

GOVT.D.B. GIRL'S P.G. (AUTONOMOUS) COLLEGE  
RAIPUR CHHATTISGARH

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**PROPOSED TEACHING PLAN FOR THE SESSION 2020-21**  
**B.A. I ECONOMICS**  
**PAPER- I**  
**MICRO ECONOMICS**

MONTH/DAYS	UNIT	TOPIC
NOVEMBER	UNIT –I	Introduction-Definitions, Nature and scope of Economics, Methodology in Economics.
DECEMBER	UNIT-I	Utility–Cardinal and Ordinal Approaches, Indifference Curve, Consumer's equilibrium, Giffin goods, compensated demand.  Demand- Law of Demand, Elasticity of demand, Price, income and cross elasticity, Consumer's surplus.
JANUARY	UNIT-II	Theory of Production and Cost– Production decision, Production function, Iso-quant, Factor substitution, Law of variable proportions, Returns to scale, Economies of scale. Different concepts of cost and their interrelation, Equilibrium of the firm.
FREBRUARY	UNIT-III	Market structure-perfect and imperfect markets, Equilibrium of a firm-perfect competition.
MARCH	UNIT-III	Monopoly and price discrimination. Monopolistic competition- Duopoly, Oligopoly, controlled and administered prices.
APRIL	UNIT –IV	Factor Pricing-Marginal productivity theory of distribution. Theories of wage determination- wages and collective bargaining wage differentials.
MAY	UNIT –IV	Rent – Scarcity Rent, differential rent, Quasi rent, Modern Rent Theory. Interest -Classical and Keynesian Theories, Modern Theory. Profits – Innovation, Risk bearing and Uncertainty theories.
JUNE	UNIT –V	Welfare economics – What welfare economics is about? Role of value judgments in welfare economics, Pigou's contribution in the field of welfare economics.Parato's optimality. New welfare economics – Kaldor, Hicks welfare criterion, Scitovsky paradox, Social welfare function and social choice. Bergson's –Samuelsson social welfare function, Prof. Amartya Sens critique, Arrow impossibility theorem

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**PROPOSED TEACHING PLAN FOR THE SESSION 2020-21**  
**B.A. I ECONOMICS**  
**PAPER- II**  
**INDIAN ECONOMY**

<b>MONTH/DAYS</b>	<b>UNIT</b>	<b>TOPIC</b>
NOVEMBER	UNIT –I	Pre and post independent Indian economy- A short introduction of Economic policies of British India, state of economy at the time of independence.
DECEMBER	UNIT-I	Planning exercise in India- Planning in India through different five years plans, The Planning Commission and NITI Aayog Growth and development in pre-reform period. New Economic Reforms- Liberalization, Privatization and Globalization. Growth, development and structural change in post reform period.
JANUARY	UNIT-II	Population and human development – demographic trends and issues of Education health malnutrition and migration, growth and distribution. Trends and policies in poverty, inequalities, unemployment and occupational distribution. International comparison in human development and poverty reduction
FEBRUARY	UNIT-III	Agriculture –Nature and importance, Trends in agriculture productivity, factors determining productivity, Land reforms, new agriculture strategies and green revolution ,rural credit,
MARCH	UNIT-III	Agricultural marketing, natural resources and infra-structure development: Performance, problems and policies, MUDRA Yojna.
APRIL	UNIT –IV	Industry: Growth and productivity, Industrial policy and reforms, Growth and problems of small and cottage scale industries,
MAY	UNIT –IV	Role of public sector enterprises in India's industrialization. Trends and performance in services.
JUNE	UNIT –V	External sector- Role of foreign trade, Trends in exports and imports, Composition and direction of India's foreign trade, Export promotion measures and the new trade policies, Recent macroeconomic scenario: National income, investment, saving and inflation, Current macroeconomic policies and their impact, fiscal policies and monetary policy.

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**PROPOSED TEACHING PLAN FOR THE SESSION 2020-21**

**B.A. II ECONOMICS  
PAPER- I  
MACRO ECONOMICS**

MONTH/DAYS	UNIT	TOPIC
NOVEMBER	UNIT –I	National Income:-Concept and Measurement of National Income; Economic welfare and national income, Social accounting. Circular flow of income. National Income accounting, Green accounting..
DECEMBER	UNIT-I	Classical theory of employment, Say's Law of Markets, Keynesian theory of employment
JANUARY	UNIT-II	Consumption function – Average and marginal propensity to consume; Keynes's psychological law of consumption, determinants of the consumption function. The saving function. The investment multiplier and its effectiveness. , The investment function – marginal efficiency of capital, autonomous and induced investment. Saving and investment equality
FREBRUARY	UNIT-III	Nature and characteristics of trade cycle; theories of trade cycle , Hawtrey's monetary theory; Hayek's over investment theory
MARCH	UNIT-III	Keynes' view on trade cycle; Schumpeter's theory of innovation. Samuelson and Hicks multiplier- accelerator model, Control of trade cycles.
APRIL	UNIT –IV	International Trade – Inter-regional and international trade, Comparative advantage cost theory, opportunity Cost theory and Hecksher-Ohlin theory.
MAY	UNIT –IV	International trade and economic development, Tariffs & import Quotas. Concept of optimum tariff. Balance of trade & Balance of Payment- Concept & Components of BOP, Equilibrium & Disequilibrium in BOP. Relative merits & demerits of devaluation. Foreign Trade Multiplier.
JUNE	UNIT –V	Functions and objective of international monetary fund, World Bank and world trade organization, international monetary reform and India, Foreign Trade in India- recent Changes in the Composition and direction of foreign trade. India's balance of payment, export promotion and import substitution in India, multinational corporation and India.

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**PROPOSED TEACHING PLAN FOR THE SESSION 2020-21**  
**B.A. II ECONOMICS**  
**PAPER- II**  
**MONEY BANKING AND PUBLIC FINANCE**

<b>MONTH/DAYS</b>	<b>UNIT</b>	<b>TOPIC</b>
NOVEMBER	UNIT –I	Basic concepts: Money – Meaning and functions, Gresham's law; Quantity theory of money – Cash transaction and cash balance approaches;
DECEMBER	UNIT-I	Value of Money- Inflation, deflation and reflation, definition, types, causes and effects of inflation on different sectors of the economy; Demand pull and cost push inflation; Measures to control inflation. Phillips curve, concept of demonetization.
JANUARY	UNIT-II	Commercial banking- meaning and types; Functions of commercial banks, The process of credit creation purpose and limitations; Liabilities and assets of banks; Functions of a central bank, Role and functions of the Reserve bank of India; Objectives and limitations of monetary policy with special reference to India.
FREBRUARY	UNIT-III	Meaning and scope of public finance; Distinction between private and public finance; public goods v/s private goods; The principle of maximum social advantage; Role of the government in economic activities;
MARCH	UNIT-III	Public expenditure – Meaning, classification and principles of public expenditure, Trends in public expenditure and causes of growth of public expenditure in India.
APRIL	UNIT –IV	Sources of Public revenue- Taxation – Meaning, Canons and classification of taxes; Division of tax burden. The benefit and ability to pay approaches; Impact and incidence of taxes;
MAY	UNIT –IV	Taxable capacity; Effects of taxation; Characteristics of a good tax system, equity and justice in taxation Major trends in tax revenue of the Central and state Government in India
JUNE	UNIT –V	Public debt and financial administration- Sources of public borrowing effects of public debt. Methods of debt redemption. The public budget- Kinds of budget, Economic and functional classification of the budget; Preparation and passing of budget in India.



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**PROPOSED TEACHING PLAN FOR THE SESSION 2020-21**  
**B.A. III ECONOMICS**

**PAPER- I**  
**DEVELOPMENT AND ENVIRONMENTAL ECONOMICS**

<b>MONTH/DAYS</b>	<b>UNIT</b>	<b>TOPIC</b>
NOVEMBER	UNIT –I	Economic Growth and Development – Factors affecting economic growth, Capital and Technology Development & under development, Population of Under-developed Countries,
DECEMBER	UNIT-I	Poverty-Absolut & Relative, Measuring development and Under development, Gap per capita income, Inequity of income and wealth. Human Development index GDI, GEM, Poverty Index of development & Quality of life.
JANUARY	UNIT-II	Population problem and growth, pattern of population. Theory of demographic transition. Population poverty & Environment. Theory of Social Change, Immutable laws of Capitalist Development-Crisis in capitalism. Karl Marx, Mahalonobis Model. Schumpeter, Big-Push, Balance and unbalanced Growth, Critical Minimum Effort thesis, Low-Income Equilibrium Trap, Dualism: technical, behavioural & social
FREBRUARY	UNIT-III	Harrod and Domar Growth Model, Neo Classical models, Solow
MARCH	UNIT-III	Meade & Mrs. Joan Robinson's Growth model, Unlimited supply of Labour.
APRIL	UNIT –IV	Environment and Ecology: Economic linkage, Environment as a necessary and luxury, Population environment linkage, Environmental use & environmental disruption as an allocation problem. Market Failure for environmental goods, environment as a public good, the Common Property problem.
MAY	UNIT –IV	Human Right approach to environmental problem, valuation of environmental damages; land, water, air & forest pollution Control-Prevention. Control and abetment of pollution, Choice of policy instrument in developing Countries, Environmental Legislation, Indicators of Sustainable Development, environmental accounting
JUNE	UNIT –V	Concept of Intellectual Capital – Food Security, Education Health & Nutrition, Efficiency & Productivity in Agriculture, New Technology & Sustainable Agriculture, Globalization & Agriculture growth, the Choice of Technique & appropriate technology & employment, Role of Monetary & Fiscal policies in developing Countries

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**PROPOSED TEACHING PLAN FOR THE SESSION 2020-21**  
**B.A. III ECONOMICS**

**PAPER- II**  
**STATISTICAL METHODS**

MONTH/DAYS	UNIT	TOPIC
NOVEMBER	UNIT –I	Statistical Methods Statistics – Definition Statistical Data, Statistical Methods, Functions of Statistics. Importance of Statistics, Limitations of Statistics, Statistical Survey & Report writing.
DECEMBER	UNIT-I	Collection of Data, Primary & Secondary Data, Sampling & Sampling Designs. Sampling Errors, Frequency Distribution, Diagrammatic & Graphic Presentation
JANUARY	UNIT-II	Central Tendency. Measurement of Mean, Median, Mode, Geometric Mean & Harmonic Mean and their uses.
FREBRUARY	UNIT-III	Dispersion : Meaning of Dispersion, Properties, good measure of Variation – Methods of Dispersion Range, Quartiles Deviation – Mean Deviation,
MARCH	UNIT-III	Standard Deviation, Coefficients of Variation, Lorenz Curve, Skewness & Kurtosis.
APRIL	UNIT–IV	Coefficient of Correlation – Karl Pearson's Method, Probable Error, Spearman's Rank Correlation Coefficient.
MAY	UNIT–V	Index Number – Construction of Index Numbers, Simple & weighted Index Number's- Fisher's Ideal Index Number & Reversal Test. Consumer Price Index Numbers and Time Series Analysis – Components of Time-Series.
JUNE	UNIT –V	Measurement of Trend – Graphic Method, Semi Average Method. Moving averages, Least Square Method, Measuring Trend by logarithms.

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DEPARTMENT OF ENGLISH  
B.A. – III ENGLISH LITERATURE TEACHING PLAN SESSION: 2020-21  
PAPER – I INDIAN WRITING IN ENGLISH**

MONTH	PROPOSED PLAN
JULY	History and background of Indian Writing in English UNIT – II POETRY Toru Dutt - Our Casuarina Tree Tagore - Songs 1 and 103 from ‘Gitanjali’
AUGUST	UNIT – III Kamala Das - The Old Playhouse Gauri Deshpandey The Female of the species , Jayant Mahapatra -Dawn at Puri K. N. Daruwala - Death by Burial , Shiv K. Kumar - Indian Women
SEPTEMBER	UNIT – IV-PROSE Nirad C. Chaudhary - My Birth Place Dr. S. Radhakrishnan - The call of the Suffering
OCTOBER	UNIT – V -DRAMA Girish Karnad Hayavadana Tendulkar Silence! The Court is in Session.
NOVEMBER	UNIT – V -DRAMA Girish Karnad Hayavadana
DECEMBER	UNIT – VI FICTION- R.K.Narayan -Guide
JANUARY	UNIT – VII Lyric, Subjective Poetry, Couplet, Fable, Hymn, Allegory ,Autobiography
FEBRUARY	REVISION

**B.A. – III ENGLISH LITERATURE  
TEACHING PLAN SESSION: 2020-21  
PAPER – II AMERICAN LITERATURE**

MONTH	PROPOSED PLAN
JULY	History and background of American Literature UNIT – II POETRY Walt Whitman- Oh Captain! My Captain, When the Lilacs lasts in the Dooryard Bloomed.  Carl Sandberg - Who Am I?, 'I am the People, the Mob'
	UNIT – III Emily Dickinson- Hope is the Thing with feather, 'I felt a Funeral in my Brain'  E.E. Cummings- The Cambridge Ladies
SEPTEMBER	UNIT – IV-PROSE William Faulkner- Nobel Award acceptance Speech  W. Carlos Williams- In the American Grain  Walt Whitman- Preface to 'Leaves of Grass'
OCTOBER	UNIT – V -DRAMA Miller- All My Sons  Eugene O' Neil- The Hairy Ape
NOVEMBER	UNIT – V -FICTION Ernest Hemingway- A Farewell to Arms
DECEMBER	UNIT – VI FICTION- W. Faulkner- The Sound and the Fury
JANUARY	UNIT – VII Naturalism, Realism, Art for Art's Sake, Poetic Drama , Symbolism, American Renaissance, Existentialism
FEBRUARY	REVISION

**B.A. – II ENGLISH LITERATURE**  
**TEACHING PLAN SESSION: 2020-21**  
**PAPER – I MODERN ENGLISH LITERATURE**

MONTH	PROPOSED PLAN
JULY	UNIT – II POETRY W. B. Yeats - A Prayer for my daughter, The Second Coming  T. S. Eliot - Love song of J. Alfred Prufrock.
	UNIT – III POETRY Dylan Thomas - Lament, A Refusal to Mourn the Death  Larkin - Toads, At Grass
SEPTEMBER	UNIT – IV-PROSE Bertrand Russell - On the value of Scepticism  Oscar Wilde - Happy Prince
OCTOBER	UNIT – V -DRAMA G. B. Shaw - Pygmalion
NOVEMBER	UNIT – V -DRAMA G. B. Shaw -  Pygmalion UNIT – V -  SHORT STORIES  Katherine Mansfield – A Cup of Tea
DECEMBER	UNIT – VI FICTION- Rudyard Kipling – Kim
JANUARY	UNIT – VII Elegy, Sonnet, Ode, Morality & Miracle Play, One Act Play, Interlude
FEBRUARY	REVISION

**B.A. – II ENGLISH LITERATURE**  
**TEACHING PLAN SESSION: 2020-21**  
**PAPER – II MODERN ENGLISH LITERATURE**

MONTH	PROPOSED PLAN
JULY	UNIT – II POETRY Sassoon - At the Grave of Henry Vaughan Owen, W. H. - Strange Meeting
	UNIT – III POETRY Auden - Seascape Ted Hughes - The Howling of the Wolves
SEPTEMBER	UNIT – IV-PROSE Robert Lynd - Forgetting H. Belloc - A conversation with a Reader
OCTOBER	UNIT – V -DRAMA John Galsworthy - Strife J.M. Synge - Riders of the Sea
NOVEMBER	UNIT – V -DRAMA J.M. Synge - Riders of the Sea  <b>FICTION</b> William Golding- Lord of the Flies
DECEMBER	UNIT – VI FICTION- William Golding - Lord of the Flies
JANUARY	UNIT – VII Simile, Metaphor, Alliteration, Onomatopoeia, Ballad, Epic, Dramatic Monologue
FEBRUARY	REVISION

**B.A. – I ENGLISH LITERATURE**  
**TEACHING PLAN SESSION: 2020-21**  
**PAPER – I- Literature in English from 1550 – 1750**

MONTH	PROPOSED PLAN
JULY	History and background of English Literature UNIT – II <b>POETRY</b> (d) Shakespeare – Sonnet No. – 1 From Fairest Creatures, Sonnet No. 154, The Little Love God. (e) Milton – How Soon Hath Time the Subtle Thief of Youth ... (f) John Donne – Sweetest Love I Don't Go, This is my play's Last Scene.
AUGUST	UNIT – II <b>POETRY</b> (c) John Dryden – Portrait of Shadwell (d) Alexander Pope – From An Essay on Criticism (True case in Writing...) and the world's Victor Stood Subdued by Sound.
SEPTEMBER	UNIT – IV-PROSE (d) Bacon – Of Studies, of Health, of Friendship (e) Addison – Sir Roger at Home (f) Steele – of the Club
OCTOBER	UNIT – V-DRAMA Shakespeare – The Merchant of Venice
NOVEMBER	UNIT – VI- DRAMA Shakespeare – The Merchant of Venice
DECEMBER	UNIT – VII FICTION Swift – The Battle of the Books
JANUARY	UNIT – VII Historical and Literary Topics (vii) The Renaissance (viii) Humanism (ix) Reformation (x) The Restoration (xi) The Earlier Drama (xii) Petrarchism and the Sonnet Cycle
FEBRUARY	UNIT – VII Historical and Literary Topics (v) The influence of Seneca and Classical Dramatic Theory (vi) The Elizabethan and Jacobean Stage (vii) Restoration drama (viii) The rise of periodical essay

**DEPARTMENT OF ENGLISH**  
**B.A. – I ENGLISH LITERATURE**  
**TEACHING PLAN SESSION: 2020-21**  
**PAPER – II- Literature in English from 1750 – 1900**

MONTH	PROPOSED PLAN
JULY	History and background of English Literature UNIT – II <b>POETRY</b> Blake – Tiger, Tiger Burning Bright.
AUGUST	UNIT – II <b>POETRY</b> Wordsworth – Daffodils and Solitary Reaper Coleridge – Frost at Midnight UNIT – III <b>POETRY</b> Shelley – Ode to Skylark Keats – Ode to Autumn
SEPTEMBER	UNIT – III <b>POETRY</b> Tennyson – Crossing the Bar Browning - Prospice UNIT – IV-PROSE Lamb – Dream Children : A Reverie Hazlitt – On Actors and Acting
OCTOBER	UNIT – V-FICTION Jane Austen – Pride and Prejudice
NOVEMBER	UNIT – VI-FICTION Charles Dickens – David Copperfield
DECEMBER	UNIT – VII Historical and Literary Topics The Reform Act, The Impact of Industrialization, Colonialism and Imperialism Scientific thoughts and Discoveries
JANUARY	UNIT – VII Historical and Literary Topics Faith and Doubt Classical and Romantic Concepts of Imagination Varieties of Romantic and Victorian Poetry The Victorian Novel, Realism and the Novel, Aestheticism
FEBRUARY	UNIT – VII Historical and Literary Topics The Victorian Novel Realism and the Novel Aestheticism REVISION



## DEPARTMENT OF ENGLISH

### BA/B.SC /B.COM– I ENGLISH LANGUAGE (FOUNDATION COURSE) TEACHING PLAN SESSION: 2020-21 PAPER – II-

MONTH	PROPOSED PLAN
JULY	Unit – 1-Basic language skills: Grammar and Usage- Grammar and Vocabulary based on the prescribed text-Article –Lesson 1,2
AUGUST	<b>Unit – 2-Comprehension of an unseen passage</b> Lesson 3 ,4,5
SEPTEMBER	<b>Unit – 3-Composition:</b> Paragraph writing. Lesson 6,7
OCTOBER	<b>Unit – 4-Letter writing</b> Lesson 8,9
NOVEMBER	<b>Unit – 5-Texts:</b> Lesson 10 11, Grammar- Tenses
DECEMBER	<b>Unit – 5-Texts:</b> Lesson 12.13 Grammar-Direct & indirect Speech
JANUARY	<b>Unit – 5-Texts:</b> Lesson 14.15 Grammar-Active & Passive Voice
FEBRUARY	Grammar-Preposition/Modals etc. REVISION

**BA/B.SC /B.COM– II**  
**ENGLISH LANGUAGE (FOUNDATION COURSE)**  
**TEACHING PLAN SESSION: 2020-21**  
**PAPER – II-**

MONTH	PROPOSED PLAN
JULY	Unit – 1- Grammar and Vocabulary based on the prescribed text –Lesson 1,2
AUGUST	Unit – 2- Report- writing Lesson 3 ,4,5
SEPTEMBER	Unit – 3 Precis writing , Expansion of an idea Lesson 6,7
OCTOBER	Unit – 4-Comprehension of an unseen passage, expansion of an idea Lesson 8,9
NOVEMBER	Unit – 5- Grammar and Vocabulary based on the prescribed text Lesson 10 11
DECEMBER	Grammar and Vocabulary based on the prescribed text Lesson 12.13
JANUARY	Lesson 14. Grammar and Vocabulary based on the prescribed text
FEBRUARY	Grammar- Modals/Question Tags etc. REVISION

**BA/B.SC /B.COM– III**  
**ENGLISH LANGUAGE (FOUNDATION COURSE)**  
**TEACHING PLAN SESSION: 2020-21**  
**PAPER – II-**

MONTH	PROPOSED PLAN
JULY	Unit – 1- Grammar and Vocabulary based on the prescribed text-Articles, Preposition –Lesson 1,2
AUGUST	<b>Unit – 2-</b> Essay writing Lesson 3 ,4,5
SEPTEMBER	<b>Unit – 3</b> Precis writing Lesson 6,7
OCTOBER	<b>Unit – 4-Comprehension of an unseen passage</b> Lesson 8,9
NOVEMBER	<b>Unit – 5-</b> Grammar- Tenses Lesson 10 11
DECEMBER	Grammar-Direct & indirect Speech Lesson 12.13
JANUARY	Lesson 14.15 Grammar-Active & Passive Voice
FEBRUARY	Grammar- Modals/Question Tags etc. REVISION

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**SESSION 2020-21  
TEACHING PLAN  
B.A. I GEOGRAPHY  
PAPER-I**

**TITLE OF THE PAPER: PHYSICAL GEOGRAPHY**

MONTH	PLAN
JULY	The Nature and Scope of Physical Geography. Origin of the Earth, Geological TimeScale. Earth's Interior, Continental Drift Theory (Wagner),
AUGUST	Plate Tectonics. Isostasy. Earth movements: Earthquakes and Volcanoes. Ricks, Weathering, Erosion, and Nomia) cycle of erosion,
SEPTEMBER	Evaluation of landscapes- Fluvial, Arid, Glacial, Karts and Coastal landscape
OCTOBER	Elements or Weather and Climate, Composition and Structure of the Atmosphere. World patterns of Atmospheric Temperature
NOVEMBER	Pressure, and Wind. Atmospheric Moisture, and Disturbances, Climatic Classification (Koppen and Thornthwait) types. characteristics
DECEMBER	World patterns of climate. Surface relief of Pacific Ocean, Atlantic Ocean, and Indian Ocean. Distribution of Temperature and Salinity of oceans and seas
JANUARY	Currents and ides, Ocean Deposits and Coral Reefs, and Oceanic Resources.
FREBRUARY	Revision

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2020-21**

**TEACHING PLAN  
B.A. I GEOGRAPHY  
PAPER-II**

**TITLE OF THE PAPER: HUMAN GEOGRAPHY**

MONTH	PRAPOSED PLAN
JULY	Definition and Scope of Human Geography. Man - environment relationship; Determinism, Possibilism, and Probabilism
AUGUST	Human development Index (HDD). Classification of Human Races — their Characteristics and Distribution
SEPTEMBER	Human adaptation to environment: Eskimos, Bushman, Pigimy, Gond, Masai, and Naga. Growth, Density and Distribution of World Population
OCTOBER	Factors Influencing spatial distribution; Over . Under. and Optimum Population; Migration  Settlements — Urban Settlements:
NOVEMBER	Urbanization. Evolution and Classification. Trends of Urbanization.
DECEMBER	<b>Rural settlements: Characteristics, Types and Regional Pattern, Rural Houses in India - Types, Classification and Regional Pattern.</b>
JANUARY	Issues — Global Warming. Climate Change. Deformation. Desertification. Air, Water and Soll Pollution.
FEBURARY	REVISION

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2020-21**

**TEACHING PLAN  
B.A. I GEOGRAPHY  
PRACTICAL**

MONTH	PRAPOSED PLAN
JULY	
AUGUST	Scale - Plain, Time, Diagonal and Comparative. Methods of showing relief - hachures, contours; Representation of different land forms by contours
SEPTEMBER	Line graph & Bar graph (Simple & Compound), Circle Diagram, wind rose.
OCTOBER	Mean, Median and Mode
NOVEMBER	Chain and tape Survey.
DECEMBER	Chain and tape Survey.
JANUARY	Chain and tape Survey.

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

FEBURARY	
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**SESSION 2020-21  
TEACHING PLAN  
B. A.II GEOGRAPHY  
PAPER-I**

**TITLE OF THE PAPER: ECONOMIC AND RESOURCE GEOGRAPHY**

MONTH	PRAPOSED PLAN
JULY	<b>Meaning, scope and approaches to economic geography; Main concepts of economic geography</b>
AUGUST	; Resource: concept and classlficadon; Natural resources: soll, forest and water. Mineral resources: irnn ore and bauxite
SEPTEMBER	; Power resources: coal, petroleum and hydro electricity; Resource conservation; Principal crops: wheat, rice, sugarcane and tea Agricultural regions of the world (Derwent Whlitlesey);
OCTOBER	); Theory of agricultural location (Von Thunen); Theory of industrial location (Weber); Major Indusirles: iron and steel, <b>textiles</b> , petrochemical and sugar;
NOVEMBER	; Industrial regions of the world.  World transportation: ma)or trans-continental rallways, sea and aL rnues; International trade: patterns and trends;
DECEMBER	Major trade blocks: LAFTA, EEC, ASEAN; Effect of globaltzatlon on developing countries.  Conservation of resources: evolution of the concept, prlncples, phllosophy, and approach to conservation
JANUARY	, resources conservadon and practices. Policy making and sustainable development

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

FEBURARY	Revision
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**SESSION 2020-21**

**TEACHING PLAN**

**B. A.II GEOGRAPHY**

**PAPER-II**

**TITLE OF THE PAPER: I GEOGRAPHY OF INDIA**

MONTH	PROPOSED PLAN
JULY	Physical Features: Structure. Relief. Climate, Physiographic Regions, Drainage, Climate-origin and mechanism of monsoon
AUGUST	and regional and Seasonal variations. Natural Resources: Sells - types, their distribution and characteristics. Water Resources (major irrigation and hydro power projects) ; Forests-types, distribution, economic significance and conservation.
SEPTEMBER	Mineral and Power resources-Iron-ore, Manganese, Copper, Coal, Petroleum and Natural gas, Non conventional sources of energy. Cultural Features : Population - Growth,
OCTOBER	Cultural Features : Population - Growth, Density and Distribution. Agriculture - Major crops. Impact of Green Revolution and Agricultural regions.
NOVEMBER	. Industries Localization. Development & Production - Iron and steel. Cotton Textile. Cement. Sugar. Transport. Foreign Trade. Industrial Region.
DECEMBER	
JANUARY	



**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

FEBURARY	Revision
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**SESSION 2020-21  
TEACHING PLAN  
B. A.II GEOGRAPHY  
PRACTICAL**

MONTH	PROPOSED PLAN
JULY	
AUGUST	Distribution Maps: Dot, Choropleth & Isopleth
SEPTEMBER	Map Projections: Definition and classification, Cylindrical projections- simple, equal area, Gall's, Mercator's
OCTOBER	Interpretation of weather maps : Use of meteorological instruments.
NOVEMBER	Statistical Methods: Quartile: Mean deviation, standard deviation and Quartile deviation; Relative variability and co-efficient of variation.

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DECEMBER	Surveying-Prismatic Compass Survey: open and closed traverse, correction of bearing, calculation of interior angles.
JANUARY	Surveying-Prismatic Compass Survey: open and closed traverse, correction of bearing, calculation of interior angles.
FEBURARY	

**SESSION 2019-20  
TEACHING PLAN  
B.A. III GEOGRAPHY  
PAPER-I**

**TITLE OF THE PAPER: RESOURCE AND ENVIRONMENT**

MONTH	PRAPOSED PLAN
JULY	<b>Basics of Remnte Sensing: deflnltltn, hlstory. and Scope; Electro-magnetic Radlatlon: Chamcterlstlcs</b>
AUGUST	Spectral reglons and Bands; Interactlon with earth surface features and atmosphere; Spectral Signature. <b>Types of Remnte Senslng: Air hnme and Space bnme; Aerlal phntos</b>
SEPTEMBER	Types and Characterlstlcs: Remote Sensing satellites: Platforms and sensors: actlve and passive, sensor chamcterlstlcs: spatlal resolutltn, spectral resoluonn, radloinetrle resolution, temporal resolution. Product.
OCTOBER	Visual and Dlglal Image processlng technlques; Rertinte Senslng appllcaHon In <b>resource mapping and envFonnlenlal moriltorlng, remote sensing In Indla: development and Growth</b>

## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

NOVEMBER	<p>. Indian Satellites, Space Organizations and data products.</p> <p><b>Introduction of GIS: Definition of Geoinformatics, Scope and Importance of Geoinformatics, History of GIS, Components of GIS, Functions of GIS. GIS tasks- Input, Manipulation, Management.</b></p>
DECEMBER	<p>. Query analysis. Visualization. Toposheets.                      Surveying. Aerial photographs .Satellite data and Images. Data types- Spatial and Non spatial.                      Data model and data analysis: Raster data and their characteristics</p>
JANUARY	<p>Vector data and their characteristics. Raster data analysis- grid cells or Pixels. Vector data analysis- Spatial data, Generation in vector format. Spatial and Non —Spatial data Management. Spatial Information Technology</p>
FEBRUARY	Revision

### SESSION 2019-20

#### TEACHING PLAN

#### B. A. III GEOGRAPHY

#### PAPER-II

#### TITLE OF THE PAPER: GEOGRAPHY OF CHHATTISGARH

MONTH	PROPOSED PLAN
JULY	<b>Physical Features : Geological Structure. Relief and Physiographic Region</b>
AUGUST	<p>Drainage, Climate.</p> <p>Natural Resources: Soils — Types, characteristics and their Distribution. Water Resources (Major Irrigation and Hydro Power Projects),</p>
SEPTEMBER	), Forests-types, Distribution. Conservation of Forest. Mineral Resources-Iron-ore, Coal. Fossil fuel, Limestone, Bauxite, etc. Power Resources of Chhattisgarh
OCTOBER	Agriculture and Population — Agriculture: Cereals, Pulses and other crops. Population: Growth, Distribution and Density

## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

NOVEMBER	: Tribal Populations, and Urban and Rural Population.  Industries - Iron and Steel. Cement. Sugar. Aluminum
DECEMBER	. <b>Industrial</b> Regions of Chhattisgarh.  Trade and Transport. Tourism
JANUARY	Socio-economic development of Chhattisgarh
FEBRUARY	Revision

### SESSION 2019-20 TEACHING PLAN B. A.III GEOGRAPHY PRACTICAL

MONTH	PROPOSED PLAN
JULY	
AUGUST	Band graph, Hythergraph and Climograph. Square root, cube-root and vernier scales
SEPTEMBER	Map Projection: Conical Projection: one standard parallel, two standard parallels, Bonne's, Polyconic, Polar Zenithal Projections; Gnomonic, Stereographic and Orthographic

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

OCTOBER	Study and Interpretation of Indian topographical sheets: classification and numbering system, Interpretation of topographical sheets with respect to cultural and physical features.
NOVEMBER	Importance of field work in Geography. Field work and field report: physical, social and economic survey of a micro-region.
DECEMBER	Surveying - Plane Table Survey, Basic Principles of plane table surveying, Plane table survey including intersection and resection.
JANUARY	Surveying - Plane Table Survey, Basic Principles of plane table surveying, Plane table survey including intersection and resection.
FEBURARY	

**SESSION 2018-19  
TEACHING PLAN  
B. A. I GEOGRAPHY  
PAPER-I**

**TITLE OF THE PAPER: ELEMENTS OF PHYSICAL GEOGRAPHY**

MONTH	PROPOSED PLAN
JULY	<b>The nature and scope of Physical Geography; Inter relation of Physical Geography with other branches of earth science. The place of Geomorphology in Physical Geography,</b>
AUGUST	<b>Geological Time scale. Earth's interior, Wegner's theory of Continental Drift, Plate Tectonics. Earth movements: - orogenic and epeirogenic</b>

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

SEPTEMBER	<b>Earthquakes and Volcanoes.</b>  <b>Rocks - Origin and composition of rocks, weathering, formation of regolith and soils, rocks and relief.</b>
OCTOBER	Geomorphic agents and processes-erosion, transportation and deposition, mass wasting. Evolution of Land scape, concept of cycle of erosion, interruption of cycle of erosion.
NOVEMBER	<b>Fluvial, Arid, Glacial, Karst and Coastal Landscapes.</b>
DECEMBER	<b>Application of Geomorphology to Hydrology, Mining, Engineering works.</b>
JANUARY	<b>Hazard management and urbanization.</b>
FEBURARY	Revision

**SESSION 2018-19  
TEACHING PLAN  
B. A. I GEOGRAPHY  
PAPER-II**

**TITLE OF THE PAPER: INTRODUCTION TO GEOGRAPHY & HUMAN GEOGRAPHY**

MONTH	PRAPOSED PLAN
JULY	The Nature of Geography, objectives and relevance, Place of Geography in the classification of Sciences,
AUGUST	Geography and other disciplines. Geography as the study of environment, man - environment relationship; ecology and ecosystems.

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

SEPTEMBER	Environmental determinism possibilism Neo - determinism; Dualism in Geography - Systematic / Regional, Physical/Human, Complementarity.
OCTOBER	Definition and scope of Human Geography. Human Races - Their characteristics and distribution. Human adaptation - To the environment; Eskimos, Bushman, Pigmy, Gond, Masai, and Naga
NOVEMBER	Growth of Population; Distribution of Population, world distribution pattern - physical, economic and social factors influencing spatial distribution,
DECEMBER	concept of overpopulation under population and optimum population. Migration - internal and international Settlements - Types and patterns of settlements.
JANUARY	A brief historical overview of Geography as a discipline, recent trends in geography with special reference to India, imperatives for the future, career opportunities for geographers.
FEBURARY	Revision

Name of department: हिन्दी

TEACHING PLAN 2020-21

MONTH

	Name of Programme	Course/ Paper	Name of course/ Paper	Course outcome (should include one point for each unit of the paper)
NOVEMBER	B.A./B.Sc./B.Com./B.Sc. H.Sc. I	Paper I	आधार पाठ्यक्रम हिन्दी भाषा	I-कार्यालयीन प्रयोग हेतु हिन्दी भाषा का ज्ञान व मूल्य शिक्षा हेतु ईदगाह कहानी का अध्ययन
DECEMBER				II. प्रतियोगी परीक्षा हेतु शुद्ध भाषा का ज्ञान व देशभक्ति की कविता
JANUARY				III-देवनागरी लिपि ज्ञान की विशेषता व समयाभाव मे संक्षेपण व संक्षिप्तीकरण का प्रयोग तथा व्यंग्य
FEBRUARY				IV- नवाचार हेतु कम्प्युटर का परिचय व भाषा से उसका संबंध , स्वामी विवेकानंद का युवाओं केओ संदेश
MARCH				V-भाषा का मानकीकरण और समाज की गतिशीलता का अध्ययन
NOVEMBER	B.A./B.Sc./B.Com./B.Sc. H.Sc. II	Paper I	आधार पाठ्यक्रम हिन्दी भाषा	I - महात्मा गाँधी के सत्य के प्रयोग से छात्रों को मूल्य शिक्षा व प्रयोजन मूलक भाषा
DECEMBER				II - युवाओं का समाज में स्थान व व्यापारिक व तकनीकी कार्यों हेतु भाषा का प्रयोग
JANUARY				III -मातृभूमि निबंध से देशभक्ति का भाव जागृत करना व व्याकरण का ज्ञान
FEBRUARY				IV -डॉ खूबचन्द बघेल का परिचय और व्याकरण का ज्ञान
MARCH				V -संभाषण कुशलता और अनुवाद
NOVEMBER	B.A./B.Sc./B.Com./B.Sc. H.Sc. III	Paper I	आधार पाठ्यक्रम हिन्दी भाषा	I- कविता , नाटक और सामान्य ज्ञान व कथन की शैली का प्रयोग
DECEMBER				II -विकासशील देशों की समस्या और पुनर्विचार ,एवं विभिन्न संरचनाओं का अध्ययन



	<b>Name of Programme</b>	<b>Course/ Paper</b>	<b>Name of course/ Paper</b>	<b>Course outcome (should include one point for each unit of the paper)</b>
JANUARY				III- आधुनिक तकनीकी सभ्यता एवं पर्यावरण का अध्ययन व कार्यालयीन पत्रों के उदाहरण
FEBRUARY				IV -जनसंख्या के कुचक्र का अध्ययन व अनुवाद प्रशिक्षण
MARCH				V - ऊर्जा और शक्तिमानता का अर्थशास्त्रीय अध्ययन , प्रतिवेदन व निमंत्रण पत्र लेखन
NOVEMBER	<b>B.A.I</b>	<b>Paper I</b>	<b>प्राचीन हिन्दी काव्य</b>	I-कबीर की साखियों की व्याख्या व समीक्षा से मूल्य संवर्धन
DECEMBER				II- जायसी के नागमती वियोग वर्णन से वियोग शृंगार का अध्ययन
JANUARY				III-सूर के भ्रमरगीत सार के माध्यम से ज्ञान पर प्रेम की विजय का अध्ययन
FEBRUARY				IV- तुलसी के रामचरित मानस के सुंदरकांड के माध्यम से सदकर्म की प्रेरणा
MARCH				V-घनानन्द के कवित्त व अन्य कवियों द्वारा नैतिक शिक्षा
NOVEMBER		<b>Paper II</b>	<b>हिन्दी कथा साहित्य</b>	I- गबन उपन्यास की समीक्षा और प्रेमचंद का जीवन परिचय
DECEMBER				II- आकाशदीप और कफन कहानी की समीक्षा व व्याख्या
JANUARY				III-परदा और ठेस कहानी की व्याख्या व तत्वों के आधार पर समीक्षा
FEBRUARY				IV- मलबे का मालिक और चीफ की दावत कहानी के आधार पर मूल्य शिक्षा
MARCH				V- जली हुई रस्सी और गदल कहानी की व्याख्या व समीक्षा तथा अन्य कहानीकारों का परिचय
NOVEMBER	<b>B.A.II</b>	<b>Paper I</b>	<b>अर्वाचीन हिन्दी काव्य</b>	I-भारत भारती की कविताएं व उनकी व्याख्या तथा समीक्षा
DECEMBER				II-सूर्यकांत त्रिपाठी निराला की कविताएं व उनकी व्याख्या तथा समीक्षा

	<b>Name of Programme</b>	<b>Course/ Paper</b>	<b>Name of course/ Paper</b>	<b>Course outcome (should include one point for each unit of the paper)</b>
JANUARY				III- सुमित्रा नन्दन पंत की कविताएं व उनकी व्याख्या तथा समीक्षा।
FEBRUARY				IV- माखन लाल चतुर्वेदी की कविताएं व उनकी व्याख्या तथा समीक्षा ।
MARCH				V-अज्ञेय की कविताएं व उनकी व्याख्या तथा समीक्षा । अन्य कवियों का जीवन परिचय ।
NOVEMBER		<b>Paper II</b>	<b>हिन्दी निबंध तथा अन्य गद्य विधाएँ</b>	I- अंधेर नगरी नाटक की समीक्षा और भारतेन्दु हरिश्चंद्र का जीवन परिचय ।
DECEMBER				II- क्रोध ,बसंत और उस अमराई ने राम राम कही है निबंध की समीक्षा व व्याख्या ।
JANUARY				III-काव्येषू -, बेईमानी की परत व्यंग्य निबंध की व्याख्या व तत्वों के आधार पर समीक्षा ।
FEBRUARY				IV- औरंगजेब की आखरी रात , स्ट्राइक और एक दिन की एकाँकी के तत्वों के आधार पर समीक्षा ।
MARCH				V-दस हजार और मम्मी - ठकुराइन एकाँकी की व्याख्या व समीक्षा तथा अन्य लेखकों का परिचय ।
NOVEMBER	<b>B.A. III</b>	<b>Paper I</b>	<b>जनपदीय भाषा साहित्य (छत्तीसगढ़ी )</b>	I-संत धर्मदास के छत्तीगढ़ी काव्य की व्याख्या व समीक्षा से मूल्य संवर्धन ।
DECEMBER				II-सोनपान छत्तीगढ़ी निबंध की समीक्षा ।
JANUARY				III-हाना का उदाहरण सहित अध्ययन ।
FEBRUARY				IV- डॉ विनय कुमार पाठक की छत्तीगढ़ी कविताओं की व्याख्या व समीक्षा ।
MARCH				V-मुकुन्द कौशल की छत्तीगढ़ी ग़ज़ल की व्याख्या व अन्य रचनाकारों का परिचय ।

	<b>Name of Programme</b>	<b>Course/ Paper</b>	<b>Name of course/ Paper</b>	<b>Course outcome (should include one point for each unit of the paper)</b>
NOVEMBER		<b>Paper II</b>	हिन्दी भाषा साहित्य का इतिहास तथा काव्याङ्ग विवेचन	I- हिन्दी भाषा के स्वरूप का विवरण
DECEMBER				II- हिन्दी के शब्द भंडार से अवगत कराना
JANUARY				III-हिन्दी साहित्य के इतिहास का परिचय
FEBRUARY				IV- काव्याङ्ग में रस के प्रकार व अंगों का परिचय
MARCH				V- काव्याङ्ग में छंद व अलंकारों के प्रकार व अंगों का परिचय
NOVEMBER	<b>M.A. I sem</b>	<b>Paper I</b>	हिन्दी साहित्य का इतिहास	I- हिन्दी साहित्य का इतिहास दर्शन और साहित्येतिहास की समीक्षा
DECEMBER				II- आदिकाल के कवियों की समीक्षा
JANUARY				III- भक्ति काल का अध्ययन
FEBRUARY				IV- सूफी और प्रेमाख्यानक कवियों का अध्ययन
NOVEMBER		<b>Paper II</b>	प्राचीन एवं मध्यकालीन काव्य	I- चंदबरदाई के पृथ्वीराज रासो का अध्ययन
DECEMBER				II- कबीर की साखियों की व्याख्या व समीक्षा
JANUARY				III- जायसी के नागमती विरह खंड की समीक्षा
FEBRUARY				IV-अन्य भक्तिकालीन कवियों का परिचय
NOVEMBER		<b>Paper III</b>	आधुनिक हिन्दी काव्य	I- मैथिलीशरण गुप्त के साकेत का अध्ययन
DECEMBER				II- जयशंकर प्रसाद के महाकाव्य कामायनी का अध्ययन
JANUARY				III- सूर्यकांत त्रिपाठी निराला की कविताओं की समीक्षा व व्याख्या
FEBRUARY				IV-अन्य आधुनिक कवियों की समीक्षा
NOVEMBER		<b>Paper IV</b>	आधुनिक गद्य साहित्य	I- स्कंदगुप्त नाटक की समीक्षा

B A I HISTORY -I PAPER- HISTORY OF INDIA [up to 1206]

SESSION -2020-21

S N	MONTH	PLAN
1	JULY	Survey of sources of Indian history Geographical features of India Pre historic age – Early stone age ,Neolithic age Harappan civilization
2	AUGUST	Salient features of Harappan civilization Political, social and economic life of the Harappan age Pre Vedic age [Rigvedic period] Later Vedic period – social ,political and economic life. Civilization and culture of Epic era
3	SEPTEMBER	India of the 6 <sup>th</sup> century B C – Buddhism and Jainism Rise of the Magadha empire Alexander’s invasion of India and their effects
4	OCTOBER	Establishment of Maurya empire- Chandra Gupta Maurya Ashoka- Ashoka’s dharma Maurya administration ,economical arrangement Art and culture
5	NOVEMBER	Post Maurya period -Shunga, Satavahana Kushan dynasty -Kanishka Sangam period- literature and culture Chol dynasty

6	DECEMBER	<p>Chol administration</p> <p>Pandya dynasty</p> <p>Gupta empire – administration.</p> <p>Economic social and cultural condition</p> <p>Rajput period – Pallava and chalukya</p>
7	JANUARY	<p>Vardhan ,Vakataka ,Pratihara</p> <p>Pal ,Sen ,Rashtrakut dynasty</p> <p>India's relations with south east Asia and Shree Lanka</p> <p>Muhammad bin Qasim</p>
8	FEBRUARY	<p>Invasion of Mahmud Gaznabi and Muhammad Gori</p> <p>Status of woman</p> <p>Rivision</p>

**B.A 1<sup>ST</sup> YEAR HISTORY**  
**2<sup>ND</sup> PAPER-WORLD HISTORY (1453 – 1789)**  
**SESSION (2020-21)**

S NO.	MONTH	PLAN
1	JULY	<p>Introduction- General introduction of second paper</p> <p>Feudalism in the medieval world, fall of the Feudalism</p> <p>The beginning of the modern Era, Characteristics of modern era</p> <p>Renaissance (What do you mean by Renaissance) causes and characteristics.</p>
2	AUGUST	<p>Reformation-what do you understand by reformation.</p> <p>Causes of the reformation, form of reformation-reformation in Germany- role of Martin Luther.</p> <p>Reformation in England.</p> <p>Consequences of the reformation movement.</p>
3	SEPTEMBER	<p>Counter reformation.</p> <p>Thirty years war (1618-1648)</p> <p>Causes, events &amp; results.</p> <p>Rise of the Nation states-</p> <p>Nation states in Spain and France.</p> <p>Nation states in England &amp; Russia-Peter the great and Catherine ii.</p>
4	OCTOBER	<p>Partition of Poland (1773-1795)</p> <p>Causes &amp; partition.</p> <p>Economical base of the modern western world-</p> <p>Mercantilism.</p> <p>Commercial Revolution and their impacts.</p>
5	NOVEMBER	<p>Industrial revolution – Causes, nature and their effects.</p> <p>Colonialism and their results.</p>

		<p>Civil war in England – struggle between parliament and monarchy.</p> <p>Causes of the civil war, incidents and their results.</p>
6	DECEMBER	<p>Glorious revolution in England – 1688.</p> <p>Background, causes, incidents and their results.</p> <p>Period of Cromwell's in England.</p> <p>Louise 14<sup>th</sup> (1668-1730) – Home policy, foreign policy.</p>
7	JANUARY	<p>Independence war of America (1776 – 1783 AD) – Causes, incidents and results.</p> <p>French revolution (1789)- Causes, immediate cause, incidents and results.</p> <p>National Assembly (1789 – 1791).</p>
8	FEBRURARY	REVISION

**B.A 2<sup>nd</sup> YEAR HISTORY**  
**1<sup>st</sup>PAPER- HISTORY OF INDIA (1206-1761)**  
**SESSION (2020-21)**

<b>S NO</b>	<b>MONTH</b>	<b>PLAN</b>
1	<b>JULY</b>	<p>General introduction of the first paper (medieval India)</p> <p>Sources of Sultanate Period.</p> <p>Sources of Mughal Period.</p> <p>Establishment of Delhi Sultanate – Slave dynasty.</p> <p>QutubuddinAibak</p> <p>Illutmish (1211 – 1236) – works of Illutmish.</p>
2	<b>AUGUST</b>	<p>Razia Sultana (1236 – 1240)</p> <p>Balban (1266 – 1288) – administrative principles of Balban, Achievements and estimate of Balban.</p> <p>The Khilzi dynasty – conquest and reforms of AlauddinKhilzi.</p> <p>Administrative arrangements of Khilzi.</p>
3	<b>SEPTEMBER</b>	<p>Tughlaq dynasty – Mohammad - bin – Tughlaq (1325 – 1351) - home policy – Mohammad Tughlaq’s schemes of reforms and their failure.</p> <p>Firoz Shah Tughlaq (1351 – 1388)</p> <p>Reforms of Firoz Shah Tughlaq</p> <p>Foreign policy of Firoz Shah</p> <p>Invasion of Timur in India and its effects</p>
4	<b>OCTOBER</b>	<p>Foundation of the Mughal Empire –</p> <p>Babur – political condition of India at the time of Babur invasion.</p> <p>The Battle of Panipat (1526 A.D), Battle of Khanwa,</p>



		<p>Chanderi and Ghaggar.</p> <p>Sher Shah Suri and his administration.</p> <p>Rajput policy of Akbar.</p>
5	<b>NOVEMBER</b>	<p>Religious policy of the Mughal Emperors (Akbar – Aurangzeb).</p> <p>Religious policy of Akbar- Din - e – Illahi.</p> <p>Religious policy of Jahangir, Shahjahan and Aurangzeb.</p> <p>Political institutions and administration.</p> <p>Social and economical condition of sultanate period.</p> <p>Social and economical condition of Mughal period.</p> <p>Religious and cultural condition of Mughal period.</p>
6	<b>DECEMBER</b>	<p>Bhakti movement – Causes and saints.</p> <p>Peculiarities of Bhakti movement.</p> <p>Sufism in India.</p> <p>Art and architecture of Sultanate period.</p> <p>Art and architecture of Mughal period.</p> <p>Education and literature of Sultanate period.</p> <p>Education and literature of Mughal period.</p>
7	<b>JANUARY</b>	<p>Vijayanagar Kingdom – King Krishnadev Rai – Battle of Talikot.</p> <p>Bahmani Kingdom – achievements of the Mahmood Gava.</p> <p>Rise of the Maratha power.</p> <p>Shivaji and his administration.</p> <p>3<sup>rd</sup> Battle of Panipat – causes, incidents and results.</p>
8	<b>FEBRURARY</b>	<p>Revision.</p>

**B A SECOND .HISTORY II PAPER-WORLD HISTORY-1789 TO 1870****SESSION- 2020-21**

S N.	MONTH	PLAN
1	JULY	French revolution – national convention to region of terror Administration of directory -problem and works Rise of Napoleon and his achievements Napoleon as a emperor – 1804 – 1815 A D.
2	AUGUST	Downfall of Napoleon. Venna congress – 1815 A D -Problems ,principles and works United system of Europe – 1815 -1825 A D Metternich – foreign policy
3	SEPTEMBER	July revolution – 1830 – causes ,incidents and results February revolution – 1848 – causes, ,incidents and results Industrial revolution in England – cause ,nature and results Liberalism in England -
4	OCTOBER	First reform act 1832 – provisions and results Second reform act- 1867 Chartist movement -1838 to1848 and their failure
5	NOVEMBER	Achievements of Napoleon third – 1852 to 1870 Eastern problem – because of the rise Greek freedom struggle – 1821 to 1829.
6	DECEMBER	Crimean war – 1854 to 1856 cause s incidents and results Russia – Jar Alexander second

		Unification of Italy –contribution of the Mazzini ,Cavour and Garibaldi.
7	January	Bismarck ,unification of Germany – background, Problems Bismarck contribution of unification of Germany Meiji restoration – 1868
8	FEBRUARY	RIVISION

**B.A FINAL YEAR HISTORY**  
**1<sup>st</sup>PAPER- HISTORY OF INDIA (1761-1950)**  
**SESSION (2020-21]**

S.NO	MONTH	PLAN
1.	JULY	<p>General introduction of first paper.</p> <p>Expansion of the British Empire – Anglo – French conflict (Karnataka war), reasons for the success of Britishers.</p> <p>Battle of Plassey (1757) – Background, causes, incident and results.</p> <p>Battle of Buxar (1763) – causes, incidents and results</p>
2.	AUGUST	<p>Subsidiary alliance of Lord Wellesley.</p> <p>Provisions of subsidiary alliance, Merit and demerits of subsidiary alliance.</p> <p>Doctrine of lapse (policy of the Lord Dalhousie).</p> <p>Principal and nature of doctrine of lapse.</p> <p>Administrative reforms in British period -</p>
3.	SEPTEMBER	<p>Reforms of Lord William Bentinck, Lord Lytton, Lord Rippon, Lord Curzon.</p> <p>Commercialism – downfall of Indian industries, downfall of trades, downfall of Indian Agriculture, Peasants movements.</p> <p>Land revenue system in British Period – background.</p>
4.	OCTOBER	<p>Permanent settlement, Raiyat Wadi, Mahal Wadi.</p> <p>Indian renaissance – Brahma Samaj – Raja Ram Mohan Roy.</p> <p>Arya Samaj – Swami Dayanand Saraswati, PrathnaSamaj – Mahadev Govind Ranade, Ramakrishna Mission – Swami Vivekananda, Theosophical Society – Smt. Annie Besant, Aligadh movement – Sir Sayyed Ahmed Khan.</p>
5.	NOVEMBER	<p>Western education and praise.</p> <p>Different Social class – Farmer, labor , middle class, women's.</p>

		<p>Rise of Nationalism – causes of nationalism, incidents of nationalism.</p> <p>Establishment of Indian National Congress – causes, concepts.</p> <p>Liberalism (1885 – 1904).</p> <p>Extremism (1905 – 1919).</p>
6.	DECEMBER	<p>Revolutionary movements.</p> <p>Gandhian movements – A. Non – cooperation movement (1920 -22), B. Civil disobedience movement (1930-34)</p> <p>C. Quit India movement (1942).</p> <p>Communalism – causes, rise and development.</p>
7.	JANUARY	<p>Subhash Chandra Bose and Azad Hind Fouze.</p> <p>Constitutional development of India – Indian government act 1919(Dyarchy), Indian government act 1935(Provincial Autonomy), Indian Independence act 1947.</p> <p>Independence of India and peculiarities of Indian constitution.</p>
8.	FEBRURARY	REVISION

## **B. A. Final ,History second -1871 – 1945**

### **Session -2020-21**

S NO	MONTH	PLAN
1	JULY	Introduction of second paper Third republican of France and their achievements Home and foreign policy of Bismarck Kaiser William second -1890 -1918.
2	AUGUST	World politics of Kaiser William second Partition of Africa (New imperialism) Modernization of Japan
3	SEPTEMBER	Japanese imperialism – Russia Japan war 1904-5 Causes results Chinas revolution – 1911 -causes and results
4	OCTOBER	DR. San-yat-sen ,his contribution Eastern problem – Berlin congress-1878 A D Young Turkish movement- 1908
5	NOVEMBER	Balkan war- 1912-1913-causes and results First world war – 1914- 1918 – causes ,incidents and results. Paris peace conference – 1919 . Russian revolution – 1917 -causes and results .
6	DECEMBER	Treaty of Versailles – provisions and their review Fascism – Mussolini . Nazism – Hitler . Militarism in Japan
7	JANUARY	Establishment of the league of Nation -14 point of Wilsons Second world war -1939 -45 -causes and results

		United nations organization – foundation . Achievements .
8	FEBRUARY	Rivision

**DEPARTMENT OF POLITICAL SCIENCE**

**B. A.I POLITICAL SCIENCE (2020-21)**

**PAPER-I**

**Political Theory**

MONTH	PLAN
NOVEMBER	Meaning and Definition of Political Science (with modern concept ), Politics as a specific Human Behaviour , Power, Authority and Influence 'meaning features and kinds
DECEMBER	Method of Study to Political Science : Traditional , Behaviouralism and Post Behaviouralism, State and its essential elements, Various theories of the origin of the State ] Marxist theory, Organismic Theory
JANUARY	Sovereignty and its pluralistic criticism, Rights: meaning, kinds and theories, Duties Liberty : meaning, kinds, safeguards, Equality : meaning kinds and relations with
FEBRUARY	Democracy: meaning, comprehensive meaning , challenges, conditions for its success, merits and demerits, Direct Democracy
MARCH	Kinds of Government : Unitary and Federal, Parliamentary and Presidential. Dictatorship.
APRIL	Government : Executive, Legislature and Judiciary. Theory of Separation of Powers and Checks and Balances. Constitutions: meaning and kinds, Theories of
MAY	Public Welfare State, Party System : meaning, kinds, process, Pressure Groups : meaning , kinds and technique , Social Change : meaning characteristics, theories, Feminism Nationalism



**B.A. – I POLITICAL SCIENCE**  
**SESSION: (2020-21)**  
**PAPER-II**  
**Indian Government & Politics**

MONTH	PRAPOSED PLAN
NOVEMBER	Indian National Movement : First Independence Movement 1858, Non cooperation , Movement, Civil Disobedience Movement and Quit India Movement, Constitutional
DECEMBER	Development of India : Govt. of India Act of 1858,1909,1919 and 1935
JANUARY	Constitution of India: Characteristics, Preamble, Sources, Federal System, Fundamental Rights and Duties, Directive Principles of State Policy. Constitution Amendment Process
FEBRUARY	Union Executive: President, Vice President, Council of Ministers and Prime Minister, Union legislature: Parliament : Lok Sabha and Rajya Sabha <del>Parliamentary Procedure</del>
MARCH	Union Judiciary:Supreme Court: Organisation , Jurisdiction, Judicial Review, Judicial Activism, State Executive: Governor, Council of Ministers and Chief Minister
APRIL	State Legislature : Legislative Assembly and Legislative Council, Election Commission and Election Reforms, National and <del>Regional Parties</del>
MAY	Major issues of Indian Politics : Caste Religion, Language And Region Panchayati Raj System .

**B.A. – II POLITICAL SCIENCE**  
**SESSION: (2020-21)**  
**PAPER-I**

MONTH	PRAPOSED PLAN
NOVEMBER	Plato - In the Context of Ideal state: Justice. Education, Communism & Philosopher King
DECEMBER	Aristote – State, Classification of constitutions, slavery, view on Revolution
JANUARY	Machiavelli - Machiavelli's views on State and Government, views on Religion. Morality & contribution to Political Philosophy. Hobbes - Social Contract Theory.
FEBRUARY	Locke -Locke's views on social contract Theory. Rousseau -Rousseau's views on social contract Theory, Theory of General will.
MARCH	Bentham -Bentham's Utilitarianism. J.S. Mill -J.S. Mill's views on state, Liberty, Rights & Representative Government
APRIL	Hegel -Hegel's views on state, Dialectical method. T.H. Green -Green's view's on state & Government, Liberty & contribution to Political Philosophy.
MAY	Karl-Marx- Marx's Dialectical materialism, Theory of class Struggle. Theory of surplus value, Economic interpretation of History, Contribution of Marx.

**B.A. – II POLITICAL SCIENCE**  
**SESSION: (2020-21)**  
**PAPER-II**  
**Comparative Government and politics (Britain, America, China, Switzerland)**

MONTH	PRAPOSED PLAN
NOVEMBER	Meaning of Comparative Politics, Nature, Scope and Problems
DECEMBER	Political system approach (David Eastan, Almond and Pawell) Constitutional Traditions and salient feature of the constitution.
JANUARY	Constitutional Structure - Meaning of Chief Executive, Kinds, Centure of power and functions, Comparative study.
FEBRUARY	Constitutional structure: - Legislature organization, Functions, Agreements in favour of second Chamber, comparative study.
MARCH	Constitutional structure :- Judiciary, Organization, Functions, Independence Rule of Law Judicial Review
APRIL	Political Culture and Political Socialization Political Parties- Importance, Characteristics
MAY	Pressure Groups, Meaning, Kinds, Definition and importance, Role of women in the political process.

**B.A. – III POLITICAL SCIENCE**  
**SESSION: (2020-21)**  
**PAPER-I**  
**International Politics**

MONTH	PRAPOSED PLAN
NOVEMBER	Meaning, Nature and Scope of International politics. Approaches to the study of international Politics.
DECEMBER	Various theories of international Politics,
JANUARY	Power: - Definition, Elements, Struggle for Power, Accumulation of Power, Increase of power and exhibition of power
FEBRUARY	The concept of balance of power: – Theoretical advantage and evaluation.  The concept of the peace and security: – Theory of collective security
MARCH	Diplomacy: – Definition, Kinds, functions, aims and means. Disarmament: – Meaning, definition and development.
APRIL	Disarmament: – Meaning, definition and development. Solution and hindrances in the path of Disarmament.
MAY	New paradigm of International Politics:- (1) Environmentalism (2) Globalization (3) Human Rights.

**B.A. – III POLITICAL SCIENCE**  
**SESSION: (2020-21)**  
**PAPER-II**  
**Public Administration**

MONTH	PRAPOSED PLAN
NOVEMBER	Public administration: – Meaning, nature and scope, importance. Evaluation of public administration as a discipline
DECEMBER	Differences and similarities between public administration and personal administration.
JANUARY	Public administration: – Methods of study and approaches, the new public administration.
FEBRUARY	Politics and public administration: - Administrative, Behavior, Leadership, Decision making, Communication accountability.
MARCH	The bureaucracy and the budget process, the new trends in public administration in the age of globalization & liberalization.
APRIL	Legislative control over administration, judicial, control on administration
MAY	Decision making, Communication accountability Evaluation of public administration as a discipline

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PROPOSED TEACHING PLAN FOR THE SESSION 2020-21

Class B.A.I (Psychology)

Paper -I Title of the Paper -Basic Psychological Processes

MONTH/DAYS	Proposed Plan
NOVEMBER/20	UNIT-I Introduction-definition and goals of psychology, perspectives-behaviouristic, cognitive, humanistic and cross-cultural. Methods-experimental, observational, interview, questionnaire and case study.
DECEMBER/23	UNIT-II Biological basis of behaviour: genes and behaviour, the nervous system-the central nervous system, the autonomic nervous system and the peripheral nervous system, Emotions- types and bodily changes (internal and external). Practical-introduction, test and experiment.
JANUARY/25	UNIT-III Perceptual processes: nature and types of sensation and perception, Attention -process, definition, type and determinants, Practical- test and experiment
FEBRUARY/24	UNIT-III Principles of perceptual organization, Illusion- nature and types Practical- test and experiment. UNIT -IV Learning and Memory: classical and operant conditioning- basic processes, Verbal and Observational learning Practical- test and experiment
MARCH/25	UNIT -IV Memory- sensory, short term and long term, Forgetting -process and theory. Practical- test and experiment
APRIL/22	UNIT -V Cognitive and Non- cognitive process: Intelligence- nature and types, Motivation- biogenic and social motives, Thinking process- nature and types, Personality- nature and determinants, Practical-test and experiment
MAY/25	UNIT-V Approaches to study personality- trait and type, Assessment of personality. Revision
JUNE /25	PRACTICAL AND THEORY EXAM

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PROPOSED TEACHING PLAN FOR THE SESSION 2020-21

Class B.A.I (Psychology)

Paper –II Psychopathology

MONTH/DAYS	Proposed Plan
NOVEMBER/20	UNIT –I Introduction; concept of Normality and Abnormality. Models of Psychopathology- psychodynamic, behavioural and cognitive.
DECEMBER/23	UNIT-II Assessment of psychopathology; Diagnostic tests, Rating scales, Clinical interview and Projective tests. Practical –Introduction, Test& Experiment
JANUARY/25	UNIT-III Anxiety disorders, Panic disorder, Phobias, Obsessive-Compulsive disorder and Generalized Anxiety disorder Practical –Test& Experiment
FEBRUARY/24	UNIT –IV Mood disorders; Manic Depressive episode and Dysthymia. Practical –Test& Experiment
MARCH/25	UNIT IV–Personality disorder, Paranoid, Schizoid and Dependent Personality disorder. Dissociative disorder and Obesity. Practical –Test& Experiment
APRIL/22	UNIT –V Management of Psychopathology; Stress management, Medico and Psychosocial Therapy, Shock Therapy, Psychoanalysis, Group Therapy, and Behaviour Therapy. Practical –Test& Experiment
MAY/25	Practical –Test& Experiment Revision
JUNE /25	Practical and Theory Exam

PROPOSED TEACHING PLAN FOR THE SESSION 2020-21

Class B.A.II (Psychology)

PAPER-I

Title of the paper -Social Psychology

MONTH/DAYS	Proposed Plan
NOVEMBER/20	UNIT-I Introduction of social psychology – nature, scope and goals, Methods of social psychology – experimental, survey, interview, observational and Sociometry. Approaches to study social behaviour – psychoanalytical cognitive and behavioural
DECEMBER/23	UNIT- II Social perception – perception of self and others, Impression formation and its determinants. Prosocial behaviour– co-operation and helping behaviour, determinants of prosocial behaviour–personal, situational and socio-cultural
JANUARY/25	UNIT-III Stereotype and Prejudice– nature and determinants, Interpersonal Attraction- nature and determinants Group Structure and Function – social facilitation Practical- 1 test& experiment
FEBRUARY/24	UNIT-III Interpersonal Attraction- nature and determinants Attitude- nature and measurements Practical- test& experiment
MARCH/25	UNIT –IV Group functions- cohesiveness, conformity and group norms, Leadership – nature, types, characteristics and functions Practical- test & experiment
APRIL/22	UNIT –V Social Issues – Aggression –nature, determinants, prevention and control, Mob Behaviour, Gender discrimination and Child labour Practical- Introduction, test & experiment
MAY/25	Practical- report writing and checking Revision
JUNE /25	Practical and Theory Exam



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PROPOSED TEACHING PLAN FOR THE SESSION 2020-21

Class -B.A. II

Paper-II Psychological Assessment

MONTH/DAYS	Proposed Plan
NOVEMBER/20	UNIT –I I Psychological Assessment; concept, difference between physical and psychological assessment, levels of assessment.
DECEMBER/23	UNIT-IBarriers in psychological assessment, unidimensional and multidimensional assessment
JANUARY/25	UNIT-II Psychological test; concept, characteristics and types- standardized and non-standardized, group, performance and verbal, uses of psychological test. Practical –Introduction, Test& Experiment
FEBRUARY/24	UNIT-III Test construction; steps in test construction and reliability- test-retest split-half, factors affecting reliability. Validity- content and predictive, factors affecting the validity, norms-age and grade Practical –Test& Experiment
MARCH/25	UNIT –IV Cognitive and non-cognitive test; introduction to intelligence, aptitude, and achievement testing, introduction to the personality, interest and value testing Practical –Test& Experiment
APRIL/22	UNIT –V Psychological testing in an applied aspect of life; Education, Occupation, Social, Health, and Organization, Social-Cultural factors in Psychological Assessment. Practical –Test& Experiment
MAY/25	Practical –Test& Experiment Revision
JUNE /25	Practical and Theory Exam

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PROPOSED TEACHING PLAN FOR THE SESSION 2020-21

Class-B.A.III

Paper- I Title of the paper -Psychological Statistics

MONTH/DAYS	Proposed Plan
NOVEMBER/20	UNIT –I Statistics: meaning and application in psychology, Nature of score, categorical and continuous variable, Frequency distribution. Graphical representation of data.
DECEMBER/23	UNIT-II Measures of central tendency- mean median and mode of ungrouped and grouped data. Measures of variability-range, standard deviation, quartile deviation and average deviation, Applications of measures of central tendency and variability. Practical – Introduction, Tests and Experiments.
JANUARY/25	UNIT-III Nature and characteristic is of normal probability curve(NPC), the concept of skewness and kurtosis. Practical – Tests and Experiments
FEBRUARY/24	UNIT-III Correlation- concept, types and methods-rank difference and product moment (ungrouped data). Practical – Tests and Experiments.
MARCH/25	UNIT–IVInferential statistics- concept of null hypothesis, level of significance, type-I error and type-II error. t-test for uncorrelated data. Practical – Tests and Experiments
APRIL/22	UNIT–V Distribution free statistics- chi-square, median and sign test, Application of computer in psychological statistics. Practical – Tests and Experiments.
MAY/25	Practical – Tests and Experiments. Revision
JUNE /25	Practical and Theory examination

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PROPOSED TEACHING PLAN FOR THE SESSION 2020-21

Class B.A.III (Psychology)

PAPER-II

Title of the paper – Human Development

MONTH/DAYS	Proposed Plan
NOVEMBER/20	UNIT-I Concept of Human Development, Theories of Human Development: Psychoanalytical and Maslow, Determinants of Human Development - Biological, social, cultural factors, Approaches to study human developments: Longitudinal and cross - sectional.
DECEMBER/23	UNIT-II Socialization: Role of family, peers and school, Media and socialization. Cognitive Development : Theoretical Perspectives Piaget, Information Processing, Vygotsky
JANUARY/25	UNIT-III Self and Identity: Emergence of self, Development of personal identity, identity crises, Physical and sexual maturation, Sequential development of emotions
FEBRUARY/24	UNIT-IV Development of morality and self concept, Development of gender differences and gender roles. Role of marriage, family and occupation in Human Development
MARCH/25	UNIT-V Problems of Aging - Cognitive, conative, affective, Developmental Disabilities.
APRIL/22	Psychological Experiments and Tests
MAY/25	Psychological Experiments and Tests Revision
JUNE /25	Practical and Theory Exam

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**PROPOSED TEACHING PLAN FOR THE SESSION 2020-21**

Class - M.A. Psychology (I<sup>st</sup> & II<sup>nd</sup> Semester)

Paper- I– Basic Psychological process-I & Basic Psychological processes-II

MONTH/DAYS	PROPOSED PLAN
NOVEMBER/20 SEM-I	UNIT-I Psychophysics: Nature, Problem And methods, Signal detection theory, Subliminal perception and related factors. Perceptual process- Approaches to study Perception: Gestalt, Physiological, processing and Ecological Approaches. Perceptual Organization: Gestalt, Figure and Ground, Law of organization. Perceptual Constancy: Size, Shape and Brightness, Depth perception; Monocular and Binocular cues, Movement Perception: Nature, Types and Theories.
DECEMBER/23	UNIT-II Attention: Nature, Concept and Mechanism of Attention. Types, Theories and Applications UNIT-III Motivation and Emotion: Basic Motivational concept: Instincts, needs, drive incentive.
JANUARY/25	UNIT-III Motivational cycle. Approaches to study Motivation; Psychoanalytical, Ethological, S-R Cognitive, Humanistic, Biological Motives, Social motives: Achievement, Affiliation, and Approval. Emotion concept; physiological correlates of Emotions. Theories of Emotions; James- Lange, Canon- Bard. Schechter and Singer. Conflicts: Sources and Types
FEBRUARY/24	UNIT-IV Consciousness: Nature and concept of consciousness, Theories of Consciousness, Methods to Studying Consciousness, Consciousness Self and identity.
MARCH/25	Lab work, Seminars & Project work
APRIL/22	Semester Exam(Theory & Practical)
MAY/25 SEM-II	UNIT- I Learning Process: Classical Conditioning: Procedure, Phenomena and related issue. Instrumental Learning: phenomena, paradigms And Theoretical issue, Process Escape Conditioning, Avoidance Conditioning, Generalization, Reinforcement: Basic variable and schedule. Experimental Analysis of behavior: Behavior Modification, Shaping, Discrimination Learning, Neurophysiology of Learning
JUNE /25	UNIT-II Verbal Learning: Methods and Materials, Organizational Process, learning Theories: Hull, Tolman, and Skinner. Cognitive Approaches In Learning: latent Learning, Observational Learning.
JULY/26	UNIT-III Memory and Forgetting: Memory Processes; Encoding, Storage and Retrieval. Stages of Memory: Sensory Memory, Short Term Memory and Long Term Memory. Episodic and Semantic Memory.
AUGUST/23	UNIT-IV Forgetting: Nature and causes of Forgetting, Theories of Forgetting; Interference, Decay, Retrieval. Improving Memory. Lab work
SEPTEMBER/24	Seminars, Project work & Semester Exam(Theory & Practical)

**TEACHING PLAN**  
**B.A. PART - I (SOCIOLOGY)**  
**PAPER - I**  
**INTRODUCTION TO SOCIOLOGY**  
**2020-21**

<b>NO.</b>	<b>MONTHS</b>	<b>TEACHING PLAN</b>
1	NOVEMBER	UNIT-I- Sociology: Meaning, Natures, Scope subject matter and significance
2	DECEMBER	UNIT-II- Social Institution: - Marriage family and kinship. Culture and Society: - Culture, Socialization, The individual and Society, Social control, Norms & Value.
3	JANUARY	UNIT-III- Social Stratification: - Meaning, forms and theories Social Mobility: - Meaning, forms and theories.
4	FEBRUARY	UNIT-IV- Social Change:- Meaning and Patterns, Types, Tractors Social Change: - Evolution & Progress
5	NOVEMBER	UNIT-V- Social System: Social system, Meaning Characteristics and Elements.
6	MARCH	UNIT-V- Social Progress: - Meaning, Element, Characteristics and types.
7	APRIL	REVISION

**TEACHING PLAN**

**B.A. PART - I**

**PAPER – II**

**FOUNDATIONS OF SOCIOLOGICAL THOUGHT**

**2020-21**

<b>MONTH</b>	<b>PLAN</b>
NOVEMBER	<b>Unit-I: Classical View about Indian Society</b> –Varna Vyavstha; Ashram Vyavastha.
DECEMBER	<b>Unit-I: Classical View about Indian Society</b> – Doctrine of Karma; Dharma; Purushartha; <b>Unit-II: Structure and Composition of Indian Society</b> – Structure of Indian Society: Village, Towns and Cities; Rural-Urban Linkage; Composition of Indian Society: Tribes.
JANUARY	<b>Unit-II: Structure and Composition of Indian Society</b> – Dalit Castes; Women in Indian Society; Minorities in India; <b>Unit-III: Basic Institutions of Indian Society</b> – Caste System; Joint Family; Marriage and Changing Dimensions.
FEBRUARY	<b>Unit-IV: Familial Problems</b> – Dowry; Domestic Violence; Divorce. Intra and Inter-Generational Conflict; Problem of Elderly.
NOVEMBER	<b>Unit-V: Social Problems</b> – Problems of Surrogate Motherhood; Live-in Relationship.
MARCH	<b>Unit-V: Social Problems</b> – Regionalism and Communalism; Corruption; Youth Unrest.
APRIL	<b>Revision Exam</b>

**TEACHING PLAN**  
**B.A. PART – II**  
**PAPER - I**  
**SOCIETY IN INDIA**  
**2020-21**

NO.	MONTHS		TEACHING PLAN
1	NOVEMBER	UNIT – I	<b>Views About Indian Society :</b> The Classical Views, Varna, Ashram, karma & Dharma. M.N. Srinivas & S.C. Dubey. Significance & Interface of Classical & Field Views.
2	DECEMBER	UNIT – I	<b>The Structure &amp; Composition of Indian Society :</b> Structure : Villages, Towns, Cities & Rural Urban Linkage.
3	JANUARY	UNIT-III	<b>Composition :</b> Tribes, Dalits, Woman & Minorities. <b>Basic Institutions of Indian Society :</b> Caste System, Kinship, Family, Marriage.
4	FEBRUARY	UNIT-III UNIT-IV	Class, Changing Dimension. <b>Familial Problems :</b> Dowry Domestic Violence & Divorce.
5	MARCH	UNIT-V	Intra-Intergenerational Conflict, Problems of Elderly. <b>Social problems :</b> Casteism, Regionalism,
6	APRIL	UNIT-V	Communalism, Youth Unrest. Revision

**TEACHING PLAN**  
**B.A. PART – II**  
**PAPER - II**  
**CRIME & SOCIETY**  
**2020-21**

NO.	MONTHS		TEACHING PLAN
1	NOVEMBER	UNIT – I UNIT – II	<b>Conception &amp; Types of Crime:</b> Early Explanation- Classical Positives, Psychological. <b>Social Structure &amp; Anomie :</b> Criminality- Suicide, Organized Crime.
2	DECEMBER	UNIT-II	<b>White Collar Crime :</b> Terrorism : Causes, Effects & Remedies.
3	JANUARY	UNIT-III	<b>Indian Social Problem :</b> Social Change in India & Crime, Social Disorganization. Alcoholism & Drug Addiction, Begarry
4	FEBRUARY	UNIT-III	<b>Punishment :</b> Objectives & Forms – Theories of Punishment, Probation, Parole & Open Prison
5	MARCH	UNIT-IV	<b>Correctional Process:</b> Role of Police & Judiciary in India. Development of Jail Reform in India
6	APRIL	UNIT-V	Sociology of Prison. Revision



**TEACHING PLAN**  
**B.A. PART - III**

**PAPER – I**

**SOCIOLOGY OF TRIBAL SOCIETY**

**2020-21**

<b>MONTH</b>	<b>PLAN</b>
NOVEMBER	<b>Unit-I:</b> Sociology of Tribal Society; Concept of Tribe, Caste and Caste. <b>Unit-II:</b> Classification of Tribal People; Tribal Economy and Economic Classification of Tribes.
DECEMBER	<b>Unit-III:</b> Socio Cultural Profile of Tribe; Kinship System amongst Tribes. Tribal Marriage; Tribal Family; Religious Beliefs and Cultural Traditions amongst Tribes.
JANUARY	<b>Unit-IV:</b> Social Mobility and Change Sensitization among Tribes; Schemes of Tribal Development.
FEBRUARY	<b>Unit-IV:</b> Various Tribal Movements; <b>Unit-V:</b> Tribal Problems: Poverty, Illiteracy, Indebtedness.
MARCH	<b>Unit-V:</b> Tribal Problems: Agrarian Issues and Exploitation;
APRIL	<b>Unit-V:</b> Tribal Communities in Chhattisgarh: Oraon, Kanwar and Gond. REVISION

**TEACHING PLAN**  
**B.A. PART - III**  
**PAPER - II**  
**METHODS OF SOCIAL RESEARCH**  
**2020-21**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>
1	NOVEMBER	Unit-I	Meaning And Significance Of Social Research, Meaning And Nature Of Social Research Hypothesis, Formulation Of Hypothesis, Scientific Method And Its Applicability
2	DECEMBER	Unit II	Positivism And Ethnography, Observation, Case Study Method Case Study Method, Content Analysis
3	JANNUARY	Unit-III	Types Of Research: Historical, Descriptive, Exploratory, Experimental
4	FEBRUARY	Unit-IV	Comparative, Exploratory and Experimental Methods And Techniques Of Data Collection : Survey method Questionnaire, Interview, Schedule, Interview Guide
5	MARCH	Unit -V	Meaning Of Social Statistics: Importance And Limitations, Graphs And Diagrams
6	APRIL	Unit -V	Measures Of Central Tendency: Mean, Median, Mode, Co-Relation

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RAIPUR CHHATTISGARH

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MONTH/DAYS	Graduation (Timeline: Start/End)  BAI	Graduation (Timeline: Start/End)  BAII	Graduation (Timeline: Start/End)  BAIII
NOVEMBER	<p><b>PAPER – I (THEORY)</b></p> <p>The Dance related stories of Uma-Shankar and Natwar Shri Krishna according to the Puranas.</p> <p>The importance of Guru-Vandana in Indian theatre tradition.</p> <p>Description of Sangeet.</p> <p>The place of Dance in Sangeet.</p> <p><b>practical</b></p> <p>Tatkar in Teental and its Thah,Dugun and Chougun</p> <p>Practical demonstration of gestures.</p> <p>Hastak Sanchalan (hand movements)</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Definition of Abhinaya and brief study of its kinds.</p> <p>Lakshan and Viniyog of Asamyukta Hasta Mudra according to “Abhinaya Darpan”</p> <p>Study of “Drishti-Bheda” described in Abhinaya Darpan.</p> <p><b>PRACTICAL</b></p> <p>Tatkar in Teental – practice</p> <p>Hastak Sanchalan (hand movements)</p> <p>Bhav Pradarshan on Krishna Vandana.</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Study of the history of Dance.</p> <p>Brief knowledge of the classical dances:-</p> <p>Kuchipudi Kathak</p> <p>Brief knowledge of the classical dances:-</p> <p>(a) Odissi (b) Mohini Attam</p> <p>Definition of Rasa and its types.</p> <p><b>PRACTICAL</b></p> <p>Tatkar and its variations – practice</p> <p>Hastak Sanchalan (hand movements)</p>

			Bhav Pradarshan on V Vandana or Shiv Vanda
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SESSION 2020-21

PROPOSED TEACHING PLAN FOR THE

KATHAK DANCE DEPARTMENT

THEORY and PRACTICAL OF KATHAK DANCE

BAI, BAI and BAI

DECEMBER	<p><b>PAPER – II (THEORY)</b></p> <p>The stories of origin of Natya (described in the first chapter of Natya- Shashtra of Bharat Muni).</p> <p>History of Dance – Sindhu-sabhyata, vedik period, Ramayan and Mahabharat period.</p> <p><b>Practical</b></p> <p>Guru-Vandana Greeva – sanchalan Asamyukta hand gestures</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Study of “Shiro-Bheda” with shloka described in Abhinaya Darpan.</p> <p>Study of Lokadharmi and Natyadharmi.</p> <p><b>Practical</b></p> <p>Presentation on Teentaal (other than learnt in the first year)</p> <p>Aamad, Chakkardar Toda, Chakkardar Paran, Tishra jati Toda or Paran, types of Tatkar.</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Definition of Bhava and types.</p> <p>Lakshan and Viniyog Hasta Mudra according to “Abhinaya Darpan”.</p> <p><b>Practical</b></p> <p>Thaat (in detail)</p> <p>Presentation on Teentaal (other than learnt in the previous year)</p> <p>Aamad, two Tode, Chakkardar</p>
JANUARY	<p><b>PAPER – II (THEORY)</b> Physical and mental benefits of practicing Dance</p> <p>General introduction of any two folk dances of Chhattisgarh (based on the festivals -Parva).</p> <p><b>Practical</b></p> <p>Anchit-Kunchit</p> <p>Teental – Thaat, Aamad, Paran, Tode</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Brief knowledge of the following classical dances:-</p> <p>(a) Kathak (b) Bharata Natyam (c) Kathakali (d) Manipuri</p> <p><b>Practical</b></p> <p>Presentation on Teentaal (other than learnt in the first year) Aamad, Chakkardar Toda, Chakkardar Paran, Tishra</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Study of Bhrikuti Bheda according to “Abhinaya Darpan”.</p> <p>Knowledge of Nritya and Nritta.</p> <p><b>Practical</b></p> <p>Presentation on Teentaal (other than learnt in the previous years) Chakkardar Paran, Primelu, Tihaiya, types of Tatkar.</p>

		jati Toda or Paranjati, types of Tatkar.	
FEBRUARY	<p><b>PAPER – I (THEORY)</b> Short description of any two folk theatre tradition:-</p> <p>1-Ramleela    2-Rasleela    3-Bhawai    4-Raai    5-Maach    6-Mahabharat Nacha</p> <p><b>PRACTICAL</b></p> <p>Teental – Chakkardar Tode, Kavitta, Gatnikas (any five), Tatkar and its types.</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Position of Dance in the modern society.</p> <p><b>PAPER – II (THEORY)</b></p> <p>Notation of the Theka in Thah, Dugun, Tigun and Chougun of Choutaal and Ektaal.</p> <p>Notation of the compositions learnt in practical (Choutaal and Ektaal).</p> <p><b>PRACTICAL</b></p> <p>Practise of dance presentation on Choutaal or Ektaal – Aamad, Tode, Paranjati and Kavitta.</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Study of Guru-Shishya and institutional education in the education of Kathak.</p> <p><b>PAPER – II (THEORY)</b></p> <p>Study of the Ten Pranjatis.</p> <p><b>PRACTICAL</b></p> <p>Practise of dance presentation on Dhamar or Rupak Taal – Thaata, Aamad, Tode, Paranjati and Tihaiya.</p>
MARCH	<p><b>PAPER – II (THEORY)</b></p> <p>Definition –</p>	<p><b>PAPER – II (THEORY)</b></p> <p>Life sketch and contribution to</p>	<p><b>PAPER – II (THEORY)</b></p> <p>Study of the various</p>
APRIL	<p><b>PAPER – I (THEORY)</b></p> <p>Introduction of Taal.</p>	<p><b>PAPER – II (THEORY)</b></p> <p>Definition –</p> <p>Gatnikas, Gatbhav, Thumri, Tandav and Lasya.</p>	<p><b>PAPER – II (THEORY)</b></p> <p>Life sketch and contribution of Kathak Dance of Narad and Sundar Prasad ji</p>

MAY	<p><b>PAPER I THEORY</b></p> <p>Notations of the compositions learnt in practical</p> <p><b>PAPER II THEORY</b></p> <p>Life sketch and contribution – Shri Shambhu Maharaj, Shri Kalika Prasad Maharaj, Sitara Devi, Damyanti Joshi.</p> <p><b>PRACTICAL</b></p> <p>Ability to dance on any song or Bhajan and knowledge of folk dance.</p>	<p><b>PAPER – II (THEORY)</b></p> <p>Study of folkdances of India.</p> <p>Study of folk dances of Chhattisgarh region.</p> <p><b>PRACTICAL</b></p> <p>Practical demonstration of the single hand gestures according to the Abhinaya Darpana.</p>	<p><b>PAPER – II (THEORY)</b></p> <p>Essay writing on the topic related to Dance:-</p> <p>(a) Kathak and other classical dances</p> <p>(b) Kathak and religious dances</p> <p>(c) Kathak and Yoga</p> <p>(d) Classical and folk dances</p> <p>Kathak dance and Navras</p> <p><b>PRACTICAL</b></p> <p>Bhav Pradarshan on the basis of Bhajan.</p> <p>Practical demonstration of double hand gestures according to the Abhinaya Darpana</p>
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PROPOSED TEACHING PLAN FOR THE SESSION 2020-21

VOCAL MUSIC DEPARTMENT

THEORY and PRACTICAL OF VOCAL MUSIC

BAI, BAI and BAI

MONTH/DAYS	Graduation (Timeline: Start/End)  BAI	Graduation (Timeline: Start/End)  BAI	Graduation (Timeline: Start/End)  BAI
NOVEMBER	<p><b>PAPER – I (THEORY)</b></p> <p>Definition of Music and brief of its kinds: - Alankar, Naad.</p> <p>The importance of Singing Techniques.</p> <p>Discussion of merits and demerits of a Singer.</p> <p><b>PRACTICAL</b></p> <p>Learning of 10 Alankars.</p> <p>Learning of Raags:- Raag Yaman, Bhupali, Saragam, Lakshan geet, Chhota Khyal, Taan, Aalap.</p> <p>Practices of Taals:- Tritaal and Dadara with Dugun</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Definition of Swar: - Grah, Ansh, Nyas-Upnyas and brief study of its kinds.</p> <p>Study of 4 Instruments types:- Tat, Vitat, Ghan, Sushir.</p> <p><b>PRACTICAL</b></p> <p>Learning of Raags, Palta for Riyaz, Raag bihag, Aarohi-Avrohi Kram Swarup, Bada Khayal, Chhota Khyal, Tan, Aalap.</p> <p>Practice of Taals with Dugun:- Taal Dhamar, Taal Tilwada, Raag Bageshree with Madhyalay Bandish.</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Study of the Shruti and its types.</p> <p>Brief knowledge of the Gharana.</p> <p>Definition of Gram and its types.</p> <p>Shadj Gram, Madhyam Gram, Gandhar Gram.</p> <p><b>PRACTICAL</b></p> <p>Practice of Taals:- Mat Taal, Rudra Taal, Theka of Dugun and Chougun,</p> <p>Raags:- Palta for Riyaz, Vilambit khyal of Ramkali, Raag with Taan and Aalap</p> <p>Practice of Raag Bahar with Tarana and Dhrut lay in</p>



			<p>Bandish.</p> <p>Practice of Raag kalava (Bada Khayal with Taan Aalap).</p>
DECEMBER	<p><b>PAPER – II (THEORY)</b></p> <p>Characteristics of Hindustani and Karnataka Sangeet system</p> <p>Characteristics and Qualities of Samya Bhed.</p> <p><b>PRACTICAL</b></p> <p>Raag Bhupali:- Saragam and Lakshangeet with Taans.</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Study of Taal system of North Indian and South Indian Music.</p> <p>Life Sketch and Musical Contribution of Alauddin Khan.</p> <p><b>PRACTICAL</b></p> <p>Raag:- Malkouns with Chhota Khayal and Taan. Raag Bhairavi in Drupad.</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Definition of Harmony and Melody.</p> <p>Short Notes on Kakubhed its types.</p> <p>Importance of Kakubhed in Music.</p> <p>Definition of Moorchna.</p> <p><b>PRACTICAL</b></p> <p>Raag Bahar:- Dhamar with dugun and Chaugun Raag Hasdhwani</p>

JANUARY	<p><b>PAPER – II (THEORY)</b></p> <p>Notation of Chhota Khyal from any one Raag. Defination of Taal, Matra, aavartan, Bol, Vibhag, Khali, Bhari etc.</p> <p><b>PRACTICAL</b></p> <p>Raag Alhaiya Bilawal, Raag Bhairav.</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Brief knowledge of the following Raga:-</p> <p>(a) Shuddha Chhayalag (b) Sankirna Raag (c) Sw-Sthan Niyam Ragaalap-rupkalap</p> <p><b>PRACTICAL</b></p> <p>Notation of Chhota Khyal from any one Raag. Raag Bhairavi, Jaunpuri Raag.</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Study of Scale:- Pythagori Diatonic, Crometic and Tempered.</p> <p><b>PRACTICAL</b></p> <p>Practice of Bhajan, Tarana Geet. Practice of Miyan Malhar.</p>
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FEBRUARY	<p><b>PAPER – I (THEORY)</b></p> <p>Study of Thata, Poorvang and Uttarang.</p> <p>Brief Discussion on Hori, Chaturang, Geet, Bhajan, Gajal.</p> <p><b>PRACTICAL</b></p> <p>Practices of Taal:- Ektaal,Jhaptal, Kaharva dhah with dugun.</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Life Sketch and Musical Contribution of Ustad Faiyaz Khan and Adarang-Sadarang.</p> <p>Comparision on Taal Rupak, Taal Tivra with dugun.</p> <p>Learning of Dakshintya Taal System.</p> <p><b>PAPER –II (THEORY)</b></p> <p>Merits of Good Listeners.</p> <p>Classical details of Raga.</p> <p>Origin of Sound in detail.</p> <p><b>PRACTICAL</b></p> <p>Practice of Drupad, Dhamar with Laykari.</p> <p>Practice of Taal Tilwada, Sultaal with dugun, chaugun.</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Discussion of the placemen Shuddha Swaras on the str of Veena according to Pt. Shrinivas.</p> <p>Detail explanation on Cha Sarana of Bharat.</p> <p><b>PAPER – II (THEORY)</b></p> <p>Comparison between India Classical Music and Foke Music.</p> <p>Discussion about their Characteristics.</p> <p><b>PRACTICAL</b></p> <p>Practice of Shuddha Kalya Raag, Miyan ki Todi.</p> <p>Taal:- Panjabi Taal, Ganes Taal and Plata for riyaz</p>
MARCH	<p><b>PAPER – II (THEORY)</b></p> <p>Explanation of Time Theory of Raags.</p> <p>Description of Poorva Raag, Uttar Raag, Sandhi Praskas Raag.</p>	<p><b>PAPER – II (THEORY)</b></p> <p>Short Notes of following:- Foke Music and its Types Kajari, Chaiti, Ravindra Sangeet, Aadivasi Sangeet, Lavani etc.</p>	<p><b>PAPER – II (THEORY)</b></p> <p>Definition and Importance of Voice Culture.</p> <p>Study of various Musical styles and their impact on Modern Classical Music in</p>

	<p style="text-align: center;"><b>PRACTICAL</b></p> <p>Practice of National Anthem and Taranas, Some Geet.</p> <p>Raag Durga.</p>	<p>Detail explanation on National Program of Music Broadcast by AIR.</p> <p style="text-align: center;"><b>PRACTICAL</b></p> <p>Raag:- Kedar, Hamir, Kamod etc.</p> <p>Report on Twelve National Programme of Classical Music broadcast by AIR or Doordarshan.</p>	<p>detail.</p> <p style="text-align: center;"><b>PRACTICAL</b></p> <p>Raag:- Pooriya Dhanashri, Raag Pooriya, Raag Basant, Miyan ki todi with bada khanda.</p> <p>Saragam, Lakshangeet in Raags.</p>
APRIL	<p style="text-align: center;"><b>PAPER – I (THEORY)</b></p> <p>Life sketch and Music contribution of Amir Khusro, Swami Haridas, Tansen.</p> <p>Definition – Pakad, Raag Jaati</p> <p>Report on National Program of Classical Music broadcast by AIR or Doordarshan.</p> <p style="text-align: center;"><b>PRACTICAL</b></p> <p>Palte of Bilaval Raag. Saragam, Palte of Raag Bhupali.</p> <p>Practice of Taal:- Dadara and Tilwada.</p>	<p style="text-align: center;"><b>PAPER – II (THEORY)</b></p> <p>Life sketch and Music contribution of Pt. Ravishankar, Acharya Bharat, Venkata Makhin.</p> <p>Short Notes:-</p> <p>Major Tone Minor Tone Semi Tone Qualities of Naad.</p> <p>Study of various Musical styles and their impact on Vedic period of Indian Music in detail.</p> <p style="text-align: center;"><b>PRACTICAL</b></p> <p>Raag Bihag, Vilambit Khyal Badat Taan Aalap.</p> <p>Taal:- Ada Chautal, Jhumra with dugun chaugun.</p>	<p style="text-align: center;"><b>PAPER – II (THEORY)</b></p> <p>Life sketch and Music contribution of Haddu-Hastu Khan, Pt. Omkar nath Thakur, Matang, Somnath, Ramamurti etc.</p> <p>Essay writing on the topics related to Music:-</p> <p>Classical Music and Electronic Instruments Importance of Riyaz in Music Classical Music and Filmy Music.</p> <p style="text-align: center;"><b>PRACTICAL</b></p> <p>Palta of Hansdhvani, Vilambit Khyal Taan Aalap with Tarana.</p> <p>Raag Adana, Raag Jaijaivanti Saragam.</p>

MAY	<p><b>PAPER – I (THEORY)</b></p> <p>Explanation of Khayal, Tarana, Tappa in details.</p> <p>Explanation on Vadi, Samvadi and Anuvadi.</p> <p><b>PAPER – II (THEORY)</b></p> <p>Study of Sampoorna- Shadab and Audav jaati in detail.</p> <p>Derivation of Raags from Shadav-Sampoorna jaati.</p> <p>Discussion of Notation system by Pt. Vishnu Narayan Bhatkhande in details.</p> <p><b>PRACTICAL</b></p> <p>Study and practice of Taal and Raag Yaman, bada khayal with taan aalap.</p>	<p><b>PAPER – II (THEORY)</b></p> <p>Definations:- Bhatiyali, Baulmad etc.</p> <p>Essay on Ravindra Sangeet.</p> <p><b>PRACTICAL</b></p> <p>Taal Practice, Making Reports, and Palta for Riyaz.</p>	<p><b>PAPER – II (THEORY)</b></p> <p>Essay writing on the topics related to Music:-</p> <p>Classical music and Fusion Music and Employment. Impacts of Music on Environment.</p> <p><b>PRACTICAL</b></p> <p>Raag Ramkali, Lakshange Saragam, Chhota Khayal, Bada Khayal with Taan Aalap.</p> <p>Taal:- Revision of Previous taals.</p>
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**PROPOSED TEACHING PLAN FOR THE SESSION 2020-21**

**B.Sc. Part-I**

**Subject –Biotechnology**

**Paper -1**

**Title of the Paper: Biochemistry, Biostatistics and Computer**

MONTH/DAYS	PROPOSED PLAN
NOVEMBER/20	<b>Unit I</b> Introduction to biochemistry: History, Scope and Development. Carbohydrates: Classification, Structure and function of Mono, Oligo & Polysaccharides.
DECEMBER/23	<b>Unit I</b> Lipids: Structure, Classification and Function.
JANUARY/25	<b>Unit II</b> Amino acids and Proteins: Classification, Structure and Properties of amino acids, types of Proteins and their Classification and Function. Enzyme: Nomenclature and classification of enzyme, Mechanism of enzyme action, Enzyme Kinetics and factors affecting the enzyme action. Immobilization of enzymes and their application
FEBRUARY/24	<b>Unit III</b> Hormones: Plant Hormones- Auxin and Gibberellins and Animal Hormone-Pancreas and Thyroid. Carbohydrates, Proteins and Lipid Metabolism- Glycolysis, Glycogenesis, Glyconeogenesis and Krebs cycle. Electron Transport Chain and $\beta$ -oxidation of Fatty acid.
MARCH/25	<b>Unit IV</b> Scope of Biostatistics, Samples and Population concept, Collection of data-sampling techniques, Processing and Presentation of data. Measures of Central Tendency: Mean, Median and Mode and Standard Deviation. Probability Calculation : Definition of probability, Theorem on total and compound probability
APRIL/22	<b>Unit V</b> Computer –General Introduction. Organization of computer, digital and analogue computers, computers algorithm.
MAY/25	<b>Unit V</b> Concept of Hardware and software, Input and output Devices. Application of computer in co-ordination of solute concentration, pH and Temperature etc. of a fermenter in operation and Internet application.
JUNE/25	Revision and Exam

## PROPOSED TEACHING PLAN FOR THE SESSION 2020-21

### B. Sc. Part-I

### Subject –Biotechnology

### Paper -II

### Title of the Paper: Cell Biology, Genetics and Microbiology

MONTH/DAYS	PROPOSED PLAN
NOVEMBER/20	<b>Unit I</b> Concept of life, Cell as a basic unit of living system and Cell theory. Diversity of Cell shape and size. Prokaryotic cell structure: Function and ultra structure of cell (Gram positive and Gram negative Bacteria), Plasma membrane, Flagella, Pili, Endospore and Capsule. Eukaryotic Cell: Plant cell wall and Plasma membrane.
DECEMBER/23	<b>Unit II</b> Cytoplasm: Structure and functions of Endoplasmic reticulum, Ribosome, Golgi complex, Lysosomes, Nucleus, Mitochondria and Chloroplast. Cytoskeleton: Microtubules, Microfilaments and Intermediate filaments. Cell division : Mitosis and Meiosis. Programmed Cell Death.
JANUARY/25	<b>Unit III</b> Mendel's Laws of Inheritance. Linkage and Crossing over. Chromosome variation in number and structure: Deletion, Duplication,
FEBRUARY/24	<b>Unit III</b> Translocation, Inversion and Aneuploidy, Euploidy (Monoploidy and Polyploidy and its importance).
MARCH/25	<b>Unit IV</b> History, Scope and Development of Microbiology. Basic techniques of Microbial Culture. Microbial growth & Nutrition of Bacteria: Isolation, media sterilization physical and chemical agents, pure culture pour plate method, streak plate method and spread plate method. General features and Economic importance of Fungi, Algae and Protozoa etc.
APRIL/22	<b>Unit V</b> Bacterial Reproduction: Conjugation, Transduction and Transformation. Mycoplasma- History, Classification, Structure, reproduction & Diseases.
MAY/25	<b>Unit V</b> Viruses- Basic features, Structure, Classification, Multiplication, Bacteriophages (Morphology, life cycle, infection and medicinal importance). Revision
JUNE/25	Revision and Exam

**PROPOSED TEACHING PLAN FOR THE SESSION 2020-21**

**B.Sc. Part-II**

**Subject –Biotechnology**

**Paper -1**

**Title of the Paper: Molecular Biology and Biophysics**

MONTH/DAYS	PROPOSED PLAN
NOVEMBER/20	<b>Unit I</b> Nucleic Acid: Bases, Nucleosides and Nucleotides; DNA and RNA Structure Plasmids Transposons: Repetitive elements, LINEs & SINEs, Structure of Gene.
DECEMBER/23	<b>Unit II</b> DNA replication: Enzymes involved in Mechanism of DNA replication in Prokaryotes. Mutation: Molecular level of Mutation, Types of Mutagens, Spontaneous and induced Mutation. DNA Repair : NER, BER and Mismatch Repair
JANUARY/25	<b>Unit III</b> Genetic code: Features, Codon Assignment, Wobble hypothesis. Transcription: Initiation, Elongation and Termination in Prokaryotes. Translation: Initiation, Elongation and Termination Translation machinery in Prokaryotes. Operon – Concept of Operator, Regulator, Promoter Gene, Inducer and Co-repressor
FREBRUARY/24	<b>Unit IV</b> Biophysics introduction, scope and Application Principle, structure, function of the following : a. Microscopy b. Colorimeter and Spectroscopy
MARCH/25	<b>Unit V</b> Principle, structure, function of the following : d. Centrifugation e. Chromatography
APRIL/22	<b>Unit V</b> Radioisotopes techniques: Measurement of radioactivity, Ionization Chambers Geiger Muller and Scintillaion Counter. Autoradiography and DNA Fingerprinting.Biosensor
MAY/25	Revision
JUNE/25	Exam and Revision



**PROPOSED TEACHING PLAN FOR THE SESSION 2020-21**

**B.Sc. Part-II**

**Subject –Biotechnology**

**Paper -II**

**Title of the Paper: Recombinant DNA technology and Genomics**

MONTH/DAYS	PROPOSED PLAN
NOVEMBER/20	<b>Unit-I</b> Recombinant DNA Technology: General concept. Steps in gene cloning and application. Host Controlled Restriction Modification System: Ligases and Polymerases, Klenow fragments, Tqa, Pfu polymerase, Nuclease (Endo, Exo, restriction, endonuclease). Modifications Enzymes (Kinase, Phosphates, terminal deoxynucleotidyl transferase)
DECEMBER/23	<b>Unit-II</b> Vectors: Plasmid, Bacteriophage, Cosmid, SV40 Expression vectors. Gene Library: Genomic and cDNA Library Selection and Screening of Recombinants: Genetic and Hybridization Methods
JANUARY/25	<b>Unit-III</b> Types of PCR Applications Advantages and Limitation of PCR PCR: Procedure (denaturation, annealing, extension) Human Genom Project
FEBRUARY/24	<b>Unit-IV</b> Basic concept of Gene Transfer Methods: Microinjection, Electroporation, Lipofection and Microprojectile
MARCH/25	<b>Unit-IV</b> Gene therapy: <i>In vivo</i> and <i>Ex vivo</i> , Germ line and Somatic gene therapy Basic Idea of stem cell technology: Types of Cell cultures and their Significances
APRIL/22	<b>Unit-V</b> Induction to Bioinformatics: History Objective and Application Major Bioinformatics Resources- NCBI, Types of Database (Primary and Secondary Database), BLAST and FASTA Basic concept of Genomics and Proteomics
MAY/25	Revision
JUNE/25	Practical Exam and Revision

## PROPOSED TEACHING PLAN FOR THE SESSION 2020-21

**B.Sc. Part-III**  
**Subject –Biotechnology**  
**Paper -1**

**Title of the Paper: Plant, Environment and Industrial Biotechnology**

MONTH/DAYS	PROPOSED PLAN
NOVEMBER/20	<b>Unit-I</b> Immunology- general concept, history and development. Immune system and Immunity, organization of immune system
DECEMBER/23	<b>Unit I</b> Antigen and antibody and its types <b>Unit-II</b> Cell involved in immune system, type and cells, basic structure and function ,Cytokines. Cell mediated immunity interferons , hypersensitivity.
JANUARY/25	<b>Unit-III</b> Antigen- Antibody interaction, principles and types.
FREBRUARY/24	<b>Unit –III</b> Immunohaematology – general concept blood group system Rh factor Medical application of blood groups.
MARCH/25	<b>Unit -IV</b> Origin and diversity in immune system.Effectors mechanism Immunity of infection disease monoclonal antibodies.
APRIL/22	<b>Unit- V</b> Autoimmune disease, haemolytic anaemia, Rheumatoid arthritis, insulin depend diabetes, Myasthenia gravis, organ transplantation
MAY/25	<b>Unit- V</b> immune deficient disease, cancer, AIDS.  Revision
JUNE/25	Practical Exam and Revision

**PROPOSED TEACHING PLAN FOR THE SESSION 2020-21**

**B.Sc. Part-III**

**Subject –Biotechnology**

**Paper -II**

**Title of the Paper: Immunology**

MONTH/DAYS	PROPOSED PLAN
NOVEMBER/20	<b>Unit-I</b> Plant cell and tissue culture: General introductio , history, scope.Application of tissue culture. Concept of cellular differentiation.Agro bacterium. Ti and Ri-plasmid.Bt gene, Molecular marker (RFLP,RAPD), edible vaccines.
DECEMBER/23	<b>Unit-II</b> Oraganogenesis , Embryogenesis, protoplast isolation and fusion.Germplasm storage and Cryopreservation.Anther and ovary culture.
JANUARY/25	<b>Unit-III</b> General introduction and scope of environmental Biotechnology.Environmental pollution and its types.
FREBRUARY/24	<b>Unit-III</b> Control of pollution of through biotechnology. Wastewater treatment: - Physical, Chemical and Biological.
MARCH/25	<b>Unit-IV</b> Biofertilizer , Biopesticides , IPR.Global environmental problem-general introduction, Ozone depletion, Acid rain.Green house effect.
APRIL/22	<b>Unit V</b> Bioreactors and its types.Fermentation (Lactic acid, alcohol).Maintenance of Industrial micro-organisms
MAY/25	<b>Unit-V</b> Food technology – Introduction, canning, packing and food preservation. and Revision
JUNE/25	Practical Exam and Revision

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**PROPOSED TEACHING PLAN FOR THE SESSION 2020-21**

**DEPARTMENT OF BOTANY**

**B.Sc. Part-I**

**Paper- I : BACTERIA, VIRUSES, FUNGI, LICHENS AND ALGAE**

Month	Course
<b>July Unit I</b>	<b>VIRUSES:</b> General characteristics, types of viruses based on structure and genetic material. Multiplication of viruses (General account), Lytic and Lysogenic cycle. Economic importance. Structure and multiplication of Bacteriophages. General account of Viroids, Virusoids, Prions, and Cyanophages. Mycorrhiza-Types and Significance.
<b>August Unit II&amp;II</b>	<b>BACTERIA:</b> General characteristics and classification (on the basis of morphology), fine structure of bacterial cell, Gram positive and Gram negative bacteria, mode of nutrition and reproduction vegetative, asexual and recombination (Conjugation, transformation and transduction), Economic importance. Microbial Biotechnology, <i>Rhizobium</i> , <i>Azotobacter</i> , <i>Anabena</i> .
<b>September Unit III</b>	<b>FUNGI:</b> General account of habit and habitat, structure (range of thallus organization), cell wall composition, nutrition and reproduction in fungi. Heterothallism and Parasexuality. Outlines of classification of fungi. Economic importance of fungi.
<b>October Unit III &amp; IV</b>	<b>FUNGI:</b> Life cycles of <i>Saprolegnia</i> , <i>Albugo</i> , <i>Aspergillus</i> , <i>Peziza</i> , <i>Agaricus</i> , <i>Ustilago</i> , <i>Puccinia</i> , <i>Alternaria</i> and <i>Cercospora</i> . VAM Fungi <b>ALGAE:</b> Algae: General characters, range of thallus organization, Gaidukov phenomenon, reproduction, life cycle patterns and economic importance. Classification, Systematic position, occurrence, structure and life cycle of following genera : <i>Nostoc</i> , <i>Gloeocapsa</i> , <i>Volvox</i> , <i>Oedogonium</i> , <i>Vaucheria</i> , <i>Chara</i> , <i>Ectocarpus</i> , <i>Polysiphonia</i> .
<b>November Unit IV</b>	<b>ALGAE:</b> Life cycle of following genera : <i>Nostoc</i> , <i>Gloeocapsa</i> , <i>Volvox</i> , <i>Oedogonium</i> , <i>Vaucheria</i> , <i>Chara</i> , <i>Ectocarpus</i> , <i>Polysiphonia</i> .
<b>December Unit V</b>	<b>Lichens-</b> General account, types, structure, nutrition, reproduction and economic importance. Mycoplasma: Structure and importance. Blue Green Algae (BGA) in nitrogen economy of soil and reclamation of Ushar land. Mushroom Biotechnology
<b>January</b>	<b>Revision</b>
<b>February</b>	<b>Practical Exam</b>

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**PROPOSED TEACHING PLAN FOR THE SESSION 2020-21**

**DEPARTMENT OF BOTANY**

**B.Sc.I BOTANY PAPER II M.M.50**

**BRYOPHYTES, PTERIDOPHYTES, GYMNOSPERMS AND  
PALAEOBOTANY**

MONTH	BRYOPHYTES, PTERIDOPHYTES, GYMNOSPERMS AND PALAEOBOTANY
July Unit I	<b>BRYOPHYTA:</b> General characteristics, affinities, range of thallus organization, general classification and economic & ecological importance, Systematic position, occurrence, morphology anatomy and reproductive structure in <i>Riccia</i> , <i>Marchantia</i> , <i>Pellia</i> , <i>Anthoceros</i> , <i>Funaria</i> . Vegetative reproduction in Bryophytes, Evolution of sporophytes.
August Unit I & II	<b>BRYOPHYTA:</b> <i>Riccia</i> , <i>Marchantia</i> , <i>Pellia</i> , <i>Anthoceros</i> , <i>Funaria</i> . Vegetative reproduction in Bryophytes, Evolution of sporophytes. <b>PTERIDOPHYTES:</b> General characteristics, affinities, economic importance and classification, Heterospory and seed habit,
September Unit II	<b>PTERIDOPHYTES :</b> Stellar system in Pteridophytes, Aposory and apogamy, Telome theory, <i>Azolla</i> as Biofertilizer.
October Unit III	Systematic position, occurrence. Morphology, anatomy and reproductive structure of <i>Psilotum</i> , <i>Lycopodium</i> , <i>selaginella</i> , <i>Equisetum</i> , <i>Marsilea</i> .
November Unit IV	<b>GYMNOSPERM:</b> General characteristics, affinities, economic importance and classification, Morphology, anatomy and reproduction in <i>Cycas</i> , <i>Pinus</i> and <i>Ephedra</i> .
December Unit IV & V	<b>GYMNOSPERM:</b> Morphology, anatomy and reproduction in <i>Cycas</i> , <i>Pinus</i> and <i>Ephedra</i> .
January Unit V	<b>PALAEOBOTANY:</b> Geological time scale, types of fossils and fossilization, Rhynia, study of some fossil gymnosperms. <i>Lygenopteris</i>

**DEPARTMENT OF BOTANY**

**B.Sc.- II, PAPER -I**

**Plant Taxonomy, Economic Botany, Plant Anatomy and Embryology**

MONTH	PROPOSED TOPIC
<b>NOV Unit-I</b>	<b>Bentham and Hooker system of classification.</b> Binomial Nomenclature, International Code of Nomenclature for Algae, Fungi, and plants (IUCN), Typification, numerical Taxonomy and chemotaxonomy. Preservation of Plant material and Herbarium techniques. Important botanical gardens and herbaria of India, Kew Botanical garden, England.
<b>DEC Unit- II</b>	<b>Systematic position, distinguishing characters and economic importance of the following families,</b> Ranunculaceae, Magnoliaceae, Brassicaceae, Rosaceae, Papaveraceae, Caryophyllaceae, Rutaceae, Cucurbitaceae, Apiaceae, Rubiaceae, Apocynaceae, Asclepiadaceae, Solanaceae, Malvaceae, Convolvulaceae, Orchidaceae, Acanthaceae, verbenaceae, Lamiaceae, Asteraceae, Fabaceae, Euphorbiaceae, Poaceae and Liliaceae.
<b>JAN Unit-III</b>	<b>Economic Botany:</b> Botanical name, family, part used and uses of the following economically important plants, fiber yielding plants; Cotton, jute, sun, hemp, coir. Timber yielding plants: Sal, Teak, Shisham and Pine. Medicinal plants: Kalmegh, Ashwangandha, Ghritkumari, Giloy, Brahmi, sarpgandha, ---of medicinal plants of C.G.
<b>FEB Unit-III</b>	<b>Food plants:</b> Pearl millet, Buck of wheat, Sorghum, Soyabean, gram, Ground nut, Sugarcane and Potato. Fruit plants: Pear, Peach, Litchi. Spices: Cinnamon, Turmeric, Ginger, Asafoetida and Cumin. Beverages : Tea, Coffee Rubber Cultivation of important flowers: Chrysanthemum, Dahelia, Biodiesel plants Jatropha, Pongamia Ethnobotany in context of Chhattisgarh.
<b>MAR Unit- IV</b>	<b>Plant Anatomy:</b> Root and shoot apical meristems theories of root and shoot apex organization, permanent tissues, anatomy of root, stem and leaf of dicot and monocot, secondary growth in root and stem, Anatomical anomalies in the primary structure of stems (Nyctanthes, Boerhaavia, Casuarina), Anamolous secondary growth in Dracaena, Bignonia, Laptadenia.
<b>APR Unit-V</b>	<b>Embryology:</b> Flower as a reproductive organ, anther, microsporogenesis, types of ovules, megasporogenesis, development of male and female gametophyte, pollination. mechanism self incompatibility, fertilization, endosperm, embryo, polyembryony, apomixes and Parthenocarpy

<b>MAY</b>	Practicals done every month as per schedule, Revision of Syllabus
<b>JUNE</b>	Practical /Theory exam

PROPOSED TEACHING PLAN FOR THE SESSION 2020-2021

DEPARTMENT OF BOTANY

B.Sc.- II, PAPER –II

Ecology and Plant Physiology

MONTH	PROPOSED TOPIC
<b>NOV Unit-I</b>	Introduction and scope of ecology, environmental and ecological factors, Soil formation and soil profile, Liebig's law of minimum, Shelford's law of tolerance, morphological and anatomical adaptations in hydrophytes, xerophytes and epiphytes.
<b>DEC Unit- II</b>	Population and community characteristics, Raunkiaer's life forms, population interactions (e.g. Symbiosis, Amensalism etc.), succession, ecotone and edge effect, ecological niches, ecotypes, ecads, keystone species, Concept of ecosystem, trophic levels, flow of energy in ecosystem, food chain and food web, concept of ecological pyramids Biogeochemical cycles: carbon cycle, nitrogen cycle and phosphorus cycle
<b>JAN Unit-III</b>	Plant water relations: Diffusion, permeability, osmosis, imbibitions, plasmolysis, osmotic potential and water potential, Types of soil water, water holding capacity, wilting, Absorption of water, theories of Ascent of sap, Mineral nutrition and absorption, Deficiency symptoms, Transpiration, stomatal movement, significance of transpiration, Factors affecting transpiration, guttation.
<b>FEB Unit-IV</b>	Photosynthesis: Photosynthetic apparatus and pigments, light reaction mechanism of ATP synthesis. C3, C4 CAM pathway of carbon reduction, photorespiration, factors affecting photosynthesis.
<b>MAR Unit- IV &amp; V</b>	Respiration: Aerobic and anaerobic respiration, Glycolysis, Krebs's cycle, factors affecting respiration, R.Q. Plant growth hormones: Auxin, Gibberellin, Cytokinin, Ethylene and Abscissic acid.
<b>APR Unit-V</b>	Physiology of flowering, Florigen concept, Photoperiodism and Vernalization. Seed dormancy and germination, plant movement.
<b>MAY</b>	Revision of Syllabus Practicals done every month as per schedule
<b>JUNE</b>	Practical /Theory exam



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Proposed Teaching Plan ( Session-2020-21)

### B.Sc. –III BOTANY, Paper -I PLANT PHYSIOLOGY, BIOCHEMISTRY AND BIOTECHNOLOGY

MONTH	PAPER-I-PLANT PHYSIOLOGY, BIOCHEMISTRY AND BIOTECHNOLOGY
NOV UNIT-I	<b>Plant water relations:</b> importance of water to plant life; physical properties of water <b>Plant water relations:</b> diffusion & osmosis; absorption, transport of water, transpiration; physiology of stomata. <b>Mineral nutrition:</b> Essential macro and micro elements and their role; mineral uptake; Deficiency and toxicity symptoms.
DEC UNIT-II	<b>Transport of organic substances:</b> Mechanism of phloem transport; source- sink relationship; factors affecting translocation. <b>Basic of enzymology:</b> Discovery and nomenclature; characteristics of enzymes; concepts of holoenzyme, Apoenzyme, coenzyme and cofactor; regulation of enzyme activity, mechanism of action.
JAN UNIT- II & III	<b>Photosynthesis:</b> Significance; historical aspects; photosynthetic pigments, action spectra and enhancement effects, concept of 2 photosystem, Z- scheme, photophosphorylation; Calvin cycle; C4 pathway, CAM plants, photorespiration. <b>Respiration:</b> ATP- The biological energy currency; aerobic and anaerobic respiration;
FEB UNIT- III	<b>Respiration:</b> Kreb's cycle, electron transport mechanism (Chemi-Osmotic theory); redox potential, Oxidative phosphorylation, pentose phosphate pathway. <b>Nitrogen and lipid metabolism:</b> biology of nitrogen fixation; importance of nitrate reductase and its regulation; ammonium assimilation; saturated and unsaturated fatty acids; storage and mobilization of fatty acids.
MAR UNIT-IV	<b>Growth and development:</b> Definitions; phases of growth and development; kinetics of growth, seed dormancy, seed germination and factors of their regulation; plant movements; the concept of photoperiodism; physiology of flowering; florigen concept; biological clocks; physiology of senescence, fruit ripening; plant hormones: Auxins, gibberellins, cytokinins, abscisic acid, ethylene, history of their discovery, biosynthesis and mechanism of action, photomorphogenesis, phytochromes and cryptochromes, their discovery, physiological role and

	mechanism of action.
<b>APRIL UNIT-V</b>	<p><b>Genetic engineering:</b> tools and techniques of recombinant DNA technology; Cloning vectors; Genomic and cDNA library; transposable elements; techniques of gene mapping and chromosome walking.</p> <p><b>Biotechnology:</b> functional definition; basic aspects of plant tissue culture; cellular totipotency, differentiation and morphogenesis; biology of agro bacterium; vectors for gene delivery and marker genes; salient achievements in crop biotechnology.</p>
<b>MAY</b>	<b>Revision of all Syllabus</b>
<b>JUNE</b>	<b>Practical/Theory Exam</b>

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Proposed Teaching Plan ( Session-2020-21)

### B.Sc.- III, PAPER –II

#### ECOLOGY AND UTILIZATION OF PLANTS

Month	Proposed Topic
NOV Unit-I	Plants and environment: Atmosphere (gaseous composition), water (properties of water cycle light (global radiation, photo synthetically active radiation), temperature, soil (development of soil profiles, physico-chemical properties), and biota. Morphological, anatomical and physiological responses of plants to water (hydrophytes & xerophytes), temperature (thermoperiodicity), light (photoperiodism, heliophytes & sciophytes) & salinity.
DEC Unit II	Community Ecology: Community characteristics, frequency, density; cover, life form biological spectrum; ecological succession.
JAN Unit-II	Ecosystems: Structure, abiotic & biotic components; food chain, food web, ecological pyramids, energy flow; biogeochemical cycles of carbon, nitrogen and phosphorus.
FEB Unit - III	Population ecology: Growth curves; ecotypes; ecades, Biogeographical regions of India. Vegetation types of India: Forests & grasslands. Vegetation types of India: Forests & grasslands.
MAR Unit- IV	Utilization of plants :Food plants: rice, wheat, maize, potato, sugarcane.Fibers: Cotton & Jute Vegetable oils: groundnut, mustard and coconut, General account of sources of firewood timber & bamboos.
APR Unit- V	Spices: General account.Medicinal plants: :General account Beverages :Tea & coffee Rubber.

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**PROPOSED TEACHING PLAN FOR THE SESSION 2020-21**

**B.Sc. PART – ONE (CHEMISTRY)**

<b>MONTH</b>	<b>PROPOSED WORK</b>	<b>PAPER - ONE</b>	<b>PAPER – TWO</b>	<b>PAPER - THREE</b>
<b>November</b>	<b>UNIT – I</b>	<b>A. ATOMIC STRUCTURE</b> Bohrs theory, its limitations and atomic spectrum of hydrogen atom, General idea of de-Broglie matter-waves, Heisenberg Uncertainty principle, Schrodinger wave equation, significance of $\Psi$ and $\Psi^2$ , radial & angular wave functions and probability distribution curves, Quantum numbers, Atomic orbital and shapes of s, p, d orbital's, Aufbau and Pauli exclusion principles, Hund's Multiplicity rule, electronic configuration of the elements.	<b>BASICS OF ORGANIC CHEMISTRY</b> Hybridization, Shapes of molecules, Influence of hybridization on bond properties. Electronic Displacements: Inductive, electromeric, resonance and mesomeric effects, hyper conjugation and their applications; Dipole moment, Electrophiles and Nucleophiles;	<b>MATHEMATICAL CONCEPTS FOR CHEMIST</b> Basic of Mathematical Concepts: Logarithmic relations, curve sketching linear graphs, Properties of straight line, sloped and intercept, Differentiation of functions, Maxima and minima, Integrals, Ordinary differential equations, vectors and matrices, determinants,,

<b>December</b>	<b>UNIT – I</b>	<b>B. PERIODIC PROPERTIES</b> Detailed discussion of the following periodic properties of the elements with reference to s- and p-block elements, trend in periodic table and applications in predicting and explaining the chemical behavior. <ul style="list-style-type: none"> <li>a) Atomic and ionic radii</li> <li>b) Ionization energy</li> <li>c) Electron gain enthalpy</li> <li>d) Electronegativity, Paulings, Mullikens, AllredRochow s scale</li> <li>e) Effective nuclear charge, shielding or screening effect, Slaters rule, variation of effective nuclear charge in periodic table</li> </ul>	<b>BASICS OF ORGANIC CHEMISTRY</b> Nucleophilicity and basicity; Homolytic and Heterolytic cleavage, Generation, shape and relative stability of Carbocations, Carbanions, Free radicals, Carbenes and Nitrenes, Introduction to types of organic reactions: Addition, Elimination and Substitution reactions.	<b>MATHEMATICAL CONCEPTS FOR CHEMIST</b> Permutation and combination, and Probability Theory, Significant figures and their applications
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January	UNIT – II	<b>CHEMICAL BONDING I</b> <b>Ionic bond:</b> Ionic solids, Ionic structures, radius ration and c-ordination number, limitations of radius ration rule, lattice defects, semiconductors, lattice energy, Born Haber cycle, salvation energy and solubility of ionic solids, polarizing power and polarisibility of ions, Fajans rule, Ionic character in covalent compounds, Bond Moment and dipole moments, Percentage of ionic character from dipole moment and electronegativity difference, Metallic bond,-free electron, Valence bond and band theories.	<b>INTRODUCTION TO STEREOCHEMISTRY-</b> Optical Isomerism: Optical Activity, Specific rotation, Chirality/Asymmetry Enantiomers,Molecules with two or more chiral-centres, Distereoisomers, meso compounds, Relative and absolute configuration, Fischer Projection, Newmann and Sawhorse Projection formulae and their interconversions; Erythrose & threose, D/L, d/l system of nomen. Cahn Ingold Prelog system of nomen (CIP rules), R/ S nomen, Geometrical isomerism –cis-trans, synanit and E/Z	<b>GASEOUS STATE CHEMISTRY</b> Gaseous state: Kinetic molecular model of a gas: postulates and derivation of the kinetic gas equation; collision frequency; collision diameter; mean free path, Maxwell distribution and its use in evaluating molecular velocities (average, root mean square and most probable) and average kinetic energy, law of equipartition of energy, degrees of freedom and molecular basis of heat capacities. Joule thmson effect, Liquification of gases, Behaviour of real gases: Deviations from ideal gas behaviour, compressibility factor (Z), and its variation with pressure for different gases. Causes of deviation from ideal behaviour.vander Waals equation of state, its derivation and application in explaining real gas behaviour,calculation of Boyle temperature. Isotherms of real gases and their comparison with van der Waals isotherms, continuity of states, critical state, relation between critical constants and van der Waals constants, law of corresponding states.
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<b>February</b>	<b>UNIT – III</b>	<b>CHEMICAL BONDING II</b> <b>Covalent Bond</b> : Lewis structure, valence bond theory and its limitations. Concept of hybridization, Energies of hybridization, equivalent and non-equivalent hybrid orbital's, Valence shell electron pair repulsion theory (VSEPR) shapes of the following simple molecules and ions containing lone pairs and bond pairs of electrons, H <sub>2</sub> O, NH <sub>3</sub> , PCl <sub>5</sub> , SF <sub>4</sub> , H <sub>3</sub> O <sup>+</sup> , SF <sub>6</sub> , ClF <sub>3</sub> and ICl <sub>2</sub> <sup>-</sup> ,	<b>CONFORMATION ANALYSIS OF ALKANES</b> Conformational analysis of alkanes, ethane, butane cyclohexane and sugars, Relative stability and energy diagrams, Types of cycloalkanes and their relative stability, Baeyer strain theory, Theory of strainless rings, chair, boat and twist boat conformations of cyclohexane with energy diagrams,	<b>A. LIQUID STATE CHEMISTRY</b> Inter molecular forces, magnitude of intermolecular force, structure of liquids, Properties of liquids, viscosity and surface tension. <b>B.</b> ideal and non-ideal solutions, modes of representing concentration of solutions, activity and activity coefficient. B. Dilute solution: Colligative Properties, lowering of vapour pressure of solvent, Raoult's law, Osmosis, van Hoff Theory of dilute solutions,
<b>March</b>	<b>UNIT – III &amp; IV</b>	<b>UNIT-III CHEMICAL BONDING II</b> Molecular orbital theory, bond order and bond strength, Molecular orbital diagrams of diatomic and simple polyatomic molecules N <sub>2</sub> , O <sub>2</sub> , F <sub>2</sub> , CO, NO <b>UNIT-IV A. s-BLOCK ELEMENTS</b>	<b>UNIT-III CONFORMATION ANALYSIS OF ALKANES</b> Relative stability of mono substituted cycloalkanes and disubstituted cyclohexane <b>UNIT -IV CHEMISTRY OF ALIPHATIC HYDROCARBONS</b>	<b>UNIT- III</b> B..measurements of Osmotic pressure, relationship between lowering of vapour pressure and osmotic pressure. Elevation of boiling point. Depression in freezing point, abnormal molar masses, Depression of dissociation and association of solutes, Vant Hoff factor. <b>UNIT- IV A. LIQUID CRYSTALS</b>

		General concepts on group relationship and gradation properties, comparative study, silent features of hydrides, solvation and complexation tendencies including their function in biosystems and introduction to alky & aryl, derivation of alkali and alkaline earth metals	<b>A. Carbon-Carbon sigma bonds</b> Chemistry of alkanes: Formation of alkanes, Wurtz Reaction, Wurtz-Fittig Reactions, Freeradical substitutions: Halogenation - relative reactivity and selectivity.	Difference between liquid Crystal, solids and liquids, Classification. Structure "of nematic and cholestric phases, Thermography. Seven segment cell, applications of liquid Crystals. <b>B. COLLOIDAL STATE</b> Classification, Optical. Kinetic, and Electrical Properties of colloid. Coagulation, Hardy Schulze law, flocculation value. Protection, Gold number, Emulsion, micelle. Gel. Syneresis and thixotrophy. Application of colloid.
	<b>UNIT –IV</b>	<b>B. p-BLOCK ELEMENTS</b> General concepts on group relationship and gradation properties, Halides, hydrides, oxides and oxoacids of Boron, Aluminum, Nitrogen and Phosphorus, Boranes, Borazine, fullerenes, grapheme and silicates, interhalogens and pseudo halides.	<b>CHEMISTRY OF ALIPHATIC HYDROCARBONS</b> <b>B. Carbon-Carbon pi bonds</b> Formation of alkenes and alkynes by elimination reactions, Mechanism of E1, E2, E1cb reactions. Saytzeff and Hofmann eliminations. Reactions of alkenes: Electrophilic additions their mechanisms (Markownikoff/AntiMarkownikoff addition), mechanism of oxy-mercuration-demercuration, hydroboration	<b>C. SOLID STATE</b> Space lattices, unit cells. Elements of Symmetry in crystallize solids, X-rays diffraction, Miller's indices, identification of unit cell by Braggs Spectrometer, Powder method, Neutron and electron diffraction (Elementary idea only)



			oxidation, ozonolysis, reduction (catalytic and chemical), syn and anti hydroxylation (oxidation).1, 2- and 1, 4- addition reactions in conjugated dienes and, Diels-Alder reaction; Allylic and benzylic bromination and mechanism, e.g. propene, 1-butene, toluene, ethyl benzene. Reactions of alkynes: Acidity, Electrophilic and Nucleophilic additions. Hydration to form carbonyl compounds, Alkylation of terminal alkynes.	
<b>April</b>	<b>UNIT – V</b>	<p><b>.UNIT-V A: CHEMISTRY OF NOBLE GASES</b></p> <p>Chemical properties of the noble gases, Chemistry of xenon, structure, bonding in xenon compounds.</p> <p><b>B. THEORETICAL PRINCIPLES IN QUALITATIVE ANALYSIS (H<sub>2</sub>S SCHEME)</b></p>	<p><b>AROMATIC HYDROCARBONS</b></p> <p>Aromaticity: Hückel's rule, aromatic character of arenes, cyclic carbocations/carbanions and heterocyclic compounds with suitable examples. Electrophilic aromatic substitution: halogenation, nitration, sulphonation and Friedel-Craft's alkylation/acylation with</p>	<p><b>A. CHEMICAL KINETICS</b></p> <p>Rate of reaction, Factors influencing rate of reaction, rate constant. Order and molecularity of reactions. Zero, first and second order reaction, methods of determining order of reaction. Complex reactions: Consecutive, opposing and side reactions, Chain reactions. Temperature dependence of reaction rate, Arrhenius theory, Physical significance of Activation energy, collision theory, demerits of collision</p>

		<p>Basic principles involved in the analysis of cations and anions and solubility products, common ion effect, Principles involved in the separation of cations into groups and choice of groups reagents, interfering anions (fluoride, borate, oxalate and phosphate) and need to remove them after group II.</p> <p><b>Revision</b></p>	<p>their mechanism. Directing effects of the groups.</p> <p><b>Revision</b></p>	<p>theory, non-mathematical concept of transition state theory.</p> <p><b>B. CATALYSIS</b></p> <p>Homogeneous and Heterogeneous Catalysis, types of catalyst, characteristics of catalyst.</p> <p>Enzyme Catalysed reactions. Micellar catalysed reactions. Industrial applications of Catalysis.</p> <p><b>Revision</b></p>
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**PROPOSED TEACHING PLAN FOR THE SESSION 2020-21**

### B.Sc. PART – TWO (CHEMISTRY)

MONTH	PROPOSED WORK	PAPER - ONE	PAPER – TWO	PAPER – THREE
November	UNIT – I	<b>UNIT-I</b> <b>CHEMISTRY OF TRANSITION SERIES ELEMENTS</b>  Transition elements, position in Periodic Table, electronic configuration, General characteristics viz atomic and ionic radii, variable oxidation states, ability to form complexes, formation of coloured ions, magnetic moment $\mu_{\text{spin}}$ (Spin only) and $\mu_{\text{eff}}$ and catalytic behavior.	<b>UNIT-I</b> <b>CHEMISTRY OF ORGANIC HALIDES</b>  Alkyl halides: Methods of preparation, nucleophilic substitution reaction- $\text{S}_{\text{N}}^1$ , $\text{S}_{\text{N}}^2$ and $\text{S}_{\text{N}}^i$ mechanism and stereochemical aspect and effect of solvents etc. Nucleophilic substitution, elimination reaction.	<b>UNIT-I</b> <b>A. THERMODYNAMICS-I</b>  Intensive and extensive variables; state and path functions; isolated, closed and open systems; Zero <sup>th</sup> law of thermodynamics. First law: Concept of heat, work, internal energy and statement of first law; enthalpy, Relation between heat capacities, calculations of $q$ , $w$ , $U$ and $H$ for reversible, irreversible and free expansion of gases under isothermal and adiabatic conditions. Joule-Thomson expansion, inversion temperature of gases, expansion of ideal gases under isothermal and adiabatic condition
				<b>B. THERMO CHEMISTRY</b>

		<b>CHEMISTRY OF TRANSITION SERIES ELEMENTS</b>  General comparative treatment of 4d and 5d elements with their 3d analogue with respect to ionic radii, oxidation states and magnetic properties.	Aryl Halides: Preparation, including preparation from Diazonium salts, nucleophilic aromatic substitution, S <sub>N</sub> Ar, Benzyne mechanism. Relative reactivity of alkyl, allyl/Benzyl, vinyl and aryl halide towards nucleophilic substitution reactions.	Thermochemistry, Laws of Thermochemistry, Heats of reactions, standard states; enthalpy of formation of molecules and ions and enthalpy of combustion and its applications; calculation of bond energy, bond dissociation energy and resonance energy from thermochemical data, effect of temperature (Kirchhoff's equations) and pressure on enthalpy of reactions, Adiabatic flame temperature, explosion temperature.
December	UNIT – II	<b>UNIT-II</b>  <b>A. OXIDATION AND REDUCTION:</b>  Redox potential, Electrochemical series and its applications, principle involved in extraction of the elements.  <b>B.COORDINATION COMPOUNDS:</b>	<b>UNIT-II</b>  <b>ALCOHOLS</b>  <b>A. Alcohols:</b> Nomenclature, preparation, properties and relative reactivity of 1 <sup>o</sup> , 2 <sup>o</sup> , 3 <sup>o</sup> alcohols, Bouvaelt- Blanc Reduction for the preparation of alcohols, Dihydric alcohols - methods of formation, chemical reactions of vicinal glycols, oxidative cleavage [Pb(OAc) <sub>4</sub> and HIO <sub>4</sub> ] and pinacol - pinacolone rearrangement.	<b>UNIT-II</b>  <b>A THERMODYNAMICS- II</b>  Second law of Thermodynamics: Spontaneous process, second law, statement of Carnot cycle and efficiency of heat engine, Carnot's Theorem, Thermodynamic state of temperature. Concept of entropy: Entropy Change in a reversible and irreversible process, Entropy change in isothermal reversible expansion of an ideal gas, Entropy change

		<p>Werner's coordination theory and its experimental verification, IUPAC nomenclature of coordination compounds, isomerism in coordination compounds. Stereochemistry of complexes with 4 and 6 coordination numbers. chelates, polynuclear complexes.</p>	<p>B. Trihydric alcohols - nomenclature and methods of formation, chemical reactions of glycerol.</p> <p><b>PHENOLS:</b></p> <p>A. Structure and bonding, in phenols, physical properties and acidic character. Comparative acidic strength of alcohols and phenols, acylation and carboxylation.</p> <p>B. Mechanisms of Fries rearrangement, Claisen rearrangement, Gatterman synthesis, Hauben - Hoesch reaction, Lederer - Manasse reaction and Reimer-Tiemann reaction.</p> <p><b>EPOXIDES</b></p> <p>Synthesis of epoxides. Catalysed ring opening of epoxides, orientation of epoxide ring opening, reactions of Grignard and organolithium reagents with epoxides. Anti 1,2-dihydroxylation of alkenes via epoxides. Crown ethers.</p>	<p>in isothermal mixing of ideal gas, Physical significance of entropy, Molecular and statistical interpretation of entropy</p> <p>B. Gibbs and Helmholtz free energy, Variation of G and A with Pressure, Volume and temperature, Gibbs-Helmholtz equation, Maxwell relations, Elementary idea of third law of Thermodynamics, Concept of residual entropy, Calculation of absolute entropy of molecule</p>
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January	<b>UNIT – III</b>	<b>UNIT-III</b> <b>COORDINATION CHEMISTRY:</b> Valence bond theory (Inner and outer orbital complexes), electroneutrality principle and back bonding. Crystal field theory, crystal field splitting and stabilization energy, measurement of $10Dq$ ( $\Delta_o$ ), CFSE in weak and strong fields, Pairing energy, factors affecting the magnitude of $10Dq$ ( $\Delta_o$ ). Octahedral vs tetrahedral coordination.	<b>UNIT-III</b> <b>ALDEHYDES AND KETONES</b> A. Nomenclature and Structure and reactivity of the carbonyl group. General methods of preparation of aldehydes and ketones. Mechanism of nucleophilic addition to carbonyl group: Benzoin, Aldol, Perkin and Knoevenagel condensation. Condensations with ammonia and its derivatives, Wittig reaction, Mannich reaction. Beckmann and Benzil – Benzilic rearrangements	<b>UNIT- 3</b> <b>A CHEMICAL EQUILIBRIUM</b> Criteria of thermodynamic equilibrium, degree of advancement of reaction, chemical equilibria in ideal gases. Concept of Fugacity, Thermodynamic derivation of relation between Gibbs free energy of reaction and reaction quotient. Coupling of exergonic and endergonic reactions. Equilibrium constants and their quantitative dependence on temperature, pressure & concentration. Thermodynamic derivation of relations between the various equilibrium constants $K_p$ , $K_c$ and $K_x$ . Le Chatelier principle (quantitative treatment). Equilibrium between ideal gas and a pure condensed phase.
February	<b>UNIT – III &amp; IV</b>	<b>UNIT-IV</b> <b>A. CHEMISTRY OF LANTHANIDE ELEMENTS</b> Electronic structure, oxidation states and ionic radii and lanthanide contraction, complex formation,	<b>UNIT III</b> B. Use of acetate as protecting group, Oxidation of aldehydes, Baeyer - Villiger oxidation of ketones, Cannizzaro reaction, MPV, Clemmensen Condensation, Wolff-Kishner reaction, $LiAlH_4$ and $NaBH_4$ reduction. Halogenation of enolizable	<b>UNIT-3 B IONIC EQUILIBRIA</b> Ionization of weak acids and bases, pH scale, common ion effect; dissociation constants of mono protic acids (exact treatment). Salt hydrolysis-calculation of hydrolysis constant, degree of hydrolysis and pH for different salts. Buffer solutions; derivation of Henderson equation and its applications. Solubility and solubility

		occurrence and isolation, lanthanide compounds.	ketones. An introduction to $\alpha$ $\beta$ , unsaturated aldehydes and ketones.	product of sparingly soluble salts – applications of solubility product principle. <b>B.</b> Nernst distribution law, Henry's law, application, solvent extraction. <b>UNIT-4 ELECTROCHEMISTRY-I</b> <b>A.</b> Electrolytic Conductance: Specific and equivalent conductance, measurement of equivalent conductance, effect of dilution on conductance, Kohlrausch's law; application of Kohlrausch's law in determination of dissociation constant of weak electrolyte, solubility of sparingly soluble electrolyte, absolute velocity of ions, ionic product of water, conductometric titration.
March	<b>UNIT – IV</b>	<b>UNIT-IV</b> <b>B. CHEMISTRY OF ACTINIDES</b> General features and chemistry of actinides, chemistry of separation of Np, Pu and Am from uranium, similarities between the later actinides and the later lanthanides.	<b>UNIT-IV</b> <b>A. CARBOXYLIC ACIDS</b> Preparation, Structure and bonding, including physical and chemical properties, acidity of carboxylic acids, effects of substituents on acid strength. Hell-Volhard Zelig reaction. Reduction of carboxylic group, Mechanism of Decarboxylation. Di carboxylic acids : methods of formation and effect of heat and dehydrating agents, Hydroxy acids. <b>B. CARBOXYLIC ACID DERIVATIVES:</b> Structure of acid chlorides, esters, amides and acid anhydrides, relative	<b>UNIT-4</b> <b>PHASE EQUILIBRIUM</b> <b>A.</b> Phase rule, Phase, component and degree of freedom, derivation of Gibbs phase rule, Clausius-Clapeyron equation and its applications to Solid-Liquid, Liquid-Vapor and Solid-Vapor, limitation of phase rule. Applications of phase rule to one component system: Water system and sulphur system. Application of phase rule to two component system: Pb-Ag system,

			stability of acyl derivatives. Physical properties, inter-conversion of acid derivatives by nucleophilic acyl substitution. Mechanisms of acid and base catalyzed esterification and hydrolysis.	desilverization of lead, Zn-Mg system, Ferric chloride-water system, congruent and incongruent melting point and eutectic point. Three component system: Solid solution liquid pairs. B. Nernst distribution law, Henry's law, application, solvent extraction
<b>April</b>	<b>UNIT – V</b>	<b>UNIT-V</b> <b>A. ACID - BASES</b> Arrhenius, Bronsted-Lowry, conjugate acids and bases, relative strength of acids and bases, the Lux-flood, solvent system and Lewis concepts of acids and bases. <b>B. NON-AQUEOUS SOLVENTS</b> Physical properties of a solvent, types of solvents and their general characteristics, reaction in non-aqueous solvents with reference to liquid ammonia and liquid sulphur dioxide, HF, H <sub>2</sub> SO <sub>4</sub> . Ionic liquids.	<b>UNIT-V</b> <b>ORGANIC COMPOUNDS OF NITROGEN:</b> A. Preparation of nitroalkanes and nitroarenes. Chemical reactions of nitroalkanes. Mechanisms of nucleophilic substitution in nitroarenes and their reduction in acidic, neutral and alkaline medium. B. Reactivity, Structure and nomenclature of amines, physical properties. Stereochemistry of amines. Separation of mixture of primary, secondary and tertiary amines. Structural features affecting basicity of amines. Preparation of alkyl	<b>UNIT-5</b> <b>PHOTOCHEMISTRY</b> Characteristics of electromagnetic radiation, Interaction of radiation with matter, difference between thermal and photochemical processes, Lambert-Beer's law and its limitations, physical significance of absorption coefficients. Laws of photochemistry: Grothus-Drapper law, Stark- Einstein law, quantum yield, actinometry, examples of low and high quantum yields, Photochemical equilibrium and the differential rate of photochemical reactions, Quenching, Role of photochemical reaction in biochemical process. Jablonski diagram depicting



			<p>and aryl amines (reduction of nitro compounds, nitriles), reductive amination of aldehydic and ketonic compounds. Gabriel - phthalimide reaction, Hofmann bromamide reaction, Reactions of amines, electrophilic aromatic substitution in aryl amines, reactions of amines with nitrous acid. Synthetic transformations of aryl diazonium salts, azo coupling. of amino acids. Acid-base behaviour, isoelectric point and electrophoresis. Preparation and reaction of <math>\alpha</math> - amino acids.</p> <p>B. Structure and nomenclature of peptides. Peptide synthesis, solid - phase peptide synthesis.</p>	<p>various process occurring in the excited state, qualitative description of fluorescence, phosphorescence, non-radiative processes (internal conversion, intersystem crossing), photosensitized reactions, energy transfer processes {simple examples), photostationary states, Chemiluminescence.</p>
	<b>DOUBT CLASS</b>	<b>REVISION AND PRACTICAL EXAM.</b>	<b>REVISION AND PRACTICAL EXAM.</b>	<b>REVISION AND PRACTICAL EXAM.</b>

**GOVT. D.B.GIRL'S P.G.COLLEGE, RAIPUR (CHHATTISGARH)**

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**PROPOSED TEACHING PLAN FOR THE SESSION 2020-21**  
**B.Sc. PART – Three (CHEMISTRY)**

MONTH	PROPOSED WORK	PAPER - ONE	PAPER – TWO	PAPER - THREE
November	<b>UNIT – I</b>	<b>UNIT-I METAL-LIGAND BONDING IN TRANSITION METAL COMPLEXES</b>  Limitations of valence bond theory, an elementary idea of crystal field theory, crystal field splitting in octahedral, tetrahedral and square planar complexes, factors affecting the crystal field parameters.	<b>UNIT-IA. ORGANICMETALLIC COMPOUNDS</b>  Organomegnesium Compounds : Grignard reagents-formation, structure and chemical reactions. Organozinc compounds : formation and chemical reactions. Organolithium compounds : formation and chemical reactions.  <b>B. Organosulphur Compounds</b> Nomenclature, structural features, methods of formation and chemical reactions of thiols, thioethers, sulphonic acids, sulphonamides and sulphaguanidine.	<b>UNIT-I QUANTUM MECHANICS</b>  Black body radiation, Plank's radiation law, photoelectric effect, Compton effect. DeBroglie's idea of matter waves, experimental verification Heisenberg's uncertainty principle, Sinosoidal wave equation, Operators : Hamiltonian operator, angular momentum operator, Laplacian operators postulate of quantum mechanics Eigen values, Eigen function. Schrodinger time independent wave equation.

		<b>UNIT-I</b> Thermodynamic and kinetic aspects of metal complexes. A brief outline of thermodynamic stability of metal complexes and factors affecting the stability, substitution reaction of square planar complexes	<b>UNIT-I B</b> Organic Synthesis via Enolates Active methylene group alkylation of diethylmalonate and ethyl acetoacetate. Synthesis of ethyl acetoacetate : the Claisen condensation. Keto-enol tautomerism of ethyl acetoacetate.	<b>UNIT-I</b> Physical significance of $\Psi$ and $\Psi^2$ . Applications of Schrodinger wave equation : particle in one dimensional box Hydrogenation (separation into three equation's) radial wave function and angular wave function.
December	<b>UNIT – II</b>	<b>UNIT-II MAGNETIC PROPERTIES OF TRANSITION METAL COMPLEXES</b> Types of magnetic behaviour, methods of determining magnetic susceptibility, spin only formula, L-S coupling, correlation of $\mu_s$ and $\mu_{eff}$ values, orbital contribution to magnetic moments, application of magnetic moment data for 3d metal complexes. <b>Electronic spectra of Transition Metal Complexes</b>	<b>UNIT-II BIOMOLECULES</b> A. Carbohydrates : Configuration of monosaccharides, threo and erythrodia stereoisomers. Formation of glycosides ethers and esters Determination of ring size of monosaccharides. Cyclic structure of D(+) glucose. Structure of ribose and deoxyribose. An introduction to disaccharides (maltose, sucrose and lactose) and polysaccharides (starch and cellulose) without involving structure determination.	<b>UNIT-II QUANTUM MECHANICS-II</b> Quantum mechanical approach of molecular orbital theory; basic idea criteria for forming M.O and A.O, LCAO approximation, formation of $H_2^+$ ion, calculation of energy levels from wave functions bonding and antibonding wave functions concept of $\sigma$ , $\sigma^*$ , $\pi$ , $\pi^*$ , and orbitals and their characteristics, Hybrid orbital : $sp$ , $sp^2$ , $sp^3$ , Calculation of coefficients Ads used in these hybrid orbitals. Introduction to valence bond model of $H_2$ , Comparison of M.O. and V.B.

		Types of electronic transitions, selection rules for d-d transitions, spectroscopic ground states, spectrochemical series. Orgel-energy level diagram for d1 and d2 states, discussion of the electronic spectrum of $[\text{Ti}(\text{H}_2\text{O})_6]^{3+}$ complex ion.	B. Proteins and Nucleic acids Classification and structure of protein levels of protein structure, protein denaturation / renaturation, Constituents of amino acids Ribonucleosides and ribonucleotides, double helical structure of DNA.	model, Huckle theory, application of huckel theory to ethane propene etc.
January	<b>UNIT – III</b>	<b>UNIT-III ORGANOMETALLIC CHEMISTRY</b>  Definition, nomenclature and classification of organo metallic compounds. Preparation, properties, bonding and applications of alkyls and aryls of Li, Al, Hg, Sn, & Ti,	<b>UNIT-III</b>  <b>A:Synthetic Polymers</b>  Addition or chain growth polymerization. Free radical vinyl polymerization, ZieglerNatta polymerization, Condensation or Step growth polymerization, Polyesters, polyamides, phenols- formaldehyde resins, urea- formaldehyde resins, epoxy	<b>UNIT-III SPECTROSCOPY-I</b>  <b>A.</b> Introduction, characterization of electromagnetic radiation, regions of the spectrum, representation of spectra width and intensity of spectral transition, rotational spectra of calculated diatomic molecules, energy level of rigid rotator, selection rule, determination of bond length qualitative description of non - rigid rotator isotopic effect.

			resins and polyurethanes, natural and synthetic rubbers.	<b>B.</b> Vibrational spectra - Fundamental vibrational and their symmetry, vibrating diatomic molecules, energy levels of simple harmonic oscillator. Selection Rule, Pure vibrational Spectrum, determination of force constant, diatomic vibrating operator. Anharmonic Oscillator.
February	<b>UNIT – III &amp; IV</b>	<p><b>UNIT-III</b> A brief account of metal-ethylenic complexes and homogeneous hydrogenation, mononuclear carbonyls and nature of bonding in metal carbonyls.</p> <p><b>UNIT-IV BIOINORGANIC CHEMISTRY</b></p> <p>Essential and trace elements in biological processes, metalloporphyrins with special reference to hemoglobin and myoglobin.</p>	<p><b>UNIT-III</b></p> <p><b>B:Synthetic Dyes</b></p> <p>Colour and constitution (Electronic Concept).Classification of Dyes.Chemistry of dyes.Chemistry and synthesis of Methyl Orange, Congo Red, Malachite Green, Crystal Violet, Phenolphthalein, fluorescein, Alizarine and Indigo.</p>	<b>UNIT-III C.</b> Raman Spectra : Concept of polarizability, quantum theory of Raman spectra stokes and anti-stokes lines pure rotational and vibrational Raman spectra, Application of Raman spectra stokes and anti-stokes lines, pure rotational and vibrational Raman spectra, Applications of Raman spectra.

<b>March</b>	<b>UNIT –IV</b>	<b>UNIT-IV</b>  Biological role of alkali and alkaline earth metals with special reference to $\text{Ca}^{2+}$ , nitrogen fixation.	<b>UNIT-IV SPECTROSCOPY-I</b>  A. Mass spectroscopy: mass spectrum fragmentation of functional groups.  B. Infra-Red Spectroscopy: absorption Band their position and intensity, Identification of IR spectra.  C. UV-Visible Spectroscopy: Beer Lambert's law, effect of Conjugation $\lambda_{\text{max}}$ Visible spectrum and colour.  D. Anthocyanin as natural colouring matter (Introduction only)  E. Application of Mass, IR, UV-Visible Spectroscopy to organic molecules.	<b>UNIT-IV SPECTROSCOPY-II</b>  A. Electronic Spectra: Electronic Spectra of diatomic molecule, Frank London principle, types of electronic transitions. Applications of electronic spectra.  B. Photo-chemistry: Interaction of radiation with matter, difference between thermal and photochemical processes. Laws of photo-chemistry,.Grothus-Draper law, Stark-Einstein law, Jablonski diagram depicting various process occurring in the excited state, qualitative description of fluorescence, occurring in the excited state, qualitative description of fluorescence, phosphorescence, non-radiative processes (internal conversion, intersystem crossing), quantum yield photosensitized reactions energy transfer processes (simple examples).
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<b>April</b>	<b>UNIT – V</b>	<b>UNIT-V HARD AND SOFT ACIDS AND BASES (HSAB)</b>  Classification of acids and bases as hard and soft,.Perason's HSAB concept, acidbase strength and hardness and softness, Symbiosis Silicones and Phosphazenes Silicons and phosphazenes as examples of inorganic polymers, nature of bonding in triphosphazenes.	<b>UNIT-V SPECTROSCOPY-II</b>  A. NMR Spectroscopy: Introduction to NMR. Shielding and Number of signal in PMR, Chemical shift and characteristic values, splitting of Signals and Coupling constant, .Application to organic molecules.  B. <sup>13</sup> CMR Spectroscopy: Principle& Application.  C. Magnetic Resonance Imaging (MRI) Introductory idea.	<b>UNIT-V THERMODYNAMICS</b>  A. Energy referred to absolute zero, third law of thermodynamics Test of III law of thermodynamics Nernst heat theorem application and limitation of Nernst heat theorem.  B. Physical properties and molecular structure : polarization of molecules, B. {Classius-Mosotti equation. orientation of dipoles in an electric field. Dipole moment, induced dipole moment, measurement of dipole moment.Temperature methods and refractivity methods.Dipole moment and molecular structure.  C. Magnetic Properties :Parmagenetism diamagnetism, ferromagnetism. Determination of magnetic susceptibility, elucidation of molecular structure.
	<b>DOUBT CLASS</b>	<b>REVISION AND PRACTICAL EXAM.</b>	<b>REVISION AND PRACTICAL EXAM.</b>	<b>REVISION AND PRACTICAL EXAM.</b>

**TEACHING PLAN COMPUTER SCIENCE SESSION 2020-21**

**B.Sc I Computer Science**

**PAPER-I**

**Computer Fundamental**

MONTH	PROPOSED PLAN
NOVEMBER	<b>UNIT 1</b> -History of computer, generation of computer, calculator vs computer, digital and analog computers and its evolution. Major components of digital computers, memory addressing capability of cpu. word length and processing speed of computers. microprocessor, single chip microcomputer, large and small computers. users interface, hardware, software and firmware.
DECEMBER	<b>UNIT 1</b> -Multiprogramming and multi user system, dumb, smart and intelligent terminals, computer network and multi processing. LAN parallel processing. Flynn's classification of computers, control flow and data flow computers. <b>UNIT II</b> - instructions for intel 8085 microprocessor Instruction word size, various addressing mode, interrupts, some special control signals,
JANUARY	<b>UNIT II</b> - Parts of CPU-ALU, control UNIT, registers, architecture of intel 8085 microprocessor,instruction cycle, fetch and execute operation, timing diagram, instruction flow and data flow.  <b>UNIT III</b> -Memory hierarchy, primary and secondary memory, cache memory and virtual memory direct access storage device (DASD), destructive and non
FEBRUARY	<b>UNIT III</b> - memory management UNIT (MMU), PCMCIA cards and Slots.  <b>UNIT IV</b> -I/O devices- keyboard, mouse, monitor, Impact and non-impact printers, plotter, scanner, other input/output devices. Scan methods of display- Raster scan, Vector scan, Bit Mapped scan, CRT controller, I/O port. Programmable and non-Programmable I/O ports. In-built I/O ports- Parallel and Serial ports.
MARCH	<b>UNIT IV</b> - USB, IEEE 1394, AGP, Serial data transfer scheme, Micro controller, Signal Processor, I/O processor, Arithmetic processor.  <b>UNIT V</b> -Application and System software- Introduction, Example, Differences, etc. Introduction to Open source software such as UNIX, LINUX (UBUNTU), Libre Office, etc.
APRIL	<b>UNIT V</b> -Introduction to Machine Language, Assembly language, and High level language Programming techniques, stack, subroutine, debugging of programs, macro, program design, software development, flow chart, multi programming, Multiuser, Multitasking Protection, Operating system and Utility programs, Application Packages.



**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**B.SC I COMPUTER SCIENCE  
PAPER-II  
PROGRAMMING IN 'C'**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>OCTOBER</b>	<b>UNIT I-</b> Overview of C : History of 'C', Structure of 'C' program.Keywords, Tokens, Data types, Constants, Literals and Variables, Operators and Expressions: Arithmetic operators, Relational operator, Logical operators, Expressions, Operator : operator precedence and associativity. Type casting, Console I/O formatting, Unformatted I/O functions: getch(), getchar, getche(),getc(), putc(), putchar().
<b>NOVEMBER</b>	<b>UNIT II- Control Constructs:</b> If-else, conditional operators, switch and break, nested conditional branching statements, loops: For, do.. while, while, Nested loops, break and continue, goto and label, exit function.  <b>Functions:-</b> definition, function components: Function arguments, return value, function call statement,function prototype. Type of function t. Scope and lifetime of variable.  <b>Practical-</b> learn how to use c environment ,basic of c software and how to write program, compiling and running a program.programs based on conditional statements like if else,looping,break etc.
<b>DECEMBER</b>	<b>UNIT II-</b> Call by value and call by reference. Function using arrays, function with command line argument. User defined function: maths and character functions, Recursive function.  <b>UNIT III-Array:-</b> Array declaration, One and Two dimensional numeric and character arrays. Multidimensional arrays. <b>String:-</b> String declaration, initialization, string manipulation with/without using library function.  <b>Practical-</b> programs based on functions and passing arguments methods,arrays based programs.
<b>JANUARY</b>	<b>UNIT III -Structure, Union &amp; Enum- Structure:</b> basics, declaring structure and structure variable, typedef statement, array of structure, array within structure, Nested structure; passing structure to function,function returning structure. <b>Union:</b> basics, declaring union and union variable, <b>Enum:</b> declaring enum and enum variable.  <b>Practical-</b> c programs based on string and string handling functions,various logic programs using function and string.

## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>FEBRUARY</b>	<p><b>UNIT IV-Pointers:</b> definition of pointers, pointer declaration, using &amp; and *operators. Void pointer, pointer to pointer, Pointer in math expression, pointer arithmetic, pointer comparison, dynamic memory allocation functions – malloc, calloc, realloc and free, pointers vs. Arrays.</p> <p><b>Practical-</b> programs based on structure,union and user define data type..</p>
<b>MARCH</b>	<p><b>UNIT IV</b> -Arrays of pointer, pointer to array, pointers to functions, function returning pointer, passing function as argument to function, pointer to structure, dynamic array of structure through pointer to structure.</p> <p><b>Practical-</b> programs based on pointers and using pointers with array,function,structure.</p>
<b>APRIL</b>	<p><b>UNIT V-File Handling and Miscellaneous Features</b> - File handling: file pointer, file accessing functions,:fopen, fclose, fputc, fgetc, fprintf, fscanf, fread, fwrite,feof, fflush, rewind, fseek, ferror. File handling through command line argument. Introduction to C preprocessor #include, #define, conditional compilation directives: #if, #else, #elif, #endif, #ifndef etc.</p> <p><b>Practical-</b> programs on various logics ,pointers and many more</p>

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**B.Sc – II COMPUTER SCIENCE  
PAPER –I  
COMPUTER HARDWARE**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>OCTOBER</b>	<b>UNIT I- classification and organization of computers</b> -digital and analog computers and its evolution. major components of digital computers; memory addressing capability of cpu; word length and processing speed of computers; microprocessors single chip microcomputers; large and small computers.
<b>NOVEMBER</b>	<b>UNIT I-</b> users interface hardware, software and firmware. multiprogramming, multiuser system. dumb smart and intelligent terminals computer network and multi processing, lan parallel processing, flinn"s classification of computers. control flow and data flow computers.  <b>UNIT II- central processing UNIT</b> -cpu organization, alu, control UNIT.
<b>DECEMBER</b>	<b>UNIT II-</b> registers. instructions of intel 8085. instruction word size, various addressing mode interrupts and exceptions, some special control signals and i/o devices, instruction cycles, fetch and execution operation, time diagram, data flow.  <b>UNIT III- memory of computers</b> -main memory, secondary memory, back up
<b>JANUARY</b>	<b>UNIT III-</b> real and virtual memory. semiconductor memory, memory controller and magnetic memory.ram disks, optical disks, magnetic bubble memory, dasd, destructive and nondestructive readout ,program of data memory and mmu.
<b>FEBRUARY</b>	<b>UNIT IV-</b> i/o devices of microcontroller; processors, i/o devices, printer . other output devices; i/o port, serial data transfer scheme, micro controller, signal processors, i/o processor, arithmetic processors.
<b>MARCH</b>	<b>UNIT V- system software and programming technique</b> ml, al, hll, stac subroutine ,debugging of programs, macro micro programming, program design, software development.
<b>APRIL</b>	<b>UNIT V-</b> flow & chart multi programming, multiuser, multitasking protection, operating system and utility program, application packages.

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**B.Sc – II COMPUTER SCIENCE  
PAPER –II  
COMPUTER SOFTWARE**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>OCTOBER</b>	<p><b>UNIT I-</b> html basics &amp; website design principles concept of website, web standards, what is html? html versions, naming scheme for html documents, html document /file, html editor, explanation of the structure of the home page, elements in the html documents, html tags, basic html tags, comment tag in html, viewing the source of a webpage, how to download the web page source? xhtml, css, extensible markup language (xml) extensible style sheet language (xsl), some tips of designing webpages, html document structure. html document structure- head section, illustration of document structure, &lt;base&gt; element, &lt;isindex&gt; element,&lt;link&gt; element, meta, &lt;title&gt; element, &lt;script&gt;.</p> <p><b>Practical-</b> introduction to html program editor ,how to write html programs, running html program and running html programs.</p>
<b>NOVEMBER</b>	<p><b>UNIT I-</b> element, practical applications, html document structures- body section:- body elements and its attributes: back ground: back ground color; text: link; active link (alink); visited link (vlink); left margin; top margin, organization of elements in the body of the document; text block elements; text emphasis elements; special elements- hyper text anchors, character- level elements; character references, text block elements; hr (horizontal line); hn (headings); p (paragraph); lists; address: blockquote; table; div(html 3.2 and up); pre (preformatted); form, text emphasis elements, special; elements- hypertext anchors, character- level elements; line breaks (bra) and images (img), lists, address element, blockquote elements, table elements, comments in html, character emphasis modes, logical and physical styles, net scape, microsoft and advanced standard elements list, font, basefont, and center.</p> <p><b>Practical-</b> html programs on various tags like body and its elements,using table tag,address tag,image tag,font tag,list tag.</p>

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<b>DECEMBER</b>	<p><b>UNIT II-</b> image, internal and external linking between webpages netscape, microsoft and advanced standard elements list, font ,basefont and center ,insertion of images using the element img (attributes; src (source), width, heighth, alt (alternative), allign, image (in line images), element and attributes, illustration of img alignment, images as hyper text anchors,internal .</p> <p><b>Practical-</b> practicing program on anchor tag, paragraph tag, heading tag ,links frames and many more</p>
<b>JANUARY</b>	<p><b>UNIT II-</b> external linking between web pages hyper text anchor, href in anchors, links to a particular place in a document, name attribute in an anchor, targeting name anchors, title attribute, practical it application designing web pages links with each other, designing frames in html. practical examples.</p> <p><b>UNIT III-</b> introduction to oop advantages of oop, the object oriented approach, characteristics of object oriented languages- object, classes, inheritance, reusability, polymorphism and c++. function: function declaration, calling function.</p> <p><b>Practical-</b> how to use cpp environment ,writing program,running and compiling a program.</p>
<b>FEBRUARY</b>	<p><b>UNIT III-</b> function defines, passing arguments to function, passing constant, passing value, reference argument, returning by reference, inline function, function overloading, default arguments in function.</p> <p><b>UNIT IV-</b> object classes and inheritance object and class, using the class, class constructor, class destructors, object as function argument, copy constructor.</p> <p><b>Practical-</b> programs on inheritance,constructor,class and objects.</p>
<b>MARCH</b>	<p><b>UNIT IV-</b>struct and classes, array as class member, static class data, static member functions, friend function, friend class, operator overloading, type of inheritance, base class, derive class, access specifier protected, function overloading, member function, string, template function.</p> <p><b>UNIT V-</b>pointers and virtual function pointers: &amp; and * operator pointer variables, pointer to pointer.</p> <p><b>Practical-</b> programs on array,function,friend class,operator overloading,strings,templates.</p>

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<b>APRIL</b>	<p><b>UNIT V</b> -void pointer , pointer and array, pointer and function, pointer and string, memory management, new and delete, pointer to object, this pointer virtual function: virtual function, virtual member function, accesses with pointer, pure virtual function. file and stream: c++ streams, c++ manipulators, stream class, string i/o ,char i/o, object i/o, i/o with multiple object, disk i/o.</p> <p><b>Practical</b>- programs based on pointers,dynamic memory management,using of new delete and this pointer in programs,virtual function etc.</p>
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**B.Sc – III COMPUTER SCIENCE  
PAPER –I  
COMPUTER HARDWARE**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>OCTOBER</b>	<p><b>UNIT I- ORGANISATION OF MICRO-PROCESSOR &amp; MICRO COMPUTER:-</b></p> <p><b>1. INTRODUCTION &amp; ORGANIZATION OF MICRO COMPUTER:</b></p> <p>(a) basic components of micro computer: basic block; prom ram memory;data memory; i/o ports; clock generator; integration of functional blocks.</p> <p>(b) interconnecting components in a micro computer: necessary functional block; bussed architecture for microcomputer; memory addressing; addressing i/o ports; comparison of i/o mapped and memory mapped i/o.</p> <p>(c) input output techniques: non-cpu devices, program &amp; interrupt controlled i/o; hardware controlled i/o or dma.</p> <p><b>2. AN INTRODUCTION TO THE VARIOUS AS:</b></p> <p>(a) general understanding of different <math>\mu</math>p or cpu: intel 8088, 286, 386, 486, 586 pentium, p54c, mmx p55c; motorola 6800 &amp; 88100 series; cyrix &amp; amd cpus.</p>

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<b>NOVEMBER</b>	<p><b>UNIT I-</b> (b) the registers of cpu: (give example of p-8088) register organization of 8088, scratch pad segment, pointer, index and flag, registers.  (c) memory addressing modes of p-8088: segment offset; data addressing modes; addressing for branch instructions.  (d) i/o addressing with p-8088: memory mapped i/o &amp; i/o mapped i/o.</p> <p><b>UNIT II- SYSTEM HARDWARE ORGANISATION OF COMPUTERS:</b></p> <p>1. Hardware Organization Of The Personal Computer :</p> <p>(a) block diagram with various parts of pc.  (b) the mother board of general p.c.: 8088 cpu; rom &amp; ram; keyboard &amp; its interface; system timer/counters; hardware interrupt vectoring; dma controller &amp; channels; interfacing to audio speaker; bus slots &amp; factory cards.  (c) the serial i/o ports, com-1 &amp; com-2.  (d) the parallel port for printer.  (e) expansion slots for ram.  (f) disk controllers: for floppy, hard disk, cd-rom &amp; cassette drives.</p>
<b>DECEMBER</b>	<p><b>UNIT II- THE VIDEO DISPLAY OF PCS:</b></p> <p>(a) video monitors ; monochrome and colour.  (b) video display adapters &amp; their video modes; monochrome &amp; colour graphics adapters.  (c) video control through ansi-sys.  (d) video control through rom-bios :int 10h.  (e) direct video control; monochrome &amp; colour graphics adapters.  (f) installing customized character sets.</p> <p><b>UNIT III- ORGANISATION OF OPERATING SYSTEM WITH SYSTEM HARDWARE:</b></p> <p><b>1. THE ROM-BIOS SERVICES:</b></p> <p>(a) introduction to unix, enix, sun, solaris, dos &amp; mac with special reference to dos &amp; windows it's ver., as dos becomes more popular than others in pcs.  (b) the rom-bios diskette services, int 13h.  (c) the rom-bios serial port services, int 14h.  (d) the rom-bios keyboard services, int 16h.  (e) the rom-bios printer services, int 17h.  (f) miscellaneous service provided by the rom-bios: int 05h, int 11h, int 12h.</p>

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<b>JANUARY</b>	<p><b>UNIT III- 2. THE FUNDAMENTAL OF OPERATING SYSTEM VIZ.</b></p> <p>DOS/WINDOWS: (a) the loading of dos &amp; its basic structure ; rom bootstrap, io.sys, dos.sys &amp; command.com</p> <p>(b) the execution of the programs under dos; exec functions , program segment prefix; features of com &amp; exe program files.</p> <p>(c) device handling by dos; fdd,hdd,con, keyboard, prn, aux, clock and nul devices; block devices; character devices; driver installation sequence.</p> <p>(d) file structures of dos;</p> <p>(e) the dos interrupts: int 20h-2fh</p> <p>(f) the dos functions through int 21h; discuss only the understanding part of various other dos function to handle hard &amp; softwares.</p> <p>(g) installation of windows: important system files in windows.</p>
<b>FEBRUARY</b>	<p><b>UNIT IV-ORGANIZATION &amp; HANDLING BY OPERATING SYSTEMS:</b></p> <p><b>1. disk and files under dos;</b></p> <p>(a) logical structure of a disk; organization of disk for use ; boot record; fat files; disk or root directory.</p> <p>(b) file organization on a dos disk; logical volumes; sub directories; volume lables.</p> <p>(c) manipulating files under dos: file attributes; date and time, file access; fcb functions.</p> <p><b>2. memory allocation, program loading and execution</b> (a) memory management under dos; exec loader: memory management and its functions; modifying a program's memory allocation.</p>
<b>MARCH</b>	<p><b>UNIT IV- (b) loading and executing programs under dos: the exec function;</b> memory considerations; parameter blocks; calling &amp; returning from exec.</p> <p>(c) loading the program overlays through exec.</p>
<b>APRIL</b>	<p><b>UNIT V-organization of hardware by operating systems</b></p> <p><b>1. interrupt handling through dos;</b></p> <p>(a) types of interrupts. (b) interrupt vector table in pc.</p> <p>(c) interrupt service routines.</p> <p>(d) special interrupts in pc: clock interrupt; the c or break interrupt; dos reserved interrupt int 28h; patching memory resident routines.</p> <p><b>2. filters for dos:</b></p> <p>(a) filters in operating systems. (b) redirection of i/o under dos.</p> <p>(c) the filters supplied with dos. (d) writing filters to run under dos.</p> <p><b>3. handling of various versions of windows o.s.:</b> (a) setup installation. (b) troubleshooting. (c) networking features.</p>



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**B.Sc – III COMPUTER SCIENCE  
PAPER –II  
COMPUTER SOFTWARE**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>OCTOBER</b>	<b>UNIT I-concept of d.b.m.s and data models</b> introduction of dbms: - purpose of data base systems, views of data , data modeling, database languages, transaction management, storage management, database administrator and user, database system structure.e-r model: basic concepts, constraints, keys , mapping constraint, e-r diagram, weak and strong entity sets, e-r database schema, reduction of an e-r schema to table.
<b>NOVEMBER</b>	<b>UNIT II-relational database management system</b>  relational model: structure of relational database, relational algebra, domain relational calculus, extended relational-algebra operation, modification of database, views. relational database design: pitfalls in relational database design decomposition functional dependencies, normalization: 1nf, 2nf, bcnf,3nf, 4nf, 5nf. <b>Practical-</b> learning about oracle environment. how to open software, running and debugging a simple program
<b>DECEMBER</b>	<b>UNIT III-introduction to rdbms software-oracle</b> introduction : introduction to personal and enterprises oracle , data types, commercial query language, sql, sql *plus.  (A) ddl and dml: creating table, specifying integrity constraint, modifying existing table, dropping table, inserting deleting and updating rows in as table. where clause, operators, order by, group function, sql function, join, set operation, sql sub queries. views: what is views, create, drop and retrieving data from views. (B) security : management of roles, changing password, granting roles & privilege, with drawing privileges. <b>Practical-</b> making tables and performing various operations on table like updating a table,altering a table,deleting a table etc.

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<b>JANUARY</b>	<p><b>UNIT III-pl/sql:</b> block structure in pl/sql, variable and constants, running pl/sql in the sql *plus, data base access with pl/sql, exception handling, record data type in pl/sql, triggers in pl/sql.</p> <p><b>UNIT IV- g.u.i programming</b> introduction to visual basic: event driven programming, ide, introduction to object , controlling objects, models and events,working with forms, mdi form working with standard controls.</p> <p><b>Practical-</b> practicing on pl sql programs and vb environment</p>
<b>FEBRUARY</b>	<p><b>UNIT IV-overview</b> of variables, declaring, scope, arrays, user defined data types, constants, working with procedures: function, subroutine and property.working with data, time, format, string and math's function. controlling program execution: comparison and logical operators , if..then statements, select case statement. looping structures, exiting a loop error trapping and debugging.</p> <p>file organization : saving data to file, sequential and random access file. the designing and coding.</p> <p><b>Practical-</b> practicing vb programs based on conditions ,looping,mdi forms,functions,strings.</p>
<b>MARCH</b>	<p><b>UNIT V-DATA BASE PROGRAMMING IN VB:</b>introduction :- concept of dao,rdo,ado, input validation : field &amp; form level validation, ado object model: the ado object hierarchy, the connection object, the command object, record set object,parameter object, field object, record object, stream object, error object, parameter object <u>Using</u> bound control to present ado data; using the ado data control, ado data control properties, binding simple controls: data list, data combo, data grid, data form wizard: single form wizard, grid form, master/detail form. programming the ado data control: refresh method, event, hierarchical flex grid control.</p> <p><b>Practical</b> –programs on various logics using different controls of vb.</p>
<b>APRIL</b>	<p><b>UNIT V- data environment &amp; data report:</b> creating connection, using command object in the data environment, data environment option and operation, binding form to the data environment, ado events in the data report, print preview, print, export, data report in code: data reports events,binding data reports directly.</p> <p><b>Practical-</b> learning how to use various connectivity ,events and using database through vb programs.</p>

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**PGDCA I<sup>ST</sup> SEMESTER**

**PAPER I- FUNDAMENTALS OF COMPUTERS**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<p><b>UNIT I- Introduction to Computers</b></p> <p><b>Computers system:</b> – Characteristics and capabilities. Computer Hardware and Software, Block Diagram of a Computer, Different Data Processing: Data, Data Processing System, Storing Data, Processing Data. Types of Computers: Analog, Digital, Hybrid, General and Special Purpose Computers. Generation of Computers</p> <p><b>UNIT II- Computer Peripherals</b></p> <p><b>Introduction to Input Devices :</b> Categorizing Input Hardware , Keyboard , Direct Entry-Card Readers , Scanning Devices – O.M.R. , Character Readers , Thumb Scanner , MICR ,Smart Card , Voice Input Devices , Pointing Devices –Mouse ,Light Pen , Touch Screen .</p>
<b>FEBRUARY</b>	<p><b>UNIT II- Computer Output :</b> Output Fundamentals , Hardcopy Devices , Impact Printers , Non-Impact Printers , Plotters , Computer output Microfilm/Microfiche(COM) system , Softcopy Output Devices , Cathode Ray Tube ,Flat Screen Technologies , Projectors ,Speakers..</p> <p><b>UNIT III:- Basic Components &amp; Storage Central Processing UNIT –</b> The Microprocessor, Control UNIT, ALU, Registers, Buses, Main Memory (RAM) for microcomputers, Read Only Memory (ROM) .<b>Storage Devices:</b> - Storage Fundamentals, Primary and Secondary Storage, Data Storage and Retrieval Methods –Sequential , Direct &amp; Indexed Sequential</p>

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<b>MARCH</b>	<p><b>UNIT III-</b> Tape Storage and Retrieval Methods Tape Storage Devices , characteristics and limitations , Direct access Storage and Microcomputers – Hard Disks ,Disk Cartridges , Direct Access Storage Device For Large Computers system , Mass Storage system and Optical Disks , CD Rom.</p> <p><b>UNIT – IV : Computer Software &amp; Languages – System Software –</b> System Software Vs Application Software , Types of System Software; Introduction and Types of Operating Systems , Boot Loader , Diagnostic Programs , BIOS , Utility Programs.</p> <p><b>Application Software:</b> - Microcomputer Software, Interacting with the system, Trends in PC Software, Types of Application Software, Difference between Program and Packages.</p> <p><b>Computer Language:</b> Definition, Generations of computer Languages, Types of Languages, Language Processors: Assembler; Interpreter, Compiler.</p>
<b>APRIL</b>	<p><b>UNIT – V : Operating System and Linux</b></p> <p>Introduction, Uses of OS , Functions of OS , Booting process , Types of Reboot , Booting from different OS , Types of OS , DOS , Windows ,Linux open source Software concept and evolution of Linux , Features of Multi-User operating system , Structure of Linux OS , Security Features of Linux , File System . Directory Structure and related commands .Linux Editors &amp; editor commands , Linux commands cd , md, rm, mv, cp ,ls , cat ,find , grep.</p>

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**PAPER II- OFFICE AUTOMATION & TALLY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<p><b>UNIT – I : Using Office with MS-Word</b> :Introduction to word processing software and it's features ,Creating new document , Saving documents, Opening and Printing documents.</p> <p><b>Home Tab:</b> Setting fonts, Paragraph settings, Various styles(Normal, No spacing , Heading1 , Heading2 , Title , Strong), Find &amp; replace , Format painter , Copy paste and paste special .</p> <p><b>Inset Tab :</b> Page ,Tables ,pictures , clipart ,shapes, header &amp; footer ,word art , equation and symbols.</p> <p><b>Page Layout Tab:</b> page setup, page Background, Paragraph (indent and spacing).</p> <p><b>Mailing Tab:</b> Create envelops and Labels, Mail merge.</p> <p><b>Review Tab:</b> Spelling and grammar check, new comment, Protect document.</p> <p><b>View Tab :</b> Document views ,zoom , window( New window , Split , Switch window).</p> <p><b>Practical-</b> basic computer knowledge,using of ms word and usage of different groups and tab buttons.and program based on this commands.</p>
<b>FEBRUARY</b>	<p><b>UNIT – II : Working With MS-Exce</b> Introducing Excel , Use of excel sheet , Creating new sheet ,Saving ,Opening and printing workbook.</p> <p><b>Home Tab :</b> Font , Alignment , Number, Styles and cells and editing ,Conditional Formatting.</p> <p><b>Insert Tab:</b> Table, Charts(column chart, Pie chart, Bar chart ,Line Chart) and Texts (header &amp; footer, word art, signature line).</p> <p><b>Page Layout Tab :</b> Page setup options , Scale to fit(width ,height, scale).</p> <p><b>Formulas Tab :</b> Autosum (sum , average , min, max), logical(If ,and or ,not , true , false) , Math &amp; trig(sin , cos , tan , ceiling , floor, fact, mod, log) , watch window.</p> <p><b>Data Tab:</b> Get external data from MS Access , Sort and filter option , Data validation , Group and ungroup .</p> <p><b>Review tab:</b> Protect sheet , Protect workbook , Share workbook .</p> <p><b>View Tab:</b> Presentation views, colours and window option.</p> <p><b>Practical-</b> programs on ms excel ,how to use various functionalities of excel through programs.</p>

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<b>MARCH</b>	<p><b>UNIT – III : Working With MS-PowerPoint</b>            Introducing power point , Use of power point Presentation , Creating new slides saving , opening and printing.  <b>Home Tab</b> : New slide ,Layout , Reset ,Delete, Setting text direction , Align text , Convert to Smart art , Drawing options.  <b>Insert Tab</b>: Table , picture ,clipart , photo album , smart art, shapes and chart , movie and sound, hyperlink and action , text box , word art, object.  <b>Design Tab</b> : Page setup options , slide orientation , applying various themes , selecting background style and Formatting it.  <b>Animations Tab</b> : Custom animation for entrance , exit and emphasis , applying slide transition , setting transition speech and sound , animation on rehears timing .<b>Slide show &amp; View Tab</b> : Start slide show potion , setup option.  <b>View Tab</b> : Presentation views , colours and window option.</p> <p><b>UNIT – IV : Working With MS-Access:</b>            Front end &amp; Back end of application ,Introduction to DBMS , Features of DBMS , Creating blank database , saving it in accdb format .Defining data type in ms access,  <b>Home Tab</b> : Datasheet view , design view , pivot chart view , pivot table view , sort and filter option.  <b>Create Tab</b> : Creating Table , Creating reports, Query wizard.</p> <p><b>Practical-</b> learning about how to make presentation and usage of different tools of powerpoint like using shapes,slide presentation,animation etc.            How to make database,creating table in ms access and performing various operations on tables.</p>
<b>APRIL</b>	<p><b>UNIT IV-External Data Tab:</b> importing data from access and excel sheet , exporting data to excel and ms word .  <b>Datasheet Tab</b> : Relationships , Fields and columns , Data type and formatting options.</p> <p><b>UNIT – V : Tally</b>            Setting up Ledger &amp; Groups. Study of recording of transactions in the *Voucher". (According to Golden rules). Study of „Final A/C preparation &amp; displaying in different mode/format". Study of alteration &amp; Deletion of ledger/Groups. Study of cash &amp; fund flow, day book, sales register, purchase register, bills receivable/Payable etc. Study of data security &amp; backing up data. Outline of entry for Income Tax, ED, VAT, ST/CST, PF, Gratuity, Bonus, Loans &amp; Depreciation etc.</p> <p><b>Practical-</b> about tally software and how to use it.</p>

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**PAPER II- PROGRAMMING IN 'C'**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<p><b>UNIT I : Introduction :</b>Introduction Character set, Identifiers and Keywords, Variables, Displaying variables, Reading Variables, Character and Character String, Qualifiers, Type define Statements, Value initialized variables, Constants, Constant Qualifier, Operators and Expressions, Operator Precedence and Associativity, Basic input output: Single Character I/O, General Outputs , Types of Characters in format string, Scanf with specifiers , Searchset Arrangements and Suppression Character , Format Specifiers for Scanf</p> <p><b>UNIT II : Control Structure &amp; Functions :</b><b>Control Structure:</b> If - statement, If - else statement, Multi decisions, Nested if statements, Switch statement, for - loop, While -loop, Do-While loop, Break statement, Continue Statement, Go to statement</p> <p><b>Practical-</b> how to use c software, how to run and compile a c program. Basic c programs like addition of numbers, swapping of numbers etc. how to apply conditional and looping statements in programs.</p>
<b>FEBRUARY</b>	<p><b>UNIT II- Functions :</b> The Main Function, Functions accepting more than one parameter, User defined and library functions, Concept associatively with functions, function parameter, Return value, recursion comparisons of Iteration and recursion variable length argument list</p> <p><b>UNIT III- Arrays &amp; Pointers:</b><b>Arrays :</b> Scope and Extent, Arrays , Strings , Multidimensional Arrays, Strings, Array of Strings, Function in String.</p> <p><b>Pointers:</b> Definition and use of pointer, address operator, pointer variable, referencing pointer, void pointers, pointer arithmetic, pointer to pointer, pointer and arrays</p> <p><b>Practical-</b> programs based on loops, functions and passing arguments in function, arrays.</p>

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<b>MARCH</b>	<p><b>UNIT III-</b> passing arrays to function , pointer and functions, accessing in array inside functions , ,pointers and two dimensional arrays, array of pointers, pointers constants, pointer and strings.</p> <p><b>UNIT IV- Structure and Union :</b>Declaring and using Structure, Structure initialization, Structure within Structure, Operations onStructures, Array of Structure, Array within Structure, Creating user defined data type, pointer toStructure and function. Union, difference between Union and Structure, Operations on Union,Scope of Union.</p> <p><b>Practical-</b> programs based on array and its types,pointers,strings.</p>
<b>APRIL</b>	<p><b>UNIT V- Dynamic Memory Allocation and File Handling :</b><b>Dynamic Memory Allocation :</b> Library functions for Dynamic memory allocation , Dynamic Multi-Dimensional Arrays.</p> <p><b>File Handling :</b> Introduction , Structure , File handling ,Functions file type , Un-buffered and buffered , Error handling</p> <p><b>Practical-</b> programs based on structure and union.</p>



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**PGDCA II<sup>2ND</sup> SEMESTER**

**PAPER I- GUI - PROGRAMMING IN VB.NET**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JUNE</b>	<p><b>UNIT I-. Introduction to .NET -</b> Overview of .net framework features &amp; architecture , Managed Execution process , CLR , common language specification, JIT Compilation ,MSIL , Namespace ,Assemblies , metadata Common Type, system, Visual development &amp; event driven programming , cross language , interoperability , Garbage collection.</p> <p><b>UNIT II-Programming with .NET Framework –</b></p> <p><b>Windows form :</b> working with Visual Studio IDE , Creating a .NET solution ,MDI application , components and controls.</p> <p><b>Practical-</b> learning about vb.net framework and various controls of it.</p>
<b>JULY</b>	<p><b>UNIT II-Programming with .NET Framework –</b></p> <p>Data types , Variable , Type conversions , Operators , Methods and events , Scope and life time of variables , Creating Enumerations..</p> <p><b>UNIT III- Control Structures</b> -Control Structures: conditional statement , loops , arrays , types of methods , method data , creating Sub Procedures. Function , MsgBox ,Inputbox ,Introduction to exception handling try catch statement , finally statement , throw , user define Exception</p> <p><b>Practical-</b> practicing vb.net programs based on conditions ,looping,mdi forms,programs on mdi application.</p>

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<b>AUGUST</b>	<p><b>UNIT IV- GUI Programming</b> - GUI Programming with window forms , Showing &amp; hiding , Textbox , RichText box , Lable ,Button, Listbox , Combobox, Checkbox , PictureBox , Radio button , Toggle button Panel , Groupbox , Scrollbar , Timer , Dialog boxes , Openfile Dialog , Save File dialog , Print dialog , Front dialog , Color dialog , Designing menus and sub menus.</p> <p><b>UNIT V- Database Programming with ADO.net –</b></p> <p>ADO .Net Architecture , .Net data provider , dataset components , creating database application using Window forms (Database connectivity through ADO.Net) ,</p> <p><b>Practical-</b> programs on usage of inputbox,error handling and on usage of different controls.</p>
<b>SEPTEMBER</b>	<p><b>UNIT V- Database Programming with ADO.net –</b></p> <p>Accessing data using server explorer , Data Adapters &amp; Data sets , Command &amp; Data reader , Data bind controls , displaying data in data grid</p> <p><b>Practical-</b> learning about how to do connectivity and using various database controls.</p>

## PAPER II- DATABASE MANAGEMENT SYSTEM

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JUNE</b>	<p><b>UNIT I:- Introduction To DBMS</b> Purpose of database systems , views of data , Data Modeling , Database Languages , Transaction Management , Storage Management , Database Administrator and User , Database System Structure.</p> <p><b>UNIT II-Entity - Relationship model</b> as a tool for conceptual design-entities, attributes and relationships. ER diagrams; Concept of keys; Case studies of ER modeling</p>

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<b>JULY</b>	<p><b>UNIT II</b> Generalization;specialization and aggregation. Converting an ER model into relational Schema</p> <p><b>UNIT III- Relational Model</b> Structure to Relational Database, select , Project, cross Product different types of joins (inner join , outer joins , self-join) , set operations. Tuple relational calculus , Domain relational calculus , Simple and complex queries using relational algebra , stand alone and embedded query languages</p> <p><b>Practical-</b> basic knowledge of oracle software and how to make database. How to make table and running a oracle program</p>
<b>AUGUST</b>	<p><b>UNIT IV-Relational Database Design:</b> Normalization concept in logical , Pitfalls in database design , update anomalies , Functional dependencies , join dependencies , Normal forms (1NF , 2NF , 3NF) . Boyce Codd Normal form , Decomposition , Multi-Valued Dependencies , 4NF ,5NF , De- Normalization.</p> <p><b>UNIT V- Introduction to RDBMS Software- SQL/Oracle :</b>Introduction to personnel and Enterprises Oracle , Data , Types , Commercial Query Language ,SQL , SQL* , PLUS.</p> <p><b>DDL and DML:</b> Creating Table, Specify Integrity Constraint, Modifying Existing Table,Dropping Table, Inserting, Deleting and Updating Rows in as Table, Where Clause.</p> <p><b>Practical-</b>learning about how to create table,insert data into table,deleting a table,dropping a table,updating and altering a table. performing various command on table like updating a table,modifying,applying different functions on table</p>
<b>SEPTEMBER</b>	<p>Operators, ORDER BY, GROUP Function, SQL Function, JOIN, Set Operation, SQL SubQueries. Views: What is Views, Create, Drop and Retrieving data from views.</p> <p><b>Security:</b> -Management of Roles, Changing Password, Granting Roles &amp; Privilege, with drawing privileges.</p> <p><b>Practical-</b>performing various operations on table like performing group function,applying different operators on table.creating view and deleting it.</p>

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**PAPER III- ESSENTIALS OF E -COMMERCE & HTML**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JUNE</b>	<b>UNIT I- Introduction to Computer and Hard ware</b> –Introduction of Information Technology ,History of Computers , Organization of computers , Number System Programming language and type , Public domain software , Application of Information Technology in business , industry , entertainment science , engineering and medicine.
<b>JULY</b>	<b>UNIT II- Internet and its Application-</b> Evolution of internet , Internet application , TCP/IP , Addressing in Internet(IP) , Domains , Internet Service Providers , Connectivity such as dialup , leased line , VSAT, E-mail protocols(X-400 , SMTP , UUCP) , Description of E-Mail headers , Email ,routing , e-mail client, POP-3 , IMAP-4.  <b>UNIT III- FTP and Telnet</b> -Introduction to File Transfer Protocol (FTP) , Type of FTP server (Including anonymous) , Telnet protocol , Telnet client ,Terminal emulation . Usenet and Internet relay chat , Web publishing tool.
<b>AUGUST</b>	<b>UNIT III-</b> Website planning , Website Hosting , Multiple sites on one server , Maintaining a web site , WWW server , HTTP & URLs , Registration of website on search engines , maintenance of website .  <b>UNIT IV- Dynamic HTML and Web Designing</b> -HTML Basic concepts , Web designing issue , Structure of HTML document , HTML Elements , core attributes , Language attributes , core Events , Block Level Events , Text Level Events , Linking Basics , Linking in HTML.  <b>Practical-</b> html programs based on various tag like heading tag,paragraph tag,address tag,anchor tag,pre tag etc.

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<b>SEPTEMBER</b>	<p><b>UNIT IV-</b> image s and Anchors , Anchor Attributes , Image as Buttons , Introduction to Layout , Backgrounds , Colors and Text , Fonts , Layout with Tables , Introduction to CSS.</p> <p><b>UNIT V-. Internet security:</b> Internet security vulnerability and threats, Firewalls, Introduction to AAA, Malwares.</p> <p><b>E-Commerce</b> - Introduction , Concepts &amp; technology , Advantages , Limitations , Various electronics , payment system , payment Gateways , Introduction to EDI.</p> <p><b>Practical-</b> html programs based on anchor tag,list tag,form tag,table tag,frame tag etc.</p>
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### ADD ON (CERTIFICATE COURSE)

#### PAPER –I

### COMPUTER FUNDAMENTALS & OFFICE AUTOMATION

MONTH	PROPOSED PLAN
<b>NOVEMBER</b>	<p><b>UNIT I-<u>Introduction to Computer</u></b></p> <p>1. What is Computer? Block diagram of computer. CPU, I/O Devices and Memory (RAM &amp; ROM). Secondary storage devices (Hard disk, Floppy, Magnetic tap etc.). Computer generations, Types of Computer- Analog, Digital, Hybrid &amp; general &amp; special purpose computer. Classification of computer – Micro, Mini, Mainframe &amp; Super computer</p>
<b>DECEMBER</b>	<p><b>UNIT II--<u>Computer Software &amp; Application</u></b> What is Software? Type of Software. Introduction of System software &amp; application s/w.Generation of languages, Languages Vs Package. Type of Operating System- Single User &amp; Multi User Operating System Function of operating system. DOS software, Internal &amp; External DOS Command.</p> <p><b>Practical-</b> basic knowledge of computer,how to start and shut down the computer.Learning about desktop,icon,files,folders,recycle bin,how to do cut,copy,paste etc.</p>

## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>JANUARY</b>	<p><b>UNIT II-</b> DOS editor. Window Concept , Multitasking , Desktop, start menu, task bar, My Computer, Accessories, Creating folders, files, Deleting, Hiding , Recycle Bin &amp; Network Neighborhood. Booting Process &amp; File System Structure, Booting Sequences, File Creation and Deletion concept for File System.</p> <p><b>UNIT III- <u>Office Software: Word-Processing, Spreadsheets</u></b></p> <p><b>Word:</b> Creating ,Editing &amp; Preview Documents, Formatting ,Advanced Features, Using Thesaurus , Mail Merge, Table &amp; Charts Handling Graphics</p> <p><b>Practical-</b>making program using various ms word functionalities like using table command, various formatting tools of ms word etc.</p>
<b>FEBRUARY</b>	<p><b>UNIT III- Excel:</b> Worksheet Basics, Creating, Opening &amp; moving in worksheet, working with Formula &amp; cell referencing, Absolute &amp; Relative addressing, working with ranges, formatting of worksheet, Graphic &amp; Charts, Database, Function and Macros.</p> <p><b>UNIT IV-<u>MS-Access</u> Creating and working with databases:</b> Designing databases, Working with database objects, Working with Access files.</p> <p><b>Practical-</b> programs on ms excel,learning about how to use formula, different charts etc.</p>
<b>MARCH</b>	<p><b>UNIT IV-</b> retrieval of records in a data base file, modification, insertion &amp; deletion of records, Sorting and Indexing, Working with controls &amp; charts</p> <p><b>UNIT V-<u>Introduction to Internet Application</u></b></p> <p>Concept of Internet, Application of Internet, Services on Internet, World Wide Web (www), Web Browser .</p> <p><b>Practical-</b> how to make tables in ms access and performing various operations on tables in ms access.Also learning about powerpoint presentation and its various functionalities.</p>
<b>APRIL</b>	<p><b>UNIT V-</b> Internet search Engines: Gopher, Yahoo etc., Surfing the Internet, Electronic mail (e- mail), Internet Security Fire Walls, Type of Firewalls</p>

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**ADD ON (CERTIFICATE COURSE)**

**PAPER –II**

**Programming With “C “& Introduction to OOPs**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>NOVEMBER</b>	<b>UNIT I</b> -Introduction to “C “, Character set, Identifiers & Keywords, Variables, Variable initialization, Constants, Characters, Strings, Qualifiers, Program structure.
<b>DECEMBER</b>	<b>UNIT II</b> -Control Structure: - If-Statement, If-else, Nested If statements, Select case, Loops – For-loop, While-loop, Do-while loop, Nested loops, Break Statement, Continue Statement, Go to Statement.  <b>Practical</b> - how to use c software,making basic c programs ,running and compiling a c program.programs based on control structure
<b>JANUARY</b>	<b>UNIT III- Function:</b> - User define & library function, Function Parameter, Recursive Function.  Array: - Array, Array initialization, One dimensional Array, Two & Three dimensional array, Array of Structure .  <b>Practical</b> - programs based on looping ,functions,array.
<b>FEBRUARY</b>	<b>UNIT III-</b> Pointer: - definition & Use of Pointer, Address Operator, Array of Pointers.  <b>UNIT IV</b> -Structure & Union: - What is structure, declaring & using structure, structure initialization.  <b>Practical</b> -programs based on pointer,array of pointer,pointer to pointer etc.
<b>MARCH</b>	<b>UNIT IV-</b> Structure within structure, Union , difference b/w Union & Structure.  <b>UNIT V-</b> Introduction of C++, OOPs Concepts, Objects, Class, Polymorphism, ritage,function & Operator Overloading.  <b>Practical</b> -program based on structure and union.

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

<b>APRIL</b>	<b>UNIT V-</b> Characteristics of Object Oriented Programming language, benefits of OOPs.  <b>Practical-</b> programs based on various logics used in c and basic knowledge of cpp environment.
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**ADD ON (DIPLOMA COURSE)  
PAPER –I  
PROGRAMMING IN VISUAL BASIC**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>NOVEMBER</b>	<b>UNIT I- <u>Introduction to Visual Basic</u></b>  Editions of Visual Basic, Event Driven Programming , Terminology, Working environment, Project & executable files, Understand Modules, Working Screen, Using code editor windows, Code documentation and formatting environment options, code formatting option . Introduction to object, Controlling objects, Properties, Methods & Events, Working with forms. Interacting with user, MsgBox function, Input Box Function, Code statements, Managing forms, Creating a program in VB, Printing.  <b>Practical-</b> about vb environment and introduction of vb controls like command box,text box,labels etc.
<b>DECEMBER</b>	<b>UNIT II-<u>Variable and Procedures and Controlling Program Execution</u></b>  Overview of Variables, Declaring Variable, Scope of Variables, Arrays, User Defined data type, Constants working with procedure, Working with date & time, using the Format function, Manipulation text strings. Comparison & logical Operators, if.... Then Statement, if .... Then ... Else Statements, Select Case Statement.  <b>Practical-</b> vb programs based on various control struture,scope of variables and using timer.



## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>JANUARY</b>	<p><b><u>UNIT II-</u></b> , Looping Structure, Using Do... Loop Structure, for...Next Statement, Exiting a loop.</p> <p><b><u>UNIT III- Working with Controls &amp; Controlling Program Execution</u></b></p> <p>Type of Control, Overview of standard Controls, Combo Box &amp; List Box, Option Button &amp; Check Button, Frame Control, Menus, Status bar, Tool bar, Advanced standard Controls, Active X Controls.</p> <p><b>Practical-</b> vb program based on looping and controls like list box,making menus,combo box etc.</p>
<b>FEBRUARY</b>	<p><b>UNIT III-</b> Overview of Run Time Errors, Error Handling Process, The Error Object, Error handling in routine, Inline Error handling ,Error handling style, General Window, Local Window.</p> <p><b><u>UNIT IV- Sequential &amp; Random Files &amp; Data Access Using the ADO Data Control</u></b>Record Structure, Random Access File, The design and coding, saving data to file.</p> <p><b>Practical-</b> programs based on activex controls,error handling techniques.</p>
<b>MARCH</b>	<p><b>UNIT IV-</b>Overview of Active X Objects, VB data access features, Relational Database Concepts using the ADO Data Control to access data, Overview of ADO,RDO, Data Control, Structure Query Language (SQL), Manipulating data Using Data Form Wizard.</p> <p><b>Practical-</b> learning about various connectivity methods like ado,dao,rdo and its steps how to do connectivity with database.</p>
<b>APRIL</b>	<p><b><u>UNIT V- Report Generation and Advance Tools</u></b></p> <p>Overview of Report, Data Report, Add Groups, Data Environments, Connection to Database, Introduction to Crystal Reports Generator.</p> <p>Overview of drag and drop , Mouse Events, Date- Time Control, Calendar, Print Dialogue, MDI (Multiple Document Interface.)</p> <p><b>Practical-</b> programs on report making and mdi forms.</p>

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**ADD ON (DIPLOMA COURSE)**

**PAPER –II**

**DBMS (SQL/Oracle)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>NOVEMBER</b>	<b>UNIT I- <u>Introduction To DBMS</u>:</b> -Purpose of database systems, Views of data, Data Modeling, Database Languages, Transaction Management, Storage Management, Database Administrator and User, Database System Structure.
<b>DECEMBER</b>	<b>UNIT II- <u>E-R Model</u>:</b> - Basic concepts, Constraints, Keys, Mapping Constraint, E-R Diagram, Weak and Strong Entity sets, E-R Database Schema, Reduction of an E-Schema to Table.  <b>Practical-</b> how to use oracle software,making table and running a program.
<b>JANUARY</b>	<b>UNIT III-</b> Relational Model: Structure to Relational Database, Relational Algebra, The Domain Relational Calculus, Extended Relational- Algebra Operation, Modification of database, Views. Relational <u>Database Design</u> : - Pitfalls in Relational Database Design, Decomposition.  <b>Practical-</b> making table and using various commands like insert,update etc.
<b>FEBRUARY</b>	<b>UNIT III-</b> Functional Dependencies, and Normalization: 1NF, 2NF, BCNF, 3NF, 4NF, 5NF  <b>UNIT IV- <u>Introduction to RDBMS Software - Oracle</u></b> <b><u>Introduction</u>:</b> - Introduction to personnel and Enterprises Oracle, Data Types, Commercial Query Language, SQL, SQL* PLUS.  <b>Practical-</b> performing various operations on tables like where clause,like clause,set operations etc.
<b>MARCH</b>	<b>UNIT IV-<u>DDL and DML</u>:</b> Creating Table, Specify Integrity Constraint, Modifying Existing Table, Dropping Table, Inserting, Deleting and Updating Rows in as Table, Where Clause, Operators, ORDER BY, GROUP Function, SQL Function, JOIN, Set Operation, SQL Sub Queries.  <b>Practical-</b> performing sql function on table like group function,using operators on table,applying different constraints on table.

## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>APRIL</b>	<b>UNIT V-Views:</b> What is Views, Create, Drop and Retrieving data from Views. <b>PL-SQL/TSQL:</b> Block Structure in PL-SQL/TSQL, Variable and Constraints, Running PL- SQL/TSQL in the SQL *PLUS, Data base Access with PL-SQL/TSQL, Exception Handling, Record Data type in PL-SQL/TSQL Triggers in PL-SQL/TSQL.  <b>Practical-</b> how to create views,dropping views,some pl sql programs.
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### ADD ON (ADVANCE DIPLOMA)

#### PAPER –I

#### PROGRAMMING IN JAVA

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>NOVEMBER</b>	<b>UNIT I- Introduction :</b> Genesis of java, importance to the Internet, overview of features.  <b>OOP :</b> OOP features, data types, control structures, arrays, methods and classes, nested & inner classes, string and String Buffer class, Wrapper Class, vectors.  <b>Practical-</b> introduction to basic java environment. How to use programming tool of java.
<b>DECEMBER</b>	<b>UNIT II- Inheritance :</b> Basics type, method Override, using abstract and final classes, using super.  <b>Packages and Interfaces :</b> Defined CLASSPATH, importing packages, implementing interface.  <b>Practical –</b> practice on basic program based on classes ,objects.inheritance.
<b>JANUARY</b>	<b>UNIT III- Exception Handling :</b> Fundamental: exception types, using try and catch, throwing exceptions, defined exceptions.  <b>Multithreaded Programming :</b> Java spread model, creating threads, thread priorities, synchronization. Suspending resuming and stopping threads.  <b>Practical-</b> programming based on abstract class,uses of interface and packages.

## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>FEBRUARY</b>	<p><b>UNIT IV- Input/Output:</b> Basic Streams, Byte and Character Stream, predefined streams, reading and writing from console and files. Using standard Java Packages (lang, util, io)</p> <p><b>JDBC:</b> Setting the JDBC connectivity with backend database.</p> <p><b>Practical-</b> programming on exception handling, steps for doing various connectivity methods like jdbc.</p>
<b>MARCH</b>	<p><b>UNIT V- Applets :</b>Fundamentals, life cycle, overriding update, HTML APPLET tag, passing parameters. Developing single applets.</p> <p><b>Introduction to AWT :</b> Window fundamentals, creating windowed, programs waking with graphics, using AWT controls, menus. Delegation event model, handling mouse and keyboard events.</p> <p><b>Practical-</b>practicing in various programs .</p>
<b>APRIL</b>	<p><b>JAVA PROJECT</b></p> <p><b>Practicals</b></p>

# **TEACHING PLAN SESSION 2020-21**

**B.Sc. I**

**Mathematics**

**PAPER-I**

**ALGEBRA AND TRIGONOMETRY**

MONTH	PLAN
NOVEMBER	<b>Unit 1</b> -Elementary operations on Matrices. Inverse of a matrix, Linear independence of row and column matrices. Row rank, column rank and rank of a matrix. Equivalence of column and row ranks. Eigenvalues, Eigenvectors and the characteristic equation of matrix. Cayley Hamilton theorem and its use in finding inverse of a matrix.
DECEMBER	<b>Unit II</b> -Applications of matrices to a system of linear (both homogeneous and non-homogeneous) equations. Theorems on consistency of a system of linear equations. Relations between the roots and coefficients of general polynomial equation in one variable. Transformation of equations. Descartes's rule of signs, solution of cubic equations (Cardan method ). Biquadratic Equations
JANUARY	<b>Unit III</b> -Mappings, Equivalence relations and partitions. Congruence modulo $n$ . Definition of a group with examples and simple properties. Cyclic groups generators, Coset decomposition, Lagrange's theorem and its consequences. Fermat's and Euler's theorems.. Normal subgroups, Quotient groups. Permutation Groups, even and odd permutations. The alternating groups. Cayley's theorem An.
FEBRUARY	<b>UNIT – IV</b> Homomorphism and Isomorphism The fundamental theorems of homomorphism. Introduction, properties and examples of rings, subrings, Integral domains and Fields. Characteristic of a Ring and field.
MARCH	<b>UNIT – V( Trigonometry )</b> De Moivre's theorem and its applications. Direct and inverse circular and hyperbolic functions. Logarithm of a complex quantity. Expansion of Trigonometrical functions. Gregory's series. Summation of series.
APRIL	REVISION

**B.Sc. I**  
**Mathematics**  
**PAPER-II**  
**CALCULUS**

MONTH	PLAN
NOVEMBER	<b>UNIT - I</b> $\epsilon - \delta$ definition of the limit of a function. Basic properties of limits. Continuous functions and classification of Discontinuities. Differentiability, Successive differentiation. Leibnitz's theorem, Maclaurin and Taylor series expansions.
DECEMBER	<b>UNIT – II</b> Asymptotes, Curvature, Tests for concavity and convexity. Points of inflexion, Multiple points. Tracing of curves in Cartesian and polar coordinates.
JANUARY	<b>UNIT – III</b> Integration of transcendental functions. Reduction formulae, Definite integrals, Quadrature, Rectification, Volumes and surfaces of solids of revolution.
FEBRUARY	<b>UNIT – IV</b> Degree and order of a differential equation. equations reducible to the linear form. Exact differential equations, First order higher degree equations solvable for $x, y, p$ . Clairaut's form and singular solutions Geometrical meaning of a differential equation. Orthogonal trajectories
MARCH	<b>UNIT – IV..</b> Linear differential equations with constant coefficients. Homogeneous linear ordinary differential equations. <b>UNIT – V</b> Linear differential equations of second order. Transformation of the equation by changing the Dependent variable / the Independent variable. Method of variation of parameters. Ordinary simultaneous differential equations.
APRIL	REVISION

**B.Sc. I**  
**Mathematics**  
**PAPER-III**  
**VECTOR ANALYSIS AND GEOMETRY**

MONTH	PROPOSED PLAN
NOVEMBER	<b>UNIT I</b> -Scalar and vector product of three vectors, Product of four vectors, Reciprocal vectors, Vector differentiation, Gradient, Divergence and Curl.
DECEMBER	<b>UNIT II</b> - Vector Integration, Theorems of Gauss, Green, Stokes and problems based on these.
JANUARY	<b>UNIT III</b> -General equation of second degree. Tracing of conics System of conics, Confocal Conics, Polar equation of a Conic.
FEBRUARY	<b>UNIT – IV</b> Sphere, Cone and Cylinder
MARCH	<b>UNIT –V</b> Central Conicoids, Paraboloids, Plane section of Conicoids, Generating lines, Confocal Conicoids, Reduction of second degree equations.
APRIL	REVISION

**B.Sc. II**  
**Mathematics**  
**PAPER-I**  
**ADVANCED CALCULUS**

MONTH	PROPOSED PLAN
OCTOBER	<b>UNIT-I</b> Definition of a sequence. Theorems on limits of sequences. Bounded and monotonic sequences. Cauchy's convergence criterion.
NOVEMBER	<b>UNIT – I</b> Series of non-negative terms. Comparison test, Cauchy's integral test, Ratio test, Raabe's test, Logarithmic test, De Morgan and Bertrand's tests. Alternating series, Liebnitz's theorem, absolute and conditional convergence.
DECEMBER	<b>UNIT – II</b> Continuity, sequential continuity, properties of continuous functions, uniform continuity. Chain rule of differentiability, Mean value theorems and their geometrical interpretations, Darboux's intermediate value theorem for derivatives. Taylor's theorem with various forms of remainders.
JANUARY	<b>UNIT – III</b> Limit and continuity of functions of two variables, Partial differentiation, Change of variables, <b>Euler's</b> theorem on homogeneous functions. Taylor's theorem for functions of two variables. Jacobians.
FEBRUARY	<b>UNIT –IV Envelopes</b> , Evolutes, Maxima, Minima and saddle points of functions of two variables, Lagrange's multiplier method.
MARCH	<b>UNIT –V Beta</b> and Gamma functions, Double and triple integrals, Dirichlet's integrals, change of order of integration in double integrals.
APRIL	REVISION



**B.Sc. II**  
**Mathematics**  
**PAPER-II**  
**DIFFERENTIAL EQUATIONS**

MONTH	PROPOSED PLAN
OCTOBER	<b>UNIT – I</b> Series solutions of differential equations - Power series method. Bessel and Legendre functions and their properties - convergence, recurrence and generating relations.
NOVEMBER	<b>UNIT – I</b> Orthogonality of functions. Sturm-Liouville problem, Orthogonality of Eigen-functions, Reality of Eigen-values, Orthogonality of Bessel functions and Legendre polynomials.
DECEMBER	<b>UNIT – II</b> Laplace Transformation - Linearity of the Laplace transformation. Existence theorem for Laplace transforms. Laplace transforms of derivatives and integrals. Shifting theorems. Differentiation and integration of transforms. Convolution theorem.
JANUARY	<b>Unit II-</b> Solution of integral equations and systems of differential equations using the Laplace transformation. <b>UNIT – III</b> Partial differential equations of the first order. Lagrange's solution. Some special types of equations which can be solved easily by methods other than the general method, Charpit's general method of solution.
FEBRUARY	<b>UNIT – IV</b> Partial differential equations of second and higher orders. Classification of linear partial differential equations of second order. Homogeneous and non-homogeneous equations with constant coefficients. Partial differential equations reducible to equations with constant coefficients. Monge's methods.
MARCH	<b>UNIT – V</b> Calculus of Variations - Variational problems with fixed boundaries - Euler's equation for functional containing first order derivative and one independent variable. External. Functional dependent on higher order derivatives. Functional dependent on more than one independent variable. Variational problems in parametric form. Invariance of Euler's equation under coordinates transformation. Variational problems with moving boundaries - Functional dependent on one and two functions. One sided variations. Sufficient conditions for an Extremum - Jacobi and Legendre conditions. Second Variation. Variational principle of least action.
APRIL	REVISION

**B.Sc. II**  
**Mathematics**  
**PAPER-III**  
**MECHANICS**

MONTH	PROPOSED PLAN
OCTOBER	<b>UNIT – I</b> Analytical conditions of equilibrium.
NOVEMBER	<b>UNIT – I</b> Stable and unstable equilibrium. Virtual work. Catenary.
DECEMBER	<b>UNIT –II</b> Forces in three dimensions. Poinso't's central axis. Null lines and planes.
JANUARY	<b>UNIT – III</b> Simple harmonic motion. Elastic strings Velocities and accelerations along radial and transverse directions, Projectile, Central orbits.
FEBRUARY	<b>UNIT – IV</b> Kepler's laws of motion, Velocities and acceleration in tangential and normal directions. Motion on smooth and rough plane curves.
MARCH	<b>UNIT – V</b> Motion in a resisting medium. Motion of particles of varying mass. Motion of a particle in three dimensions. Acceleration in terms of different co-ordinate systems.
APRIL	REVISION

**B.Sc. III**  
**Mathematics**  
**PAPER-I**  
**ANALYSIS**

MONTH	PLAN
OCTOBER	<b>UNIT I-</b> Series of arbitrary terms, Convergence, Divergence and Oscillation. Abel's and Dirichlet's test.
NOVEMBER	<b>UNIT I-</b> Multiplication of series. Double series. Partial derivation and differentiability of real valued functions of two variables. Schwarz's and Young's theorem. Implicit function theorem. Fourier series. Fourier expansion of piecewise monotonic functions.
DECEMBER	<b>UNIT II -</b> Riemann integral. Integrability of continuous and monotonic functions. The fundamental theorem of Integral Calculus. Mean value theorems of integral calculus. Improper integrals and their convergence, comparison tests. Abel's and Dirichlet's tests. Frullani's integral, Integral as a function of a parameter.
JANUARY	<b>UNIT III-</b> Complex numbers as ordered pairs. Geometric representation of complex numbers. Stereographic projection. Continuity and differentiability of complex functions. Analytic functions, Cauchy Riemann equations, Harmonic functions. Elementary functions, mapping by elementary functions. Mobious
FEBRUARY	<b>UNIT III-</b> transformations, Fixed points, Cross ratio, Inverse points and critical mappings, Conformal mappings. <b>UNIT IV</b> Definition and examples of metric spaces. Neighbourhoods, Limit points, Interior points, Open and Closed sets, Closure and interior. Boundary points, Sub-space of a metric space. Cauchy sequences,
MARCH	<b>UNIT IV-</b> Completeness, Cantor's intersection theorem, Contraction principle, Construction of real numbers as the completion of the incomplete metric space of rational. Real numbers as a complete ordered field. <b>UNIT V –</b> Dense subsets. Baire Category theorem, Separable, second countable and first countable spaces. Continuous functions
APRIL	<b>UNIT V</b> Extension theorem. Uniform continuity. Isometry and homeomorphism. Equivalent metrics. Compactness, Sequential compactness. Totally bounded spaces. Finite intersection property. Continuous functions and compact sets. Connectedness, Components, Continuous functions and connected sets.

**B.Sc. III**  
**Mathematics**  
**PAPER-II**  
**ABSTRACT ALGEBRA**

MONTH	PLAN
OCTOBER	<b>UNIT – I</b> Group-Automorphism, inner automorphisms. Automorphism groups and their computations, Conjugacy relation
NOVEMBER	<b>UNIT – I</b> Normaliser, Counting principle and the class equation of a finite group. Center for group of prime-order, Abelianizing of a group and its universal property. Sylow's theorems, Sylow's subgroup, structure theorem for finite Abelian groups.
DECEMBER	<b>UNIT-II</b> Ring theory- Ring homomorphism, Ideals and Quotient Rings. Field of Quotients of an Integral Domain, Euclidean Rings, Polynomial rings, Polynomials over the Rational Field. The Eisenstein Criterion, Polynomial Rings over Commutative rings, Unique factorization domain. R unique factorisation domain
JANUARY	<b>UNIT-III</b> Definition and examples of vector spaces. Subspace, Sum and direct sum of subspaces, Linear span. Linear dependence, independence and their basic properties. Basis Finite dimensional vector spaces, existence theorem for bases, invariance of the number elements of a basis set. Dimension, Existence of complementary subspace of a finite dimensional vector space. Dimension of sums of subspaces. Quotient space and its dimension
FEBRUARY	<b>UNIT-IV</b> Linear transformations and their representation as matrices. The Algebra of linear transformations. The rank nullity theorem. Change of basis. Dual space, Bidual space and natural isomorphism, forms. Adjoint of a linear transformation, Eigenvalues and Eigen vectors of a linear transformation.
MARCH	<b>UNIT IV</b> Diagonalisation. Annihilator of a subspace, Bilinear, Quadratic and Hermitian. <b>UNIT-V</b> Inner product spaces-Cauchy-Schwarz inequality, Orthogonal vectors, Orthogonal complements, Orthonormal sets and bases. Bessel's inequality for finite dimensional spaces, Gram-Schmidt orthogonalization process.
APRIL	REVISION

**B.Sc. III**  
**Mathematics**  
**PAPER-III**  
**DISCRETE MATHEMATICS**

MONTH	PLAN
OCTOBER	<b>UNIT –I <u>Sets and Propositions</u></b> - Cardinality, Mathematical induction
NOVEMBER	<b>UNIT –I <u>Sets and Propositions</u></b> - Cardinality, Mathematical induction, Principle of inclusion and exclusion. Computability and Formal Languages - Ordered sets, languages, Phrase structure Grammars, Types of Grammars and languages. Permutations, Combinations and Discrete probability.
DECEMBER	<b>UNIT-II <u>Relations and Functions</u></b> - Binary relations, Equivalence relations and Partitions. Partial Order Relations and Lattices. Chains and Antichains. Pigeon Hole Principle. <b><u>Graphs and Planar Graphs</u></b> - Basic Terminology, Multigraphs, Weighted graphs, Paths and circuits, Shortest paths, Eulerian Paths and circuits. Travelling Salesman Problem, Planner graphs. Trees.
JANUARY	<b>UNIT-III <u>Finite State machines</u></b> - Equivalent machines. Finite state machines as language recognizers Analysis of Algorithms - Time complexity, Complexity of problems, Discrete Numeric functions and Generating functions.
FEBRUARY	<b>UNIT-IV <u>Recurrence Relations and Recursive Algorithms</u></b> - Linear Recurrence Relations with constant coefficients. Homogeneous solutions, Particular solutions, Total solutions, Solution by the method of Generating functions, Brief review of Groups and Rings.
MARCH	<b>UNIT-V <u>Boolean Algebra</u></b> - Lattices and Algebraic structures. Duality, distributive and complemented Lattices. Boolean Lattices and Boolean Algebras. Boolean functions and expressions. Propositional Calculus, Design and implementation of Digital Networks, Switching Circuits.
APRIL	REVISION

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**PROPOSED TEACHING PLAN FOR THE SESSION 2020-21**

**Name of the Department: PHYSICS**

**CLASS B. SC. I**

Month/ Days	Paper I	Paper II
<b>NOVEMBER</b>	<b>Admission work</b> Motion under a central force, Kepler's laws. Effect of centrifugal and Coriolis force due to earth's rotation. Center of mass (C.M.). Lab and CM frame of reference, motion of C.M. of system of particles subject to external forces, <b>elastic and inelastic collisions in one and two dimensions, Scattering angle in the laboratory frame of reference.</b>	<b>Admission work</b> Kirchhoff's law Ideal constant-voltage and Constant-current Sources. Thevenin theorem, Norton theorem. Superposition theorem, Reciprocity theorem and Maximum Power Transfer theorem. Repeated integrals of a function of more than one variable, definition of a double and triple integral. Gradient of a scalar field and its geometrical interpretation, divergence and curl of a vector field and their geometrical interpretation, line, surface and volume integrals, flux of a vector field. Gauss's divergence theorem.
<b>DECEMBER</b>	Cartesian, Cylindrical and Spherical co-ordinate system, Inertial and non-inertial frames of reference, uniformly rotating frame, Coriolis force and its applications. Conservation of linear and angular momentum. Conservation of energy. Rigid body motion, rotational motion, moment of inertia and their products, principal moments and axes. Introductory idea of Euler's equations. Potential well and periodic oscillations, case of harmonic oscillations, differential equation and its solution, kinetic and potential energy, examples of simple harmonic oscillations, spring and mass system, simple and compound pendulum, torsional pendulum.	Green's theorem and Stoke's theorem and their physical significance. Coulomb's law in vacuum expressed in vector form. Calculations of E for simple distributions of charges at rest, dipole and quadrupole fields. Work done on a charge in an electrostatic field expressed as a line integral, conservative nature of the electrostatic field. Relation between Electric potential and electric field, torque on a dipole in a uniform electric field and its energy, flux of the electric field. Gauss's law and its application for finding E due to (1) an infinite line of charge, (2) a charged cylindrical conductor, (3) an infinite sheet of charge and two parallel charged sheets, capacitors, electrostatic field energy. Force per unit area on the surface of a conductor in an electric field, conducting sphere in a uniform field.
<b>January</b>	Bifilar oscillations, Helmholtz resonator, LC circuit, vibrations of a magnet, oscillations of two masses connected by a spring. Superposition of two simple harmonic motions of the same frequency, Lissajous figures, case of different frequencies. Damped harmonic oscillator, power dissipation, quality factor, examples, driven (forced) harmonic oscillator, transient and steady states, power absorption, resonance.	Dielectric constant. Polar and Non Polar dielectrics. Dielectrics and Gauss's Law. Dielectric Polarization. Electric Polarization vector P, electric displacement vector D. Relation between three electric vectors, Dielectric susceptibility and permittivity. Polarizability and mechanism of Polarization. Lorentz local field. Clausius Mossotti equation, Debey equation. Ferroelectric and Paraelectric dielectrics. Steady current, current density J, non-steady currents and continuity equation, rise and decay of current in LR, CR and LCR circuits, decay constants, AC circuits,

<b>February</b>	E as an accelerating field, electron gun, case of discharge tube, linear accelerator, E as a deflecting field, CRO, sensitivity. Transverse B field, 180 degree deflection, mass spectrograph, curvature of tracks for energy determination, principle of a cyclotron. Mutually perpendicular E and B fields, velocity selector, its resolutions. Parallel E and B fields, positive ray parabolas, discovery of isotopes, elements of mass spectrographs, principle of magnetic focusing (lens).	complex numbers and their applications in solving AC circuit problems, complex impedance and reactance, series and parallel resonance, Q factor, power consumed by an AC circuit, power factor. Magnetization Current and magnetization vector M, three magnetic vectors and their relationship. Magnetic permeability and susceptibility. Diamagnetic, paramagnetic and ferromagnetic substances.
<b>March</b>	Elasticity : Strain and stress, elastic limit, Hook's law. Modulus of rigidity. Poisson's ratio. Bulk modulus. Relation connecting different elastic-constants, twisting couple of a cylinder (solid and hollow). Bending moment, Cantilever, Young modulus by bending of beam.	B.H. Curve, cycle of magnetization and hysteresis, Hysteresis loss. Biot and Savart's law and its applications: B due to (1) a straight Current Carrying Conductor and (2) Current Loop. Current Loop as a Magnetic Dipole and its Dipole Moment (Analogy with Electric Dipole) , Ampere's circuital law (Integral and Differential Forms.
<b>April</b>	Viscosity : Poiseuille's equation of liquid flow through a narrow tube, equations of continuity. Euler's equation, Bernoulli's theorem, viscous fluids, streamline and turbulent flow. Poiseuille's law. Coefficient of viscosity, Stoke's law. Surface tension and molecular interpretation of surface tension, surface energy. Angle of contact. Wetting.	Electromagnetic induction, Faraday's law, electromotive force, $\varepsilon = \int \mathbf{E} \cdot d\mathbf{r}$ , integral and differential forms of Faraday's law, mutual and self inductance, transformers, energy in a static magnetic field. Maxwell's displacement current, Maxwell's equations, electromagnetic field energy density. The wave equation satisfied by E and B, Plane electromagnetic waves in vacuum, Poynting's vector.
<b>May</b>	Revision and Practical Examination	Revision and Practical Examination
	Annual Examinations	Annual Examinations
	Annual Examinations	Annual Examinations
	Annual Examinations	Annual Examinations

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**PROPOSED TEACHING PLAN FOR THE SESSION 2020-21**

**Name of the Department: PHYSICS**

**CLASS B. SC. II**

Month/ Days	Paper I	Paper II
<b>November</b>	<b>Admission work</b> <b>UNIT I</b> The law of thermodynamics: The Zeroeth law, first law of thermodynamics, internal energy as a state function, reversible and irreversible change, Carnot's theorem and the second law of thermodynamics. Clausius theorem inequality. Entropy, Change of entropy in simple cases: ( i ) Isothermal expansion of an ideal gas (ii) Reversible isochoric process (iii) Free adiabatic expansion of an ideal gas. Concept of Entropy, Entropy of the universe. Entropy change in revercible and irrevercible process.	<b>Admission work</b> <b>UNIT I</b> Waves in media: Speed of transverse waves on a uniform string, speed of longitudinal waves in a fluid, energy density and energy transmission in waves. Waves over liquid surface: gravity waves and ripples. Group velocity and phase velocity and relationship between them. Production and detection of Ultrasonic and Infrasonic waves and application. Reflection, refraction and diffraction of sound:
<b>December</b>	Entropy as a thermodynamic variable ,S-T diagram. Principle of increase of entropy. The thermodynamic scale of temperature. Third law of thermodynamics. Concept of negative temperature. <b>UNIT II</b> Thermodynamic functions , Internal energy, Enthalpy, helmholts functions and Gibb's free energy, Maxwell thermodynamical equations and their applications. TdS equations, energy and heat capacity equations, Applications of Maxwell's equations in joule-Thomson cooling, adiabatic cooling of system, Wanderwall Gas, Clausius-Clapeyron heat equation.	Acoustic impedance of a medium, percentage reflection and refraction at a boundary, impedance matching for transducers, diffraction of sound, Principle of a sonar system, sound ranging. <b>NIT II</b> Fermat's principle of extremum path, the aplanatic points of a sphere and other applications. Cardinal points of an optical system, thick lens and lens combinations. Lagrange's equation of magnification, telescopic combination, telephoto lenses. Monochromatic aberrations and their reductions; aspherical mirrors and Schmidt corrector plates, alpanatic points, oil immersion objectives, meniscus lens.
<b>January</b>	Black body radiation: Pure temperature dependence, Stefan – Boltzmann law, pressure of radiation, spectral distribution of black body radiation, Wien's displacement law, Rayleigh – Jean's law, Planck's quantum theory of radiation. Transport phenomena in gases: Molecular collisions mean free path and collision cross sections.	U Optical instruments: entrance and exit pupils, need for a multiple lens eyepiece, common types of eyepieces (Ramsden & Huygen's eyepieces). <b>UNIT III</b> Interference of light : The principle of superposition, two slit interference, coherence requirement for the sources, optical path retardation, Conditions for sustained interference, Theory of Interference, Thin fins.



	Estimates of molecular diameter and mean free path. Transport of mass, momentum and energy and interrelationship, dependence on temperature and pressure.	Newton's rings and Michelson interferometer and their applications for precision determination of wavelength, wavelength difference and the width of spectral lines. Multiple beam interference in parallel film and Fabry – Perot interferometer. Rayleigh refractometer, Twyman Green Interferometer and its uses.
<b>February</b>	Behaviour of real Gases: Deviations from the Ideal Gas Equation. The Virial equation. Andrew's experiments. Experiments on CO <sub>2</sub> gas. Critical constant. The statistical basis of thermodynamics: Probability and thermodynamic probability, principle of equal a priori probabilities, statistical postulates. Concept of Gibbs's ensemble, accessible and inaccessible states.	UNIT IV Fresnel half- period zones, Phasor diagram and integral calculus methods, the intensity distribution, Zone plates, Diffraction due to straight edge, Fraunhofer diffraction at a slit and double slit, Diffraction at N parallel slits, plane diffraction grating, Rayleigh criteria, resolving power of grating, prism, telescope. Polarized light and its mathematical representation, production of polarized light by reflection, refraction and scattering.
<b>March</b>	Concept of phase space, Gamma phase space and mu phase space. Equilibrium between two systems in thermal contact, Probability and entropy, Boltzmann entropy relation. Boltzmann canonical distribution law and its applications, law of equipartition of energy. Transition to quantum statistics: 'h' as a natural constant and its implications, cases of particle in a one – dimensional box and one – dimensional harmonic oscillator.	Polarization by double refraction and Huygen's theory, Nicol prism, retardation plates, production and analysis of circularly and elliptically polarized light. Optical activity and Fresnel's theory, Biquartz polarimeter.
<b>April</b>	Indistinguishability of particles and its consequences, Bose–Einstein & Fermi–Dirac conditions. Concept of partition function, Derivation of Maxwell - Boltzmann, Bose - Einstein and Fermi - Dirac statistics through canonical partition function. Limits of B–E and F–D statistics to M –B statistics. Application of B –E statistics to black body radiation. Application of F- D statistics to free electrons in a metal.	UNIT V Laser system: Basic properties of Lasers, coherence length and coherence time, spatial coherence of a source, Einstein's A and B coefficients, Spontaneous and induced emissions, conditions for laser action, population inversion. Types of lasers: Ruby and He – Ne lasers and Application of lasers: Application in communication, Holography and basics of non – linear optics and generation of harmonics.
<b>May</b>	Revision and Practical Examination	Revision and Practical Examination
	Annual Examinations	Annual Examinations
	Annual Examinations	Annual Examinations
	Annual Examinations	Annual Examinations

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**PROPOSED TEACHING PLAN FOR THE SESSION 2020-21**

**Name of the Department: PHYSICS**

**CLASS B. SC. III**

Month/ Days	Paper I	Paper II
<b>November</b>	<b>Admission work</b> <b>Unit-I</b> Reference system, inertial frames Gallilean invariance and conservation laws, propagation of light, Michelson-Morley experiment; search for ether. Postulates for the special theory of relativity, Lorentz transformations, length contraction time dilation, velocity addition theorem, variation of mass with veloc ity, mass – energy equivalence, particle with zero rest mass ,Compton effect.	<b>Admission work</b> Amorphous and crystalline solids, elements of symmetry, seven system, Cubic lattices, Crystal planes, Miller indices, Laue's equations for X- ray diffraction. Bragg's law. Bonding in solids classification. Cohesive energy of solid.Modelung constant, evaluation of parameters. Specific heat of solids, classical theory (Dulong- Petit's law). Einstein's and Debye theories. Vibrational modes of one dimensional monoatomic lattice, Dispersion relation, Brillouin zone.
<b>December</b>	<b>Unit- II</b> Origin of the quantum theory: Failure of classical physics to explain the phenomena such as black body spectrum, photoelectric effect. Wave particle duality and uncertainty principle: de Broglie's hypothesis for matter waves; the concept of wave and group velocities, evidence for diffraction and interference of particles, experimental demonstration of matter waves. Davisson and Germer's experiment.Consequence of de Broglie's concepts; quantization in hydrogen atom; energies of a particle in a box, wave packets. Consequence of the uncertainty relation: gamma ray microscope, diffraction at a slit.	<b>Unit- II</b> Free electron model of a metal, solution of one dimensional Schrodinger's equation in a constant potential. Density of states. Fermi energy , Energy bands in a solid (kronig – penny model without mathematical details). Metals, insulators and semiconductors. Hall effect.Die, Para and Ferromagnetism. Langevin's theory of die and para magnetism. Curie – Weiss's law. Qualitative description of Ferromagnetism (Magnetic domains), B – H curve and hysteresis loss.
<b>January</b>	<b>Unit – IIIQuantum Mechanics:</b> Schrodinger's equation. Postulatory basis of quantum mechanics; operators, expectation values, transition probabilities, applications to particle in a one and three dimensional boxes, harmonic oscillatorin one dimension, reflection at a step potential, transmission across a potential barrier. Hydrogen atom: natural occurrence of n,	<b>Unit –IIIIntrinsic semiconductors, Carrier</b> concentration in thermal equilibrium, Fermi level, Impurity, semiconductor, donor and acceptor levels, Diode equation, junctions, junction breakdown, Depletion width and junction capacitance, abrupt junction, Tunnel diode , Zener diode. Light emitting diodes, solar cell, bipolar transistors,

	l and m quantum numbers, the related physical quantities.	
<b>February</b>	Unit – IV Spectra of hydrogen, deuteron and alkali atoms, spectral terms, double fine structure, screening constants for alkali spectra for s, p, d and f states, selection rules, Discrete set of electronic energies of molecules, quantization of vibrational and rotational	PNP and NPN transistors, characteristics of transistors, different configurations, current amplification factor, FET. Unit – IV Half and full wave rectifier, rectification efficiency, ripple factor, Bridge rectifier, filters, Inductor filter, T and $\pi$ filters, Zener diode, regulated power supply.
<b>March</b>	Energies, determination of internuclear distance, pure rotational and rotational vibrational spectra. Dissociation limit for the ground and other electronic states, transition rules for pure vibration and electronic spectra. Raman effect, Stokes and anti – Stokes lines complimentary character of Raman and infrared spectra, experimental arrangements for Raman spectroscopy.	Application of transistors. Bipolar transistor as amplifier. Single stage and CE small signal amplifiers, Emitter follower, Transistor as power amplifier, Transistor as oscillator. Wein bridge oscillator and Hartley oscillator.
<b>April</b>	Unit - V Interaction of charged particles and neutrons with matter, working of nuclear detectors, G-M counter, proportional counter and scintillation counter, cloud chamber, Spark Chambers emulsions. Structure of nuclei, basic properties (I, $\mu$ , Q and binding energy), deuteron binding energy, p-p and n-p scattering and general concepts of nuclear forces. Beta decay, range of alpha particle, Geiger-Nuttal law. Gamow's explanation of beta decay, alpha decay and continuous and discrete spectra. Nuclear reactions, channels, compound nucleus, direct reaction (concepts). Shell model: liquid drop model, fusion (concepts), energy production in stars by p-p and carbon- nitrogen cycles (concepts).	Unit – V Introduction to computer organization, time sharing and multiprogramming systems, window based word processing packages, MS Word. Introduction to C programming and application to simple problems of arranging number in ascending/descending orders; sorting a given data in an array, solution of simultaneous equation.
<b>February</b>	<b>Practical Exam and Revision</b>	<b>Practical Exam and Revision</b>
<b>March</b>	<b>Annual Examination</b>	<b>Annual Examination</b>
<b>April</b>	<b>Annual Examination</b>	<b>Annual Examination</b>
<b>May</b>	Annual Examinations	Annual Examinations

# **TEACHING PLAN OF ZOOLOGY FOR SESSION 2020-21**

**B. Sc. I**

**Zoology**

**PAPER-I**

## **CELL BIOLOGY AND INVERTEBRATE**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>NOVEMBER</b>	<b>Unit I -</b> The cell (Prokaryotic and Eukaryotic) Organization of Cell-extra-nuclear and nuclear Plasma membrane, Endoplasmic reticulum, Golgi bodies, Ribosome, Mitochondria, Lysosomes, Nucleus, Chromosome, DNA and RNA
<b>DECEMBER</b>	<b>Unit II-</b> Cell division (Mitosis and Meiosis). An elementary idea of Cancer cells and cell transformation. An elementary idea of Immunity Innate & Acquired Immunity, Lymphoid organ, Cells of Immune system, Antigen, Antibody and their interaction.
<b>JANUARY</b>	<b>Unit III</b> General characters and classification of Phylum Protozoa up to orders Protozoa-Type study-Paramecium.
<b>FEBRUARY</b>	<b>Unit III</b> General characters and classification of Phylum Porifera and Coelenterata up to orders Porifera- Type study-Sycon. Coelenterata-Type study-Obelia.
<b>MARCH</b>	<b>UNIT – IV</b> General characters and classification of Phylum Helminthes, Annelida and Arthropoda up to orders Platyhelminthes and Nematelminthes-Type Study-Fasciola. And Ascaris Annelida-Type Study-Pheretima. Arthropoda- Type Study-Palaemone.
<b>APRIL</b>	<b>UNIT – V</b> General characters and classification of Phylum Mollusca and Echinodermata up to orders Mollusca- Type Study-Pila. Echinodermata- Type Study- Asterias(Starfish).

**B. Sc. I**  
**Zoology**  
**PAPER-II**  
**VERTEBRATES AND EMBRYOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
NOVEMBER	<b>UNIT – I</b> Classification of Hemichordata Hemichordata – Type study - Balanoglossus Classification of Chordata up to Order Protochordata-Type study- Amphioxus. A comparative account of Petromyzon and Myxine.
DECEMBER	<b>UNIT – II</b> Fishes-Skin & Scales, migration in fishes, Parental care in Fishes. Amphibia-Parental care, Neoteny. Reptilia- Poisonous & Non-poisonous Snakes, Poison apparatus, snake venom and Extinct Reptiles
JANUARY	<b>UNIT – III</b> Birds- Flight Adaptation, Migration and Perching Mechanism. Discuss-Birds are glorified reptiles. Mammals-Comparative account of Prototheria, Metatheria, Eutheria and Affinities. Aquatic Mammals and their adaptation
FEBRUARY	<b>UNIT –IV</b> Fertilization Gametogenesis, Structure of Gamete and Types of Eggs Cleavage
MARCH	<b>UNIT – IV</b> Development of Frog up to formation of three germ layers Parthenogenesis.
APRIL	<b>UNIT –V</b> Embryonic induction, Differentiation and Regeneration. Development of Chick (a) Up to formation of three germ layer (b) Extra-embryonic membranes. Placenta in mammals. <b>REVISION</b>

**B. Sc. II**  
**Zoology**  
**PAPER-I**  
**ANATOMY AND PHYSIOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
NOVEMBER	<b>UNIT I</b> –Comparative anatomy of various organ systems of vertebrates. Integument and its derivatives: structure of scales, hair and feathers, Alimentary canal and digestive glands invertebrates Respiratory organs : Gills and lung , air-sac in birds
DECEMBER	<b>UNIT II</b> - Endoskeleton: Limbs, girdles and vertebrae Circulatory System: Evolution of heart and aortic arches Urinogenital System: Kidney and excretory ducts
JANUARY	<b>UNIT III</b> -Nervous System: General plan of brain and spinal cord Endocrine glands- classification and histology
FEBRUARY	<b>Unit III</b> – Gonads and genital ducts <b>UNIT – IV</b> Digestion and absorption of dietary components Physiology of heart, cardiac cycle and ECG
MARCH	<b>UNIT IV</b> – Blood Coagulation Respiration: mechanism and control of breathing
APRIL	<b>UNIT –V</b> - Excretion: Physiology of excretion, osmoregulation Physiology of muscle contraction Physiology of nerve impulse, Synaptic transmission Ear and Eye: structure and function

**B. Sc. II**  
**Zoology**  
**PAPER-II**  
**VERTEBRATE ENDOCRINOLOGY, REPRODUCTIVE BIOLOGY**  
**BEHAVIOUR, EVOLUTION AND APPLIED ZOOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
NOVEMBER	<b>UNIT I-</b> General Characters of Hormones Hormone receptor Biosynthesis and secretion of thyroid, adrenal, ovarian and testicular hormones Endocrine disorder due to hormones and other glands Endocrine disorder due to hormones and other glands
DECEMBER	<b>UNIT II –</b> Reproductive cycle invertebrates Menstruation, lactation and pregnancy Mechanism of parturition Hormonal regulation of gametogenesis Extra-embryonic membrane
JANUARY	<b>UNIT III-</b> Evidences of organic evolution. Theories of organic evolution. Variation, Mutation, Isolation and Natural selection. Evolution of Horse
FEBRUARY	<b>UNIT IV-</b> Introduction to Ethology. Patterns of Behaviour: Taxes, Reflexes, Drives and Stereotyped behaviours.
MARCH	<b>UNIT IV-</b> Reproductive behavioural patterns. Hormones, drugs and behavior <b>UNIT V –Aquaculture</b> Sericulture Apiculture Pisciculture
APRIL	<b>UNIT V –Poultrykeeping</b> Elements of pest control- Chemical control Biological control

**B. Sc. III**  
**Zoology**  
**PAPER-I**  
**ECOLOGY, ENVIRONMENTAL BIOLOGY, TOXICOLOGY,**  
**MICROBIOLOGY AND MEDICAL ZOOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
NOVEMBER	<b>UNIT – I</b> Aims and scopes of ecology Major ecosystems of the world-Brief introduction Population- Characteristics and regulation of densities Communities and ecosystem Bio-geo chemical cycles Air & water pollution Ecological succession
DECEMBER	<b>UNIT-II</b> Laws of limiting factor Food chain in fresh water ecosystem Energy flow in ecosystem- Trophic levels Conservation of natural resources Environmental impact assessment
JANUARY	<b>UNIT-III</b> Definition of toxicity Classification of toxicants Principle of systematic toxicology Toxic agents & their action-Metallic & inorganic agents Animal poisons- snake venom, scorpion & bee poisoning Food poisoning
FEBRUARY	<b>UNIT-IV</b> General and applied microbiology Microbiology of domestic water and sewage
MARCH	<b>UNIT IV</b> Microbiology of milk & milk products Industrial microbiology
APRIL	<b>UNIT-V</b> Brief introduction to pathogenic microorganisms, Rickettsia, Spirochaetes & Bacteria Brief account of life history & pathogenicity of the following pathogens with reference to man: prophylaxis & treatment Pathogenic protozoans- Entamoeba, Trypanosome & Giardia Pathogenic helminthes-Schistosoma Nematode pathogenic parasites of man Vector insects



**B. Sc. III**  
**Zoology**  
**PAPER-II**  
**GENETICS, CELL PHYSIOLOGY, BIOCHEMISTRY, BIOTECHNOLOGY AND**  
**BIOTECHNIQUES**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
NOVEMBER	<b>UNIT – I</b> Linkage & linkage maps Varieties of gene expression- multiple alleles; Lithogenesis, Pleiotropic Gene; Gene interaction; Epistasis Sex chromosomes systems & sex linkage Mutation & chromosomal alteration; meiotic consequences Human genetics, chromosomal & single gene disorders (somatic cell genetics)
DECEMBER	<b>UNIT-II</b> General idea about pH & buffer Transport across membrane- cell membrane; mitochondria and endoplasmic reticulum Active transport & its mechanism; active transport in mitochondria & endoplasmic reticulum Hydrolytic enzymes-their chemical nature, activation & specificity
JANUARY	<b>UNIT-III</b> Amino acids & peptides- Basic structure & biological function Carbohydrates & its metabolism- Glycogenesis; Gluconeogenesis; Glycolysis; Glycogenolysis; Cori-cycle Lipid metabolism- Oxidation of glycerol; Oxidation of fatty acids Protein metabolism- Deamination, transamination, transmethylation; Biosynthesis of protein
FEBRUARY	<b>UNIT III</b> <b>UNIT-IV</b> Biotechnology- Scope & importance Recombinant DNA & Gene cloning
MARCH	<b>UNIT IV</b> Cloned genes & other tools of biotechnology Applications of biotechnology in (i) Pharmaceutical industry (ii) Food processing industry
APRIL	<b>UNIT-V</b> Principles & techniques about the following: (i) pH meter (ii) Colorimeter (iii) Microscopy- Light microscopes, Phase contrast & Electron microscopes (iv) Centrifugation (v) Separation of biomolecules by chromatography & electrophoresis (vi) Histo-chemical methods of determination of protein, lipid & carbohydrates

**GOVT.D.B.GIRLS' P G (AUTONOMOUS) COLLEGE, RAIPUR**  
**TEACHING PLAN / SESSION 2020-21**

**B.SC.HOME SCIENCE PART I GROUP A PAPER II INTRODUCTION TO RESOURCE MANAGEMENT ECOLOGY AND ENVIRONMENT**

- JULY- INTRODUCTION, CONCEPT, PURPOSE OF MANAGEMENT, ACHIEVEMENT OF GOALS
- AUG- OBSTACLE TO IMPROVE MANAGEMENT, FACTORS AFFECTING MANAGEMENT, LIFESTYLE.  
TYPES OF FAMILY, SIZE, STAGES OF FAMILY LIFE CYCLE
- SEPT- DEFINITION, TYPES, UTILITY OF GOALS, IMPORTANCE, SOURCES CLASSIFICATION  
CHARACTERISTICS OF VALUE, CHANGING VALUES, STANDARD DEFINITION, QUANTITATIVE  
QUALITATIVE, CONVENTIONAL, NON CONVENTIONAL, ROLE OF DECISION IN MANAGEMENT ,  
AVAILABILITY OF RESOURCES, AND PRACTICAL
- OCT- MEANING OF MANAGEMENT PROCESSES PLANNING, CONTROLLING, EVALUATION, DECISION  
MAKING ,PLANNING IMPORTANCE, TYPES, TECHNIQUES, CONTROLLING PHASES ENERGIZING  
CHECKING, SUCCESS FACTORS, SUITABLY, PROMPTNESS, NEW DECISIONS, FLEXIBILITY &  
PRACTICAL
- NOV- SUPERVISION DIRECTIONS & GUIDANCE, ANALYSIS OF SUPERVISION, EVALUATION, IMPORTANCE  
RELATION TO GOALS, SELF EVALUATION, EVALUATION OF MANAGEMENT PROCESSES, TYPES  
AND FACTORS OF RESOURCES AND PRACTICAL
- DEC- MEANING, DEFINITION, SCOPE OF ECOLOGY AND ENVIRONMENT, LAND ENERGY, MINERALS  
RESOURCE, POLLUTION, SOURCES, DOMESTIC WASTE, HEALTH HAZARD PREVENTION  
CONTROL, WATER PROBLEM ISSUES, POLLUTION SCARCITY, POLLUTANTS, HEALTH HAZARD,  
CONTROL AND PRACTICAL
- JAN- UTILITY & RESOURCE OF FOREST, DEFORESTATION, CONSERVATION, AIR COMPOSITION,  
POLLUTANTS, SOURCES, HEALTH HAZARD, GREEN HOUSE EFFECT, & PRACTICAL
- FEB- ENERGY SOURCES, ALTERNATIVE, CONSERVATION, UNCONTROLLED POLLUTION GROWTH AND  
CONTROL, ENVIRONMENT EDUCATION, NEED, OBJECTIVES, ROLE OF GOVERNMENT, NGOS  
EDUCATION INSTITUTIONS, NATIONAL, INTERNATIONAL AGENCY, ENVIRONMENTAL  
PROTECTION POLICY, PROGRAMME, LEGISLATION

**GOVT.D.B.GIRLS' P G (AUTONOMOUS) COLLEGE, RAIPUR**  
**TEACHING PLAN / SESSION 2020-21**  
**BSc./ B.A. Part- I (FASHION DESIGNING)**  
**Group B / Paper-I**  
**NAME OF PAPER : TEXTILE SCIENCE**

MONTH	TEACHING PLAN
JULY	Introduction of the Subject. A brief historical background of Textile. Common Terminology used in Textile. Physical Properties of Textile fibers.
AUGUST	Chemical properties of Textile fibers. Introduction of Textile fibers Classification of Textile fibers : Natural fiber Vegetative Fiber : Cotton , Linen ( History, Cultivation , Manufacturing process & properties of each fiber )
SEPTEMBER	Animal Fiber : Silk,Wool ( History, Cultivation , Manufacturing process & properties of each fiber ) Mineral Fiber : Gold, Silver, Asbestoss Man-Made Fiber : Rayon ( History , Types, Production & Properties )
OCTOBER	Thermoplastic Fiber: Nylon ( History , Types, Production & Properties) Yarn : Meaning, yarn making. Types of yarn : Simple, Complex, Novelty. Yarn Twist
NOVEMBER	Methods of Fabric Construction:Weaving – Essential parts of Handloom Different types of Weaves. Other Methods of Fabric Construction.
DECEMBER	Identification of Fabric : Appearance test , Microscopic test , Burning test , Creasing test ,Breaking test ,Tearing test and Chemical test. Importance of Clothing
JANUARY	Selection of fabric for Dress according to Climate , Age, Occupation , Personality , Occasion , Figure type , Fashion etc. Wardrobe Planning
FREBRUARY	REVISION

**GOVT.D.B.GIRLS' P G (AUTONOMOUS) COLLEGE, RAIPUR**  
**TEACHING PLAN / SESSION 2020-21**  
**BSc./ B.A. Part- I (FASHION DESIGNING)**  
**Group B / Paper-II**  
**NAME OF PAPER : COLOR THEORY AND CONCEPTS**

MONTH	TEACHING PLAN
JULY	Introduction to Element of Design <ul style="list-style-type: none"> <li>• Color</li> <li>• Line &amp;</li> <li>• Texture</li> </ul>
AUGUST	Color Theories <ul style="list-style-type: none"> <li>• Prang's Color Theory</li> <li>• Munshell's Color Theory</li> </ul> Principles of Design <ul style="list-style-type: none"> <li>• Proportion</li> </ul>
SEPTEMBER	<ul style="list-style-type: none"> <li>• Balance</li> <li>• Harmony</li> <li>• Rhythm</li> <li>• Emphasis</li> </ul>
OCTOBER	Classification of Lines and its Significance. Combination of Lines, Different types of Patterns : Structural , Decorative , Geometrical , Abstract , Floral and Scrawly pattern.
NOVEMBER	Color Wheel ( According to Prang's Color Theory ) <ul style="list-style-type: none"> <li>• Single line design</li> <li>• Double line design</li> <li>• Four fold design</li> </ul>
DECEMBER	Color Scheme : Complementary, Double Complementary, Split Complementary, Traid Color Scheme, Pastel & Dusty Pastel, Contrast color scheme, Analogous color scheme, VIBGYOR color scheme, Neutral color scheme with Metallic colors, Nursery prints.
JANUARY	Enlargement of Pint. Texture : Fevicol texture , Thumb Impression, Rope Impression, Leaf Impression, Smoke and Spray texture, Wax drop & rubbing, Blowing, Stencils, Vegetable blocks, Stone Impression, Marble texture ,Dry brush etc.
FEBRUARY	REVISION

**GOVT.D.B.GIRLS'P G (AUTONOMOUS) COLLEGE, RAIPUR**  
**TEACHING PLAN / SESSION 2020-21**  
**BSc. Part- I ( HOME SCIENCE )**

**Group IV / Paper-B**

**NAME OF PAPER : PERSONAL EMPOWERMENT AND COMPUTER BASICS**

MONTH	TEACHING PLAN
JULY	Personal growth and personality development. The challenges: understanding and managing oneself. Personality development: Factors and influences. Peer pressures: Issues and management. Conflicts and stress, Simple coping strategies
AUGUST	Adjustment and readjustment to changing needs and conditions of contemporary society (technological changes, social changes, changes in values).Empowerment of women- Women and development: personal, familial, societal and national perspective.Capacity building for women: Education, decision-making abilities and opportunities.
SEPTEMBER	Women's organizations and collective strength: Women's action groups Women's participation in development initiatives.Study and discussion of life histories, case studies of illustrious Indian women from different walks of life eg. IndiraGandhi, Jhansi ki Rani, Kiran Bedi, Ha Bhat etc.
OCTOBER	Case studies: Medha Patkar, Vijaylaxmi Pandit, Sudha Chandran, Bhanvari Devi, Anutai Wagh. Home Science Education as Empowerment :The interdisciplinary of Home Science Education, the role of Home Science education for personal growth and professional development.
NOVEMBER	Home Science as holistic education with integration of goals for persons, enhancement and community development.Some Significant Contemporary Issues of Concern -Gender issues: inequities and discriminations, biases & stereotype; myths and facts.
DECEMBER	Substance abuse: Why and how to say no. Healthy habits: In relation to physique, to heterosexual interests. AIDS : Awareness and Education Computer Fundamentals : Overview about computers.
JANUARY	Computer Fundamentals : Components of a computer, Input / Output devices, Secondary storage devices, Number system : Decimal, Binary, Octal, Hexadecimal. Representation of information : BCD, EBCDIC, ASCII. Representation of Data : Files, Records, File organization and access. Security and safety of data. Introduction to operating systems.
FREBRUARY	RIVISION

**GOVT.D.B.GIRLS'P G (AUTONOMOUS) COLLEGE, RAIPUR**  
**TEACHING PLAN / SESSION 2020-21**  
**BSc./ B.A. Part- II (FASHION DESIGNING)**

**Group B / Paper-I**

**NAME OF PAPER: INTRODUCTION TO FASHION ILLUSTRATION & MODEL**

MONTH	TEACHING PLAN
JULY	Fashion : Definition ,Theories Fashion Trends In India. Terms Related To Fashion Industry. Factors Affecting Fashion.
AUGUST	Anatomy Of Human Body Skeleton & Muscular System Joints Of Human Body Normal Body , Abnormal Body
SEPTEMBER	Figure Problems & Different Types Of Figure Defects :Erect, Stooping, Low Shoulder, Square Shoulder, Thin Waist, Stout Waist, Long Body, Short Body, Full Back, Flat Back, Cylindrical, Corpulent, Head Forward, Head Backward
OCTOBER	Deformity : Natural & Accidental Principle Of Figure Drawing Sketching Of Different Body Features
NOVEMBER	Figure Head Theories : 7 ½ (Average Figure) 8 ½ (Average Figure) Drawing Of Human Form In Different Angles : Front , Back , Side .
DECEMBER	Figure Head Theories 10 ½ (Block Figure) 12 ½ (Fashion Figure) Drawing Of Human Form In Different Angles : Front , Back , Side .
JANUARY	Drawing Different Silhouettes Rendering Of Figure In Different Postures Sketching Styles For Different Age Group Male , Female , Kids
FREBRUARY	RIVISION

**GOVT.D.B.GIRLS'P G (AUTONOMOUS) COLLEGE, RAIPUR**

**TEACHING PLAN / SESSION 2020-21**

**BSc./ B.A. Part- II (FASHION DESIGNING)**

**Group B / Paper-II**

**NAME OF PAPER: DESIGN IDEAS IN GARMENTS**

MONTH	TEACHING PLAN
JULY	Body Measurements Anthropometric Measurements Methods Of Taking Body Measurements Standard Measurement Charts Based On Different Age Group
AUGUST	Pattern Making Principles, Techniques, And Application For Different Styles Basic Paper Pattern For : Children Wear (Any 3)
SEPTEMBER	Men's Wear (Any 2) Ladies Wear (Any 3) Preparing Layouts For Above Mention Paper Pattern Cloth Estimation For Different Garments
OCTOBER	Necklines :Study Of Different Types Of Necklines Variations Of Necklines Collars : Study Of Different Types Of Collars Collars Above The Necklines (Band Collars)
NOVEMBER	Collars Below The Necklines (Flat Collars) Tucks : Different Types Of Tucks (Pin, Diagonal, Blind, Cross, Spaced, Diamond, Shell, Corded)
DECEMBER	Pleats : Different Types Of Pleats (Simple, Knife, Box, Accordion, Kick, Reverse, Inverted Box) Seam : French & Counter Seam Gathers : Sheerings & Smocking
JANUARY	Yoke : Different Types Of Yokes (Body, Waist, Hip, Shoulder) Sleeves : Different Types Of Sleeves (Plain, Puff, Raglan, Kimono, Dolman)
FREBRUARY	REVISION

**GOVT.D.B.GIRLS'P G (AUTONOMOUS) COLLEGE, RAIPUR**

**TEACHING PLAN / SESSION 2020-21**

**BSc./ B.A. Part- III (FASHION DESIGNING)**

**Group B / Paper-I**

**NAME OF PAPER : MARKETING & SALES MANAGEMENT**

MONTH	TEACHING PLAN
JULY	Introduction to Marketing : Meaning, Definition, Nature & Scope ,Types, Functions & Method ,Marketing Process Standardization & Grading : Meaning, Definition, Importance & Advantages.
AUGUST	Product Policy Decision , Product Life Cycle Pricing Policies : Pricing Economic Concept & Objects Meaning of cost ,Methods of setting Price ,Factors Affecting Pricing Decisions, Sales Promotion: Meaning, Method, Strategies & Planning
SEPTEMBER	Salesmanship: Meaning,Definition,Characteristics & Scope Essentials of Successful Salesmanship, Duties & Main Qualities of Successful Salesmanship, Salesmanship & Advertisement,Channels of Distribution : Meaning, Definition, Types & Functions .
OCTOBER	Channels of Distribution of Consumer Goods & Industrial Goods,Role of Middleman. Channels of Distribution In India Advertisement: Meaning, Definition, Functions & Principles ,Advantages & Disadvantages, Media of Advertisement
NOVEMBER	Factors to be considered when selecting a medium of Advertisement,Consumer Education. Marketing Research &Information: Meaning,Definition,Object,Types,Procedure Importance & Advantages
DECEMBER	Market Report : Meaning & Types Market Terminology , Consumer Protection Entrepreneurship :Meaning, Definition, Nature & Types Qualities Of A Successful Entrepreneur
JANUARY	Theories & Models Of Entrepreneurship (Psychological, Sociological, Economic & 7 Integrated Models) Factors Affecting The Development Of Entrepreneurship Self Employment Programmes In India Consumer Association In India.
FREBRUARY	RIVISION



**GOVT.D.B.GIRLS'P G (AUTONOMOUS) COLLEGE, RAIPUR**

**TEACHING PLAN / SESSION 2020-21**

**BSc./ B.A. Part- III (FASHION DESIGNING)**

**Group B / Paper-II**

**NAME OF PAPER: CLOTHING CONSTRUCTION & FASHION DESIGNING**

MONTH	TEACHING PLAN
JULY	Clothing: Origin of Clothing, Meaning & Significance, Costumes of Ancient Age, Costumes of Modern Age. Personality : Meaning, Types & Factors Affecting Personality. Clothing & Personality. Selection of Children Clothing according to Age.
AUGUST	Fabric For Garment Making: Handling Of Different Types Of Fabric, Selection Of Suitable Fabric For Clothing, Suggestions For Persons Of Different Figures, Factors Affecting Clothing Decisions, Industrial Machines & Equipment Used For Cutting, Sewing And Finishing.
SEPTEMBER	Interrelationship Of Needles, Thread, Stitch Length, & Fabric Fitting : Fundamentals Of Fitting, Problems Area In Fitting, Factors Affecting Good Fit. Tailoring : General Principles, Proper Measurements , Principles Of Commercial Tailoring
OCTOBER	Pattern Making : General Instructions For Pattern Making, Method, Types & Layout, Use Of Commercial Paper Pattern, Pattern Alteration, Meaning & Types, Dart Manipulation & Dart Concealment, Drafting & Draping, Trimming Materials Used For Making Garment, Ornamentation Techniques
NOVEMBER	Embroidery : Fundamentals , Techniques , Design Color Combination , Use Of Different Threads , Different Types Of Stitches. Traditional Embroidery Of India: Kutch & Kathiyawar Of Gujrat, Zari Embroidery, Applique Work
DECEMBER	Traditional Embroidery of India: Kashida of Kashmir & Bihar, Kantha If Bengal, Phulkari of Punjab. Chikenkari of Lucknow, Kasuti of Karnataka, Costume of Men For Different States, Details of Costumes, Jewellery & Accessories
JANUARY	Costume of Women For Different States , Details of Costumes Jewellery & Accessories, Marriage Costumes For Different States of India, Various Dance Costumes Of India, Accessories: Importance & Types, Factors Affecting Selection Of Accessories
FREBRUARY	REVISION

PROPOSED TEACHING PLAN FOR THE SESSION OF **2020-21**

**B.SC.HOME SCIENCE PART III GROUP C PAPER I I**

JULY- DESIGN DEFINITION, TYPES STRUCTURAL, DECORATIVE, ELEMENTS OF DESIGN LINE, SIZE, FORM, STRUCTURE,SPACE, PATTERNS, SHAPES

AUG- LIGHT CHARACTERISTICS, CLASSIFICATION, STUDY OF COLOUR, CLASSIFICATION, DIMENSION, COLOUR SCHEMES, EFFECT, PRINCIPLES OF DESIGN DEFINITION CHARACTERISTICS, TYPES OF BALANCE, HARMONY, SCALE, PROPORTIONS, RHYTHM, EMPHASIS

SEPT- INDIAN REGIONAL, TRADITIONAL, CONTEMPORARY ART IN FLOOR DECORATION, HOME DECORATION, ACCESSORIES AND PRACTICAL, APPRECIATION OF ART IN TERMS OF PRINCIPLES OF ART &DESIGN, IN TERMS OF COMPOSITION And AESTHETIC APPEAL And PRACTICAL

OCT- FAMILY HOUSING NEED PROTECTIVE, ECONOMIC, AFFECTIONAL,SOCIAL, STANDARD OF LIVING , HOUSING GOALS, STYLE, FUNCTION, OCCUPATION, FACTORS INFLUENCING SELECTION & PURCHASE OF SITE FOR HOUSE BUILDING LEGAL ASPECT, LOCATION, PHYSICAL FEATURE, SOIL CONDITIONS, COST, SERVICES &PRACTICAL

NOV- HOUSE PLANNING READING HOUSE PLANS, GROUPING OF ROOMS, ORIENTATION, CIRCULATION, FLEXIBILITY, PRIVACY, SPECIOUSNESS, SERVICES, AESTHETIC, ECONOMY LIGHT VACCINATION, PLANNING OF DIFFERENT ROOMS LIVING,SLEEPING, DINING ROOM KITCHEN, STORE TOILET, PASSAGE, STAIRCASE ,LAND SCAPING PRINCIPLES &APPLICATION

DEC- FINANCIAL CONSIDERATIONS AVAILABILITY OF FUND FOR HOUSING HDFC, COOPERATIVE HOUSING SOCIETY, LIC,COOPERATIVE BANK, PF,FCI&PRACTICAL

JAN DISABILITY OF OWNING VERSUS RENTING,  
HOUSING PROBLEMS AND REMEDIES &PRACTICAL

FEB- FURNITURE STYLE TRADITIONAL, CONTEMPORARY, MODERN, SELECTION OF FURNITURE FOR COMFORT, REST, RELAXATION, WORK, STORAGE, ARRANGEMENT OF FURNITURE OF LIVING, SLEEPING, DINING AND MULTIPURPOSE ROOM, UPHOLSTERED FURNITURE MATERIAL TECHNIQUES, DESIGN, TYPES OF CURTAINS, DRAPERIES, FLOOR COVERINGS, RUGS, CARPETS CUSHION COVERS, SELECTION AND USE OF ACCESSORIES AND THEIR ROLE IN INTERIORS

**B.SC.HOME SCIENCE PART III GROUP C PAPER II FOUNDATION OF ART &DESIGN**

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JULY- DESIGN DEFINITION & TYPES STRUCTURAL, DECORATIVE, ELEMENTS OF DESIGN, LINE, SIZE, FORM STRUCTURE, SPACE, PATTERN, SHAPE, LIGHT CHARACTERISTICS CLASSIFICATION

AUG- STUDY OF COLOUR, CLASSIFICATION, DIMENSION, COLOUR SCHEMES, EFFECT, PRINCIPLES OF DESIGN, DEFINITION, CHARACTERISTICS & TYPES OF BALANCE, HARMONY, SCALE, PROPORTIONS. RHYTHM, EMPHASIS

SEPT- INDIAN REGIONAL, TRADITIONAL CONTEMPORARY ART IN FLOOR DECORATION, HOME DECORATION, ACCESSORIES, APPRECIATION OF ART IN TERMS OF PRINCIPLES OF ART & DESIGN IN TERMS OF COMPOSITION & AESTHETIC APPEAL AND PRACTICAL

OCT- FAMILY HOUSING NEED PROTECTIVE, ECONOMIC, AFFECTIONAL, SOCIAL STANDARD OF LIVING HOUSING GOALS, STYLE, FUNCTION OCCUPATION FACTORS INFLUENCING SELECTION &

PURCHASE OF SITE FOR HOUSE BUILDING LEGAL ASPECT LOCATION PHYSICAL FEATURE SOIL

CONDITIONS, COST, SERVICE AND PRACTICAL

NOV- HOUSE PLANNING READING HOUSE PLANS, GROUPING OF ROOMS. ORIENTATION,

CIRCULATION, FLEXIBILITY, PRIVACY, SPECIOUSNESS, SERVICES, AESTHETICS,

ECONOMY, LIGHT, VENTILATION, PLANNING OF DIFFERENT ROOMS LIVING, DINING, BEDROOM KITCHEN, STORE, TOILET, PASSAGE, STAIRCASE, LAND SCAPING PRINCIPLES & APPLICATION AND PRACTICAL

DEC- FINANCIAL CONSIDERATIONS AVAILABILITY OF FUNDS FOR HOUSING HDFC, COOPERATIVE HOUSING SOCIETY, LIC, COOPERATIVE BANK, FCI, PF & PRACTICAL

JAN- DISABILITY OF OWNING VERSUS RENTING, HOUSING PROBLEMS, CAUSES, REMEDIAL MEASURES

PRACTICAL

FEB- FURNITURE STYLE TRADITIONAL, CONTEMPORARY, MODERN, SELECTION OF FURNITURE FOR

COMFORT, REST, RELAXATION, WORK, STORAGE, ARRANGEMENT OF FURNITURE FOR LIVING,

SLEEPING, DINING AND MULTIPURPOSE ROOM, UPHOLSTERED FURNITURE MATERIAL,

TECHNIQUES, DESIGN, TYPES OF CURTAINS, DRAPERIES, FLOOR COVERINGS, RUGS, CARPETS

CUSHION COVERS, SELECTION AND USE OF ACCESSORIES AND THEIR ROLE IN INTERIORS

**DEPARTMENT OF HOME SCIENCE**  
**B.Sc. (H.Sc.)-III**  
**SESSION 2020-21**  
**GROUP-C**  
**PAPER-1**  
**EARLY CHILDHOOD EDUCATION**

Month	Plan
July	<b>UNIT-I</b> <b>Significance and objectives of early childhood care and education.</b> <ul style="list-style-type: none"> <li>1. Significance of early childhood years in individuals development.</li> <li>2. Meaning and need for intervention programmes for better growth and development.</li> <li>3. Objectives of ECCE.</li> <li>4. Different types of programs currently offered. Objectives of the program routine and target group covered by each of the following. ECE programme - Balwadi, anganwadi, Nursery school, Kindergarten, Montessori, laboratory nursery school ECCE Program - ICDS and mobile cretch. Play group : day care.</li> </ul>
August	<b>UNIT-II</b> <b>Current Status and Expansion of Scope of ECE to ECCE</b> <ul style="list-style-type: none"> <li>Expansion from ECE to ECCE.</li> <li>Current Status of ECCE programme.</li> <li>Objectives : staff qualifications, teacher-children ratio, indoor and outdoor play space and play facilities, equipment, curriculum and evaluation.</li> <li>Admission tests and effects on children.</li> <li>Effects of pressures on young children due to formal education.</li> <li>Need for ECCE programmes to provide quality care where mothers are at work.</li> <li>Historical overview of ECCE.</li> <li>Global perspective - views of educationists - Froebel, Mac Millan sister, Deweu and Montessori,</li> <li>ECE in India : Overview of pre.and post independence period.</li> <li>Contributions of Ravindranath Tagore, Mohandas Gandhi, Gijubhai Bodheka, Tarabai Modak, Anutai Wagh</li> </ul>
September	<ul style="list-style-type: none"> <li>Recent Developments : Policies, Institutions and contributions of NGOs</li> <li>national policy on children.</li> <li>National policy on education 1986.</li> <li>Adoption of Ram Joshi Committee Report on Child Education by Government of Maharashtra.</li> <li>Role of Indian Association of Preschool Education, National Institute of Public Cooperation and Child Development, National Council for Educational Research and Training, SCERT and NGOs</li> </ul>
October	<b>UNIT-III</b> <ul style="list-style-type: none"> <li>Meaning of curriculum, Foundation of. curriculum development.</li> <li>Impact of play as means of development and learning.</li> <li>Developmental stages of play. Types of Play - Solitary play, parallel play, associative play and coopertives play.</li> <li>Functions of play - play as a means of assessing children's development.</li> <li>Teachers Role in creating environment and Promoting play.</li> <li>Classical theories of play - Surplus energy theory relaxation theory, Preexercise &amp; recapitulation theory.</li> </ul>
November	<ul style="list-style-type: none"> <li>Programme Planning - Approaches to learning : Incidental and planned learning.</li> <li>Principles of programme planning : - from known to unknown, simple to complex, concrete to abstract.</li> <li>Balance between individual and group activity, indoor and outdoor play, quiet and active plays, guided and free activities.</li> <li>Factors influencing programme planning.</li> </ul>

	<ul style="list-style-type: none"> <li>Formal versus non-formal approach in education : advantages and disadvantages. - Integrated learning approach or project method that is covering various components of curriculum that is focussing on one topic/theme at a time.</li> <li>Short and long term planning.</li> </ul>
December	<p><b>UNIT-IV Languages</b></p> <ul style="list-style-type: none"> <li>Goals of language teaching.</li> <li>Readiness for reading and writing. Meaning of readiness.</li> <li>Factor to be considered for readiness : Age, Vision, Hearing, Physical, emotional, social, experiential background, attention span, finer motor coordination, eye hand coordination, reading from left to right and top to bottom.</li> </ul> <p><b>Mathematics</b></p> <ul style="list-style-type: none"> <li>Importance of number and mathematics.</li> <li>- Number as a language and history of its development.</li> <li>Abstract nature of number.</li> <li>Mathematical readiness.</li> <li>Analysis of prerequisite skill for 'number classification, comparing, seriation, patterning, counting, shape and space, measurement fractions, vocabulary, numeral operations.</li> <li>Decimal system of numeration (base 10)</li> <li>Number line-position and relevance of zero.</li> <li>Operations and relevant rules and properties; subtraction, multiplication and division.</li> <li>Two and three dimension shapes, properties, characteristics.</li> <li>Basic principles of measurements 0 time/distance, weight, capacity and money.</li> </ul>
January	<p><b>Environmental studies</b></p> <ul style="list-style-type: none"> <li>Scope of environmental studies.</li> <li>Importance and goals of environmental studies.</li> <li>Content : to conclude understanding from biological, physical and social environment.</li> </ul> <p><b>UNIT-V Project method</b></p> <ul style="list-style-type: none"> <li>Introduction</li> <li>Meaning and advantages of using project method.</li> <li>Planning .</li> <li>Resource unit.</li> </ul> <p><b>Alternative to Home Work</b></p> <ul style="list-style-type: none"> <li>Disadvantages of learning by role.</li> <li>Suitable alternatives such as observations, exploration, experimentation and reporting orally, picture or at. Something related to the concepts covered in class.</li> </ul>
February	<p><b>Evaluation</b></p> <ul style="list-style-type: none"> <li>Need for evaluation.</li> <li>Formative and summative evaluation.</li> <li>Methods of evaluation : Observations.</li> <li>Evaluation of daly work, tools for evaluation</li> <li>Reporting to parents.</li> <li>Revision</li> </ul>

**CLASS: P.G.DIPLOMA IN DIETETICS**  
**SESSION:2020-21**

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**NAME OF PAPER: BASIC DIETETICS**

January	<b>CONCEPT OF DIET THERAPY</b>  Growth and source of dietetics, Purpose & principles of therapeutic diets, Modification of Normal Diet, Classification of therapeutic Diets.
February	<b>ROLE OF DIETICIAN</b>  Definition Of Nutritional Care, Inter Personal Relationship with Patient, Planning and Implementing dietary care, Team approach to nutritional care.  <b>INTRODUCTION TO HOSPITAL FOOD SERVICE MANAGRMENT</b>  Types of food services, Selection of food material, Cost Control ,Sanitation and safety(In brief).
March	<b>ROUTINE HOSPITAL DIETS</b>  Per-operative and post-operative diets, study and review of hospital diets, Basic Concepts and methods of (I)Oral Feeding(II)Tube Feeding(III) Parenteral Nutrition.  .
April	<b>DIET IN FEVERS AND INFECTIONS</b>  Types, Metabolism In Fevers, General Dietary Considerations, Diet in Influenza ,Typhoid Fever, Recurrent malaria and Tuberculosis <b>DIET IN BURNS AND FRACTURES</b> <b>OBSESITY AND LEANNESS</b>  Causes, complications & Health effects, Dietary treatment & other recommendations.

May	<ol style="list-style-type: none"> <li>1. <b>DIET IN ALLERGY</b> Definition ,Classifications. Manifestation , Common food Allergy Tests and dietetic treatment.</li> <li>2. <b>DIET AND DRUG INTERACTION</b> A The effects of Drugs on Nutrient intake, Absorption metabolism and requirements.</li> <li>1. B The effects of Nutrients and Nutritional status on the Absorption and Metabolism of Drugs. <b>PLANNING AND PREPARTION OF THE FOLLOWING DIET:</b> A Sodium – High &amp; Low B Protein - High &amp; Low c. Calorie - High &amp; Low D. Fiber - High &amp; Low</li> <li>2. <b>DIET &amp; DENTAL DISEASES:</b> Dental Caries, Periodontal Disease.</li> </ol>
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**Govt. D.B. Girls P.G. Autonomous College , Raipur (C.G.)**  
**Proposed Teaching Plan For the Session 2020-21**  
**B.Com. Part - I**

Month	Financial Accounting	Business Communication	Business Mathematics	Business Regulatory Framework	Business Environment	Business Economics
November	UNIT-I Accounting : An introduction: Development, Definition, Needs, Objectives; Branches of accounting; Basic Accounting principles, Concept & Conventions. Accounting Standards: International accounting standards only outlines; Accounting standards in India. Accounting Transactions: Concept of Double Entry System, Concept of Capital & Revenue, Book of original records: journal ; Ledger; Sub-division of Journal: cashbook.	UNIT -I Introducing Business Communication: Definitions, concepts and Significance of communication, Basic forms of communication; Communication models and process, Principles of effective communication; Theories of communication; Self – Development and Communication: Development of positive personal attitudes, SWOT Analysis;	UNIT-I Simultaneous Equations – Meaning , Characteristics, Methods of solving Equations in two Variables- Graphical, Substitution, Elimination and cross Multiplication. Linear Programming – Formulation of LLP: Graphical method of solution; Problems relating to two variables including the case of mixed constraints ;	UNIT-I Law of Contract(1872)- I : Nature of contract ; Classification ; Offer & Acceptance ; Capacity of parties to contract , free consent , considerations, legality of object ; Agreement declared void; Law of Contract (1872)-II: Performance of contract; Discharge of contract; Remedies for breach of contract.	UNIT-I Business Environment : Concept , Components and Importance, Economic Trends (over view) : Income ; Saving and investments ; Trade and balance of payments , money and Finance.	UNIT-I Introduction: Definition, Nature and Scope of Economics, Difference between Micro and Macro Economics Study: Inductive and Deductive Methods. Basic problems of an economy; Working of price mechanism. Utility Analysis: Measurement of Utility, Law of diminishing marginal Utility, Law of Equi-Marginal Utility.
December	UNIT-II Final Accounts : Trial Balance; Manufacturing accounts ; Trading account ; Profit & loss account; Balance Sheet ; Adjustment entries.	UNIT-II Corporate communication: Formal and Informal communication networks; Grapevine; Miscommunication (Barriers); improving communication.	UNIT-II Matrices & Determinants: Definition of a matrix; Types of matrices; Algebra of matrices; Properties of determinants; Calculation of values of determinants up to third order;	UNIT-II Special Contracts: Indemnity; Guarantee; Bailment and pledge; Agency.	UNIT-II Problems of Growth: Unemployment; Poverty;	UNIT-II Law of Demand: Meaning and Definitions, Effecting Factors, Types; Exception of Law of Demand



January	UNIT-II Rectification of errors: Classification of errors; Location of errors; Rectification of errors; Suspense account; Effect on profit.	UNIT-II Practices in business communication: Group discussions; Seminars; Effective listening; Principles of affective listening; Factor affective listening exercises; Oral, Written, and video sessions. Audience analysis and Feedback.	UN IT-II Logarithms & Antilogarithm's. UNIT-III Simple Interest and Compound Interest.	UNIT-III Sale of Goods Act, (1930) : Formation of contract of sale ; Goods and their classification , price , conditions and warranties ; Transfer of property in goods ; Performance of the contract of sales; Unpaid seller and his rights , sale by auction ; Hire purchase agreement.	UNIT-II Regional imbalances; Social injustice; Inflation Parallel economy; Industrial sickness.	UNIT-II Elasticity of Demand: Concept, Definitions, Importance, Types and measurement of Elasticity of demand, Factors affecting the Elasticity of demand.
February	UNIT-III Depreciation, Provisions, & Reserves : Concept of depreciation ; Causes of depreciation ; Depreciation, depletion , amortization; Depreciation accounting; Methods of recording depreciation ; Methods of providing depreciation;	UNIT-III Writing Skill: Business letters- Definition, concept, structure, advantages disadvantages, need and kind of business letter. Essentials of effective business letter. Good news & bad news letters; Office memorandum. Writing Resume and letter of job application.	UNIT-III Annuities: Types of Annuities; Present value and amount of an annuity, Including the case of continuous compounding; Valuation of simple loans and debentures; Problems relating to sinking funds.	UNIT-IV Negotiable Instrument Act (1881) : Definition of negotiable instruments; Features ; Promissory Note ; Bills of Exchange & Cheque ; Holder & Holder in the due course ;	UNIT-III Role of Government : Monetary and fiscal policy ; Industrial policy ; Industrial Licensing; Privatization ; Liberalization, Globalization Devaluation ; Demonetization; Export – Import policy.	UNIT-III Production: Factors of Production, their characteristics and importance. Production Function: Law of variable proportions;

March	UNIT-III Depreciation of different assets ; Depreciation of replacement cost; Depreciation policy; as per Indian accounting standard : .Provisions & Reserves. Accounts of Non–Trading Institutions	UNIT-IV Report Writing: Introduction to a proposal, short report and formal report, report preparation. Oral Presentation : Principles of oral Presentation , factors effecting presentation, sales presentation , training Presentation , conducting surveys , speeches to motivate ,Presentation skills.	UNIT-IV Ratio & Proportion.	UNIT- IV Crossing of a cheque , Types of crossing ; Negotiation ; Dishonor and Discharge of negotiable instrument	UNIT- IV Economic Planning in India: Need Objectives, strategy; Review of Previous Plans, Planning Commission. Foreign Exchange Management Act 2000 : Basic Concept and main Provisions.	UNIT-III Returns to scale and Equal product Curve Analysis; Internal & External economies and dis-economies.
April	UNIT-IV Special Accounting Areas: Hire-purchase and installment purchase system; Meaning of hire-purchase contract; Legal provision regarding hire-purchase contract; Accounting for goods of substantial sale values and accounting records for goods of small values; Installment purchase system ; After sales service.	UNIT-V Non-Verbal Aspects of Communicating: Body language: Kinesics, Proxemics, Para language. Interviewing Skills: Appearing in interview; conducting interview; Mock Interview.	UNIT-IV Average, Percentage UNIT-V Commission, Brokerage	UNIT-V The Consumer Protection Act 1986 : Main Provision, Definition of consumer ; Consumer disputes, Grievances Redressal Machinery; Indian Partnership Act 1932. Limited Liabilities Partnership Act 2008.	UNIT-V International Environment : Trends in World trade and the problems of developing countries ; Foreign trade and economic growth;	UNIT-IV Market Structures: Concept, characteristics, classification. Determination of Price under condition of Perfect Competition, Imperfect Competition and Monopoly, Monopolistic Competition, Oligopoly and Duopoly.
May	UNIT-V Partnership Accounts : Dissolution of a Partnership firm, Amalgamation of Partnership Firms, Conversion of Partnership Firm into Joint Stock Company.	UNIT-V Modern Forms of Communication: Fax; E-mail; Video conferencing, etc. International Communication for global business.	UNIT-V Discount, Profit & Loss	UNIT -V Introduction of Intellectual Property Right Act – Copyright, Patent and Trademark.	UNIT-V International economic groupings - GATT , WTO , UNCTAD, World Bank , IMF , FDI.	UNIT-V Theories of distribution, Marginal Productivity theory of distribution, Concept and theories of Wages, Rent, Interest & Profit.

**Govt. D.B. Girls P.G. Autonomous College , Raipur (C.G.)**  
**Proposed Teaching Plan For the Session 2020-21**  
**B.Com. Part - II**

Month	Corporate Accounting	COMPANY LAW	COST ACCOUNTING	PRINCIPLES OF BUSINESS MANAGEMENT	BUSINESS STATISTICS	FUNDAMENTALS OF ENTREPRENEURSHIP
November	Unit-I Issue , Forfeiture and Re-issue of Shares ; Redemption of preference shares ; Issue and Redemption of debentures .	Unit-I Corporate Personalities : Kinds of companies , Nature & Scope, promotion and Incorporation of companies.	Unit-I Introduction Nature and scope of cost accounting; Cost concepts and classification; method and techniques and Installation of costing system ; Concept of cost audit.	Unit-I Introduction: Concept, nature, process and significance of management ; Management roles (Mintzberg) ;	UNIT-I Introduction : Statistics as a subject ; Descriptive Statistics – compared to Inferential Statistics ; Types of data ; Summation operation ; Rules of Sigma $\Sigma$	Unit-I Introduction : The entrepreneur , Definition ; Emergence of entrepreneurial class ; Theories of entrepreneurship ; Role of socio - economic environment ; Characteristics.
December	Unit-I Redemption of preference shares ; Issue and Redemption of debentures .	UNIT-II Memorandum of Association ; Articles of Association ; Prospectus ,	UNIT-I Accounting for Material : Material Control and techniques ; Pricing of material Issues ; Treatment of material losses.	UNIT-I An overview of functional areas of management ; Development management thought ; Classical and neo-classical system ; Concept Approaches.	UNIT-I Operations ; Analysis of University Data ; Construction of a frequency distribution; Concept of central tendency.	Unit-II Promotion of a Venture : Opportunities analysis ; External environmental analysis : Economic , social and technological ; Competitive factors ;
January	Unit-II Final Accounts (as per company act 2013), Liquidation of Company	UNIT-II Share ; Share Capital – transfer and transmission.	Unit-II Accounting for Labour : Labour cost control procedure; Labour turnover ; Idle time and overtime; Methods of wage payment–time and piece rates; Incentive schemes.	Unit-II Planning : Concept , process and types . Decision making – concept and bounded Rationality; management by objectives ; Corporate planning ; Environment analysis and diagnosis ; Strategy formulation.	UNIT-II Dispersion and their measurements: Partition values; Moments; Skewness and measures .	UNIT-II Legal requirements for establishment of a new unit and raising of funds ; Venture capital sources and documentation required

February	Unit-II Liquidation of Company	UNIT-III Capital Management : borrowing powers , mortgages and charges , debentures.	UNIT-II Accounting for overheads ; Classification and departmentalization ; Absorption of Overheads ; Determination of overhead rates ; Under and over absorption and its treatment.	UNIT-III Organizing : Concept , nature , process and significance; Authority and resident Relationships; Centralization and Decentralization ; Departmentalization ; Organization Structure – forms and contingency factor.	UNIT-III Analysis of Bivariate Data: Linear regression two variables & correlation.	Unit-III Entrepreneurial Behavior : Innovation and entrepreneur ; entrepreneurial Behavior and Psycho – Theories , Social responsibility.
March	<b>Unit-III</b> Valuation of Goodwill and Shares.	UNIT-III Directors – Managing Director, whole time director, Appointment, Remuneration and duties.	Unit-III Cost Ascertainment : Unit costing ;	Unit-IV Motivating and Leading People at Work : Motivation – concept ; Theories Herzberg , McGregor and Ouchi ; Financial and non-financial incentives.	Index Number : Meaning , types and uses ; Methods of Constructing price and quantity indices ; Test of adequacy ; Chain - base index numbers; Base shifting , splicing and defaulting ; Problems of constructing index numbers ; Consumer price index. Analysis of time series : Causes of variation in time series data ; Components of time series ;	Unit-IV Entrepreneurial Development Programs ( EDP ) : EDP , their role, relevance and achievements ; Role of government in organizing EDPs ;Critical evaluation.
April	UNIT -IV Accounting for Amalgamation of Companies as per Indian Accounting Standard-14;	Unit-IV Companies Meetings : Kinds , notices , quorum , voting, proxy , resolutions , minutes.	UNIT-III Job , batch and contract costing.	UNIT-IV Leadership – concept and leadership styles ; Leadership theories ( Tannenb Schmidt) ; Likert's System Management Communication – nature, process , networks and barriers , Effective communication.	UNIT-IV Decomposition – Additive and multiplicative models; Determination of trend – Moving Averages Method and method of least squares ; Computation of seasonal indices by simple averages, ratio – to- moving average , and link relative methods.	Unit-V Role of Entrepreneur : Role of Entrepreneur in economic growth as an innovator, generation of employment opportunities , complementing and supplementing economic growth , bringing about social stability and balanced regional development of industries ;

May	UNIT-IV Accounting for Amalgamation of Companies as per Indian Accounting Standard-14; Consolidated Balance Sheet of holding companies with one subsidiary only	Unit-V Majority powers and Minority rights ; Prevention of oppression mismanagement . Winding up : Kinds and conduct.	Unit-IV Operating costing ; Process costing – excluding inter – process profits and joint and by – products. Cost Records : Integral and non-integral system ; Reconciliation of cost and financial accounts ; Break Even Point	Unit-V Managerial Control : Concept and process ; Effective control system ; Technical Control – traditional and modern. Management of change : Concept , nature , and process of planned Resistance to Change ; Emerging horizons of management in a environment.	UNIT-V Forecasting and Methods : Forecasting – Concept , types and importance ; General approach to forecasting ; Methods of forecasting ; Demand ; Industry Vs Company sales forecast ; Factors affecting company sales. Theory of Probability : as a concept ; The three approaches to defining probability ; Addition and Multiplication laws of probability ; Conditional probability ; Bayes' Theorem ; Expectations and variances of a random variable.	UNIT-V Role in export promotion and import substitution, forex earning and augmenting and meeting local demands.
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**Govt. D.B. Girls P.G. Autonomous College , Raipur (C.G.)**  
**Proposed Teaching Plan For the Session 2020-21**  
**B.Com. Part - III**

Month	Income Tax	Indirect Taxes	Management Accounting	Auditing	Principles of Marketing	International Marketing
November	<b>UNIT-I</b> Basic Concepts : Income, agriculture Income , casual income, assessment year, previous year, gross total income, total income, person ; Basis of charge :	UNIT-I Central Excise : Nature & Scope of Central Excise; Important terms and definitions under the Central Excise Act. ; General procedure of Central Excise ; Clearance and excisable goods ; Concession to small scale industries under Central Excise Act.	UNIT-I Management Accounting : Meaning , nature ,scope and function of management accounting ; Role of management accounting in decision making ; Management accounting Vs financial accounting ; Tools and techniques of management accounting ;	UNIT-I Introduction : Meaning and objectives of auditing ; Types of audit ; Internal audit. Audit Process : Audit programme ;	UNIT -I Introduction : Nature and scope of marketing ; Importance of marketing as a business function and in the economy ; Marketing Concepts –traditional and modern ; Selling Vs marketing ; Marketing Mix ; Marketing environment.	UNIT -I International Marketing : Nature , definition and scope of international marketing; Domestic marketing Vs International marketing ; International environment – internal and external.
December	<b>UNIT-I</b> : Scope of total income, residence and tax liability, income which does not form part of total income .	UNIT-II State Excise ; CENVAT. Detail study of State excise during calculation of tax.	UNIT-I Financial statement ; Objectives and methods of financial statements analysis ; Ratio analysis ; Classification of ratio – Profitability ratios ; turnover ratios , liquidity ratios , Advantages of ratio analysis ; Limitations of accounting ratios.	UNIT- I Audit and books ; Working papers and evidences .  UNIT-II Internal Check System : Internal control.	UNIT_II Consumer Behavior and Market Segmentation : Nature , scope and Significance of consumer behavior ; Market segmentation – Concept and Importance ; Bases for market segmentation.	UNIT-II Identifying & Selecting Foreign Market: Foreign market entry mode decisions. Product Planning for international market : Product designing ; Standardization Vs adaptation; Branding & Packaging ; Labeling and quality Issues ;

January	<b>UNIT-II</b> Heads of Income: UNIT-IIe Salaries ;	UNIT-III Customs : Role of Customs in international trade ; Important terms and definitions; Goods ; Duty ; Exporter ; Foreign going vessel ; Aircraft goods Export Manifest ; Letter of credit ; Kinds of duties Basic , auxiliary , additional and countervailing ; Basics of levy-advallorem, Specific duties ; Prohibition of export and import of goods and provisions regarding notified & specified goods;	UNIT-II Funds Flow Statement as per Indian Accounting Standard – 3 ; Cash Flow Statement.	UNIT-II Audit Procedure : Vouching : Verification of assets and liabilities.	UNIT-III Product : Concept of product, consumer and industrial goods ; Product Planning and development ; Packaging role and functions ; Brand name and Trade mark ; after sale service ; product-life-cycle concept.	UNIT-II After sale service . International Pricing : Factors influencing International price; Pricing process and methods ; International price quotations and payment terms.
February	<b>UNIT-II</b> Income from House Property.	UNIT-III Import of goods – Free import and restricted import; Type of import - Import of cargo , import of personal baggage, import of stores. Clearance Procedure : For home consumption, for warehousing for re- export; Clearance Procedure for import by post ; Prohibited export of cargo , export of baggage ; Export of Cargo by land , sea , and air routes.	UNIT -III Absorption and Marginal Costing : Marginal and differential costing as a tool for decision making – make or buy ; Change of price mix ; Pricing ;	UNIT-III Audit of Limited Companies : a) Company auditor – Appointment , powers , duties & liabilities. b) Divisible profits and dividends. c) Auditors report – standard report and qualified report.	UNIT-III Price : Importance of price in the marketing mix ; Factors affecting price of a product/service ; Discounts and rebates.	UNIT-III Promotion of Product and Service Abroad : Methods of international promotion ; Direct mail and sales literature ;
March	<b>UNIT-III</b> Profit and gains of business or profession, including provisions relating to specific Business	Unit-IV Central Sales Tax : Important terms and definitions under the Central Sales Tax Act. 1956 : Dealer , dealer goods ,	UNIT- III Break-even analysis ; Exploring new markets ; Shut down decisions.	UNIT -III d) Special audit of banking companies. e) Audit of	UNIT-IV Distribution channels and Physical Distribution : Distribution channels – Concept and role ; Types of	UNIT-III Advertising ; Personal selling ; Trade fairs and exhibitions.

	Capital gains	place of business , sale , sale price, turnover, year, appropriate Authority ; Nature & scope of Central Sales Tax Act. ;		educational institutions. f) Audit of Insurance companies.	distribution channel ; Factors affecting choice of a distribution channel ; Retailers & wholesalers.	
April	<b>UNIT-III</b> Income from other sources. <b>UNIT-IV</b> Computation of Tax Liability : Set-off and carry forward of Losses ; Deduction from gross total income. <b>IV</b> Aggregation of income ; Computation of total income and tax liability of an Individual , H.U.F, and Firm	UNIT-IV Provisions relating to inter-state sales; Sales/Purchase in the course of imports and export out of India. Registration of dealers and procedure thereof ; Rate of tax ; Exemption of subsequent sales ; Determination of turnover. State Commercial Tax Definition , Registration , Tax liability , Procedure of computation & collection of Tax , Penalties & Prosecution calculation of tax .	UNIT-IV Budgeting for Profit Planning and Control : Meaning of budget and Budgetary control; Objectives ; Merits and limitations ; Types of budgets; Fixed and flexible budgeting ; Control ratio ; Zero based budgeting ; Responsibility accounting ; Performance budgeting.	UNIT- IV Investigation : Investigation ; Audit of non profit companies a)Where fraud is suspended , and b)When a running a business is proposed. Recent Trends in Auditing : Nature and significance of cost audit ; Tax audit; c)Verification & Valuation of assets.	UNIT-IV Physical Distribution of goods – Transportation , warehousing , Inventory Control ; Order processing. Promotion : Methods of promotion ; Optimum promotion mix ; Advertising Media – their relative merits and limitations ;	UNIT-IV International Distribution : Distribution Channels and logistic decisions ; Selection and appointment of foreign sales agents. Export Policy and Practices in India : EXIM Policy – an overview ; Trends in India's foreign trade ; Steps in starting an export business ; Product selection ;
May	<b>UNIT-V</b> Tax Management : Tax deduction at source , Advance payment of tax ; Assessment procedures ; Tax planning for individuals. Tax evasion, Tax avoidance and Tax Planning Tax Administration : Authorities , appeals , penalties.	UNIT-V VAT- Preliminary Knowledge.	<b>UNIT-V</b> Standard Costing and Variance Analysis : Meaning of Standard cost and Standard costing; Advantages and application ; Variance analysis – material ; Labour and overhead ( Two-way analysis) ; Variances .	<b>UNIT-V</b> Management audit . Company auditing – Qualification , Appointment ,Resignation and Liabilities.	UNIT -V Characteristics of an effective advertisement ; Personal selling ; Selling as a career ; Classification of successful sales person ; <u>Functions of salesman.</u>	UNIT-V Export pricing; Export finance; Export Documentation; Export procedures ; Export assistance and incentives.



**GOVT. D.B. GIRLS P.G. (AUTONOMOUS) COLLEGE, RAIPUR (CG)****TEACHING PLAN FOR B.P.Ed. 1st SEMESTER (SESSION-1)**

<b>MONTH</b>	<b>PAPER CODE</b>	<b>PAPER NAME</b>	<b>UNIT</b>
NOVEMBER	CC101	History, Principles and foundation of Physical Education	UNIT - I - Introduction *Meaning, Definition and Scope of Physical Education *Aims and Objective of Physical Education *Importance of Physical Education in present era. *Misconceptions about Physical Education. *Relationship of Physical Education with General Education.*Physical Education as an Art and Science.
	CC102	Anatomy and Physiology	UNIT-I - Brief Introduction of Anatomy and physiology in the field of Physical Education. *Introduction of Cell and Tissue. *The arrangement of the skeleton *Function of the skeleton *Ribs and Vertebral column and the extremities *joints of the body and their types *Gender differences in the skeleton. *Types of muscles.
	CC103	Health Education and Environmental Studies	UNIT - I - Health Education oConcept, Dimensions, Spectrum and Determinants of Health o Definition of Health, Health Education, Health Instruction, Health Supervision oAim, objective and Principles of Health Education oHealth Service and guidance instruction in personal hygiene
	EC101/102	Olympic Movement/Officiating and Coaching (Elective)	UNIT - I - Introduction of Officiating and coaching o Concept of officiating and coaching oImportance and principles of officiating oRelation of official and coach with management, players and spectators oMeasures of improving the standards of officiating and coaching
	PC101	Track and Field (Running Events)	Running Event o Starting techniques: Standing start, Crouch start and its variations, Proper use of blocks. o Finishing Techniques: Run, Through, Forward lunging, Shoulder Shrug oGround Marking, Rules and Officiating oHurdles: • Fundamental Skills- Starting, Clearance and Landing Techniques. • Types of Hurdles • Ground Marking and Officiating. Relays: Fundamental Skills o Various patterns of Baton Exchange oUnderstanding of Relay Zones o Ground Marking oInterpretation of Rules and Officiating.

DECEMBER	CC101	History, Principles and foundation of Physical Education	Unit- II: Historical Development of Physical Education in India *Indus Valley Civilization Period. (3250 BC – 2500 BC) *Vedic Period (2500 BC – 600 BC) *Early Hindu Period (600 BC – 320 AD) and Later Hindu Period (320 AD – 1000 AD) *Medieval Period (1000 AD – 1757 AD) oBritish Period (Before 1947)*Physical Education in India (After 1947)oContribution of Akhadas and Vyayamshalso Y.M.C.A. and its contributions.
	CC102	Anatomy and Physiology	Unit- II: Blood and circulatory system: Constituents of blood and their function – Blood groups and blood transfusion, clotting of blood, the structure of the heart- properties of the heart muscle, circulation of blood, cardiac cycle, blood pressure, Lymph and Lymphatic circulation. Cardiac output. *The Respiratory system: The Respiratory passage – the lungs and their structure and exchange of gases in the lungs, mechanism of respiration (internal and external respiration) lung capacity, tidal volume. *The Digestive system: structure and functions of the digestive system, Digestive organs, Metabolism *The Excretory system: Structure and functions of the kidneys and the skin. *The Endocrine glands: Functions of glands pituitary, Thyroid, Parathyroid. Adrenal, Pancreatic and the sex glands. *Nervous systems: Function of the Autonomic nervous system and Central nervous system. Reflex Action, *Sense organs: A brief account of the structure and functions of the Eye and Ear.
	CC103	Health Education and Environmental Studies	Unit- II: Health Problems in India oCommunicable and Non Communicable Diseases o Obesity, Malnutrition, Adulteration in food, Environmental sanitation, Explosive Population, oPersonal and Environmental Hygiene for schools o Objective of school health service, Role of health education in schools o Health Services – Care of skin, Nails, Eye health service, Nutritional service, Health appraisal, Health record, Healthful school environment, first- aid and emergency care etc.

	EC101/102	Olympic Movement/Officiating and Coaching (Elective)	Unit- II: Coach as a Mentor oDuties of coach in general, pre, during and post game. o Philosophy of coaching oResponsibilities of a coach on and off the field oPsychology of competition and coaching
	PC102	Swimming/Gymnastics/Shooting	Swimming: Fundamental Skills oEntry into the pool. o Developing water balance and confidence oWater fear removing drills. o Floating-Mushroom and Jelly fish etc. oGliding with and without kickboard. o Introduction of various strokes oBody Position, Leg, Kick, Arm pull, Breathing and Co ordination. o Start and turns of the concerned strokes. o Introduction of Various Strokes. oWater Treading and Simple Jumping. oStarts and turns of concerned strokes. o Rules of Competitive swimming-officials and their duties, pool specifications, seeding heats and finals, Rules of the races.
JANUARY	CC101	History, Principles and foundation of Physical Education	Unit- III: Foundation of Physical Education *Philosophical foundation *Idealism, Pragmatism, Naturalism, Realism, Humanism, Existentialism and Indian Philosophy and Culture. *Fitness and wellness movement in the contemporary perspectives oSports for all and its role in the maintenance and promotion of fitness.
	CC102	Anatomy and Physiology	Unit- III: Definition of physiology and its importance in the field of physical education and sports o Structure, Composition, Properties and functions of skeletal muscles. o Nerve control of muscular activity: o Neuromuscular junction oTransmission of nerve impulse across it. o Fuel for muscular activity oRole of oxygen-physical training, oxygen debt, second wind, vital capacity.
	CC103	Health Education and Environmental Studies	Unit- III: Environmental Science oDefinition, Scope, Need and Importance of environmental studies. o Concept of environmental education, Historical background of environmental education, oCelebration of various days in relation with environment. o Plastic recycling & probation of plastic bag / cover. oRole of school in environmental conservation and sustainable development.

	EC101/102	Olympic Movement/Officiating and Coaching (Elective)	Unit- III: Duties of Official o Duties of official in general, pre, during and post game.o Philosophy of officiating oMechanics of officiating – position, singles and movement etc. o Ethics of officiating
	PC103	Indigenous Sports: Kabaddi/ Malkhambh/ lezim / March past (Any of one out of these)	Kabaddi: Fundamental Skills o Skills in Raiding-Touching with hand, various kicks, crossing of baulk line, Crossing of Bonus line, luring the opponent to catch, Pursuing. oSkills of Holding the Raider-Variou formations, Catching from particular position, Different catches, Luring the raider to take particular position so as to facilitate catching, catching formations and techniques. o Additional skills in raiding-Bringing the antis in to particular position, Escaping from various holds, Techniques of escaping from chain formation, Combined formations in offence and defense. o Ground Marking, Rules and Officiating
FEBRUARY	CC101	History, Principles and foundation of Physical Education	Unit-IV- Principles of Physical Education *Biological § Growth and development § Age and gender characteristics § Body Types § Anthropometric differences *Psychological § Learning types, learning curve § Laws and principles of learning § Attitude, interest, cognition, emotions and sentiments *Sociological § Society and culture § Social acceptance and recognition § Leadership § Social integration and cohesiveness
	CC102	Anatomy and Physiology	UNIT-IV- o Effect of exercise and training on cardiovascular system. oEffect of exercise and training on respiratory system. oEffect of exercise and training on muscular system oPhysiological concept of physical fitness, warming up, conditioning and fatigue. oBasic concept of balanced diet – Diet before, during and after competition.
	CC103	Health Education and Environmental Studies	Unit – IV-Natural Resources and related environmental issues: o Water resources, food resources and Land resources oDefinition, effects and control measures of: o Air Pollution, Water Pollution, Soil Pollution, Noise Pollution, Thermal Pollution oManagement of environment and Govt. policies , Role of pollution control board.

	EC101/102	Olympic Movement/Officiating and Coaching (Elective)	Unit- IV: Qualities and Qualifications of Coach and Official o Qualities and qualification of coach and official o General rules of games and sports o Eligibility rules of intercollegiate and inter-university tournaments, preparation of TA, DA bills o Integrity and values of sports.
	PC104	Mass Demonstration Activities: Kho-Kho / dumbbells / tipri / wands / hoop / umbrella (Any one out of these)	Kho Kho: o General skills of the game- Running, chasing, Dodging, Faking etc. o Skills in chasing-Correct Kho, Moving on the lanes, Pursuing the runner, Tapping the inactive runner, Tapping the runner on heels, Tapping on the pole, Diving, Judgement in giving Kho, Rectification of Foul. o Skills in Running-Zigzag running, Single and double chain, Ring play, Rolling in the sides, Dodging while facing and on the back, fakes on the pole, fake legs, body arm etc, Combination of different skills. o Ground Marking o Rules and their interpretations and duties of officials.

**TEACHING PLAN FOR B.P.Ed. 1st SEMESTER (SESSION-1)**

MONTH	PAPER CODE	PAPER NAME	UNIT
JANUARY	CC201	Yoga Education	Unit – I: Introduction o Meaning and Definition of Yoga o Aims and Objectives of Yoga o Yoga in Early Upanisads o The Yoga Sutra: General Consideration o Need and Importance of Yoga in Physical Education and Sports
	CC202	Educational Technology and Methods of Teaching in Physical Education	Unit – I Introduction o Education and Education Technology- Meaning and Definitions o Types of Education- Formal, Informal and Non- Formal education. o Educative Process o Importance of Devices and Methods of Teaching.

	CC203	Organization and Administration	Unit – I: Organization and administration oMeaning and importance of Organization and Administration in physical education oQualification and Responsibilities of Physical Education teacher and pupil leader oPlanning and their basic principles, o Program planning: Meaning, Importance, Principles of program planning in physical education. oFunctions of Planning, organizing, staffing, directing, communicating, co-ordination, controlling, evaluating and innovating.
	EC201/202	Contemporary issues in physical education, fitness and wellness/ Sports Nutrition and Weight Management (Elective)	Unit – I Introduction to Sports Nutrition oMeaning and Definition of Sports Nutrition oBasic Nutrition guidelines oRole of nutrition in sports o Factor to consider for developing nutrition plan
	PC201	Track and Field (Jumping Events)	
FEBRUARY	CC201	Yoga Education	Unit - II: Foundation of Yoga oThe Astanga Yoga: Yama, Niyama, Asana, Pranayama, Pratyahara, Dharana, Dhyana and Samadhi oYoga in the Bhagavadgita - Karma Yoga, Raja Yoga, Jnana Yoga and Bhakti Yoga
	CC202	Educational Technology and Methods of Teaching in Physical Education	Unit – II Teaching Technique oTeaching Technique – Lecture method, Command method, Demonstration method, Imitation method, project method etc. o Teaching Procedure – Whole method, whole – part – whole method, part – whole method. oPresentation Technique – Personal and technical preparation oCommand- Meaning, Types and its uses in different situations.
	CC203	Organization and Administration	Unit- II: Office Management, Record, Register & Budget o Office Management: Meaning, definition, functions and kinds of office management oRecords and Registers: Maintenance of attendance Register, stock register, cash register, physical efficiency record, Medical examination Record. o Budget: Meaning, Importance of Budget making, oCriteria of a good Budget, Sources of Income, Expenditure, Preparation of Budget.

	EC201/202	Contemporary issues in physical education, fitness and wellness/ Sports Nutrition and Weight Management (Elective)	Unit – II Nutrients: Ingestion to energy metabolism oCarbohydrates, Protein, Fat – Meaning, classification and its function oRole of carbohydrates, Fat and protein during exercise oVitamins, Minerals, Water – Meaning, classification and its function o Role of hydration during exercise, water balance, Nutrition – daily caloric requirement and expenditure.
	PC202	Yoga/Aerobics / Swimming / Gymnastics (Any of the two out of these)	Yoga: o Surya Namaskara, oPranayamsoCorrective AsanasoKriyasAsanas • Sitting • Standing • Laying Prone Position, • Laying Spine Position
MARCH	CC201	Yoga Education	Unit - III AsanasoEffect of Asanas and Pranayama on various system of the body oClassification of asanas with special reference to physical education and sports oInfluences of relaxtive, meditative posture on various system of the body oTypes of Bandhas and mudras o Type of kriyas
	CC202	Educational Technology and Methods of Teaching in Physical Education	Unit – III Teaching Aids oTeaching Aids – Meaning, Importance and its criteria for selecting teaching aids. oTeaching aids – Audio aids, Visual aids, Audio – visual aids, Verbal, Chalk board, Charts, Model, Slide projector, Motion picture etcoTeam Teaching – Meaning, Principles and advantage of team teaching. oDifference between Teaching Methods and Teaching Aid.
	CC203	Organization and Administration	Unit-III: Facilities, & Time-Table Management oFacilities and equipment management: Types of facilities Infrastructure-indoor, out door.o Care of school building, Gymnasium, swimming pool, Play fields, Play grounds oEquipment: Need, importance, purchase, care and maintenance. oTime Table Management: Meaning, Need, Importance and Factor affecting time table.

	EC201/202	Contemporary issues in physical education, fitness and wellness/ Sports Nutrition and Weight Management (Elective)	Unit – III Nutrition and Weight Management oMeaning of weight management oConcept of weight management in modern era oFactor affecting weight management and values of weight management oConcept of BMI (Body mass index), Obesity and its hazard, Myth of Spot reduction, Dieting versus exercise for weight control, Common Myths about Weight Loss oObesity – Definition, meaning and types of obesity, oHealth Risks Associated with Obesity, Obesity - Causes and Solutions for Overcoming Obesity.
	PC203		Badminton: Fundamental Skills oRacket parts, Racket grips, Shuttle Grips. oThe basic stances. oThe basic strokes-Serves, Forehand-overhead and underarm, Backhand-overhead and underarm oDrills and lead up games oTypes of games-Singles, doubles, including mixed doubles. oRules and their interpretations and duties of officials.
APRIL	CC201	Yoga Education	Unit – IVYoga Education oBasic, applied and action research in Yoga oDifference between yogic practices and physical exercises oYoga education centers in India and abroad oCompetitions in Yogasanas
	CC202	Educational Technology and Methods of Teaching in Physical Education	Unit – IV Lesson Planning and Teaching Innovations oLesson Planning – Meaning, Type and principles of lesson plan. oGeneral and specific lesson plan. oMicro Teaching – Meaning, Types and steps of micro teaching. oSimulation Teaching - Meaning, Types and steps of simulation teaching.
	CC203	Organization and Administration	Unit-IV:Competition Organization oImportance of Tournament, oTypes of Tournament and its organization structure - Knock-out Tournaments, League or Round Robin Tournaments, Combination Tournament and challenge Tournament. oOrganization structure of Athletic Meet oSports Event Intramurals & Extramural Tournament planning



	EC201/202	Contemporary issues in physical education, fitness and wellness/ Sports Nutrition and Weight Management (Elective)	Unit – IV Steps of planning of Weight Management o Nutrition – Daily calorie intake and expenditure, Determination of desirable body weight o Balanced diet for Indian School Children, Maintaining a Healthy Lifestyle o Weight management program for sporty child, Role of diet and exercise in weight management, Design diet plan and exercise schedule for weight gain and loss
	TP201	Teaching Practice (Classroom and outdoor)	10 teaching practice lessons out of which 5 lessons in class-room situation and 5 lessons for out-door activities within premises on the students of B.P.Ed course.

**TEACHING PLAN FOR B.P.Ed. 3rd SEMESTER (SESSION-2)**

<b>MONTH</b>	<b>PAPER CODE</b>	<b>PAPER NAME</b>	<b>UNIT</b>
AUGUST	CC301	Sports Training	Unit – I Introduction to Sports Training o Meaning and Definition of Sports Training o Aim and Objective of Sports Training o Principles of Sports Training o System of Sports Training – Basic Performance, Good Performance and High Performance Training
	CC302	Computer Applications in Physical Education	Unit – I: Introduction to Computer o Meaning, need and importance of information and communication technology (ICT). Application of Computers in Physical Education o Components of computer, input and output device o Application software used in Physical Education and sports
	CC303	Sports Psychology and Sociology	Unit -I: introduction o Meaning, Importance and scope of Educational and Sports Psychology o General characteristics of Various Stages of growth and development o Types and nature of individual differences; Factors responsible -Heredity And environment o Psycho-sociological aspects of Human behavior in relation to physical education and sports

	EC301/302	Sports Medicine, Physiotherapy and Rehabilitation/ Curriculum Design (Elective)	Unit-I: - Sports Medicine: o Sports Medicine: Meaning, Definition, Aims, Objectives, Modern Concepts and Importance. o Athletes Care and Rehabilitation: Contribution of Physical Education Teachers and Coaches. o Need and Importance of the study of sports injuries in the field of Physical Education o Prevention of injuries in sports – Common sports injuries – Diagnosis – oFirst Aid - Treatment - Laceration – Blisters – Contusion - Strain – Sprain – Fracture – Dislocation and Cramps – Bandages – Types of Bandages – trapping and supports.
	PC301	Track and Field (Throwing Events)	Track and fields (Throwing Events) o Discus Throw, Javelin, Hammer throw, shot-put oBasic Skills and techniques of the Throwing events o Ground Marking / Sector Marking o Interpretation of Rules and Officiating. oGrip oStance oRelease o Reserve/ (Follow through action) o Rules and their interpretations and duties of officials.
SEPTEMBER	CC301	Sports Training	Unit – II Training Components oStrength – Mean and Methods of Strength Development oSpeed – Mean and Methods of Speed Development oEndurance - Mean and Methods of Endurance Development oCoordination – Mean and Methods of coordination Development oFlexibility – Mean and Methods of Flexibility Development
	CC302	Computer Applications in Physical Education	Unit – II: MS Word oIntroduction to MS Word oCreating, saving and opening a document oFormatting Editing features Drawing table , o page setup, paragraph alignment, spelling and grammar check printing option, inserting page number, graph, footnote and notes

	CC303	Sports Psychology and Sociology	Unit-II: Sports Psychology oNature of learning, theories of learning, Laws of learning, oPlateau in Learning; & transfer of training o Meaning and definition of personality, characteristics of personality, oDimension of personality, Personality and Sports performance o Nature of motivation: Factors influencing motivation; Motivation and techniques and its impact on sports performance. o Mental Preparation Strategies: Attention focus, Self- talk, Relaxation, Imaginary. o Aggression and Sports, Meaning and nature of anxiety, Kinds of anxiety o Meaning and nature of stress; Types of stress, Anxiety, Stress, Arousal and their effects on sports performance
	EC301/302	Sports Medicine, Physiotherapy and Rehabilitation/ Curriculum Design (Elective)	Unit-II: Physiotherapy oDefinition – Guiding principles of physiotherapy, Importance of physiotherapy, Introduction and demonstration of treatments - Electrotherapy – infrared rays – Ultraviolet rays –short wave diathermy – ultrasonic rays.

	PC302	Combative Sports : Martial Art, Karate, Judo, Fencing, Boxing, Taekwondo, Wrestling (Any two out of these)	<p>Taekwondo Fundamental Skills</p> <ul style="list-style-type: none"> <li>o Player Stances – walking, extending walking, L stance, cat stance.</li> <li>o Fundamental Skills – Sitting stance punch, single punch, double punch, triple punch.</li> <li>o Punching Skill from sparring position – front-fist punch, rear fist punch, double punch, and four combination punch.</li> <li>o Foot Techniques (Balgisul) – standing kick (soseochagi), Front kick (AP chagi), Arc kick (BandalChagi), Side kick, (YeopChagi), Turning kick (DollyoChagi), Back kick (Twit Chagi), Reverse turning kick (BandaeDollyoChagi), Jump kick (TwimyoChagi),</li> <li>o Poomsae (Forms) – Jang, Yi Jang, Sam Jang, Sa Jang, O Jang, Yook Jang, Chil Jang, Pal Jang (Fundamental Movement – eye control, concentration of spirit, speed control, strength control, flexibility, balance, variety in techniques)</li> <li>o Sparring (Kyorugi) – One Step Sparring (hand techniques, foot techniques, self defense techniques, combination kicks), Free Sparring.</li> <li>o Board Breaking (Kyokpa) – eye control, balance, power control, speed, point of attack.</li> <li>o Rules and their interpretations and duties of officials.</li> </ul>
OCTOBER	CC301	Sports Training	<p>Unit – III Training Process</p> <ul style="list-style-type: none"> <li>o Training Load-Definition and Types of Training Load</li> <li>o Principles of Intensity and Volume of stimulus</li> <li>o Technical Training – Meaning and Methods of Technique Training</li> <li>o Tactical Training – Meaning and Methods of Tactical Training</li> </ul>
	CC302	Computer Applications in Physical Education	<p>Unit – III: MS Excel</p> <ul style="list-style-type: none"> <li>o Introduction to MS Excelo Creating, saving and opening spreadsheet</li> <li>o creating formulas</li> <li>o Format and editing features adjusting columns width and row height understanding charts.</li> </ul>
	CC303	Sports Psychology and Sociology	<p>Unit-III: Relation between Social Science and Physical Education.</p> <ul style="list-style-type: none"> <li>o Orthodoxy, customs, Tradition and Physical Education.</li> <li>o Festivals and Physical Education.</li> <li>o Socialization through Physical Education.</li> <li>o Social Group life, Social conglomeration and Social group, Primary group and Remote group.</li> </ul>

	EC301/302	Sports Medicine, Physiotherapy and Rehabilitation/ Curriculum Design (Elective)	Unit-III: Hydrotherapy: o Introduction and demonstration of treatments of Cry therapy, Thermo therapy, Contrast Bath, Whirlpool Bath – Steam Bath – Sauna Bath – Hot Water Fomentation – Massage: History of Massage – Classification of Manipulation (Swedish System) physiological Effect of Massage.
	PC303	Team Games: Baseball, Cricket, Football, Hockey, Softball, Volleyball, Handball, Basketball, Netball (Any two of these)	Football: Fundamental Skillso Kicks-Inside kick, Instep kick, Outer instep kick, lofted kick oTrapping-trapping rolling the ball, trapping bouncing ball with sole oDribbling-With instep, inside and outer instep of the foot. o Heading-From standing, running and jumping. o Throw in oFeinting-With the lower limb and upper part of the body. oTackling-Simple tackling, Slide tackling.o Goal Keeping-Collection of balls, Ball clearance-kicking, throwing and deflecting. Volleyball: Fundamental Skills oPlayers Stance-Receiving the ball and passing to the team mates, oThe Volley (Over head pass), oThe Dig(Under hand pass). o Service-Under Arm Service, Side Arm Service, Tennis Service, Round Arm Service. o Rules and their interpretations and duties of officials.
NOVEMBER	CC301	Sports Training	Unit – IV Training programming and planning oPeriodization – Meaning and types of Periodization oAim and Content of Periods – Preparatory, Competition, Transitional etc. o Planning – Training session oTalent Identification and Development
	CC302	Computer Applications in Physical Education	Unit – IV: MS Power Point oIntroduction to MS PowerPoint oCreating, saving and opening a ppt. file. o format and editing features slide show , design , inserting slide number opicture ,graph ,table. o Preparation of Power point presentations
	CC303	Sports Psychology and Sociology	Unit-4 Culture : Meaning and Importance. o Features of culture, oImportance of culture. o Effects of culture on people life style. o Different methods of studying Observation/ Inspection method, Questionnaire method, Interview method

	EC301/302	Sports Medicine, Physiotherapy and Rehabilitation/ Curriculum Design (Elective)	Unit-IV: Therapeutic Exercise: o Definition and Scope – Principles of Therapeutic Exercise – Classification, Effects and uses of Therapeutic exercise – passive Movements (Relaxed, Forced and passive - stretching) – active movements (concentric, Eccentric and static) application of the therapeutic exercise: Free Mobility Exercise – Shoulder, Elbow – Wrist and Finger Joints – Hips, Knee, ankle and Foot joints – Trunk. Head and Neck exercises.
	TP301	Teaching Practice (Teaching Lesson Plans for Racket Sport/ Team Games/Indigenous Sports)	Teaching practices:10 teaching lesson plans for Racket Sport/ Team Games/ Indigenous Sports out of which 5 lessons internal and 5 lessons external at school.

**TEACHING PLAN FOR B.P.Ed. 4th SEMESTER (SESSION-2)**

<b>MONTH</b>	<b>PAPER CODE</b>	<b>PAPER NAME</b>	<b>UNIT</b>
JUNE	CC401	MEASUREMENT AND EVALUATION IN PHYSICAL EDUCATION	Unit- II Introduction to Test & Measurement & Evaluation o Meaning of Test & Measurement & Evaluation in Physical Education o Need & Importance of Test & Measurement & Evaluation in Physical Education o Principles of Evaluation
	CC402	KINESIOLOGY AND BIOMECHANICS	Unit – I Introduction to Kinesiology and Sports Biomechanics o Meaning and Definition of Kinesiology and Sports Biomechanics o Importance of Kinesiology and Sports Biomechanics to Physical Education Teacher, Athletes and Sports Coaches. o Terminology of Fundamental Movements o Fundamental concepts of following terms – Axes and Planes, Centre of Gravity, Equilibrium, Line of Gravity
	CC403	RESEARCH AND STATISTICS IN PHYSICAL EDUCATION	Unit-I Introduction to Research o Definition of Research o Need and importance of Research in Physical Education and Sports. o Scope of Research in Physical Education & Sports. o Classification of Research o Research Problem, Meaning of the term, Location and criteria of Selection of Problem, Formulation of a Research Problem, Limitations and Delimitations.

	EC401/402	Theory of sports and games(Specifically sports and games specialization)/Sports Management (Elective)	Unit-IoNature and Concept of Sports Management. oProgressive concept of Sports management. oThe purpose and scope of Sports Management. o Essential skills of Sports Management. o Qualities and competencies required for the Sports Manager. o Event Management in physical education and sports.
	PC401		
JULY	CC401	MEASUREMENT AND EVALUATION IN PHYSICAL EDUCATION	Unit- IICriteria; ClassificationandAdministration of testCriteria of good Test o Criteria of tests, scientific authenticity (reliability, objectivity, validity and availability of norms) o Type and classification of Test oAdministration of test, advance preparation – Duties during testing – Duties after testing.
	CC402	KINESIOLOGY AND BIOMECHANICS	Unit – II Fundamental Concept of Anatomy and Physiology oClassification of Joints and Muscles oTypes of Muscle Contractions oPosture – Meaning, Types and Importance of good posture. oFundamental concepts of following terms- Angle of Pull, All or None Law, Reciprocal Innovation
	CC403	RESEARCH AND STATISTICS IN PHYSICAL EDUCATION	Unit-II Survey of Related LiteratureoNeed for surveying related literature. oLiterature Sources, Library Reading oResearch Proposal, Meaning and Significance of Research Proposal. oPreparation of Research proposal / project. o Research Report: A group project is to be undertaken by a small batch of students under the supervision of a teacher, wherein it is expected to survey school facilities of physical education, health assessment programme evaluation, fitness status of the students, staff and other stakeholders etc. and submit the report to the institution.
	EC401/402	Theory of sports and games(Specifically sports and games specialization)/Sports Management (Elective)	Unit-IIoMeaning and Definition of leadership oLeadership style and method. oElements of leadership. o Forms of Leadership. • Autocratic • Laissez-faire • Democratic • Benevolent Dictator oQualities of administrative leader. oPreparation of administrative leader. o Leadership and Organizational performance.

	PC402	Kabaddi/ Kho-Kho/ Baseball/ Cricket/ Football/Hockey/Softball/ Volleyball/ Handball/ Basketball/ Netball/ Badminton/ Table Tennis/ Squash/ Tennis (Any of one out of these)	
AUGUST	CC401	MEASUREMENT AND EVALUATION IN PHYSICAL EDUCATION	Unit- III Physical Fitness Tests oAAHPER youth fitness test oNational physical Fitness Test oIndiana Motor Fitness Test oJCR test o U.S Army Physical Fitness Test
	CC402	KINESIOLOGY AND BIOMECHANICS	Unit – III Mechanical Concepts oForce - Meaning, definition, types and its application to sports activities oLever - Meaning, definition, types and its application to human body. oNewton’s Laws of Motion – Meaning, definition and its application to sports activities. oProjectile – Factors influencing projectile trajectory.
	CC403	RESEARCH AND STATISTICS IN PHYSICAL EDUCATION	Unit-III Basics of Statistical AnalysisoStatistics: Meaning, Definition, Nature and Importance o Class Intervals: Raw Score, Continuous and Discrete Series, Class Distribution, Construction of Tables oGraphical Presentation of Class Distribution: Histogram, Frequency Polygon, Frequency Curve. Cumulative Frequency Polygon, Ogive, Pie Diagram
	EC401/402	Theory of sports and games(Specifically sports and games specialization)/Sports Management (Elective)	Unit-IIIoSports Management in Schools, colleges and Universities. o Factors affecting planning oPlanning a school or college sports programme. oDirecting of school or college sports programme. o Controlling a school, college and university sports programme. • Developing performance standard • Establishing a reporting system •Evaluation • The reward/punishment system
	TP401	Sports Specialization: Coaching lessons Plans Track and Field/Swimming /Gymnastics (Any of one out of these)	4 internal lesson at practicing school and 1 final external lesson on the students of practicing school as a sports specialization of any discipline mentioned above.
SEPTEMBER	CC401	MEASUREMENT AND EVALUATION IN PHYSICAL EDUCATION	Unit- IV Sports Skill Tests oLockhart and McPherson badminton test o Johnson basketball test oMcDonald soccer test oS.A.I volleyball test oS.A.I Hockey test



	CC402	KINESIOLOGY AND BIOMECHANICS	Unit – IV Kinematics and Kinetics of Human Movement o Linear Kinematics – Distance and Displacement, speed and velocity, Acceleration o Angular kinematics – Angular Distance and Displacement, Angular Speed and velocity, Angular Acceleration. o Linear Kinetics – Inertia, Mass, Momentum, Friction. o Angular Kinetics – Moment of inertia, Couple, Stability.
	CC403	RESEARCH AND STATISTICS IN PHYSICAL EDUCATION	Unit- IV Statistical Models in Physical Education and Sports o Measures of Central Tendency: Mean, Median and Mode- Meaning, Definition, Importance, Advantages, Disadvantages and Calculation from Group and Ungrouped data o Measures of Variability: Meaning, importance, computing from group and ungroup data o Percentiles and Quartiles: Meaning, importance, computing from group and ungroup data
	EC401/402	Theory of sports and games (Specifically sports and games specialization)/Sports Management (Elective)	Unit- IV Financial management in Physical Education & sports in schools, Colleges and Universities. o Budget – Importance, Criteria of good budget, o Steps of Budget making o Principles of budgeting
	TP402	Game specialization Coaching lessons: Kabaddi/ Kho- Kho/ Baseball/ Cricket/Football/Hockey /Softball/ Volleyball/ Handball/ Basketball/ Netball/ Badminton/ Table Tennis/ Squash/ Tennis (Any of one out of these)	4 internal lesson at practicing school and 1 final external lesson on the students of practicing school as a games specialization of any discipline mentioned above.

<b>GOVT. D.B. GIRLS P.G. (AUTONOMOUS) COLLEGE, RAIPUR (CG)</b>			
<b>TEACHING PLAN FOR P.G.D.Y.E.P. 1st SEMESTER (SESSION-1)</b>			
<b>MONTH</b>	<b>PAPER No.</b>	<b>PAPER NAME</b>	<b>UNIT</b>
JANUARY	Paper 1	Theoretical Yoga Vijnan	UNIT-1: Introduction to Yoga: The concept, Meaning, definition and tradition of Yoga, guru-shishya (types and meaning)
	Paper 2	Applied Yoga Vijnan	UNIT-1: Meaning, definition and importance of yoga and health in life. Theories of health, Various exercises benefits of yoga - asanas and their values vis-à-vis other systems.
	Practical A	Teaching practice (Indoor and Outdoor)	Asanas, kriyas, pranayamas, class arrangement, meditation
	Practical B	Practical 1-6	1. pawanmuktasana part-1,2,3 2. Asanas 3. Nadishodhan and pranayamas 4. Mudra 5. Bandha 6. Shawasana
	Practical C	_____-----_____	Practical Record and Viva voce
FEBRUARY	Paper 1	Theoretical Yoga Vijnan	UNIT-2: Basic texts of yoga : yoga sutra (samadhi and sadhana padas), hathyoga pradipika.
	Paper 2	Applied Yoga Vijnan	UNIT-2: Practice of yoga - preparation, food, dress, sequence
	Practical A	Teaching practice (Indoor and Outdoor)	Asanas, kriyas, pranayamas, class arrangement, meditation
	Practical B	Practical 1-6	1. pawanmuktasana part-1,2,3 2. Asanas 3. Nadishodhan and pranayamas 4. Mudra 5. Bandha 6. Shawasana
	Practical C	_____-----_____	Practical Record and Viva voce
MARCH	Paper 1	Theoretical Yoga Vijnan	UNIT-3: Kinds of yoga : Bhakti yoga, karma yoga, mantra yoga and raj yoga
	Paper 2	Applied Yoga Vijnan	Unit -3 Life pattern and Yoga -- Effects of yoga upon bodily functions, Role of yoga asanas in modern living.

	Practical A	Teaching practice (Indoor and Outdoor)	Asanas, kriyas, pranayamas, class arrangement, meditation
	Practical B	Practical 1-6	1. pawanmuktasana part-1,2,3 2. Asanas 3. Nadishodhan and pranayamas 4. Mudra 5. Bandha 6. Shawasana
	Practical C	_____-----_____	Practical Record and Viva voce
APRIL	Paper 1	Theoretical Yoga Vijnan	Unit-IV Study of Ida,Pingala, Sushumna,Seven Chakras ,Five Koshas, and Five Pranas.
	Paper 2	Applied Yoga Vijnan	Unit-4 Physiology- Constitution Nervous system , Respiratory system, Circulatory system and Endocrine glands
	Practical A	Teaching practice (Indoor and Outdoor)	Asanas, kriyas, pranayamas, class arrangement, meditation
	Practical B	Practical 1-6	1. pawanmuktasana part-1,2,3 2. Asanas 3. Nadishodhan and pranayamas 4. Mudra 5. Bandha 6. Shawasana
	Practical C	_____-----_____	Practical Record and Viva voce
MAY	Paper 1	Theoretical Yoga Vijnan	Unit-V Contemporary Yogis --Shri Aurobindo,Satyananda and Shivananda.
	Paper 2	Applied Yoga Vijnan	Unit- 5 Aspects of Mind ( Topographical and Dynamic ) Id,Ego and Super Ego, Conscious, Sub-conscious and Un-conscious . Yogic concept of mind and mental process.
	Practical A	Teaching practice (Indoor and Outdoor)	Asanas, kriyas, pranayamas, class arrangement, meditation
	Practical B	Practical 1-6	1. pawanmuktasana part-1,2,3 2. Asanas 3. Nadishodhan and pranayamas 4. Mudra 5. Bandha 6. Shawasana

	Practical C	_____-----_____	Practical Record and Viva voce
<b>TEACHING PLAN FOR B.P.Ed. 1st SEMESTER (SESSION-1)</b>			
<b>MONTH</b>	<b>PAPER CODE</b>	<b>PAPER NAME</b>	<b>UNIT</b>
JANUARY	Paper 1	Yoga Philosophy.	Unit-I The subject matter of Yoga philosophy-Samkhya: Prakriti,Purusha and Cosmology.Vedanta :Brahman Soul and Maya.
	Paper 2	Hatha Yoga.	Unit-I Introduction to the HathPradipika and Gherand Samhita.
	Practical 1	Practice Teaching (Indoor)	Asanas, Kriyas, Pranayamas, Class arrangement & Meditation.
	Practical 2	Practicals (1-8)	1. Balancing Asanas. 2. Asanas of Higher group. 3. Surya Namaskar. 4. Pranayama : Suryabheda Pranayama, Bhastrika Pranayama, Kapalabhati Pranayama & Moorchha Pranayama. 5. Bandha : Uddiyaan Bandha & Mahaabandha. 6. Mudra : Bandha Mudrayen & Aadhaar Mudrayen. 7. Shatkarma. 8. Dhaayana & Yoganidra.
	Practical 3		Practical records and Viva-voce
FEBRUARY	Paper 1	Yoga Philosophy.	Unit-II Different systems of philosophy : Pancha Mahavrata -- Jainism. Ashtang Marg -- Buddhism Integral Yoiga -- Shri Aurobindo
	Paper 2	Hatha Yoga.	Unit-II Pranayama--Its meaning methods,kinds,Precaution and benifits.
	Practical 1	Practice Teaching (Indoor)	Asanas, Kriyas, Pranayamas, Class arrangement & Meditation.

	Practical 2	Practicals (1-8)	1. Balancing Asanas. 2. Asanas of Higher group. 3. Surya Namaskar. 4. Pranayama : Suryabheda Pranayama, Bhastrika Pranayama, Kapalabhati Pranayama & Moorchha Pranayama. 5. Bandha : Uddiyaan Bandha & Mahaabandha. 6. Mudra : Bandha Mudrayen & Aadhaar Mudrayen. 7. Shatkarma. 8. Dhaayana & Yoganidra.
	Practical 3		Practical records and Viva-voce
MARCH	Paper 1	Yoga Philosophy.	Unit-III Yoga Sutra : Nature of Chitta, Chitta vrittis and Bhoomis
	Paper 2	Hatha Yoga.	Unit-III Shuddhi kriya--Shatkarma,its method and utility.
	Practical 1	Practice Teaching (Indoor)	Asanas, Kriyas, Pranayamas, Class arrangement & Meditation.
	Practical 2	Practicals (1-8)	1. Balancing Asanas. 2. Asanas of Higher group. 3. Surya Namaskar. 4. Pranayama : Suryabheda Pranayama, Bhastrika Pranayama, Kapalabhati Pranayama & Moorchha Pranayama. 5. Bandha : Uddiyaan Bandha & Mahaabandha. 6. Mudra : Bandha Mudrayen & Aadhaar Mudrayen. 7. Shatkarma. 8. Dhaayana & Yoganidra.
	Practical 3		Practical records and Viva-voce
APRIL	Paper 1	Yoga Philosophy.	Unit-IV Kinds of Yoga : Hatha Yoga, Kundalini, Jnana,Laya.
	Paper 2	Hatha Yoga.	Unit-IV Bandha and Mudras -- methods and benifits.
	Practical 1	Practice Teaching (Indoor)	Asanas, Kriyas, Pranayamas, Class arrangement & Meditation.

	Practical 2	Practicals (1-8)	1. Balancing Asanas. 2. Asanas of Higher group. 3. Surya Namaskar. 4. Pranayama : Suryabheda Pranayama, Bhastrika Pranayama, Kapalabhati Pranayama & Moorchha Pranayama. 5. Bandha : Uddiyaan Bandha & Mahaabandha. 6. Mudra : Bandha Mudrayen & Aadhaar Mudrayen. 7. Shatkarma. 8. Dhaayana & Yoganidra.
	Practical 3		Practical records and Viva-voce
MAY	Paper 1	Yoga Philosophy.	Unit-V Psychosomatic disorders(meaning and types) their management through Yoga, Aging -- Its problems and management through Yoga.
	Paper 2	Hatha Yoga.	Unit-V Samadhi , Different systems of Meditation.
	Practical 1	Practice Teaching (Indoor)	Asanas, Kriyas, Pranayamas, Class arrangement & Meditation.
	Practical 2	Practicals (1-8)	1. Balancing Asanas. 2. Asanas of Higher group. 3. Surya Namaskar. 4. Pranayama : Suryabheda Pranayama, Bhastrika Pranayama, Kapalabhati Pranayama & Moorchha Pranayama. 5. Bandha : Uddiyaan Bandha & Mahaabandha. 6. Mudra : Bandha Mudrayen & Aadhaar Mudrayen. 7. Shatkarma. 8. Dhaayana & Yoganidra.
	Practical 3		Practical records and Viva-voce

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**PROPOSED TEACHING PLAN FOR THE SESSION 2020-21  
ECONOMICS  
M.A. I & II SEMESTER  
PAPER-I MICRO ECONOMICS**

<b>MONTH</b>	<b>UNIT</b>	<b>TOPIC</b>
NOVEMBER/20	UNIT-I	Demand Analysis; Economic models. Equilibrium and Disequilibrium Systems. Elasticity of supply. Theories of demand-Utility.
DECEMBER/23	UNIT-II	Indifference curve ; Consumer's Surplus, Price formation - Theory of Production and Costs.
JANUARY/25	UNIT-III	Isoquants- ; Returns to factor; Economies of scale; Elasticity of substitution; Euler's theorem, Monopoly .
FREBRUARY/24	UNIT-IV	Monopolistic Competition, Oligopoly.
MARCH/25	Seminars & Internal assessment	
APRIL/22	Semester Exam	
MAY/25	UNIT-I	Critical evaluation of marginal analysis.
JUNE/25	UNIT-II	NEO-Classical Approach of Distribution and General Equilibrium Theory of distribution.
JULY	UNIT-III	welfare economics.
	UNIT-IV	Partial and General equilibrium.
AUGUST	Seminars & Internal assessment	
	Semester Exam	

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PROPOSED TEACHING PLAN FOR THE SESSION 2020-21  
ECONOMICS

M.A. I & II SEMESTER  
PAPER-II MACRO ECONOMICS

MONTH	UNIT	TOPIC
NOVEMBER/20	UNIT-I	National income and accounts, Social accounting,
DECEMBER/23	UNIT-II	Consumption function
JANUARY/25	UNIT-III	Investment function
FREBRUARY/24	UNIT-IV	Demand for money – Quantity theory of money
MARCH/25	Seminars & Internal assessment	
APRIL/22	Semester Exam	
MAY/25	UNIT-I	Theory of Inflation, control of inflation.
JUNE/25	UNIT-II	Business Cycles.
JULY	UNIT-III	Monetary Policy.
	UNIT-IV	Fiscal Policy.
AUGUST	Seminars & Internal assessment	
	Semester Exam	



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PROPOSED TEACHING PLAN FOR THE SESSION 2020-21

ECONOMICS  
M.A. I & II SEMESTER  
PAPER-III QUANTITATIVE METHODS & RESEARCH METHODOLOGY

MONTH	UNIT	TOPIC
NOVEMBER/20	UNIT-I	Skewness Correlation-
DECEMBER/23	UNIT-II	Regression analysis: Interpolation and extrapolation
JANUARY/25	UNIT-III	Association of Attributes Probability
FREBRUARY/24	UNIT-IV	Index Number Time series
MARCH/25	Seminars & Internal assessment	
APRIL/22	Semester Exam	
MAY/25	UNIT-I	Research Methodology and Research Methods. Methods of collection of data.
JUNE/25	UNIT-II	Classification and tabulation of data, Frequency distribution of data., Hypothesis,
JULY	UNIT-III	Sampling and sample designs .
	UNIT-IV	Test of Significance – meaning, Procedure of test of significance, Student ‘t’ test, Chi-square test. F- ratio test,
AUGUST	Seminars & Internal assessment	
	Semester Exam	

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**PROPOSED TEACHING PLAN FOR THE SESSION 2020-21  
ECONOMICS**

**M.A. I & II SEMESTER  
PAPER-IV INDIAN ECONOMICS**

<b>MONTH</b>	<b>UNIT</b>	<b>TOPIC</b>
NOVEMBER/20	UNIT-I	GDP and National Income of India
DECEMBER/23	UNIT-II	Demographic Features of Indian Population
JANUARY/25	UNIT-III	Agricultural Development in Indian Economy
FREBRUARY/24	UNIT-IV	Industrial Development in India
MARCH/25	Seminars & Internal assessment	
APRIL/22	Semester Exam	
MAY/25	UNIT-I	Planning in India
JUNE/25	UNIT-II	Problem of Poverty and Inequality Problem of Unemployment in India
JULY	UNIT-III	Public Finance in Indian Economy
	UNIT-IV	External Sector Behavior of Indian Economy
AUGUST	Seminars & Internal assessment	
	Semester Exam	

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**PROPOSED TEACHING PLAN FOR THE SESSION 2020-21  
ECONOMICS**

**M.A. I & II SEMESTER**

**PAPER-V LABOUR & INDUSTRIAL ECONOMICS**

<b>MONTH</b>	<b>UNIT</b>	<b>TOPIC</b>
NOVEMBER/20	UNIT-I	Industrialization pattern, Market Structure, Theories of Industrial Localization.
DECEMBER/23	UNIT-II	Size & Growth of the firm, Industrial Productivity Industrial Policy of India, Industrial Policy of Chhattisgarh. Role of Public & Private Sectors. Liberalization and privatization. Regional industrial growth in India.
JANUARY/25	UNIT-III	Industrial Finance.
FREBRUARY/24	UNIT-IV	Industrial Labour and Labour Legislation.
MARCH/25	Seminars & Internal assessment	
APRIL/22	Semester Exam	
MAY/25	UNIT-I	Labour Market, Employment and development relationship - Poverty, Unemployment – concept, types and measurement.
JUNE/25	UNIT-II	Impact of rationalization, public sector and employment in agricultural sector; analysis of educated employment policy in five year plans its evaluation. Wage Determination
JULY	UNIT-III	Productivity and wage relationship. Asymmetric information and efficiency of labour markets in wage determination; National wage policy,
	UNIT-IV	Labour legislation in India.
AUGUST	Seminars & Internal assessment	
	Semester Exam	

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**PROPOSED TEACHING PLAN FOR THE SESSION 2020-21  
ECONOMICS**

**M.A. III & IV SEMESTER  
PAPER-I ECONOMICS OF GROWTH**

<b>MONTH</b>	<b>UNIT</b>	<b>TOPIC</b>
NOVEMBER/20	UNIT-I	Economic Growth and Development, Physical Quality of Life Index, Human development index,
DECEMBER/23	UNIT-II	Capital Output Ratio, input-output Analysis, Project evaluation and Cost – Benefit Analysis.
JANUARY/25	UNIT-III	The Adam Smith model, The Ricardian model, The Marxian model. The Schumpeterian model, Keynesian, Mahalanobis .
FREBRUARY/24	UNIT-IV	Harrod-Domar Model, Kaldor model, John Robinson model, Meads, Solow .
MARCH/25	Seminars & Internal assessment	
APRIL/22	Semester Exam	
MAY/25	UNIT-I	Economic Planning- Objective. Achievements and Failures of Indian Plans
JUNE/25	UNIT-II	Vicious circle of Poverty, Unlimited Supply of labour model, Big-Push Theory, Theory of critical minimum efforts, Balanced and unbalanced growth. Ranis and Fai model
JULY	UNIT-III	Investment criterion in economic development
	UNIT-IV	measuring poverty and Income inequalities, unemployment, The choice of techniques, sustainable development, Role of state in Economic development. Problem of Price-rise in India.
AUGUST	Seminars & Internal assessment	
	Semester Exam	

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**PROPOSED TEACHING PLAN FOR THE SESSION 2020-21  
ECONOMICS**

**M.A. III & IV SEMESTER  
PAPER-II International Trade**

<b>MONTH</b>	<b>UNIT</b>	<b>TOPIC</b>
NOVEMBER/20	UNIT-I	Theory of International Trade
DECEMBER/23	UNIT-II	Heckschar-Ohlin Theory of International Trade, Terms of Trade & Economic Development.
JANUARY/25	UNIT-III	The Theory of Intervention – Tariffs, Quotas, and nontariff barriers.
FREBRUARY/24	UNIT-IV	Balance of Payments, Foreign Exchange Rate.
MARCH/25	Seminars & Internal assessment	
APRIL/22	Semester Exam	
MAY/25	UNIT-I	The Theory of Regional Blocks-Forms of Economic Co-operation, reforms for the emergence of trading blocks at the Global level
JUNE/25	UNIT-II	Regionalism of European Union, NAFTA, Multilateralism and WTO,
JULY	UNIT-III	Theory of short term & long term capital movement and international trade
	UNIT-IV	WTO and World Bank, Export policies of India, working and regulations of MNCs in India.
AUGUST	Seminars & Internal assessment	
	Semester Exam	

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PROPOSED TEACHING PLAN FOR THE SESSION 2020-21  
ECONOMICS

M.A. III & IV SEMESTER  
PAPER-III Public Finance

MONTH	UNIT	TOPIC
NOVEMBER/20	UNIT-I	Role of Government in organized Society. Principles of maximum social advantages, Taxation.
DECEMBER/23	UNIT-II	Indian tax System, Indirect & direct tax, personal income tax..
JANUARY/25	UNIT-III	Public Expenditure.
FREBRUARY/24	UNIT-IV	Public Debt , Growth of Public Debt in India, Burden of Public Debt.
MARCH/25	Seminars & Internal assessment	
APRIL/22	Semester Exam	
MAY/25	UNIT-I	Fiscal Policy,
JUNE/25	UNIT-II	Federal Finance, Finance commission-Report, Gadgil formul.
JULY	UNIT-III	Budgets and Budgetary procedure in India, Budget Theory – Classical Viewpoint. Balance Budget, Modern View Point, Imbalanced Budget.
	UNIT-IV	Analysis of Chhattisgarh Govt. Financial Responsibilities and budget management Act.
AUGUST	Seminars & Internal assessment	
	Semester Exam	

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ECONOMICS**

**M.A. III & IV SEMESTER**

**PAPER-IV ENVIRONMENTAL ECONOMICS& ECO OF SOCIAL SECTOR**

<b>MONTH</b>	<b>UNIT</b>	<b>TOPIC</b>
NOVEMBER/20	UNIT-I	Welfare Economics – Definition of welfare Economics. Criterion of Social Welfare-Bentham Criteria, Cardinalize Criterion, Pareto Optimality Criterion, .
DECEMBER/23	UNIT-II	Social Welfare function, Maximization of social welfare, Maximization in perfect competition, public goods and private goods. Market failure & public goods
JANUARY/25	UNIT-III	Environmental Economics – Definition of Environmental Economics, Relation between Environmental Economics and Economics.
FREBRUARY/24	UNIT-IV	Theories of Externalities –Pigouvian Taxes and Subsidies. Environmental values , international carbon Tax, Environment and W.T.O.
MARCH/25	Seminars & Internal assessment	
APRIL/22	Semester Exam	
MAY/25	UNIT-I	Pollution – Classification of pollution
JUNE/25	UNIT-II	Environmental Protection- Environmental laws.
JULY	UNIT-III	Classification of Resource, social forestry
	UNIT-IV	Economics of Education, Human Capital, Human Capital Vs. Physical capital. Health Economics- Prospective HDI, GDI, GEM and HPI.
AUGUST	Seminars & Internal assessment	
	Semester Exam	

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ECONOMICS

M.A. III & IV SEMESTER

PAPER-V DEMOGRAPHY

MONTH	UNIT	TOPIC
NOVEMBER/20	UNIT-I	Demography – Meaning and importance, Theories of Population – Theory of optimum population and Theory of demographic transition.
DECEMBER/23	UNIT-II	Migration.
JANUARY/25	UNIT-III	Mortality.
FREBRUARY/24	UNIT-IV	Fertility.
MARCH/25	Seminars & Internal assessment	
APRIL/22	Semester Exam	
MAY/25	UNIT-I	VIVA
JUNE/25	UNIT-II	
JULY	UNIT-III	
	UNIT-IV	
AUGUST	Seminars & Internal assessment	
	Semester Exam	



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**M. A. ENGLISH LITERATURE**  
**SEMESTER - I**  
**PAPER-I**  
**POETRY-I**

<b>MONTH</b>	<b>PLAN</b>
<b>JANUARY</b>	Introduction: History and background of English Literature <b>UNIT-I</b> Types of poetry, Elements of poetry, Poetic devices, Sub-genres of poetry John Donne: Death Be Not Proud, A Valediction: Forbidding Mourning (Detailed) William Shakespeare: Sonnet no: 1, 154 (non-Detailed)
<b>FEBRUARY</b>	<b>UNIT-II</b> Geoffrey Chaucer: Prologue to the Canterbury Tales (Detailed)
<b>MARCH</b>	<b>UNIT-III</b> John Milton: Paradise Lost Book-I (Lines 1-300) (Detailed) John Dryden: The Portrait of Shadwell (Non-Detailed) <b>Internal Test 1</b>
<b>APRIL</b>	<b>UNIT IV</b> Alexander Pope: The Rape of the Lock (Detailed) Thomas Gray: Elegy written in a Country Churchyard (Non-Detailed) <b>Internal Test 2</b>
<b>MAY</b>	<b>UNIT IV</b> Thomas Gray: Elegy written in a Country Churchyard (Non-Detailed) <b>SEMINAR/EXAM</b>

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**SEMESTER - I**  
**PAPER-II**  
**DRAMA-I**

<b>MONTH</b>	<b>PLAN</b>
<b>JANUARY</b>	<b>UNIT-I</b> Origin and development of drama, Elements of drama (Theme, Plot, Characters, Dialogue) Dramatic devices Christopher Marlowe: Dr. Faustus (Detailed)
<b>FEBRUARY</b>	<b>UNIT-I</b> Christopher Marlowe: Dr. Faustus (Detailed) <b>UNIT-II</b> John Webster: The Duchess of Malfi (Detailed) Ben Jonson: The Alchemist (Non-Detailed)
<b>MARCH</b>	<b>UNIT-III</b> William Shakespeare: Hamlet(Detailed) <b>Internal Test 1</b>
<b>APRIL</b>	<b>UNIT-IV</b> William Shakespeare: The Tempest (Detailed) William Congreve: The Way of the World (Non-Detailed) <b>Internal Test 2</b>
<b>MAY</b>	<b>UNIT-IV</b> William Congreve: The Way of the World (Non-Detailed) <b>SEMINAR/EXAM</b>

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**M. A. ENGLISH LITERATURE**  
**SEMESTER - I**  
**PAPER-III**  
**PROSE-I**

<b>MONTH</b>	<b>PLAN</b>
<b>JANUARY</b>	<b>UNIT-I</b> The elements of prose (Characters, Setting, Plot, Point of view, Theme, Mood) Varieties of Prose (Descriptive prose, Narrative prose, Expository prose) Forms of Prose (Short story, Essay, Letter, Travelogue, Biography, Autobiography, Diary, Speech)
<b>FEBRUARY</b>	<b>UNIT-I</b> Forms of Prose (Short story, Essay, Letter, Travelogue, Biography, Autobiography, Diary, Speech) <b>UNIT-II</b> Francis Bacon: Of Studies, Of Beauty, Of Truth (All Detailed) Thomas Browne: Urn Burial (Non-Detailed)
<b>MARCH</b>	<b>UNIT-III</b> Joseph Addison: Sir Roger at Home, Sir Roger at Assizes, Sir Roger at Church (All Detailed) Richard Steele: Recollections of Childhood, The Spectator Club (Non-Detailed) <b>Internal Test 1</b>
<b>APRIL</b>	<b>UNIT-IV</b> Samuel Johnson: Life of Milton (Non-Detailed) R. L. Stevenson: Walking Tours, An Apology for Idlers, El Dorado (All Detailed) <b>Internal Test 2</b>
<b>MAY</b>	<b>UNIT-IV</b> William Congreve: The Way of the World (Non-Detailed) <b>SEMINAR/EXAM</b>

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**SEMESTER - I**  
**PAPER-IV**  
**FICTION-I**

<b>MONTH</b>	<b>PLAN</b>
<b>JANUARY</b>	<b>UNIT-I</b> Development of novel from Bunyan to Modern age John Bunyan: The Pilgrim's Progress Daniel Defoe: Robinson Crusoe
<b>FEBRUARY</b>	<b>UNIT-II</b> Henry Fielding: Tom Jones Oliver Goldsmith: The Vicar of Wakefield
<b>MARCH</b>	<b>UNIT-III</b> Sir Walter Scott: Ivanhoe Jane Austen: Pride and Prejudice <b>Internal Test 1</b>
<b>APRIL</b>	<b>UNIT-IV</b> Charles Dickens: Great Expectations Emily Bronte: Wuthering Heights
<b>MAY</b>	<b>Internal Test 2</b> <b>SEMINAR/EXAM</b>

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**SEMESTER - I**  
**PAPER –V**  
**LANGUAGE MANAGEMENT AND COMMUNICATION SKILLS-I**

<b>MONTH</b>	<b>PLAN</b>
<b>JANUARY</b>	<b>UNIT-I: Communication Skills (A)</b> The Role of Communication Meaning and Definition Process of Communication Models of Communication Elements of Communication Essentials of Communication
<b>FEBRUARY</b>	<b>UNIT-II: Communication Skills (B)</b> Types of Communication: Verbal and Non-Verbal Barriers to Communication 7Cs of Effective Communication
<b>MARCH</b>	<b>UNIT-III: Oral Communications</b> Meaning, advantages and Limitations Meeting People, Exchanging Greetings and Taking Leave Introducing Oneself, Giving Personal Information Introducing People to Others Complaining, Apologizing and Responding to Apology Inviting, Accepting and Refusing an Invite Asking for, Giving and Refusing Permission Asking for Directions and Giving Directions <b>Internal Test 1</b>
<b>APRIL</b>	<b>UNIT-IV: Listening Skills</b> Significance, Nature and Purpose of Listening Types of Listening Barriers to Active Listening Developing Listening Skills <b>Internal Test 2</b>
<b>MAY</b>	<b>SEMINAR/EXAM</b>

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**M. A. ENGLISH LITERATURE**  
**SEMESTER - II**  
**PAPER-I**  
**POETRY-II**

MONTH	PLAN
JUNE	<b>UNIT-I</b> <b>William Wordsworth:</b> Immortality Ode (Non-Detailed) Tintern Abbey (Detailed) <b>Samuel Taylor Coleridge:</b> Kubla Khan (Detailed)
JULY	<b>UNIT-II</b> <b>P. B. Shelley:</b> Ode to the Westwind (Non-Detailed) <b>John Keats:</b> Ode to Nightingale (Detailed) <b>Alfred Tennyson:</b> Ulysses (Detailed) <b>Robert Browning:</b> The Last Ride Together (Detailed) My Last Duchess (Non-Detailed)
AUGUST	<b>UNIT-III</b> <b>Mathew Arnold:</b> Scholar Gypsy (Non-Detailed) <b>W.B.Yeats:</b> The Second Coming, Sailing to Byzantium(Non-Detailed) <b>T.S.Eliot:</b> The Waste Land (Detailed)
SEPTEMBER	<b>UNIT-IV</b> <b>W.H.Auden:</b> The Shield of Achilles (Non-Detailed) <b>Wilfred Owen:</b> Strange Meeting (Detailed) <b>Edith Sitwel:</b> Still Falls the Rain(Non-Detailed)
OCTOBER	SEMESTER EXAM

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**SEMESTER - II**  
**PAPER-II**  
**DRAMA**

MONTH	PLAN
JUNE	<b>UNIT-I</b> Types of Drama, Tragedy, Melodrama, The Heroic play, Problem, Play, Comedy, Comedy of errors, Comedy of Manners, Sentimental comedy, Comedy of character or Humour, Farce, Didactic drama, Historical plays, Tragic-comedy, Expressionistic drama, Poetic drama.
JULY	<b>UNIT-II</b> <b>Oliver Goldsmith</b> : She Stoops to Conquer (Detailed) <b>R.B.Sheridan</b> :The Rivals (Non -Detailed)
AUGUST	<b>UNIT-III</b> <b>George Bernard Shaw</b> : Arms and the Man (Detailed) <b>John Galsworthy</b> : Justice (Non-Detailed)
SEPTEMBER	<b>UNIT-IV</b> <b>Thomas Stearns Eliot</b> : Murder in the Cathedral (Detailed) <b>J. M. Synge</b> : Riders to the Sea (Non-Detailed) <b>Seminar</b>
OCTOBER	SEMESTER EXAM

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**SEMESTER - II**  
**PAPER-III**  
**PROSE-II**

MONTH	PLAN
JUNE	<b>UNIT-I</b> <b>Background:</b> Essay: Definition, Origin and development, Aphoristic essay, the character writers, the critical essay, the Periodical and social essay, the reviews, the personal essay.
JULY	<b>UNIT-II</b> <b>Charles Lamb:</b> Dream Children, A Bachelor's Complaint, Christ Hospital (Detailed) <b>William Hazlitt:</b> On going on a Journey, Indian Jugglers (Non-Detailed) <b>Thomas Moore:</b> Utopia (Non-Detailed)
AUGUST	<b>UNIT-III</b> <b>Thomas Carlyle:</b> Hero as a Poet (Detailed) <b>John Ruskin:</b> Sesame and Lilies (Non-Detailed) <b>Machiavelli:</b> The Prince (Non-Detailed)
SEPTEMBER	<b>UNIT-IV</b> <b>A.G. Gardiner:</b> On saying "Please", On the rule of the Road (Detailed) <b>Virginia Woolf:</b> A Room of One's Own (Non-Detailed) <b>Seminar</b>
OCTOBER	SEMESTER EXAM



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**SEMESTER - II**  
**PAPER-IV**  
**FICTION-II**

MONTH	PLAN
JUNE	<b>UNIT-I</b> Figures of speech, Structuralism, Imagism, Symbolism, Stream of Consciousness, Science Fiction <b>Thomas Hardy:</b> Tess of Du'rbervilles <b>James Joyce:</b> Portrait of the Artist as a Young Man
JULY	<b>UNIT-II</b> <b>Iris Murdoch:</b> The Sand Castle <b>D. H. Lawrence:</b> Sons and Lovers
AUGUST	<b>UNIT-III</b> <b>Joseph Conrad:</b> Heart of Darkness <b>George Orwell:</b> Animal Farm
SEPTEMBER	<b>UNIT-IV</b> <b>William Golding:</b> Lord of the Flies <b>Doris Lessing:</b> The Grass is singing <b>Seminar</b>
OCTOBER	SEMESTER EXAM

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**SEMESTER - II**  
**PAPER-V**

**LANGUAGE MANAGEMENT & COMMUNICATION SKILLS**

MONTH	PLAN
JUNE	<b>UNIT-I: Reading Skills</b> <ul style="list-style-type: none"> <li>• Basic Purpose of Reading</li> <li>• Characteristics of Efficient Reading</li> <li>• The Five Pillars of Reading: Phonemic Awareness, Phonics, Fluency, Vocabulary and Comprehension</li> </ul>
JULY	<b>UNIT-II: Written Communications (A)</b> <ul style="list-style-type: none"> <li>• Précis Writing</li> <li>• Paragraph Development</li> <li>• Advertisement</li> <li>• Note Making and Note Taking</li> </ul>
AUGUST	<b>UNIT-III: Written Communications (B)</b> <ul style="list-style-type: none"> <li>• Writing Book and film Reviews</li> <li>• Notices, Meetings, Agenda and Minutes</li> <li>• Writing a Resume/Curriculum Vitae</li> <li>• Content of good Resume, Guidelines for writing Resume, Different types of Resume</li> </ul>
SEPTEMBER	<b>UNIT-IV: Group Discussion and Oral Presentation Skills</b> <ul style="list-style-type: none"> <li>• Purpose of Group Discussion</li> <li>• Types of Group Discussion</li> <li>• Considerations in Group Discussion</li> <li>• Seminar, Conference and Other Discussion Groups</li> <li>• Planning, Designing and Making a Speech/Presentation</li> <li>• Audio-visual Aids in Presentation</li> <li>• Essential Features of a Good Presentation</li> </ul>
OCTOBER	SEMESTER EXAM

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**M. A. ENGLISH LITERATURE**  
**SEMESTER - III**  
**PAPER-I**  
**CRITICAL THEORY- I**

<b>MONTH</b>	<b>PLAN</b>
<b>JANUARY</b>	<b>UNIT-I</b> Aristotle: Poetics Longinus: On the Sublime
<b>FEBRUARY</b>	<b>UNIT-II</b> Philip Sidney: An Apology for Poetry John Dryden: Essay on Dramatic Poesy
<b>MARCH</b>	<b>UNIT-III</b> William Wordsworth: Preface to Lyrical Ballads S. T. Coleridge: Biographia Literaria chapter XIII to XVII <b>Internal Test 1</b>
<b>APRIL</b>	<b>UNIT-IV</b> Mathew Arnold: The Study of Poetry, The Function of Criticism in Present Times <b>Internal Test 2</b>
<b>MAY</b>	<b>SEMINAR/EXAM</b>

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**SEMESTER - III**  
**PAPER-II**  
**INDIAN WRITING IN ENGLISH - I**

<b>MONTH</b>	<b>PLAN</b>
JANUARY	<b>UNIT-I</b> Sri Aurobindo: Savitri- Book I, Canto I Rabindranath Tagore: Songs 1 to 15 from Gitanjali Nissim Ezekiel: Enterprise, Poet Lover and Birdwatcher
FEBRUARY	<b>UNIT-II</b> Girish Karnad: Nagmandala Vijay Tendulkar: Silence 'The Court is in Session'
MARCH	<b>UNIT-III</b> Nirad C. Chaudhari: An Autobiography of an Unknown Indian. M.K. Gandhi: The Story of My Experiments with Truth <b>Internal Test 1</b>
APRIL	<b>UNIT-IV</b> Raja Rao: Kanthapura Mulk Raj Anand: Coolie <b>Internal Test 2</b>
MAY	SEMINAR/EXAM

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**M. A. ENGLISH LITERATURE**  
**SEMESTER - III**  
**PAPER-III**  
**AMERICAN LITERATURE - I**

<b>MONTH</b>	<b>PLAN</b>
<b>JANUARY</b>	<b>UNIT-I</b> Puritanism, Democracy in America, Romanticism in America, Indian Thought in Emerson, Thoreau and Whitman, New England Renaissance, Expressionism
<b>FEBRUARY</b>	<b>UNIT-I</b> Walt Whitman: When Lilacs last in the Dooryard Bloomed I Hear America Singing. <b>UNIT-II</b> Robert Frost: Birches, The Road not Taken. Emily Dickinson: Bring Me the Sunset in a Cup (128); The Soul selects her own Society (303); Sylvia Plath: Daddy, Lady Lazarus
<b>MARCH</b>	<b>UNIT-III</b> Eugene o'Neil: The Emporer Jones Tennessee Williams: The Glass Menagerie <b>Internal Test 1</b>
<b>APRIL</b>	<b>UNIT-IV</b> Ralph Waldo. Emerson: Self-Reliance Henry David Thoreau: Civil Disobedience <b>Internal Test 2</b>
<b>MAY</b>	<b>SEMINAR/EXAM</b>

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**M. A. ENGLISH LITERATURE**  
**SEMESTER - III**  
**PAPER-IV**  
**LINGUISTICS - I**

<b>MONTH</b>	<b>PLAN</b>
<b>JANUARY</b>	<b>UNIT-I</b> Language: Definition, Characteristics of Human Language, Development of English Language (Chaucerian, Middle English & Modern English)
<b>FEBRUARY</b>	<b>UNIT-II</b> Linguistics: Definition, Objective, Branches of Linguistics: Phonetics, Phonology, Morphology, Syntax and Semantics, Linguistics and its Related Disciplines.
<b>MARCH</b>	<b>UNIT-III</b> Phonetics: Definition, Branches: Articulatory /Acoustic Phonetics, Auditory Phonetics, <b>The</b> Organs of Speech and their Functions.  Classification of Human Speech Sounds: Characteristics of Vowels and Consonants, Similarities and Dissimilarities between Vowels and Consonants, Phonetics Symbols (IPA). <b>Internal Test 1</b>
<b>APRIL</b>	<b>UNIT-IV</b> Classification of Vowels: On the Basis of Height of the Tongue, Parts of the Tongue, Position of Soft Palate, Position of Muscles and Length. Classification of Consonants: On the Basis of Place and Manner of articulation, aspiration and voicing. <b>Internal Test 2</b>
<b>MAY</b>	<b>SEMINAR/EXAM</b>

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**SEMESTER -III**  
**PAPER-V**  
**NEW LITERATURES IN ENGLISH - I**

<b>MONTH</b>	<b>PLAN</b>
<b>JANUARY</b>	<b>UNIT-I</b> African Culture, Religion & the World view, Colonial and Post- Colonial experiences in African & Caribbean Context, The Oral Tradition, The specificity of Caribbean Literature (Caribbean Poetry), Ethnicity, Hybridity, Creolisation
<b>FEBRUARY</b>	<b>UNIT-I</b> Kamau Brathwaite: Wings of a Dove <b>UNIT-II</b> Wole Soyinka: The Dance of the Forest
<b>MARCH</b>	<b>UNIT-III</b> Ngugi Wa Thiong O: A Grain of Wheat <b>Internal Test 1</b>
<b>APRIL</b>	<b>UNIT-IV</b> Chimamanda Ngozi Adichie: The Purple Hibiscus <b>Internal Test 2</b>
<b>MAY</b>	<b>SEMINAR/EXAM</b>

**DEPARTMENT OF ENGLISH**  
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**M. A. ENGLISH LITERATURE**  
**SEMESTER - IV**  
**PAPER-I**  
**CRITICAL THEORY - II**

<b>MONTH</b>	<b>PLAN</b>
JUNE	<b>UNIT-I</b> <b>Bharata:</b> Natyashastra (Rasa and Bhava Theory)
JULY	<b>UNIT-II</b> <b>T. S. Eliot:</b> Tradition and Individual Talent <b>I. A. Richards:</b> Four Kinds of Meaning, Communication and the Artist, Analysis of a Poem
AUGUST	<b>UNIT-III</b> <b>Ferdinand S Sassure:</b> Nature of Linguistic sign <b>Michael Foucault:</b> What is an Author?
SEPTEMBER	<b>UNIT-V</b> <b>Northrop Frye:</b> The Function of Criticism <b>Elaine Showalter:</b> Feminist Criticism in Wilderness <b>Seminar</b>
OCTOBER	SEMESTER EXAM



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**M. A. ENGLISH LITERATURE**  
**SEMESTER - IV**  
**PAPER-II**  
**INDIAN WRITING IN ENGLISH - II**

<b>MONTH</b>	<b>PLAN</b>
<b>JUNE</b>	<b>UNIT-I</b> <b>A.K. Ramanujan:</b> Obituary, Love Poem for a Wife <b>Jayant Mahapatra:</b> Indian summer, A Missing Person, Hunger
<b>JULY</b>	<b>UNIT-II</b> <b>Jawaharlal Nehru:</b> The Discovery of India ( Ch.1 to 5) <b>A.P.J. Kalam:</b> Ignited Minds
<b>AUGUST</b>	<b>UNIT-III</b> <b>Mahashweta Devi:</b> The Mother of 1084(play) <b>Mahesh Dattani:</b> Tara
<b>SEPTEMBER</b>	<b>UNIT-IV</b> <b>Arundhati Roy:</b> The God of Small Things <b>Arvind Adiga:</b> The White Tiger <b>Jhumpa Lahiri:</b> Interpreter of Maladies(The Title Story) <b>Seminar</b>
<b>OCTOBER</b>	<b>SEMESTER EXAM</b>

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**M. A. ENGLISH LITERATURE**  
**SEMESTER - IV**  
**PAPER-III**  
**AMERICAM LITERATURE -II**

MONTH	PLAN
JUNE	<b>UNIT-I</b> Naturalism, Realism, Existentialism, The Theatre of the Absurd <b>Wallace Stevens:</b> Peter Quince at the Clavier, of Modern Poetry, Sunday Morning, A Postcard from the Volcano.
JULY	<b>UNIT-II</b> <b>Arthur Miller:</b> All My Sons <b>Edward Albee:</b> Who's Afraid of Virginia Woolf?
AUGUST	<b>UNIT-III</b> <b>William Faulkner:</b> The Sound and the Fury <b>Ernest Hemingway:</b> The Old Man and the Sea
SEPTEMBER	<b>UNIT-IV</b> <b>Nathaniel Hawthorne:</b> The Scarlet Letter <b>Mark Twain:</b> The Adventures of Huckleberry Finn
OCTOBER	SEMESTER EXAM

**DEPARTMENT OF ENGLISH**  
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**M. A. ENGLISH LITERATURE**  
**SEMESTER - IV**  
**PAPER-IV**  
**LINGUISTICS - II**

MONTH	PLAN
JUNE	<b>UNIT-I</b> <b>Phonology:</b> Definition, Distinctive features of Sounds, Allophones and Classification of English Phonemes Suprasegmental Features: Length, Stress, Pitch, Intonation and Juncture. <b>Morphology:</b> Morpheme, Morph, Allomorph, Types of Morphemes, Word-Classes
JULY	<b>UNIT-II</b> <b>Syntax:</b> Constituents, Immediate Constituents, Models of I C Analysis, <b>Syntactic Devices:</b> Word order, Function Words and content Words, Government, Concord.
AUGUST	<b>UNIT-III</b> <b>Semantics:</b> Semene, Types of meaning: Synonymy, Antonymy, Polysemy, Homonymy, Collocation, Sets.
SEPTEMBER	<b>UNIT-V</b> Introduction to Phrase Structure Grammar, Limitation to Phrase Structure Grammar
OCTOBER	SEMESTER EXAM

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**M. A. ENGLISH LITERATURE**  
**SEMESTER - IV**  
**PAPER-V**  
**NEW LITERATURE IN ENGLISH-II**

<b>MONTH</b>	<b>PLAN</b>
<b>JUNE</b>	<b>UNIT-I</b> <b>Recent Histories &amp; Responses to the landscape, Early Canadian and Australian Literature, Naturalism, Marginalization, Introduction to the African and American Literature, Race, Class, Gender, Slave Narrative.</b>
<b>JULY</b>	<b>UNIT-II</b> <b>Langston Hughes: Mother to Son; I, Too</b> <b>Nikki Giovanni: Quilt: Possum Crossing</b>
<b>AUGUST</b>	<b>UNIT-III</b> <b>George Ryga: The Ecstasy of Rita Joe</b>
<b>SEPTEMBER</b>	<b>UNIT-IV</b> <b>Toni Morrison: Beloved</b>
<b>OCTOBER</b>	<b>SEMESTER EXAM</b>

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2020-21**

**TEACHING PLAN**

**M. A.I SEMESTER GEOGRAPHY**

**PAPER-I**

**TITLE OF THE PAPER: GEOMORPHOLOGY**

MONTH	PLAN
JULY	Nature and scope of geomorphology, fundamental concepts. Interior of the earth.
AUGUST	Earth movements: Endogenic movement: Plate tectonics, volcanic with special reference to Himalayas. Exogenic process: concept of gradation agents and processes of gradation
SEPTEMBER	weathering mass wasting, Normal cycle of erosion, Interruption of the cycle of erosion, Drainage patterns
OCTOBER	Glacial, Aeolian and Marine (Coastal) River, Karst: processes and resulting landforms, slope, Analysis by penck wood & king
NOVEMBER	Geological structure and landforms: development of drainage and landscape on folded and domal structure, Applied geomorphology.

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**TEACHING PLAN**

**M. A.I SEMESTER GEOGRAPHY**

**PAPER-II**

**TITLE OF THE PAPER: CLIMATOLOGY**

MONTH	PROPOSED PLAN
JULY	Nature and scope of climatology and its relationship with meteorology. Composition of atmosphere; Insulation, heat balance of the earth, stability and instability, green house effect, vertical and horizontal distribution of temperature; Jet stream
AUGUST	General circulation in the atmosphere, acid rain, concept of air masses and atmospheric disturbances, ocean- atmospheric interaction, El Nino and La Nino; Monsoon winds & cyclones.
SEPTEMBER	application of general principles of elementary, physical and synoptic meteorology to the study and classification of climate, climatic classification of Koppen and Thornthwaite.
OCTOBER	Major climates of the world: Tropical, Temperate, Desert and Mountain climate; Climatic change and Global warming, Environment impact and Society's response.
NOVEMBER	Applied climatology.

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**TEACHING PLAN**

**M. A.I SEMESTER GEOGRAPHY**

**PAPER-III**

**TITLE OF THE PAPER: GEOGRAPHICAL THOUGHT**

MONTH	PROPOSED PLAN
JULY	Definition, scope and function of geography, geography as a science of aerial differentiation. Environmentalism, Determinism, Possibilism and Neo- determinism. Laws and theories in geography
AUGUST	The growth of geographical knowledge from earliest time up to 15 <sup>th</sup> century, contribution of Greek and Roman thinkers, <b>Arab</b> geographers:- Al- baruni. Al-masudi, Ibn-e-batuta and Al- idarsi . Geographical information in ancient Indian literature. The Dark Age in geography. The great age of maritime discovery and exploration.
SEPTEMBER	Contribution of Various Schools of thought in modern geography.  German school -Humbolt, Ritter, Ratzel. 2. French school - Vidal -de- la-blache.3. British school - Mackinder.4.American - Davis and Huntington. Models in geography, quantitative revolution, positivism.
OCTOBER	Behaviouralism, Humanistic geography-relevance and the movement, Radical geography. Changing paradigm, status of Indian geography. Dualism in geography. :- Physical and Human, Systematic VS regional
NOVEMBER	Inductive VS Deductive.

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**TEACHING PLAN**

**M. A.I SEMESTER GEOGRAPHY**

**PAPER-IV**

**TITLE OF THE PAPER: ADVANCED GEOGRAPHY OF INDIA**

MONTH	PROPOSED PLAN
JULY	Physical & Biological elements in the geography of India, Geological structure, relief, climate water resources. Vegetation and Soils
AUGUST	Agriculture : major characteristics and problems, Important crops : wheat. rice, cotton, sugarcane, oil seeds, tea and coffee: Agricultural regions.
SEPTEMBER	Population : distribution density and growth, problems and policies. Sources of power coal, petroleum, natural gas, hydroelectricity .Mineral resources with specific reference to Iron-ore. Manganese. Bauxite and Copper
OCTOBER	Industrial development with special reference to Iron and steel. Cement. Cotton Textile and Sugar. Industrial regions Industrial Policy.
NOVEMBER	Trade Transport & Communication.



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**TEACHING PLAN**

**M. A.I SEMESTER GEOGRAPHY**

**PAPER-PRACTICAL**

**TITLE OF THE PAPER: ADVANCED CARTOGRAPHY**

MONTH	PROPOSED PLAN
JULY	
AUGUST	Thematic maps- Chorochromatic and choropleth map, isolines, dot map, routed map. flow map,
SEPTEMBER	Morphometric analysis: Profiles, Slope analysis, Altimetric and Hypsometric curves, Drainage analysis, Block diagram
OCTOBER	Map projection: Properties and principles of construction of world projection
NOVEMBER	Interpretation of maps: Topographical sheets

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**SESSION 2020-21**

**TEACHING PLAN**

**M. A.III SEMESTER GEOGRAPHY**

**PAPER-I**

**TITLE OF THE PAPER: ECONOMIC GEOGRAPHY**

MONTH	PLAN
JULY	Nature, scope and systematic development of Economic geography. Fundamental concepts in economic geography. Approaches and methods to study of Economic Geography
AUGUST	Mineral: - Iron - ore, Bauxite, Manganese .Energy resource: - Coal, Hydro-electricity, Petroleum and Non conventional resource
SEPTEMBER	Weber 's Theory of industrial location. Case studies of selected industries: Iron and Steel; Chemical, Engineering Textile; Industrial Regions, Transport and trade. Trade blocks: EEC, LAFTA and ASIAN
OCTOBER	Distribution factors of Economic Activities: - Primary and Secondary Economic Activities, World economies and economic regions, Market orientated economy.
NOVEMBER	Globalization and with special reference to India.

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**SESSION 2020-21**

**TEACHING PLAN**

**M. A.III SEMESTER GEOGRAPHY**

**PAPER-II**

**TITLE OF THE PAPER: RESEARCH METHODOLOGY**

MONTH	PLAN
JULY	Research Methodology : An over view Procedure of Scientific Research, Defining research problem, formulating Hypothesis, Research Design.
AUGUST	Methods of data collection : Observation, Questionire, Schedule and Interview, Sampling : sampling Methods, Si, of samples.
SEPTEMBER	Processing and analysis of Data : Processing, Editing, Coding, Classification and Tabulation. Analysis, Measurement of Central Tendency, Disperssion, Correlation
OCTOBER	Preparation of Research Reports; Steps layout Types of Report
NOVEMBER	Revision

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**TEACHING PLAN**

**M. A.III SEMESTER GEOGRAPHY**

**PAPER-III**

**TITLE OF THE PAPER: REGIONAL DEVELOPMENT AND PLANNING**

	PLAN
JULY	Concept of Planning, Region and Planning regions, Origin Definition and scope of Regional Planning. Evolution, Functions and Objectives of Regional Planning
AUGUST	Spatial Organisation: Von Thunen's Isolated State, Industrial Location Theory of Weber. Central Place theory: Single Function Central Place System, Multiple Functions and Hierarchies, Loschian Modification,
SEPTEMBER	Regional Development Theories: Export Base Theory, Neoclassical Exogeneous Growth Theory, Cumulative Causation Theory of Myrdal, Regional Development Theory of Hirschman., Core –periphery theory of Friedmann, Growth Pole Theory , New Economic Geography.
OCTOBER	Concept of Development. Planning for special areas: River basins- Damodar Valley Corporation, National Capital Region,
NOVEMBER	Development programme (HADP)/ Western Ghats Development programme (WGDP) and Tribal area of Chhattisgarh,

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**SESSION 2020-21**

**TEACHING PLAN**

**M. A.III SEMESTER GEOGRAPHY**

**PAPER-IV**

**TITLE OF THE PAPER: POPULATION GEOGRAPHY**

MONTH	PLAN
JULY	Definition and scope of Population geography. Historical development of population geography in western countries and in India. Sources of demographic data. Census and its history.
AUGUST	: Population density and its types, factors affecting population distribution. Population distribution in the world with special reference to Europe and Asia. Distribution of population in India
SEPTEMBER	Prehistoric and modern trends of population growth in the world. Regional aspect of population growth in India. Population theories. Demographic transition, future growth of population.
OCTOBER	Population composition in terms of age and sex, rural-urban, educational status and occupational structure, Significance of these elements in population analysis,
NOVEMBER	Migration of population: causes, characteristics and types. Methods of estimating internal migration. Internal migration in India. Important international migration

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**SESSION 2020-21**

**TEACHING PLAN**

**M. A.III SEMESTER GEOGRAPHY**

**PRACTICAL**

**Quantitative Techniques, Remote Sensing and Aerial Photographs**

MONTH	PLAN
JULY	
AUGUST	<b>Quantitative Techniques</b>  (i) Measures of Central tendency. Dispersion and Variability. Product Moment and Rank Correlation Coefficient, Linear Regression.  (ii) Hypothesis Testing: Chi-Square and 't' tests, Analysis of Variance and F test: Sampling,
SEPTEMBER	Running mean. Mean centre, Nearest Neighbour Analysis Lorenz Curve, Normal Distribution curve, probability
OCTOBER	<i>Remote Sensing and GIS</i> Air Photos and Photogrammetry: Elements of Photographic Systems: types, scales and ground coverage resolution, films with aerial Cameras, vertical photographs, relief displacement, airphoto interpretation.
NOVEMBER	Image Processing; types of imagery, basic concepts and techniques of visual interpretation, ground verification and transfer of interpreted thematic information to base maps. Remote sensing programme of India: image interpretation, mapping of land use and study of water resources. Application of remote sensing , elements of GIS

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2020-21**

**TEACHING PLAN**

**M. A.II SEMESTER GEOGRAPHY**

**PAPER-I**

**TITLE OF THE PAPER: GEOGRAPHY OF CHHATTISGARH**

MONTH	PLAN
JANUARY	Physical setting- location, extent, geology, physical, features, climate, drainage, soil and vegetation.
FEBURARY	Socio-economic-, major crops and agriculture region Water resources, irrigation, major irrigation projects, mineral and power resources [renewable and non- renewable] and power projects.
MARCH	Major industries - Iron and Steel, Cement, Aluminium, Agro and Forest-industries.  Population: Distribution of Population, Social, Cultural characteristics of population and tribes of Chhattisgarh
APRIL	Urbanization.Transport and Trade, Tourist places of Chhattisgarh, National parks, wild LIFE

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**SESSION 2020-21**

**TEACHING PLAN**

**M. A.II SEMESTER GEOGRAPHY**

**PAPER-II**

**TITLE OF THE PAPER: OCENOGRAPHY**

MONTH	PLAN
JANUARY	Nature and scope of oceanography, Detailed study of distribution of land and water, major features of ocean basins: continental shelf, continental slope oceanic plain and deeps, composition of sea water.
FEBURARY	Inter link between atmospheric circulation and circulation pattern in. the oceans, oceanic currents; Temperature, Salinity, Density, waves and tides.
MARCH	Marine sediments: Marine-biological environments, Bio- geo- chemical cycle in the ocean, bio-zones, types of organisms, food and mineral resources of the sea.
APRIL	Major marine environments: coastal, estuary, delta barrier Island, rocky coasts Pelagic environment impact of humans on the marine environment. Exclusive Economic Zone: with special reference to Indian ocean. Applied oceanography.



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**TEACHING PLAN**

**M. A.II SEMESTER GEOGRAPHY**

**PAPER-III**

**TITLE OF THE PAPER: AGRICULTURAL GEOGRAPHY**

MONTH	PLAN
JANUARY	Definition, nature, scope and significance of agricultural geography, approaches to the study of agriculture in geography commodity, deterministic, systematic, regional, behavioral and ecosystem Origin and dispersal of agriculture.
FEBURARY	Determinants of agricultural land use – Physical, economic, social, and technological, Land holding and land tenure systems, Land reforms, land use policy and planning. Cropping pattern, crop concentration, intensity of cropping, degree of commercialization, diversification and specialization efficiency and productivity, crop combination regions and agricultural development.
MARCH	Theories of agricultural location :- Von Thunen's theory of agricultural location and its recent modifications; Whittlesey's classification of agricultural regions; land use and land capability
APRIL	Agriculture in India : Landuse pattern, regional pattern of productivity : Green Revolution, Food deficit and food surplus regions; Specific Problems in Indian agriculture and their management; Agricultural policy in India.

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TEACHING PLAN  
M.A. II SEMESTER GEOGRAPHY  
PAPER- IV  
TITLE OF THE PAPER: URBAN GEOGRAPHY**

MONTH	PLAN
JANUARY	Definition and scope of urban geography. Centrifugal and centripetal forces in urban Geography , urban morphology and landuse pattern :- Burgess concentric zone theory , Hoyt sector model ,Ullman and Harris multiple Nuclei model.
FEBURARY	Evolution and growth of urban settlement . the geographical setting of urban centers :- site, situation and location , rank size rule. Functional classification of towns-Harris and Nelsion,
MARCH	Central place theory:- Christaller theory . Growth centre theory. Umland. Rural-urban fringe. Economic bases of Town. Basic -Non Basic concept.
APRIL	Urban Planning : Types and elements ,Urban Problem, Blight and renewal Urbanization in World and in India, Urban planning with reference to Naya Raipur.

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**TEACHING PLAN**

**M.A. II SEMESTER GEOGRAPHY**

**PAPER-PRACTICAL**

**TITLE OF THE PAPER: ADVANCED CARTOGRAPHY AND SURVEYING**

MONTH	PLAN
JANUARY	Graphs and Diagrams: Triangular graph. Ergograph, Snail diagram climatograph ; Pie- diagram and divided rectangles, proportional circles, spheres and cubes. Interpretation of Maps :-Geological maps and Thematic maps
FEBURARY	Principles and Methods of topographical survey involving the use of Theodolite and Dumpy level

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**SESSION 2020-21**

**TEACHING PLAN**

**M. A.IV SEMESTER GEOGRAPHY**

**PAPER- I**

**TITLE OF THE PAPER: SOCIAL GEOGRAPHY**

MONTH	PLAN
JANUARY	Definition meaning and scope of Social geography . Nature and Relationship with other social sciences. Development of social geography. Approaches to the study of social geography, Evolution of Man. , Definition , Origin and Types of Society and Human Races.
FEBURARY	Society and Environment , Quality of Social Environment, Man's impact on Social environment-environmental pollution. Social well being and human development. Cultural Realms , Cultural Regions of Asia
MARCH	Indian Society in Historical Perspective, Traditional Hindu Social Organisation. Human Race of India .Religious and Linguistic groups of India .Backward and Scheduled Castes. Tribes Of India
APRIL	Social Change in India , Status of Woman in India , Human Development in India, Social Planning In India, Gender Inequality , Woman Empowerment, Urbanization and Related Problems in India.

**SESSION 2020-21**

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**TEACHING PLAN  
M. A.IV SEMESTER GEOGRAPHY  
PAPER-II**

**TITLE OF THE PAPER: POLITICAL GEOGRAPHY**

MONTH	PLAN
JANUARY	Nature, scope, history and recent development in Political geography; approaches to study, major schools of political thought. Global Strategic Views.
FEBURARY	Geographic Elements and the State: Physical Elements; Human elements: Economic elements; Cultural elements and Political geography and environment interface .Concept of State , Nation, Frontiers and Boundaries
MARCH	Capital and Core Area , Geographical studies of Election , Supra - Nationalism i.e Emergance of International Organisation and their Role in World Politics, The changing patterns of World Powers.
APRIL	Geopolitical significance of Indian Ocean: Political geography of SAARC Region. Political geography of contemporary India with special reference to its spirit: Unity in Diversity. Emerging Politico - geographical issues in modern World.

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**SESSION 2020-21**

**TEACHING PLAN**

**M. A.IV SEMESTER GEOGRAPHY**

**PAPER-III**

**TITLE OF THE PAPER: ENVIRONMENT GEOGRAPHY**

MONTH	PLAN
JANUARY	Meaning, definition, Concepts and theories related to environment. Environment and its components, Man environment relationship, Ecology and Ecosystem.
FEBURARY	Plant and Animal Kingdom, Bio-diversity. Biomes. Food Chains, Tropic level and productivity, Energy flow, Circulation of Elements, hydrological cycle.
MARCH	Soil system-erosion, Man and Climate, Environment Degradation. Environment Planning and Management, Pollution.
APRIL	Deforestation and Desertification, Hazards and Disaster. Environment Problem- global and in Indian scenario, Global Co-operation, World Summit on Sustainable development.

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**TEACHING PLAN**  
**SESSION 2020-21**  
**M.A. IV SEMESTER GEOGRAPHY**  
**PAPER-IV**  
**TITLE OF THE PAPER: DISASTER MANAGEMENT**

MONTH	PLAN
JANUARY	Disaster meaning and concept- hazard, risk, vulnerability, disaster management, plans, managing environment. Disaster its effect on different social group. Poverty and vulnerability. Disaster management prevention, preparedness and mitigation.
FEBRUARY	Disaster - Classification of disaster; Natural disaster - earthquake, floods, drought and global warming causes consequences and mitigation, natural disaster prone areas of world and India
MARCH	manmade disasters, their types-technological and industrial disasters. Social disaster: cause consequences and mitigation. With special reference to India.
APRIL	Disaster management- relief and response, reconstruction and rehabilitation. Disaster - Strategies for survival, types of strategies. Importance of information in disaster management, significance of Remote Sense and GIS. Planning in the context of Disaster management.

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**SESSION 2018-19**

**TEACHING PLAN**

**M. A.IV SEMESTER GEOGRAPHY**

**PROJECT WORK**

**TITLE OF THE PAPER: SOCIO ECONOMIC SURVEY**

MONTH	PLAN
JANUARY	Physical aspect- Location, Physical feature, Climate, Vegetation, Drainage, Soil and Land use. Cultural aspect- Population, Economic activities, Services and Settlements. Analysis of the findings and report writing.
FEBURARY	
MARCH	
APRIL	



	<b>Name of Programme</b>	<b>Course/ Paper</b>	<b>Name of course/ Paper</b>	<b>Course outcome (should include one point for each unit of the paper)</b>
NOVEMBER		<b>Paper II</b>	हिन्दी भाषा साहित्य का इतिहास तथा काव्याङ्ग विवेचन	I- हिन्दी भाषा के स्वरूप का विवरण
DECEMBER				II- हिन्दी के शब्द भंडार से अवगत कराना
JANUARY				III-हिन्दी साहित्य के इतिहास का परिचय
FEBRUARY				IV- काव्याङ्ग में रस के प्रकार व अंगों का परिचय
MARCH				V- काव्याङ्ग में छंद व अलंकारों के प्रकार व अंगों का परिचय
NOVEMBER	<b>M.A. I sem</b>	<b>Paper I</b>	हिन्दी साहित्य का इतिहास	I- हिन्दी साहित्य का इतिहास दर्शन और साहित्येतिहास की समीक्षा
DECEMBER				II- आदिकाल के कवियों की समीक्षा
JANUARY				III- भक्ति काल का अध्ययन
FEBRUARY				IV- सूफी और प्रेमाख्यानक कवियों का अध्ययन
NOVEMBER		<b>Paper II</b>	प्राचीन एवं मध्यकालीन काव्य	I- चंदबरदाई के पृथ्वीराज रासो का अध्ययन
DECEMBER				II- कबीर की साखियों की व्याख्या व समीक्षा
JANUARY				III- जायसी के नागमती विरह खंड की समीक्षा
FEBRUARY				IV-अन्य भक्तिकालीन कवियों का परिचय
NOVEMBER		<b>Paper III</b>	आधुनिक हिन्दी काव्य	I- मैथिलीशरण गुप्त के साकेत का अध्ययन
DECEMBER				II- जयशंकर प्रसाद के महाकाव्य कामायनी का अध्ययन
JANUARY				III- सूर्यकांत त्रिपाठी निराला की कविताओं की समीक्षा व व्याख्या
FEBRUARY				IV-अन्य आधुनिक कवियों की समीक्षा
NOVEMBER		<b>Paper IV</b>	आधुनिक गद्य साहित्य	I- स्कंदगुप्त नाटक की समीक्षा

	<b>Name of Programme</b>	<b>Course/ Paper</b>	<b>Name of course/ Paper</b>	<b>Course outcome (should include one point for each unit of the paper)</b>
DECEMBER				II-आषाढ़ का एक दिन की नाट्य समीक्षा
JANUARY				III- विभिन्न निबंधों की समीक्षा
FEBRUARY				IV-विभिन्न विधाओं के अन्य रचनाकारों की समीक्षा
JUNE	<b>M.A. II sem</b>	<b>Paper I</b>	<b>हिन्दी साहित्य का इतिहास भाग 2</b>	I- रीतिकाल एवं उसकी अन्य धाराओं का अध्ययन
JULY				II- आधुनिक काल का परिचय
AUGUST				III-द्विवेदी युग व अन्यवादों व प्रवृत्तियों का अध्ययन
SEPTEMBER				IV- हिन्दी गद्य का विकास
JUNE		<b>Paper II</b>	<b>प्राचीन एवं मध्यकालीन काव्य भाग 2</b>	I - सूरदास के भ्रमरगीत सार की काव्य समीक्षा
JULY				II.तुलसी के रामचरित मानस के सुंदरकांड के माध्यम से सदकर्म की प्रेरणा
AUGUST				III- बिहारी के काव्य की व्याख्या व समीक्षा
SEPTEMBER				IV-विभिन्न कवियों की समीक्षा
JUNE		<b>Paper III</b>	<b>आधुनिक हिन्दी काव्य भाग 2</b>	I-अज्ञेय की कविताओं की व्याख्या व समीक्षा
JULY				II- मुक्तिबोध की लंबी कविता अंधेरे में की व्याख्या
AUGUST				III- नागार्जुन की विभिन्न कविताओं की समीक्षा
SEPTEMBER				IV- द्रुत पाठ के विभिन्न कवियों की समीक्षा
JUNE		<b>Paper IV</b>	<b>आधुनिक गद्य साहित्य भाग 2</b>	I - गोदान उपन्यास की समीक्षा
JULY				II- आंचलिक उपन्यास मैला आंचल की समीक्षा
AUGUST				III- विभिन्न कहानियों की व्याख्या व समीक्षा
SEPTEMBER				IV - विभिन्न कहानीकारों की रचनाओं का अध्ययन

	<b>Name of Programme</b>	<b>Course/ Paper</b>	<b>Name of course/ Paper</b>	<b>Course outcome (should include one point for each unit of the paper)</b>
NOVEMBER	<b>M.A. III SEMESTER</b>	<b>Paper I</b>	<b>काव्य शास्त्र एवं साहित्यालोचन भाग 1</b>	I. भारतीय काव्यशास्त्र में काव्य हेतु ,लक्षण व प्रयोजन का अध्ययन
DECEMBER				II. अलंकार , रीति , वक्रोक्ति , ध्वनि और औचित्य सिद्धान्त की समीक्षा
JANUARY				III. पाश्चात्य काव्य शास्त्री प्लेटो और अरस्तू के सिद्धांतों का अध्ययन
FEBRUARY				IV. लॉजाइनस और मैथ्यू अर्नोल्ड की काव्य अवधारणा का अध्ययन
NOVEMBER		<b>Paper II</b>	<b>भाषा विज्ञान व हिन्दी भाषा भाग 1</b>	I. भाषा व भाषा विज्ञान का आधारभूत ज्ञान
DECEMBER				II. स्वन प्रक्रिया का अध्ययन
JANUARY				III. रूप विज्ञान व वाक्य संरचना का अध्ययन
FEBRUARY				IV. अर्थ विज्ञान का अध्ययन
NOVEMBER		<b>Paper III</b>	<b>प्रयोजनमूलक हिन्दी भाग 1</b>	I. हिन्दी के विभिन्न रूप व कार्यालयीन हिन्दी ,राजभाषा का अध्ययन
DECEMBER				II. पारिभाषिक शब्दावली एवं कम्प्यूटर में हिन्दी का अनुप्रयोग
JANUARY				III. इंटरनेट संपर्क उपकरणों का परिचय
FEBRUARY				IV. पत्रकारिता स्वरूप एवं प्रकार
NOVEMBER		<b>Paper IV</b>	<b>भारतीय साहित्य</b>	I. भारतीय साहित्य का स्वरूप
DECEMBER				II. पूर्वाञ्चल भाषा वर्ग में बंगला भाषा व साहित्य का अध्ययन
JANUARY				III. बंगला और हिन्दी का तुलनात्मक अध्ययन
FEBRUARY				IV. अग्निगर्भ उपन्यास व हयवदन नाटक काबी आलोचनात्मक अध्ययन
JUNE	<b>M.A. IV SEMESTER</b>	<b>Paper I</b>	<b>काव्य शास्त्र एवं साहित्यालोचन भाग 2</b>	I. अभिव्यंजनावाद , स्वच्छंदतावाद आदि का अध्ययन
JULY				II. विभिन्न आचार्यों का काव्यशास्त्रीय सीएचआईएनटीएन

	<b>Name of Programme</b>	<b>Course/ Paper</b>	<b>Name of course/ Paper</b>	<b>Course outcome (should include one point for each unit of the paper)</b>
AUGUST				III. आधुनिक हिन्दी आलोचना की प्रमुख प्रवृत्तियाँ
SEPTEMBER				IV. व्यावहारिक समीक्षा
JUNE		<b>Paper II</b>	<b>भाषा विज्ञान व हिन्दी भाषा भाग 2</b>	I. प्राचीन भारतीय आर्य भाषाओं का अध्ययन
JULY				II. हिन्दी की उप भाषाओं का अध्ययन
AUGUST				III. हिन्दी के विविध रूपों का अध्ययन
SEPTEMBER				IV. देवनागरी लिपि का अध्ययन
JUNE		<b>Paper III</b>	<b>प्रयोजनमूलक हिन्दी भाग 2</b>	I. मीडिया लेखन जैसे जनसंचार के माध्यमों का अध्ययन
JULY				II. दृश्य - श्रव्य माध्यम (फिल्म ,टेलीविजन व रेडियो )में भाषा की प्रकृति
AUGUST				III. अनुवाद परिभाषा , क्षेत्र व सीमाएं
SEPTEMBER				IV. शाब्दिक अनुवाद , भावानुवाद आदि का अध्ययन
JUNE		<b>Paper IV</b>	<b>जनपदीय भाषा साहित्य (छत्तीसगढ़ी )</b>	I. छत्तीसगढ़ का साहित्यिक और सांस्कृतिक इतिहास
JULY				II. छत्तीसगढ़ के प्रमुख कवियों का परिचय
AUGUST				III. छत्तीसगढ़ी नाटक और उपन्यास का अध्ययन
SEPTEMBER				IV. छत्तीसगढ़ के अन्य रचनाकारों का अध्ययन

M A I ,II SEM. HISTORY , 1<sup>st</sup> PAPER

HISTORY METHOD WRITING

SESSION – 2020-21

S.NO.	MONTH	PLAN
1	AUGUST	History meaning and definition . The extent and types of history. History relation to other social sciences. Utility of history.
2	SEPTEMBER	Cause of Action in history. Objectivity in history. Facts in history. Is history a science or an art.
3	OCTOBER	Relativistic theory of history . The cyclist theory of history . Sociological theory of history . Idealistic theory of history .
4	NOVEMBER	Comparative theory of history . Critical theory of history . Materialistic theory of history . Etihasvad .
5	DECEMBER	RIVISION
1	JANUARY	II SEM Greek and Roman historiography . Chinese historiography . Arab and Persian historiography . The tradition of writing historiography in ancient India .
2	FEBRUARY	Medieval Indian historiography . Modern Indian historiography . Themes of indian history - economic history . Thimes of indian history - social and cultural history .
3	MARCH	Imperialist interpretation of indian history . Nationalist interpretation of indian history . Marxist interpretation of indian history . Nationalist interpretation of indian history . Democratic interpretation of indian history .
4	April	Ancient indian history – nomenclature of Indus valley civilization , Origin of Rajput's . Medieval indian history – Muhammad Bin Tughlaq ,Aurangzeb's religious fanaticism .  Modern indian history – Form of revolution 1857 ,partition of india .

M A I , II SEM ,HISTORY

SECOND PAPER – WORLD HISTORY 1871 -1919

SESSION 2020-21

S NO	MONTH	PLAN
1	AUGUST	New imperialism – partition of Africa . Development of Capitalism . Rise of Labaralism in England ,France. Rise of Socialism .
2	SEPTEMBER	Home and foreign policy of Bismark . Foreign policy of Kaiser William II . Foreign policy of Italy [1871 -1914] Industrial development in United State of America .
3	October	Meiji Restoration in Japan . Russio –Japanese war –1904-5 . Chinese revolution – 1911 . Eastern problem –1878 -1913—Berlin congress – 1878
4	NOVEMBER	Balkan war – 1912 -13. First world war – 1914 -1918 –causes incidents and results . Russian revolution -1917—causes and results Peace treaties of Paris .
1	JANUARY	II SEM Achievement and failure of league of nations . Problem of compensation . Problem of disarmament . World recession - 1929
2	FEBRUARY	Fascism in Italy - Mussolini Nazism in Germany – Hitler . Second world war – causes Incidents and results .
3	MARCH	Communism in China National movement in Indochina . National movement in Indonesia . Arab nationalism .
4	April	United Nations Organization Cold war Non –Alignment movement. Role of India in non alignment movement

M A I,II SEM 3<sup>rd</sup> PAPER – HISTORY OF CHHATTISGARH

SESSION 2020-21

S N	MONTH	I SEM PLAN
1	AUGUST	Introduction of Chhattisgarh – nomenclature and geographical location Vedic to Maurya period Chhattisgarh -political social economic and cultural condition . Chhattisgarh during the Satavahana period Gupta vakataka era Chhattisgarh
2	SEPTEMBER	Nala and Rajershitulya dynasty Sharabhpuriya dynasty Pandu dynasty Chindacknagvansh and Phaninagvansh
3	OCTOBER	Establishment of Kalchuri rule Early Kalchury king Post Kalachuri king- arrival before Marathas Social economic and cultural condition of Kalchuris
4	NOVEMBER	Maratha invasion Bimbaji Bhosle Suba administration Socio economic and cultural condition of Maratha period
1	JANUARY	II SEM Chhattisgarh under British protection and Raghuji 3 <sup>rd</sup> [1818-1830] British administration in Chhattisgarh Governance system after the formation of the central provinces British land revenue system
2	FEBRUARY	Social change in British era Chhattisgarh Economic condition in British era Chhattisgarh Cultural condition in British era Chhattisgarh British policy towards the princely states of chhattisgarh
3	MARCH	The Revolt of 1857 in Chhattisgarh National movement in Chhattisgarh – 1885-1919 National movement in Chhattisgarh – 1920-1947 Peasant ,lebar and tribal movement in Chhattisgarh
4	APRIL	Religious faith of chhattisgarh -Shaiva, shakta, Vaishnav ,Jain Buddha Kabir sect, Satnam sect Folk culture of Chhattisgarh Background of Chhattisgarh state formation

M A I,II SEM,HISTORY,4<sup>th</sup> PAPER- Tourism theory and practice  
SESSION 2020-21

1	AUGUST Unit -1	Explanation of tourism Principles and objectives of tourism . Concept of tourism. Tourism information.
2	SEPTEMBER Unit - 2	History of tourism . Travel agency formation . Functions of travel agencies . Tour operators and guides .
3	OCTOBER Unit -3	Impact of tourism on the industry . Tourism – Accommodation and Hotel industry . Tourism and Handicrafts industry . Shops ,emporium and Fair.
4	NOVEMBER Unit -4	Tourism and folk culture . Important historical tourist center of India --Agra ,Ajanta Ellora Caves, Bhimbetka Caves ,Hampi ,Sun temple- Konark ,Khajuraho ,Rameshwaram . Important historical tourist center of Chhattisgarh – Sirpur, Giroudpuri ,Bhoramdev ,Dantewada, DongargarhRatanpurRamgiri . Vibrant culture and performing spiritual arts .
1	JANUARY Unit -1	Tourism organization . Central tourism organization of india. Tourism department and organization of Chhattisgarh . State government tourism -encouragement plans-with reference of Chhattisgarh.
2	FEBRUARY	Tourism Marketing . International tourism. Tourism and transport. Wildlife of Chhattisgarh -Barnawapara ,Achanackmarga.
3	MARCH	Tourism and environment . Importance of national parks in tourism . Tourism and fair- in a national perspective. Monuments and Museums.
4	APRIL	Tourism prospects in Chhattisgarh . Major tourist places of Chhattisgarh.



M A III ,IV SEM ,HISTORY – I PAPER – Ancient India

SESSION -2020-21

S NO	MONTH	II SEM PLAN
1	AUGUST	A review of sources related to ancient Indian history Stone age culture Megalithic civilization Harappan civilization
2	SEPTEMBER	Pre Vedic society – political ,economic ,social and religious life Later Vedic society – political economic social and religious life Culture of Epic era Religious movement – Jainism and Buddhism
3	OCTOBER	Mahajanapada period – sixteen Mahajanapadas Republic system Urban centers and economic development Body corporate -castsystem ,Aashram system, tradition ,marriage Status of woman
4	NOVEMBER	Agricultural development of ancient India Development of industry and trade Scientific advancement in ancient times Ancient religious architecture
1	JANUARY	IV SEM Rise of Magadha empire -Haryak to Nand dynasty Alexander's invasion -causes and result Sangam era – social economic and religious condition of south India Administrative arrangement in Maurya period
2	FABRUARY	Art and architecture Ashoka's dhamma Downfall of Maurya empire Culture of Kushan satavahana period
3	MARCH	Gupta period administrative system Scientific ,literary and cultural development in Gupta period Harshvardhan period Development of Vaishnavism and Shaivism in ancient India
4	APRIL	Rise of cast system in ancient India ,untouchability Social and religious status of woman Development of education in ancient India Development of Temple architect sculpture art

M A III & IV SEM HISTORY -II PAPER- HISTORY OF INDIA[650 to 1200]

SESSION -2020-21

S N	MONTH	III SEM PLAN
1	AUGUST	Means of knowing history Political changes Economic and social changes Eastern India – Pal ,Sen dynasty
2	SEPTEMBER	Indian state – Pratihara, Chauhan , Parmar dynasty Kalchuri ,Chandel dynasty Pallava ,Chalukya dynasty Rashtrakoot, Chola dynasty
3	OCTOBER	Origin of Rajput Raj system and administration of Rajput Socio, economic ,religious condition of Rajput period Trade relation with south east Asia and western Asia
4	NOVEMBER	Early contact with Arab , Arab invasion in Sindh Arrival of Turks in India – Mahmud Ghaznavi Muhammad Gori -invasion -causes and result Success of Turks
1	JANUARY	IV SEM Agricultural economic arrangement – land donation Development of agricultural technology Urban economy -craft and trade Contribution of 'Guild' in economic arena
2	FEBRUARY	Development of new Trade and craft class Origin of caste system Untouchability Social status of woman
3	MARCH	Educational development and teaching institution Development of regional languages and literatures Temple architecture Development of Sculpture art
4	APRIL	Bhakti movement -with special reference of south India – Shaivism , Vaishnavism and Tantricism Vedanta ,Mimamsa philosophy Sufi movement

M A III ,IV SEM – III PAPER- INDIANs NATIONAL MOVEMENT

SESSION 2020-21

S N.	MONTH	III SEM PLAN
1	AUGUST	Revolt of 1857 – causes , nature results and failure Indian Renaissance -means and cause Social religious reform movement -Bramhasamaj, Arya samaj Ramacrishana mission, theosophical socity ,Aligarh movement
2	SEPTEMBER	Political organization of pre congress Establishment of national congress Liberalism Militancy
3	OCTOBER	Swadeshi movement Revolutionary movement -first step- Bengal Maharashtra Panjab " " step Marle -Minto reforms -1909
4	NOVEMBER	Home -rule movement Gandhian political thought Khilafat movement Indian government act 1919
1	JANUARY	IV SEM Non co operation movement Swaraj party Civil dis obedience movement Indian government act - 1935
2	FEBRUARY	Development of Indian industries Peasant and labor movement Tribes movement Quit India movement and Subhash Chandra Bos
3	MARCH	Communalism in Indian politics Cripps mission Cebinet mission plan Mount batton plan
4	APRils	Integration of Indian princely states -contribution of Sardar Patel Great leaders of india Twenty years of post independence -internal change ,foreign policy Five years plans

M A III ,IV SEM – IV PAPER- INDIANs NATIONAL MOVEMENT

SESSION 2020-21

S N.	MONTH	III SEM PLAN
1	AUGUST	SOURCE OF WOMAN STUDIES IDEOLOGY OF WOMAN STUDIES- LIBRILIST , EXTRIMIST IDEOLOGY OF WOMAN STUDIES- SOCILIST , COMMUNIST IDEOLOGY OF WOMAN STUDIES- PHYCISOLOGIEST
2	SEPTEMBER	POSITION OF WOMANS IN DIFFERENT RELIGIONS – HINDU RELIGION IN BUDDHISM AND JAINISM POSITION OF WOMANS IN ISLAM POSITION OF WOMAN IN SIKH RELIGION
3	OCTOBER	LIGEAL POSITION OF WOMANS- IN ANCIENT INDIA LIGEAL POSITION OF WOMANS -IN MEDIVAL INDIA SOCIAL RIGHTS-PROPERTY RIGHTS WOMAN ORGANISATION IN REFERENCE OF 20 <sup>TH</sup> CEN.
4	NOVEMBER	WOMANS AND FREEDOM MOMENT GANDHIAN MOMENT AND WOMANS WOMANS LIBERATION MOMENT WOMANS AND POLITICS IN POST INDEPENDECE INDIA
1	JANUARY	IV SEM WOMANS AND THERE WORK AREA DOMESTIC WORK AREA AGRICULTURE AND INDUSTRIAL AREA , TRADE WORK AREA EMPLOYED WOMAN
2	FEBRUARY	WOMANS AND CULTURE CENEMA THEATER AND MEDIA AREA LITRATURE AND RELIGION AREA LITRARY WRITING AND HISTEREOGRAPHY
3	MARCH	REFORM MOMENT AND WOMANS- BHAKTI MOMENT RELIGIOUS REFORM MOMENT AND WOMANS- BRAMH SAMAJ ARYA SAMAJ REFORM MOMENT AND WOMANS- ALIGARH MOMENT REFORM MOMENT AND WOMANS- THIOSOPHICAL SOCEITY , SELF RESPECT MOMENT
4	APRIL	ROLE OF WOMANS IN MOMENT AND POLITICS AREA- TRIBLE MOMENT PEASANT MOMENT LABOUR MOMENT ROLE OF MOMENTS IN LOCAL BODIES

**DEPARTMENT OF POLITICAL SCIENCE**

**SESSION 2020-21**

**TEACHING PLAN**

**PAPER-I**

**पाश्चात्य राजनीतिक चिंतन**

MONTH	PLAN
JANUARY	प्लेटो, अरस्तु
FEBRUARY	मैकियावली, टॉमस हाब्स
MARCH	जॉन लाक, जीन जैक्स, रूसो
APRIL	जेरेमी, बेन्थम जॉन स्टुअर्ट मिल थामस हिल ग्रीन
MAY	कार्ल मार्क्स ,ग्राम्स्की माओ एवं लेनिन

**SESSION 2020-21**  
**TEACHING PLAN**

**PAPER-II**  
**तुलनात्मक राजनीति**

MONTH	PLAN
JANUARY	राजनीतिक व्यवस्था के अध्ययन में तुलनात्मक पद्धति तुलनात्मक राजनीति का अर्थ, प्रकृति एवं क्षेत्र
FEBRUARY	तुलनात्मक राजनीति का विकास। राजनीतिक व्यवस्था की अवधारणा
MARCH	तुलनात्मक राजनीति के अध्ययन के विविध उपागम—परम्परागत, मार्क्सवादी, राजनीतिक समाजशास्त्र उपागम
APRIL	संरचनात्मक :— प्रकार्यात्मक उपागम राजनीतिक आधुनिकीकरण, राजनीतिक सहभागिता
MAY	राजनीतिक संस्कृति राजनीतिक समाजीकरण, राजनीतिक संचार

**SESSION 2020-21**  
**TEACHING PLAN**

**PAPER-III**  
**लोक प्रशासन**

MONTH	PLAN
JANUARY	लोक प्रशासन :- परिभाषा, प्रकृति, क्षेत्र विकास प्रशासन एवं नवीन प्रशासन
FEBRUARY	अध्ययन के उपागम :-निर्णयपरक, व्यवस्था सिद्धांत सुशासन, जवाबदेही और सूचना का अधिकार
MARCH	संगठन के सिद्धांत :-नियंत्रण का क्षेत्र, पदसोपान, केन्द्रीकरण एवं विकेन्द्रीकरण
APRIL	मुख्य कार्यपालिका :- प्रकार एवं भूमिका, सूत्र एवं स्टॉफ अभिकरण,
MAY	विभागीय संगठन, लोक निगम नौकरशाही

**SESSION 2020-21****TEACHING PLAN****PAPER-IV****छत्तीसगढ़ शासन एवं राजनीति**

MONTH	PLAN
JANUARY	राज्यो का पुर्नगठन (2000) तथा छत्तीसगढ़ का निर्माण
FEBRUARY	छत्तीसगढ़ निर्माण हेतु आंदोलन तथा छत्तीसगढ़ निर्माण के बाद समस्याएं एवं समस्याओं को दूर करने हेतु सुझाव
MARCH	छत्तीसगढ़ की राजनीति के निर्धारित तत्व एवं विशेषताएं छत्तीसगढ़ में जिला प्रशासन एवं जिलाधीश की भूमिका
APRIL	छत्तीसगढ़ में स्थानीय शासन एवं पंचायती राज छत्तीसगढ़ में विधानसभा की रचना एवं कार्यप्रणाली ,मतदान व्यवहार
MAY	छत्तीसगढ़ में किसान आंदोलन, नक्सलवाद समस्या एवं समाधान के उपाय छत्तीसगढ़ के विकास की राजनीति एवं विकास की योजनाएं



**M.A.III SEMESTER**

**SESSION 2020-21**  
**TEACHING PLAN**  
**PAPER-I**  
**भारतीय शासन एवं राजनीति**

MONTH	PLAN
JANUARY	संविधान सभा की पृष्ठभूमि, संगठन (संरचना) एवं कार्यप्रणाली, वैचारिक आधार, प्रस्तावना, विशेषताएँ
FEBRUARY	मौलिक अधिकार एवं मौलिक कर्तव्य, राज्य के नीति निर्देशक सिद्धांत,
MARCH	सामाजिक परिवर्तन के उपकरण के रूप में संविधान संशोधन प्रक्रिया संघीय सरकार – राष्ट्रपति, प्रधानमंत्री
APRIL	मंत्रीपरिषद, संसद सर्वोच्च न्यायालय एवं न्यायिक पुनर्विलोकन
MAY	न्यायिक सक्रियतावाद दलपद्धति की प्रकृति, राष्ट्रीय एवं क्षेत्रीय दल, दबाव समूह

**SESSION 2020-21**

**TEACHING PLAN**  
**PAPER-II**  
**अंतर्राष्ट्रीय राजनीति के सिद्धांत**

MONTH	PLAN
JANUARY	अंतर्राष्ट्रीय राजनीति का विषय के रूप में विकास, प्रकृति एवं क्षेत्र
FEBRUARY	अध्ययन पद्धतियाँ :- परम्परागत एवं वैज्ञानिक अंतर्राष्ट्रीय राजनीति के सिद्धांत :- (वृहत्) यथार्थवाद, आदर्शवाद, संतुलन (साम्यावस्था)
MARCH	निर्णय-निर्माण, खेल, संचार, व्यवस्था सिद्धांत शक्ति संकल्पना :- तत्व एवं सीमाएं । शक्ति प्रबंधन – शक्ति संतुलन
APRIL	सामूहिक सुरक्षा । अंतर्राष्ट्रीय राजनीति में राष्ट्रीय हित निःशस्त्रीकरण
MAY	परमाणु अप्रसार – सी.टी.बीटी. एन.पी.टी क्षेत्रवाद एवं क्षेत्रीय संगठन , साम्राज्यवाद, नव-साम्राज्यवाद

**SESSION 2020-21**  
**TEACHING PLAN**

**PAPER-III**  
**शोध प्रविधि**

MONTH	PLAN
JANUARY	सामाजिक अनुसंधान – अर्थ एवं प्रकृति, विशेषताएँ , प्रकार
FEBRUARY	सामाजिक अनुसंधान महत्व एवं समस्याएँ वैज्ञानिक पद्धति, सामाजिक अनुसंधान के प्रमुख चरण, वैयक्तिक अध्ययन पद्धति
MARCH	सामाजिक सर्वेक्षण – उद्देश्य, महत्व, प्रमुख चरण, अनुसंधान अभिकल्पना, उपकल्पना
APRIL	तथ्यों के प्राथमिक एवं द्वितीयक स्रोत साक्षात्कार पद्धति :- गुणदोष एवं सीमाएँ
MAY	तथ्य संग्रहण की प्रविधियाँ : अवलोकन पद्धति प्रकार, गुण एवं दोष

**SESSION 2020-21**  
**TEACHING PLAN**  
**PAPER-IV**  
**अंतर्राष्ट्रीय संगठन**

MONTH	PLAN
JANUARY	अंतर्राष्ट्रीय संगठन की प्रकृति एवं विकास।
FEBRUARY	अंतर्राष्ट्रीय संगठन – राष्ट्र राज्य एवं अंतर्राष्ट्रीय व्यवस्था का समन्वय  राष्ट्रसंघ – कार्य एवं असफलता, संयुक्त राष्ट्र संघ सुरक्षा परिषद
MARCH	संयुक्त राष्ट्र संघ के अन्य अंगों की संरचना एवं कार्य
APRIL	विवादों का शांतिपूर्ण समाधान एवं बाध्यकारी उपाय,  अंतर्राष्ट्रीय न्यायालय
MAY	आर्थिक एवं सामाजिक विकास में संयुक्त राष्ट्र संघ की भूमिका  उत्तर शीत युद्धकाल और संयुक्त राष्ट्रसंघ

**M.A.II SEMESTER**

**SESSION 2020-21**

**TEACHING PLAN**

**PAPER-I**

**राजनीतिक चिंतन**

MONTH	PLAN
JUNE	मनु, कौटिल्य एवं शांतिपर्व  विवेकानंद , अरविन्द घोष
JULY	महात्मा गांधी, डॉ.भीमराव अम्बेडकर  एम एल रॉय, जयप्रकाश नारायण , राम मनोहर लोहिया
AUGUST	जार्ज बिल्हेलम फ्रेडरिक हीगल  परम्परागत राजनीतिक सिद्धांत एवं आधुनिक राजनीति सिद्धांत की विशेषताएं
SEPTEMBER	व्यवहारवाद एवं उत्तर व्यवहारवाद,  राजनीतिक चिंतन की समकालीन प्रवृत्तियाँ

**SESSION 2020-21**  
**TEACHING PLAN**

**PAPER-II**

विकासशील देशों की राजनीति एवं तुलनात्मक राजनीति

MONTH	PLAN
JUNE	राजनीतिक विकास राजनीतिक अभिजन संविधानवाद
JULY	सरकार का वर्गीकरण :- एकात्मक व संघात्मक, संसदीय व अध्यक्षीय नौकरशाही :- संरचना, कार्य व भूमिका।
AUGUST	राजनीतिक दल, दबाव समूह, राजनीतिक संस्थाएँ :- व्यवस्थापिका – संरचना, कार्य व भूमिका
SEPTEMBER	कार्यपालिका :- संरचना, कार्य व भूमिका, न्यायपालिका :- संरचना , कार्य व भूमिका न्यायिक पुनरीक्षण शक्ति पृथक्करण । अवरोध एवं संतुलन

**SESSION 2020-21****TEACHING PLAN****PAPER-III****लोक प्रशासन (स्थानीय स्वायत्त शासन )**

MONTH	PLAN
JUNE	कार्मिक प्रशासन : भर्ती पदोन्नति, प्रशिक्षण,  अनुशासन, मनोबल, नियोक्ता कर्मचारी संबंध
JULY	वित्तीय प्रशासन :- अर्थ प्रकृति, विशेषताएं,  राजनीतिक बजट :- सिद्धांत एवं महत्व, भारत में बजट निर्माण प्रक्रिया।
AUGUST	प्रशासन पर नियंत्रण, व्यवस्थापिका, न्यापालिका  स्थानीय स्वायत्तशासी संस्थाओं की भूमिका
SEPTEMBER	लोक प्रशासन में भ्रष्टाचार  शिकायत निवारण संस्थाएं,आम्बुड्समेन, लोकपाल, लोकायुक्त

**SESSION 2020-21**  
**TEACHING PLAN**

**PAPER-IV**

**भारत की विदेश नीति**

MONTH	PLAN
JUNE	विदेशनीति :-अर्थ एवं निर्धारक तत्व, विदेशनीति के अध्ययन के उपांगम  भारतीय विदेशनीति :-सिद्धांत एवं उद्देश्य
JULY	भारत की विदेशनीति के आंतरिक निर्धारक :- भूगोल, इतिहास, संस्कृति ,सामाजिक, आर्थिक, एवं राजनितिक व्यवस्था  भारतीय विदेशनीति के बाह्य निर्धारक :- वैश्विक, क्षेत्रीय एवं द्विपक्षीय
AUGUST	विदेशनीति निर्माण प्रक्रिया की संरचना, भारतीय विदेशनीति में नैरन्तर्य एवं परिवर्तन  भारत के महाशक्तियों के साथ संघर्ष – अमेरिका एवं रूस
SEPTEMBER	भारत एवं पड़ोसी देश – चीन एवं पाकिस्तान  बांग्लादेश , नेपाल एवं श्रीलंका



**M.A.IV SEMESTER**

**SESSION 2020-21**

**TEACHING PLAN**

**PAPER-I**

**भारतीय शासन में राज्यों की राजनीति**

MONTH	PLAN
JUNE	निर्वाचन आयोग, संघ लोक सेवा आयोग  भारतीय संघवाद तथा केन्द्र राज्य संबंध
JULY	राज्यपाल, मुख्यमंत्री  मंत्रीमंडल ,राज्य विधान मंडल
AUGUST	राष्ट्रीय राजनीति का राज्य राजनीति पर प्रभाव राज्यों की स्वायत्ता की मांग  गठबंधन की राजनीति दलबदल की राजनीति
SEPTEMBER	भारतीय राजनीति में जाति,धर्म का प्रभाव  भारतीय राजनीति में, क्षेत्रवाद, भाषा का प्रभाव

**SESSION 2020-21****TEACHING PLAN****PAPER-II****अंतर्राष्ट्रीय राजनीति के सिद्धांत (समकालीन मुद्दे)**

MONTH	PLAN
JUNE	अंतर्राष्ट्रीय राजनीति में असंलग्नता – आधार, भूमिका, महत्व एवं प्रासंगिकता  शीतयुद्ध एवं शीतयुद्ध की समाप्ति – कारण एवं परिणाम । नई विश्व व्यवस्था
JULY	उत्तर शीत युद्धकालीन महत्वपूर्ण मुद्दे – वैश्वीकरण, मानवाधिकार  उत्तर शीत युद्धकालीन महत्वपूर्ण मुद्दे – पर्यावरणवाद, आतंकवाद
AUGUST	तृतीय विश्व और इसकी समस्याएँ , उत्तर दक्षिण संबंध ।  प्रमुख राष्ट्रों की विदेश नीतियां – भारत
SEPTEMBER	प्रमुख राष्ट्रों की विदेश नीतियां -संयुक्त राज्य अमेरिका  चीन एवं रूस की विदेश नीति

**SESSION 2020-21****TEACHING PLAN****PAPER-III****शोध प्रविधि – क्षेत्रीय कार्य**

MONTH	PLAN
JUNE	प्रश्नावली :- प्रकार, गुण, दोष एवं सीमाएं अनुसूची :- प्रकार, गुण, दोष एवं सीमाएं
JULY	निदर्शन :- अर्थ एवं प्रकार सारणीयन एवं <b>संकेतन</b> , अनुमापन प्रविधियाँ
AUGUST	प्रक्षेपी प्रविधियाँ , अनुसंधान की समस्या अनुसंधान दल, प्रतिवेदन लेखन,
SEPTEMBER	सामाजिक अनुसंधान में साँख्यिकी की उपयोगिता एवं सीमायें – मीन, मोड, मीडियन शोध में कम्प्यूटर का उपयोग

## SESSION 2020-21

### TEACHING PLAN

#### PAPER-IV

#### अंतराष्ट्रीय कानून

MONTH	PLAN
JUNE	अंतराष्ट्रीय कानून :- प्रकृति क्षेत्र, विकास, स्रोत एवं संहिताकरण। राष्ट्रीय एवं अंतराष्ट्रीय कानून।  अंतराष्ट्रीय कानून एवं राज्य उत्तराधिकार , राज्यों की मान्यता
JULY	राज्य का क्षेत्राधिकार, राज्यों की समानता  युद्ध :- परिभाषा, प्रकृति, लक्षण, घोषणा, प्रभाव । स्थल युद्ध के नियम :- समुद्री युद्ध के नियम एवं वायु युद्ध के नियम, आणविक युद्ध
AUGUST	युद्ध की समाप्ति एवं पूर्वावस्था, युद्ध-अपराध  तटस्थता :- परिभाषा, प्रकार, लक्षण। तटस्थ राज्यों के अधिकार एवं कर्तव्य
SEPTEMBER	नाकाबंदी,(परिवेष्टन) राजनयिक उन्मुक्तियाँ एवं विशेषाधिकार  अंतराष्ट्रीय कानून की सीमायें एवं संभावनायें, प्रत्यर्पण

**GOVT.D.B.GIRL'S P.G. (AUTONOMOUS) COLLEGE  
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**PROPOSED TEACHING PLAN FOR THE SESSION 2020-21**

Class - M.A. Psychology (I<sup>st</sup> & II<sup>nd</sup> Semester)

Paper- I– Basic Psychological process-I & Basic Psychological processes-II

MONTH/DAYS	PROPOSED PLAN
NOVEMBER/20 SEM-I	UNIT-I Psychophysics: Nature, Problem And methods, Signal detection theory, Subliminal perception and related factors. Perceptual process- Approaches to study Perception: Gestalt, Physiological, processing and Ecological Approaches. Perceptual Organization: Gestalt, Figure and Ground, Law of organization. Perceptual Constancy: Size, Shape and Brightness, Depth perception; Monocular and Binocular cues, Movement Perception: Nature, Types and Theories.
DECEMBER/23	UNIT-II Attention: Nature, Concept and Mechanism of Attention. Types, Theories and Applications UNIT-III Motivation and Emotion: Basic Motivational concept: Instincts, needs, drive incentive.
JANUARY/25	UNIT-III Motivational cycle. Approaches to study Motivation; Psychoanalytical, Ethological, S-R Cognitive, Humanistic, Biological Motives, Social motives: Achievement, Affiliation, and Approval. Emotion concept; physiological correlates of Emotions. Theories of Emotions; James- Lange, Canon- Bard. Schechter and Singer. Conflicts: Sources and Types
FEBRUARY/24	UNIT-IV Consciousness: Nature and concept of consciousness, Theories of Consciousness, Methods to Studying Consciousness, Consciousness Self and identity.
MARCH/25	Lab work, Seminars & Project work
APRIL/22	Semester Exam(Theory & Practical)
MAY/25 SEM-II	UNIT- I Learning Process: Classical Conditioning: Procedure, Phenomena and related issue. Instrumental Learning: phenomena, paradigms And Theoretical issue, Process Escape Conditioning, Avoidance Conditioning, Generalization, Reinforcement: Basic variable and schedule. Experimental Analysis of behavior: Behavior Modification, Shaping, Discrimination Learning, Neurophysiology of Learning
JUNE /25	UNIT-II Verbal Learning: Methods and Materials, Organizational Process, learning Theories: Hull, Tolman, and Skinner. Cognitive Approaches In Learning: latent Learning, Observational Learning.
JULY/26	UNIT-III Memory and Forgetting: Memory Processes; Encoding, Storage and Retrieval. Stages of Memory: Sensory Memory, Short Term Memory and Long Term Memory. Episodic and Semantic Memory.
AUGUST/23	UNIT-IV Forgetting: Nature and causes of Forgetting, Theories of Forgetting; Interference, Decay, Retrieval. Improving Memory. Lab work
SEPTEMBER/24	Seminars, Project work & Semester Exam(Theory & Practical)

Paper- II – Social Psychology & Group Processes and Cultural Psychology

MONTH/DAYS	Proposed Plan
NOVEMBER/20 SEM-I	UNIT-I Introduction and Social Psychological Perspective Social Psychology- Nature And Scope , Historical Background and Methods of Social Psychology, Theoretical Perspectives- Cognitive Dissonance, Attribution, Field and Psychodynamic, Symbolic Interaction and Socio-Biology
DECEMBER/23	UNIT-II Social Cognition and Person Perception Sources of Errors in Social Cognition, Social Perception and Person Perception, Determinants of Person Perception, Impression Formation and Management, Role of Stereotypes in Person Perception
JANUARY/25	UNIT-III Process of Social Influences Meaning and Nature of Social Influence , Social Facilitation, Conformity, Compliance and Obedience, Social Power , Reactance Attitude– Nature and Characteristics, Development and Formation of Attitudes, Theories of Attitude Change
FEBRUARY/24	UNIT-IV Social Psychology and Social Situations Prosocial Behavior, Aggression and Violence- nature, characteristics, determinants and theories, Management of Aggression
MARCH/25	Seminars &Project work Practical- Psychological Experiments
APRIL/22	Semester Exam (Theory &Practical)
MAY/25 SEM-II	UNIT-I Intergroup Relations Group Dynamics and Group Behavior, Group Effectiveness and Group Cohesiveness-Meanings, Formation, Decision Making, Problem Solving and Group Level Behaviors
JUNE /25	UNIT-II leadership Leadership –meaning, nature and functions, Styles and Effectiveness of Leadership, Psychology of Followers
JULY/26	UNIT-III Social Issues Poverty, Caste, Gender and Population Issues in India Communal Tension and Harmony Culture and Behavior-I Culture, Cognition and Emotions, Culture and Organization
AUGUST/23	UNIT-IV Culture And Behavior-II Culture And Health, Culture and Personality, Health , Environment and Law Practical – Psychological Tests

Title of the paper- Basic Research Methodology & Advance Research Methodology

MONTH/DAYS	PROPOSED PLAN
NOVEMBER/20 SEM-1	UNIT-I Introduction to Psychological Research Meaning, Purpose and Dimensions of Research. Types of Psychological Research: Qualitative and Quantitative. Parametric and Non-Parametric Statistics. Methods of Psychological Research: Experimental. Quasi-Experimental. Case Studies, Field Studies. Variables: Nature and Types. Techniques of experimental manipulation, controlling experiment.
DECEMBER/23	UNIT-II Research Process Research Process: Consideration of Research Problem and Hypothesis, Operationalization .Sampling: Probability and Non probability Sampling. Sources of Bias. Ethical Issues in Psychological Research.
JANUARY/25	UNIT-III Research Designs: Cross Sectional and Longitudinal, Experimental, Correlation. Single Factor, Quasi - Experimental
FEBRUARY/24	UNIT-IV Central Tendencies, Measures of Dispersion, Normal Probability Curve, its properties and utility. Null Hypothesis, Type-I and Type-II Errors, Level of Significance. Inferential Statistics: t -Test. Method of Data Collection Survey and Observation Method: Questionnaire, Interview. Tests and Scales.
MARCH/25	Lab work, Seminars & Project work
APRIL/22	Semester Exam (Theory & Practical)
MAY/25 SEM-II	UNIT-I Experimental Design; Randomized groups, Matched Groups, Factorial Designs; Between and within Groups, Repeated Measures (One Factors).
JUNE /25	UNIT-II Analysis of Variance; ANOVA; One Way and Two-Way
JULY/26	UNIT-III Measures of Relationships; Bi-serial, point Bi-serial, Tetra choric and Phi, Multiple and partial Correlations
AUGUST/23	UNIT-IV Regression and Factor Analysis: Simple and Multiple, factor Analysis: Assumptions, Methods, Rotation and Interpretation. Report Writing; Uses of computer in Psychological Researches, Research Report Writing.(APA Style)
SEPTEMBER/24	Seminars, Project work & Semester Exam(Theory & Practical)

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PROPOSED TEACHING PLAN FOR THE SESSION 2020-21

Class - M.A. Psychology (I<sup>st</sup> & II<sup>nd</sup> Semester)

**Paper IV – Psychopathology and Physiological Psychology and Health Behaviour**

MONTH/DAYS	PROPOSED PLAN
NOVEMBER/20 SEM-I	UNIT-I Concept of Psychopathology and Classification System Diagnosis: Purpose, diagnostic system: Mental Status Examination (MSE). Clinical Interview and Diagnostic Tools. Classification Systems: ICD and DSM .Evaluation of Classification System. Theoretical Models of Psychopathology Psychodynamic, Behavioural, Cognitive, Humanistic, Biological and Socio-Cultural.
DECEMBER/23	UNIT– II Disorders of Anxiety, Somatoform, and Behavioural Syndromes Panic, Phobic, OCD, Post-Traumatic, GAD, Somatoform Disorders, Impulse Control Disorder, Eating Disorder, Sleep Disorder. Dissociative Disorder: Types, Characteristics, Etiology and Management.
JANUARY/25	UNIT – III Psychotic Spectrum Disorders Schizophrenia, Mood Disorder. Personality Disorders: Clinical Characteristics, Etiology and Management.
FEBRUARY/24	UNIT – IV Substance Related Disorders and Developmental Disorders of Childhood Mental Retardation. Disorders of Childhood: Autism Spectrum Disorder (ASD), Attention Deficit Disorder (ADD), Attention Deficit and Hyperactive Disorder (ADHD). Learning disabilities.
MARCH/25	Lab work, Seminars & Project work
APRIL/22	Semester Exam(Theory & Practical)
MAY/25 SEM -II	UNIT – I Methods and Basic Concepts Methods of Physiological Psychology: Lesion and Brain Stimulation. Receptors, Effectors and Adjuster Mechanisms. Neural Impulse: Origin. Conduction and Measurement.
JUNE /25	UNIT – II Sensory System Vision and Audition. Human Nervous System: Structure and Functions.
JULY/26	UNIT – III Sleep and Waking: Stages of Sleep, Disorders of Sleep and Physiological Mechanisms of Sleep and Waking .Drinking and its Neural Mechanism; Hunger and its Neural Mechanism .Endocrine System: Chemical and Glandular.
AUGUST/23	UNIT - IV Approach to Therapy Psychoanalytic, Biological, Behavioural, Behavioural-Medicine and Spiritual Therapy. Mental Health- Mental Health Promotion and Maintenance. Current Issues and Trends in Health Psychology. Lab work
SEPTEMBER/24	Seminars, Project work & Semester Exam(Theory & Practical)

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**PROPOSED TEACHING PLAN FOR THE SESSION 2020-21**



**Class - M.A. Psychology (III<sup>rd</sup>&IV<sup>th</sup> Semester)Paper- I<sup>ST</sup>**  
**Personality and Indigenous Psychology-I & Life Span Development (Compulsory)**

MONTH/DAYS	PROPOSED PLAN
NOVEMBER/20 III <sup>rd</sup>	UNIT-I Personality; Meaning, Perspective and measurement of Personality Concept of Mature Personality, Personality Theory- Problems and Procedures.
DECEMBER/23	UNIT – II Approaches to Personality- I Psychodynamic Perspectives of Personality: Theories of Personality: Freud, Erikson, And Adler. Structure, Dynamics and Development of Personality. Methods to study Personality. Approaches to Personality –II Theories of Personality: Cattell and Eysenck- Structure, Dynamics and Development of Personality. Research Methods.
JANUARY/25	UNIT – III Approaches to Personality-III Cognitive, Behavioural and Humanistic. Kelly, Bandura and Roger's. Structure, Dynamics and Development of Personality. Research Methods.
FEBRUARY/24	UNIT – IV Approaches to Personality-IV Indigenous Concept and Models of Personality – Yogic, Samkhya. Current Researches in the Field of Personality.
MARCH/25	Internship, Seminars & Project work
APRIL/22	Semester Exam(Theory & Practical)
MAY/25 IV <sup>th</sup>	UNIT-IScope, Nature and Principles of development, Concepts-maturity, experience factors in development: Biogenic, Psychogenic and Sociogenic.Factors influencing development: Heredity, Environment, Motivation and Learning.Development processes: Nature, Principles and related.
JUNE /25	UNIT-IIMethods; Cross-sectional, longitudinal approach, Research strategies: Co relational, Experimental and other sequential techniques. The Developmental tasks and theories of Development. Psychoanalytic, Behaviourist and cognitive.
JULY/26	UNIT-IIIIHow life begins Infancy, baby hood and childhood. The Characteristics, adjustment, hazards and Personality Development.
AUGUST/23	UNIT-IVAdolescence and Adulthood. Characteristic, Physical, Social and Cognitive development psychosocial Changes and adjustment. Middle and Old age, Characteristics, problems. Personal social and vacation adjustment.
SEPTEMBER/24	Seminars, Project work & Semester Exam(Theory & Practical)

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**PROPOSED TEACHING PLAN FOR THE SESSION 2020-21**

M.A. Psychology (III<sup>rd</sup> & IV<sup>th</sup> Semester)  
PAPER- II PSYCHOLOGICAL ASSESSMENT I

MONTH/DAYS	Proposed Plan
NOVEMBER/20 SEM-III	UNIT-I Nature of psychological assessment: difference between physical and psychological assessment, problems in psychological assessment. Levels of assessment.
DECEMBER/23	UNIT-II SCALING- Unidimensional and multidimensional scale. Scale construction technique. Difference between tests, scales, questionnaires and schedule. Characteristics of a good psychological test. Difference between psychometric and projective tests.
JANUARY/25	UNIT-III Construction of a psychological tool: steps in test construction, item writing, pre try- out, item difficulty, discrimination power, types of psychological tests.
FEBRUARY/24	UNIT-IV Adaptation of Tests. Test taking Response Styles: Social Desirability, Acquiescence and Faking. Use of Psychological tests in Applied Field of Life: Diagnosis, Psychotherapy, Education, Occupations and Organizations.
MARCH/25	Seminars & Project work
APRIL/22	Semester Exam (Theory & Practical)
MAY/25 SEM-IV	UNIT-I Concept and Measurement of Intelligence, Major Tests of Intelligence developed under Western and Indian Cultural set up.
JUNE /25	UNIT-II Concept and Measurement of Aptitude; Major Test of Aptitude developed under Western and Indian Cultural set up. Achievement; concept and measurement of Achievement Test; Major Test of Achievement
JULY/26	UNIT-III Test of Personality: Projective and Psychometric Approaches, Major Test of Personality, developed under Western and Indian Cultural set up Lab work
AUGUST/23	UNIT-IV Test of Adjustment, Values, Interest, Stress and Anxiety development under Indian condition. Psychological Testing in Applied Field: Neuropsychological Testing: Objectives and Major Neuropsychological Test. Emotional Intelligence: Concept and Major Test of emotional Intelligence developed under western and Indian cultural set up.
SEPTEMBER/24	Seminars, Project work & Semester Exam(Theory & Practical)

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**PROPOSED TEACHING PLAN FOR THE SESSION 2020-21**  
**Class - M.A. Psychology (III<sup>rd</sup> & IV<sup>th</sup> Semester)**  
**Paper III – Cognitive Psychology & Psychology of Cognitive Abilities**

MONTH/DAYS	PROPOSED PLAN
NOVEMBER/20 SEM-I11	UNIT-I Theories of thought processes: Associationism, Gestalt, Information processing. Concept formation: Rules and Strategies. Role of concepts in thinking. Convergent and divergent thinking.
DECEMBER/23	UNIT-II Reasoning – deductive and inductive Problem- Solving: Type and strategies. Cognitive Strategies: Algorithms and heuristics. Decision- making; impediments to problem-solving.
JANUARY/25	UNIT-III Models of memory: Atkinson and Shiffrin, Craik and Lockhart, Tulving. Semantic memory: Episodic, trace model and network model.
FEBRUARY/24	UNIT-IV Biological basis of memory: The search for the engram, PET scan, and biochemical factors in memory. Improving memory: Strategies.
MARCH/25	Lab work, Seminars & Project work
APRIL/22	Semester Exam (Theory & Practical)
MAY/25 SEM-IV	UNIT-I Creative thinking and problem - solving. Language and thought. Theories of intelligence: Cattell, Jensen, Sternberg, Goleman. Creativity: Views of Torrance, Getzels, Guilford.
JUNE /25	UNIT-III Intelligence and creativity: Relationship. Abilities and achievement: Concept and role of emotional intelligence. UNIT-III Intelligence; Biological, Social, Eco- cultural determinants
JULY/26	UNIT-III Theories of intelligence: Spearman, Thurston, Guilford. UNIT-IV Individual and group differences: Extent and causes
AUGUST/23	.UNIT-IV Measurement of human abilities. Internship
SEPTEMBER/24	Seminars & Project work & Semester Exam (Practical & Theory)

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PROPOSED TEACHING PLAN FOR THE SESSION 2020-21

Class - M.A. Psychology (III<sup>rd</sup> & IV<sup>th</sup> Semester)

Paper IV –Educational Instructional Psychology& Basics of Psychological Guidance and Counseling

MONTH/DAYS	PROPOSED PLAN
NOVEMBER/20 SEM-III	Conceptual and Theoretical Perspectives in Educational Psychology. Theories: Behaviouristic, Social Learning and Cognitive Applications in Teaching.
DECEMBER/23	UNIT-II Instructional Models Programmed Learning, Concept, Characteristics and Models.
JANUARY/25	UNIT-III Learning Styles: Nature, Approaches to Learning Style, Measurement of Learning Styles. Attempt to Modify Learning Styles.
FEBRUARY/24	UNIT-IV Individual and Group Differences in Intelligence. Theories of Intelligence, Gender Differences issues in the Classroom. Learning and Motivation, Study Habit, importance, Levels of Learning.
MARCH/25	Lab work/Internship, Seminars &Project work
APRIL/22	Semester Exam(Theory &Practical)
MAY/25 SEM-IV	UNIT-I Nature, Need and Functions of Counseling. Counseling and Psychotherapy. Intervention, Goal and objectives of Counseling. Approaches of Counseling: Directive, Non-directive, Eclectic. Individual and group counseling. Evaluation of counseling. Follow up and placement services. Techniques of appraising the client: Standardized Techniques, Intelligence, Personality, Aptitude and Interest Interview.
JUNE /25	UNIT-II Characteristics of a good Counselor. Counselors, Training, Issues and trends in guidance and counseling. Ethical standards. Nature, Need and Functions of Guidance. Principles of Guidance. Techniques of appraising the client: Non-Standardized Methods. Anecdotal Record, Auto biography, Case study, Sociometric, Observation, Rating scale, Questionnaire.
JULY/26	UNIT-III Guidance service: - Kinds of guidance services. Various services in guidance programme- 1. Information 2. Self inventory 3. Preparation, follow up4. Placement 5. Individual data collection 6. Counseling 7. Research Services. Organization of a guidance program Relevance of Guidance under 10+2+3 educational patterns.
AUGUST/23	UNIT-IV Special areas of Guidance and Counseling: Marital, Family. Counseling for the pre-school and elementary school children adolescent. Special areas of Guidance- Vocational Guidance, Educational Guidance's personal Guidance Problems of Guidance in India.
SEPTEMBER/24	Seminars, Project work & Semester Exam(Theory &Practical)

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**PROPOSED TEACHING PLAN FOR THE SESSION 2020-21**

Class - M.A. Psychology (III<sup>rd</sup> & IV<sup>th</sup> Semester)

Paper –IV Clinical Diagnosis and Psychotherapeutic Counseling

MONTH/DAYS	PROPOSED PLAN
NOVEMBER/20 SEM-III	UNIT-I History And Current trends, Growth of the Branch; Growth in numbers, Differentiation. Professionals spiral of growth. Growth in India, Approach of Clinical Psychology: Psychodynamic, Behaviouristic, Humanistic, Cognitive and Socio- Cultural.
DECEMBER/23	UNIT–II Personality assessment: Projective, psychometric and behavioral measures. Projective tests: Characteristics and clinical use, Rorschach & TAT.
JANUARY/25	UNIT – III Human Diversity and Education Psychometric tests: MMPL, WAIS & WISC.
FEBRUARY/24	UNIT – IV Individual and Group Differences Dynamic diagnosis: Observation, Case history, and Interview. Neuropsychological examination: Approaches; Approaches; Halstead Neuropsychological test battery, Luria Nebraska.
MARCH/25	Seminars & Project work
APRIL/22	Semester Exam(Theory & Practical)
MAY/25 SEM-IV	UNIT-IMethods for preventing problems and developing resourcefulness: Training family members, sibling's behavior change agents, Maintenance of parent raining. Development of academic skills- Teaching study skills to adults, improving study behavior through self- control technique. Assertiveness Training, Developing Assertive Behavior through Converts Modeling Training, Developing Assertive Behavior through Converts Modeling. Personal Appearance, Improving clients grooming.
JUNE /25	UNIT-II Methods for Promoting Wise Decision- Making: With Children, Career Decision Making Evaluation of Problem Solving Competence. Drug Abuse: Drug abuse perception Reimforment of alternatives Peer Counseling: Peer Guidance program and behavioral interventions, Counselor Accountability System.
JULY/26	UNIT-IIIPsychotherapeutic Counseling: Psychoanalytic Technique, Behavioral. Technique, Client centered technique, Community interventions and Group therapeutic techniques. Methods for Altering Maladaptive Behavioral deficits: Shyness, delinquency, depression, Speech and sexual dysfunctions.
AUGUST/23	UNIT-IV Methods of altering inappropriate behavior: Marital maladjustment, child-misbehavior, homosexuality, and exhibitionism. Methods for altering maladaptive behavioral excesses: Excessive smoking, alcoholism, drug addiction and temper-outburst, physical aggression. Methods for altering fears and anxiety and treating psycho physiological disorders: test-anxiety, generalized anxiety, stress, school phobia, snake phobia, combination of fears, CHD, asthma and peptic ulcer.

Class -PG Diploma in Psychological Guidance and Counseling (PGC)  
PAPER-1

Psychological Guidance

MONTH/DAYS	Proposed Plan
NOVEMBER/20	UNIT –I Meaning and Functions of guidance. The bases of present guidance approach Basic Principle and assumption of guidance. Guidance services. Difference between Guidance and Counseling.
DECEMBER/23	UNIT –II Understanding Individual (use of interviews and questionnaires) Appraisals of Aptitude for guidance appraisal of personal qualities and interest : (Test and Inventories rating scale, behaviour descriptions. Anecdotal records. Socio- metric devices evaluation of achievement, Cumulative Records, Case study and follow-up.
JANUARY/25	UNIT –III Organization of guidance programme in school. Problems of guidance in India. Types of guidance services, characteristics of a well organized guidance programme.
FEBRUARY/24	UNIT –IV Guidance Services for children. Guidance Of young children. Elementary School Children, Junior high school children. Adolescents. Lab work
MARCH/25	UNIT –V Guidance services to adults, vocational guidance, Guidance of adults. Guidance towards family life. Guidance in personal adjustment, guidance to deviates, and guidance in group situation appraisals of guidance programmes, Emerging Trends in guidance.
APRIL/22	Internship
MAY/25	Internship
JUNE /25	Project work, Seminars &(Theory &Practical Exams)

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PROPOSED TEACHING PLAN FOR THE SESSION 2020-21  
Class -PG Diploma in Psychological Guidance and Counseling (PGC)  
PAPER-1I

## Counseling Theories and Techniques

MONTH/DAYS	Proposed Plan
NOVEMBER/20	UNIT –I COUNSELLING- The art and Science of helping Meaning. Purpose and goals of Counselling with special reference to India. Professional issues. Ethics. Education and training of the counselor. Counselling relationship.
DECEMBER/23	UNIT–II COUNSELLING PROCESS: Theories and Techniques of Counselling. Psychodynamic Approach, Freudian, Neo Freudian, Modern. Humanistic Approach: Existential client centered.
JANUARY/25	UNIT –III Cognitive Approach: rational emotive, Transaction analysis. Behavioural Approach: Operant conditioning. Behaviour Modification. Indian contribution Yoga and Meditation.
FEBRUARY/24	UNIT –IV COUNSELLING APPLICATION - 1 Counselling in schools, Career Counselling, Alcohol and Drug Abuse, Group counselling, Crises Intervention, Counselling Case Studies for each of the above types Of counselling applications, counselling interview. Lab work
MARCH/25	UNIT –V COUNSELING APPLICATION – 11 Management of- Shyness, Smoking, Depression, Stress, Marital Maladjustment ,Old age problems, Euresis, Phobias, Fear Of interview, Fear of stage performance, Problems in decision making.
APRIL/22	Internship
MAY/25	Internship
JUNE /25	Project work, Seminars & (Theory & Practical Exam)

**TEACHING PLAN**  
**M.A. SEMESTER – I**  
**PAPER – I**  
**CLASSICAL SOCIOLOGICAL TRADITION**  
**SESSION 2020-21**

MONTH	PLAN
JANUARY	<b>Unit-I: Historical Development of the Emergence of Sociology</b> – Historical development of social thought; Tradition feudal economic and social structure. <b>Historical Development of the Emergence of Sociology</b> – Impact of Industrial Revolution and New Mode of production on society and Economy; Emergence of Capitalist mode of production: Nature and Feature of Capitalism; Enlightenment and it's impact on thinking and reasoning.
FEBRUARY	<b>Unit-II: August Comte</b> – Social Static's and Dynamics; Law of three stages; Hierarchy of Sciences; Positivism; Scheme of Social Reconstruction.
MARCH	<b>Unit-III: Emile Durkheim</b> – Social Facts; Mechanical and Organic Solidarity; Division of Labour; Theory of Suicide; Collective Representation.
APRIL	<b>Unit-IV: Velfredo Pareto</b> – Theory of Social Change; Contribution of Methodology; Theory of the Circulation of Elite; Theory of Logical and Non-Logical Action.
MAY	<b>Seminars and Projects Semester Exam</b>



**TEACHING PLAN**  
**SEMESTER - I SOCIOLOGY**  
**PAPER - II**  
**PHYLOSOPHICAL AND CONCEPTUAL FOUNDATION OF**  
**RESEARCH METHODOLOGY**  
**2020-21**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>
1	JANUARY	Unit-I	Philosophical Roots Of Social Research: Issues In The Theories Of Epistemology Forms And Types Of Knowledge Validation Of Knowledge, Positivism And Its Critique Research Design, Steps And Process
2	FEBRUARY	Unit-II	Objectivity In Social Science: Scientific Methods In Social Science, Objectivity, Problems Of Objectivity Problems Of Concept And Theory, Hypothesis
3	MARCH	Unit-III	Qualitative Methods In Social Research: Techniques And Methods Of Qualitative Research: Observation And Interview Guide, Case Study, Content Analysis, Experiences In Field Work
4	APRIL	Unit-IV	Issues In Social Research: Issues In Qualitative Research, Theoretical Vs. Applied Research, Interdisciplinary Research
5	MAY		Semester Exam & Project Work

**TEACHING PLAN**  
**SEMESTER - I SOCIOLOGY**  
**PAPER - III**  
**SOCIAL CHANGE IN INDIA**

**2020-21**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>
1	JANUARY	Unit-I	<b>Conceptual &amp; Theoretical Frame Work :</b> <ul style="list-style-type: none"> <li>a. Social change concepts, Characteristics &amp; Forms</li> <li>b. Linear Theory &amp; Cyclical Theory, Evolution &amp; Progress</li> <li>c. Economic Factors &amp; Biotech Factors of Social Change</li> <li>d. Culture &amp; Development</li> </ul>
2	FEBRUARY	Unit-II	<b>Trends &amp; Processes of change in Modern India :</b> <ul style="list-style-type: none"> <li>a. Sanskritization</li> <li>b. Westernization</li> <li>c. Globalization</li> <li>d. Mass Media</li> </ul>
3	MARCH	Unit-III	<b>Changes in Tribal &amp; Rural India :</b> <ul style="list-style-type: none"> <li>a. Changes in Tribal Society</li> <li>b. Changes in Rural Society</li> <li>c. Rural economy</li> <li>d. Tradition &amp; Modernity</li> </ul>
4	APRIL	Unit-IV	<b>Changes in Urban &amp; Industrial India :</b> <ul style="list-style-type: none"> <li>a. Migration</li> <li>b. Development of Slums</li> <li>c. Development of Criminal Activities</li> <li>d. Welfare Measures &amp; Consequent changes</li> </ul>
5	MAY		Project Work & Semester Exam

**TEACHING PLAN**  
**SEMESTER - I SOCIOLOGY**  
**PAPER - IV**  
**RURAL SOCIOLOGY**

**2020-21**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>
1	JANUARY	Unit-I	Characteristics & Approaches a. Rural Social Structure b. Characteristics of rural Society c. Subltern Approaches d. d. Land Ownership and its types
2	FEBRUARY	Unit-II	Planned Change a. Panchayati raj b. Five Years Plan in India c. Changing Scenario of Indian Village d. Rural Leadership & Functionalism
3	MARCH	Unit-III	<b>Rural Development &amp; Change</b> a. Agrarian Legislation & Land Reform b. Green Revolution c. Globalization & its impacts on Agriculture d. Power Structure in Rural India
4	APRIL	Unit-IV	Welfare Measures & Consequents changes a. Community Development Projects b. Self Help Group c. MANREGA(Mahatma Gandhi Rural Employment Guarantee Act) d. Diversification of Occupation e. SSA (Sarv Siksha Abhiyan)
5	MAY		Project Work & Semester Exam

**M.A. SEMESTER – II**

**PAPER – I**

**CLASSICAL SOCIOLOGICAL THINKERS**

**2020-21**

<b>MONTH</b>	<b>PLAN</b>
JUNE	<b>Unit-I: Karl Marx</b> – Materialistic Interpretation of History; Class and Class Struggle; Alienation; Theory of Ideology; Theory of Surplus Value.
JULY	<b>Unit-II: Max Weber</b> – Theory of Social Action; Concept of Status, Class and Power; Sociology of Religion and Economic Development; Contribution to Methodology; Bureaucracy.
AUGUST	<b>Unit-III: Talcott Parsons</b> – Social Action; Pattern Variables; Social Stratifications-Class, Gender & Race; Social System.
SEPTEMBER	<b>Unit-IV: Robert K. Merton</b> – Reference Group; Social Conformity and Anomie; Middle Range Theory; Functional Paradigm.
OCTOBER	<b>Seminars and Projects, Semester Exam</b>

**TEACHING PLAN**  
**SEMESTER - II SOCIOLOGY**  
**PAPER - II**  
**QUANTITATIVE RESEARCH TECHNIQUES IN SOCIOLOGY**  
**2020-21**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>
1	JUNE	Unit-I	Tools And Techniques Of Social Research: Techniques Of Survey Research, Interview, Preparations Of Questionnaire And Interview Schedule, Sampling Design, Sampling Error
2	JULY	Unit-II	Measurement And Scaling Techniques: Levels Of Measurement, Types Of Scales: Nominal And Ordinal Reliability And Validity Of Scaling, Measures Of Social Distance: Thurston, Lickert, And Bogardus Scale
3	AUGUST	Unit-III	Statistics In Social Research: Measures Of Central Tendency: Mean Median And Mode, Measures Of Dispersion: Stander
4	SEPTEMBER	Unit-IV	Computer Application And Social Research: Application Of Computer In Social Research, MS Office, Ethical Issues In Social Research: Use Of Computer In Data Processing, Processing Of Data: Classification, Tabulation, And Interpretation,
5	OCTOBER		Project Work & Semester Exam

**TEACHING PLAN**  
**SEMESTER - II SOCIOLOGY**  
**PAPER – III**  
**SOCIOLOGY OF DEVELOPMENT**  
**2020-21**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>
1	JUNE	Unit-I	Perspective on development a. Modernization b. Social Transformation c. Change in Social Structure in Contemporary India d. Economic Aspects of Human Development & Social Development
2	JULY	Unit-II	Indian Experiences on Development a. Sociological Appraisal of Five Year Plan b. Social Consequences of Economic Reforms c. Socio Culture Impact of Globalization d. Social Implication of Info Tech & Biotech Revolution
3	AUGUST	Unit-III	Consequences of Development : a. Indicators of Social Development b. Development & Socio Economic Disparities c. Ecological Perspectives of Development d. Development & Migration
4	SEPTEMBER	Unit-IV	Issues & Development in Contemporary India a. Gender Discrimination b. Privatization c. Sustainable Development d. Issues of Community Development in India
5	OCTOBER		Project Work & Semester Exam

**TEACHING PLAN**  
**SEMESTER - II SOCIOLOGY**  
**PAPER - IV**  
**INDIAN RURAL SOCIETY**  
**2020-21**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>
1	JUNE	Unit-I	Tribal Society as Agrarian Society a. Structure & Characteristics of Tribal Society b. Tribe Cast & changing problems of Tribal's c. Agriculture & Landless Labor
2	JULY	Unit-II	Social Issues a. Migration b. Land Alienation c. Inequalities d. Rural Poverty
3	AUGUST	Unit-III	Contemporary Issues a. Health & Education b. Depeasantisation c. Changing Status of Rural Women d. Rural & Urban Community
4	SEPTEMBER	Unit-IV	Peasant Women e. Cause & Types f. Tebhaga, Telangana, Naxalwadi g. Naxalite Movement in Contemporary India its origin & Causes h. Present Status Government Measures & People Response.
5	OCTOBER		Project Work & Semester Exam

**M.A. SEMESTER – III**  
**PAPER – I**  
**CLASSICAL SOCIOLOGICAL THEORIES**  
**2020-21**

MONTH	PLAN
JANUARY	<b>Unit-I: Positivism</b> – Origin and basic postulates; Contribution of Comte; Contribution of Durkheim. <b>Positivism</b> -Contribution of Max Weber; Criticism and presentstatus.
FEBRUARY	<b>Unit-II: Conflict Theory</b> – Origin and basic Postulates; Contribution of Karl Marx; Contribution of Dahrendorf; Contribution of Coser; Criticismand Present Status.
MARCH	<b>Unit-III: Structuralism</b> – Origin and basic Postulates; Contribution of Levistrauss; Contribution of Goldiner; Contribution of M. Foucault;Criticism and Present status.
APRIL	<b>Unit-IV: Social Exchange Theory</b> – Intellectual Roots; Contribution of Levi-Strauss; Contribution of George C. Homans; Contribution of Peter M. Blau; Criticism and Present status.
MAY	<b>Seminars and Projects, Semester Exam</b>



**TEACHING PLAN**  
**SEMESTER-III**  
**PAPER-II**  
**PERSPECTIVES OF STUDY TO INDIAN SOCIETY**  
**2020-21**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>	<b>PLAN</b>
1	JANUARY	Unit-I	<b>Distinctive Characteristics of Indian Society :</b> a. Configuration of Indian Society b. Consequences of Increasing Linkages & Network in Indian Society Village in Relation to the Wider World	
2	FEBRUARY	Unit-II	<b>Textual &amp; Structural Functionalism Perspective :</b> a. G.S. Ghurye b. S.C. Dubey c. M.N. Srinivas	
3	MARCH	Unit-III	<b>Marxism :</b> a. D.P. Mukherjee b. A.R. Desai c. Criticism & Present Status	
4	APRIL	Unit-IV	<b>Subaltern Perspective &amp; Civilization Perspective:</b> a. B.R. Ambedkar b. David Hardiman c. N.K. Bose d. Surjeet Sinha e. Criticism & Present Status	
5	MAY		Project Work & Semester Exam	

**TEACHING PLAN**  
**SEMESTER-III**  
**PAPER-III**  
**INDUSTRY AND SOCIETY IN INDIA**  
**2020-21**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>	<b>PLAN</b>
1	JANUARY	Unit-I	Industrial Sociology And Classical Sociological Tradition A-Development Of Industrial Sociology, Industry, Industrialization B-Division Of Labour C- Bureaucracy And Rationality D-Production Relation And Alienation	
2	FEBRUARY	Unit-II	Industrial Organization: A-Industrial Organization :Formal, Informal B-Industrial Management C-Scientific Management D-Sociology Of Work: Work Innovation ,Motivation Culture, Work, Satisfaction, Incentives And Its Effects	
3	MARCH	Unit-III	Concept Of Industrialization And Social Problems Of Industrialization A-Migration B-Habitat And Settlement C-Environment D- Indebtedness of Industrial Workers	
4	APRIL	Unit-IV	Technology Change And Automation A-Technology And Social Structure In Industry B-Socio Technological System C-Organisational change And Technological Change D-Automation And Its Consequences	
5	MAY		Project Work & Semester Exam	

**TEACHING PLAN**  
**SEMESTER-III**  
**PAPER-IV**  
**CRIMINOLOGY**

**2020-21**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>	<b>PLAN</b>
1	JANUARY	Unit-1	<b>Conceptual &amp; Theoretical Approaches :</b> a. Conceptual Approaches to Crime b. Legal & Sociological Approach c. Crime Deviance : Causes, Prevention & Control d. Theories on Crime Causation : Classical & e. Positivist	
2	FEBRUARY	Unit-I	<b>Types of Criminal &amp; Crime :</b> a. Types of Crime b. Juvenile Delinquency c. Women & Crime d. White Collar Crime	
3	MARCH	Unit-II	<b>Changing Profile of Crime &amp; Criminals :</b> a. Corruption : Types, Causes & Consequences b. Cyber Crime : Causes, Prevention & Control c. Crime against Women : Causes, Prevention & Control d. Terrorism in India : Its Origin & Causes	
4	APRIL	Unit-III	<b>Theories of Punishment :</b> a. Retributive, Deterrent : Theories & Criticism b. Reformatory Theory : Probation & Parole c. Open Prison : Its Success & Failure d. Futility & Cost of Punishment	
5	MAY	Unit-IV	Project Work & Semester Exam	

**M.A. SEMESTER – IV**  
**PAPER – I**  
**MODERN SOCIOLOGICAL THEORIES**  
**2020-21**

<b>MONTH</b>	<b>PLAN</b>
JUNE	<b>Unit-I: Symbolic Interactionism</b> – Origin and Basic Postulates; Contribution of G.H. Mead; Contribution of H. Blumer; Contribution of E. Goffman; Criticism and Present status.
JULY	<b>Unit-II: Phenomenology</b> – Origin, Basic postulates of phenomenology; Contribution of Schutz; Contribution of Berger; Contribution of E. Husserl; Criticism and Present status.
AUGUST	<b>Unit-III: Ethnomethodology</b> – Origin Basic postulates of Ethnomethodology; Contribution of Garfinkel; Contribution of Goffman; Contribution of Ckorel; Criticism and present status.
SEPTEMBER	<b>Unit-IV: Post Modernism</b> – Origin and Development; Contribution of Foucault; Contribution of Derrida; Contribution of Baudrillard; Criticism and present status.
OCTOBER	<b>Seminars and Projects, Semester Exam</b>

**TEACHING PLAN**  
**SEMESTER - IV**  
**PAPER - II**  
**COMPARATIVE SOCIOLOGY**  
**2020-21**

No.	MONTH		TEACHING PLAN	PLAN
1	JUNE	JANUARY	<b>Historical &amp; Social Context of Emergence of Sociology in the West :</b> a. Emergence of Growth of Sociology in India b. Western Sociological Tradition c. Americanization of Sociology	
2	JULY	FEBRUARY	<b>Central Themes in Comparative Sociology:</b> a. Modernity & Development b. Diversity & Multiculturalism c. Environment d. Globalization	
3	AUGUST	MARCH	<b>Theoretical Concern in Comparative Sociology :</b> a. Problems of Theoring in Sociology b. Theoretical & Methodological Approaches in Sociology c. Sociology in India d. Trends of Sociology in India	
4	SEPTEMBER	APRIL	<b>Current Debates :</b> a. Contextualization b. Indigenization c. Use of Native Categories in The Analysis of Indian Society d. Text & Context	
5	OCTOBER	MAY	Project Work & Semester Exam	

**SEMESTER - IV**  
**PAPER - III**  
**INDUSTRY AND SOCIETY IN INDIA**  
**2020-21**

No.	MONTH		TEACHING PLAN	PLAN
1	JUNE	UNIT-I	Industrial Relation: A-Importance Of Human Relation At Work B-Conflict: Causes And Types, Resolution Of Conflict C-Collective Bargaining D-Worker Participation In Management E-Education Training And Development Of Manpower F-Labour Welfare In India	
2	JULY	UNIT-II	Contemporary Issues: A-Industrialization And Women Labour B-Industrialization And Child Labour C-Industrialization And Environment D-Problems Of Industrialization In Developing Countries	
3	AUGUST	UNIT-III	A-History Of Trade Unionism In India B-Objectives And functions Of Trade Union C-ILO D-Trade Unionism And Globalization	
4	SEPTEMBER	UNIT-IV	A-MNCS And Third World B-FDI And Third World C-International Agencies: World Bank And Third World Countries D-Status Of Industries In Third World Countries	
5	OCTOBER		Project Work & Semester Exam	

**SEMESTER - IV**  
**PAPER - IV**  
**CRIMINOLOGY**  
**2020-21**

No.	MONTH		TEACHING PLAN	PLAN
1	JUNE	UNIT-I	<b>Roots of Correction to Prevent Crime:</b> <ul style="list-style-type: none"> <li>a. Socialization, Role of Family Values &amp; Education</li> <li>b. Correctional Programs in Prison : history of Prison, Reform in India</li> <li>c. Correctional Program : Meditational &amp; Recreation</li> <li>d. After Care &amp; Rehabilitation Program</li> </ul>	
2	JULY	UNIT-II	<b>Problems of Correctional Administration :</b> <ul style="list-style-type: none"> <li>a. Antiquated Jail manual &amp; Prison Act</li> <li>b. Over Crowding Lack of Inter Agency Coordination among Police Prosecution Judiciary &amp; Prison</li> <li>c. Prison Offenses</li> <li>d. Problem of Criminal Justice Administration</li> </ul>	
3	AUGUST	UNIT-III	<b>Victimological Perspectives :</b> <ul style="list-style-type: none"> <li>a. Historical Background of Victimology</li> <li>b. Victims Responsibility in Crime</li> <li>c. Compensation to Victims</li> <li>d. Violation of Prisoners Human Rights</li> </ul>	
4	SEPTEMBER	UNIT-IV	<b>Community Policing:</b> <ul style="list-style-type: none"> <li>a. Concept of Police</li> <li>b. Role of Police</li> <li>c. Concept of Judiciary</li> <li>d. Role of Judiciary</li> </ul>	
5	OCTOBER		Project Work & Semester Exam	

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**PROPOSED TEACHING PLAN ( SESSION 2020-21)**

**DEPARTMENT OF BOTANY**

**SEMESTER 1, PAPER 1 -CELL BIOLOGY M.M. 80**

MONTH	CELL BIOLOGY
OCT Unit-I	<b>The dynamic cell:</b> Structural Organization of the plant cell, specialized plant cell type, chemical foundation, and biochemical energetic. <b>Cell wall</b> – Structure and functions, biogenesis growth.
NOV Unit-I & Unit II	<b>Plasma membrane:</b> Structure, models and functions, site for ATPases, ion carries, channels and pumps, receptors. <b>Chloroplast:</b> Structure, Genome organization, Gene expression, RNA editing
DEC Unit II & Unit III	<b>Mitochondria:</b> Structure, Genome organization, Biogenesis. <b>Plant Vacuole:</b> Tonoplast membrane, ATPases, transporters as a storage organelle. <b>Nucleus:</b> Structure, Nuclear Pore.
JAN Unit III	<b>Ribosome:</b> Structure and functional significance <b>Cell cycle and Apoptosis:</b> Control mechanisms, Role of cyclins dependent kinases Retinoblastoma and E2F proteins, cytokinesis and cell plate formation, mechanism of programmed cell death.
FEB Unit IV	<b>Other cell organelles:</b> Structure and functions of microtubules, Microfilaments, Golgi apparatus, Lysosome, Endoplasmic Reticulum. <b>Techniques in cell biology:</b> Immuno-techniques, in situ hybridization to locate transcripts in cell types FISH, GISH,
MARCH Unit-IV	Confocal microscopy, Flow Cytometry. <b>Revision,</b> Practicals done every month as per schedule
APRIL	Practical/Theory Exam



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### SEMESTER-I, PAPER- II –Genetics

MONTH	PAPER-II, GENETICS
<b>OCT UNIT-I</b>	❖ <b>Chromatic Organization:</b> Chromosome structure and packaging of DNA, Nucleosome organization, molecular organization of centromere and telomere, nucleolus and ribosomal RNA genes, Euchromatin and heterochromatin, karyotype, banding pattern.
<b>NOV UNIT-I</b>	❖ <b>Chromatic Organization:</b> Specialized type of chromosomes, polytene, lamp brush, B chromosomes and sex chromosomes Molecular basis of chromosome pairing, chromosomal aberration and polyploidy.
<b>DEC UNIT-II</b>	❖ <b>Mapping of Bacteriophage genome,</b> Phage phenotype, and recombination in phage, genetic transformation and transduction in bacteria.
<b>JAN UNIT-III</b>	❖ <b>Genetic recombination &amp; genetic mapping:</b> Mechanism of crossing over, molecular mechanism of recombination, role of Rec-A and Rec-B, C, D enzyme, site specific recombination, linkage group, genetic marker
<b>FEB UNIT-IV</b>	❖ <b>Alien gene transfer through chromosome manipulation:</b> Transfer of whole genome, examples from Wheat, Arachis & Brassica. Transfer of individual chromosomes & chromosome segment, methods for detecting Alien chromatin production.
<b>MAR UNIT-IV</b>	❖ Characterization and utility of Alien addition & substitution lines, genetic basis of breeding and heterosis, exploitation of hybrid vigour.
<b>APRIL</b>	Practical/ Theory Exam,

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**PROPOSED TEACHING PLAN FOR THE SESSION 2020-21**

**DEPARTMENT OF BOTANY**

**SEMESTER I PAPER- III – Microbiology, Phycology and Mycology**

**Max.Marks 80**

Month	<b>Microbiology, Phycology and Mycology</b>
OCT Unit-I	<b>Archaeobacteria and Eubacteria:</b> General account, ultra structure nutrition and reproduction, biology and economic importance. <b>Cyanobacteria:</b> Salient feature and biological importance.
NOV Unit-I & II	<b>Viruses:</b> Characteristics and ultra structure of virus, isolation and purification of viruses, chemical nature, replication, transmission of viruses, economic importance <b>Phytoplasma:</b> General characteristic and role in causing plant diseases.
DEC Unit – III	<b>Phycology:</b> Algae in diversified habitats (terrestrial, freshwater, marine), thallus organization, cell ultra structure, reproduction (vegetative, asexual, sexual) General account of Chlorophyta, Xanthophyta, Bacillariophyta, Phaeophyta and Rhodophyta. Economic importance of algae.
JAN Unit-IV	<b>Mycology:</b> General character of fungi, substrate relationship in fungi, cell structure, unicellular and multicellular, organization, cell wall composition and nutrition (saprobic, biotrophic, symbiotic)
FEB Unit -IV	<b>Mycology:</b> Reproduction, vegetative, asexual, sexual) heterothallism, heterokaryosis, Parasexuality, recent account of Mastigomycotina, Zygomycotina, Ascomycotina,
MAR Unit-IV	Basidiomycotina, Deuteromycotina, Mycorrhiza, Fungi as biocontrol agent.
APRIL	Practical/ Theory Exam

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**PROPOSED TEACHING PLAN FOR THE SESSION 2020-21**

**DEPARTMENT OF BOTANY**

**SEMESTER I PAPER- IV – Bryophyta, Pteridophyta and Gymnosperm**

**Max.Marks 80**

Month	<b>Bryophyta, Pteridophyta and Gymnosperm</b>
OCT Unit-I	<b>Bryophyta:</b> General characters, distribution and classification. General account of following orders: - Marchantiales, Jungernanniales
NOV Unit-I & II	Anthocerotales, Sphagnales, Funariales & Polytrichales. <b>II Pteridophyta:</b> General characters and classification. Evolution of stele in Pteridophytes. General account of – Psilopsida, Lycopsida, Sphenopsida and Pteropsida
DEC Unit – II & III	Sphenopsida and Pteropsida <b>Gymnosperms:</b> General characters and classification. Resemblances and difference between Gymnosperms, Pteridophyta and Angiosperms. Distribution of Gymnosperms in India and their economic importance.
JAN Unit-III	Brief account of following families: Lygnopteridaceae, Medullosaceae, Glossopteridaceae, Caytoniaceae General account of order Pentoxylales.
FEB Unit -IV	General account of following orders: Cycadales, Ginkgoales, Coniferales, Ephedrales,

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**PROPOSED TEACHING PLAN FOR THE SESSION 2020-21**

**DEPARTMENT OF BOTANY**

**M.Sc.-SEMESTER - II, PAPER 1 – Taxonomy and Diversity of Angiosperms**

MONTH	Course
June Unit-I	.Origin of Intrapopulation Variations: population and the environment, ecades and ecotypes; Taxonomic hierachy major and minor categories; the species concept. Plant Nomenclature- Salient features of international code of Botanical Nomenclature, Binomial Nomenclature.
July Unit II	Taxonomic evidence: Morphology, Anatomy, Palynology, Embryology, Cytology, Photochemistry, Genome analysis and Nucleic acid hybridization. Taxonomic tools- Herbarium, Flora, Taxonomic Literature GIS (Geographical information system).
August Unit III & UNIT-IV	Fossil Angiosperms, Sustainable utilization of Bio- rures. Systems of Angiosperm classification- Bentham and Hooker, Hutchinson, Takhatjan & Cronquist. Study of following families with particular reference to systematic position, phylogeny, Evolutionary trends and economic importance. Dicot families: Ranunculaceae, Magnoliaceae, Nymphaeaceae, Capparidaceae, Meliaceae, Tiliaceae, Cucurbitaceae, Leguminosae (Fabaceae) (Caesalpinoideae, Mimosoideae, Papileonoideae)
September Unit IV	,Umbelliferae (Apiaceae), Lythraceae, Myraceae, Rubiaceae, Apocynaceae, Asclepiadaceae, Solanaceae, Labiateae (Lamiaceae), Verbinaceae, Euphorbiaceae; Compositeae. Monocot families- Orchidaceae, Zingiberaceae, Liliaceae, Cyperaceae, Gramineae (Poaceae).
Oct.	Revision & Practical Exam
	Practicals done every month as per schedule

## TEACHING PLAN

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Proposed Teaching Plan ( Session-2020-21)

### DEPARTMENT OF BOTANY

MONTH	PAPER-II Molecular Biology
<b>JUNE UNIT-1</b>	RNA and DNA structure A, B and Z Forms, replication, Transcription, Translation, DNA damage and repair mechanism, Inherited human diseases –causes.
<b>JULY UNIT-II</b>	Molecular cytogenetics : Nuclear DNA concept, C-value paradox, Cot curve and its significance, restriction mapping – concept and techniques, multi-gene families and their evolution, in situ hybridization and techniques, chromosome, microdissection and microcloning.
<b>AUGUST UNIT-III</b>	<b>Gene structure and expression:</b> Fine structure of gene, cis-trans test, fine structure analysis of eukaryotes introns and their significance, RNA splicing, regulation of gene expression in prokaryotes and eukaryotes. ❖ <b>Protein sorting:</b> Targeting of proteins to organelles.
<b>SEPTEMBER UNIT-IV</b>	<b>Mutation:</b> Spontaneous and induced mutation, physical and chemical mutagens, molecular basis of gene, transposable elements in prokaryotes and eukaryotes, mutation induced by transposones, site-directed mutagenesis, translocation tester sets, Robertsonian translocation, B-A translocation.

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**PROPOSED TEACHING PLAN FOR THE SESSION 2020-21**

**DEPARTMENT OF BOTANY**

**SEMESTER II, PAPER- III – Plant Physiology**

**Max.Marks 80**

MONTH	Course
<b>JUNE</b> <b>Unit-I</b>	<b>Membrane transport and translocation of water and solutes:</b> Plant- water relation, mechanism of water transport through xylem, root microbe interactions in facilitating nutrient uptake,
<b>JULY</b> <b>Unit I &amp; II</b>	comparison of xylem and phloem transport, phloem loading and unloading, passive active active solute transport, membrane transport. Structure and Mechanism of opening & closing of stomata, factors affecting transpiration. <b>Signal transduction:</b> Overview, receptors and G proteins, Phospholipids signaling, role of cyclic nucleotides, calcium
<b>AUGUST</b> <b>Unit-II &amp; III</b>	calcium-calmodulin cascade, diversity in protein kinases and phosphatases, specific signaling mechanism, two component sensor regulator system in <b>Stress Physiology:</b> Plant responses to biotic and a-biotic stress, mechanisms of biotic and abiotic stress tolerance, HR fundamental and SAR, water deficit and drought resistance, salinity stress, metal toxicity, freezing and heat stress
<b>SEPTEMBER</b> <b>Unit -III</b>	<b>Fundamentals of enzymology:</b> General aspect, allosteric mechanism regulatory and active sites, isozymes, kinetics of enzymatic catalysis, Michaelis-Menton equation and its significance.
<b>November</b> <b>Unit -IV</b>	<b>Sensory Photobiology:</b> History of discovery of phytochromes and cryptochrome light induced responses, cellular localization, and molecular mechanism of action of photomorphogenic receptors.

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**PROPOSED TEACHING PLAN FOR THE SESSION 2020-21**

**DEPARTMENT OF BOTANY**

**SEMESTER II, PAPER IV -**

**PLANT METABOLISM**

Month	Course
JUNE Unit-I	<b>Photosynthesis:</b> General concepts and historical background, evolution of photosynthetic apparatus, photosynthetic pigments and light harvesting complexes, photo-oxidation of water mechanism of electron and proton transport, carbon assimilation – The Calvin cycle, photorespiration and its significance, the C <sub>4</sub> cycle, the CAM pathway, biosynthesis of starch and sucrose, physiological and ecological considerations.
JULY Unit II	<b>Respiration and Lipid Metabolism:</b> Overview of plant respiration, glycolysis, the TCA cycle, electron transport and ATP synthesis, Pentose phosphate pathway, glyoxylate cycle, alternative oxidase system, structure and function of lipids, fatty acid biosynthesis, synthesis of membrane lipid and storage lipids and their catabolism.
AUG. UNIT III	<b>Nitrogen and Sulphur Metabolism:</b> Overview, biological nitrogen fixation, nodule formation and nod factors, mechanism of nitrate uptake and reduction, ammonium assimilation, sulphur uptake, transport and assimilation.
SEP. Unit IV	<b>Plant growth regulator and elicitors:</b> Physiological effect and mechanism of action of auxins, gibberellins cytokinins, ethylenes, abscissic acid, brassinosteroids, polyamines, jasmonic acid and hormone receptors. <b>The Flowering Process:</b> Photoperiodism and its significance, endogenous clock and its regulation, floral induction and development – Genetic molecular analysis, role of vernalization.
OCT.	Practicals done every month as per schedule. Theory and practical exams.

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**PROPOSED TEACHING PLAN FOR THE SESSION 2020-21**

**DEPARTMENT OF BOTANY**

**M.Sc.BOTANY, SEMESTER III, PAPER- I**

**Plant Development and Resource Utilization**

<b>MONTH</b>	<b>Course</b>
<b>JAN</b> <b>.UNIT I</b>	Introduction: Unique features of plant development Seed germination and seedling growth, Metabolism of nucleic acids, proteins and Fat Mobilization of food reserves; tropisms; hormonal control of seedling growth; gene expression; use of mutants in understanding seedling growth
<b>FEB.</b> <b>UNIT II</b>	Leaf growth and differentiation: Determination, Phyllotaxy; control of leaf form; differentiation of epidermis (with special reference to stomata and trichomes) and mesophyll. Root development, Organization of the Root Apical Meristem (RAM); lateral roots; root hairs; root-microbe interactions.
<b>MARCH</b> <b>UNIT III</b>	Shoot development, Organization of the Shoot Apical Meristem (SAM); cytological and molecular analysis of SAM; control of cell division and cell to cell communication; control of tissue differentiation, especially xylem and phloem. secretory ducts and laticifers; wood development in relation to environmental factors
<b>APRIL</b> <b>IV</b>	Origin of Agriculture, Origin, evolution, botany, cultivation and uses of (i) Food, Forage and Fodder crops, (ii) Fiber crops, (iii) Medicinal and Aromatic Plants & secretory ducts and laticifers; wood development in relation to environmental factors
<b>MAY</b>	Practicals done every month as per schedule



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**PROPOSED TEACHING PLAN FOR THE SESSION 2020-21**

**DEPARTMENT OF BOTANY**

**M.Sc. BOTANY SEMESTER- III, PAPER- II**

<b>MONTH</b>	<b>Topic</b>
<b>JAN.</b> <b>UNIT- I</b>	<b>Ecosystem Organization:</b> Structure and functions; primary production (method of measurement, global pattern, controlling factors); energy dynamics (trophic organization energy flow pathways, ecological efficiencies);
<b>FEB.</b> <b>UNIT -I</b> <b>UNIT- II</b>	<b>Ecosystem Organization:</b> Litter fall and decomposition (mechanism, substrate quality and climatic factors) global biogeochemical cycles of C, N, P and S mineral cycles (pathways, processes, budgets) in terrestrial and aquatic ecosystems. <b>Vegetation organization:</b> Concepts of community and continuum; analysis of communities (analytical and synthetic characters); community coefficients, interspecific associations, ordination, concept of ecological niche.
<b>MARCH</b> <b>UNIT- II</b> <b>UNIT- III</b>	<b>Vegetation development:</b> Temporal changes (cyclic and non-cyclic) mechanism of ecological succession (relay floristic and initial floristic composition; facilitation, tolerance and inhibition models); changes in ecosystem properties during succession. <b>Biological diversity:</b> Concept and levels; role of biodiversity in ecosystem functions and stability; speciation and extinction; IUCN categories of threatened distribution and global patterns; terrestrial biodiversity hot spots; inventory.
<b>APRIL</b> <b>UNIT -III</b> <b>UNIT-IV</b>	<b>World centers of primary diversity of domesticated plants:</b> The Indo-Burmesian center, plant introductions and secondary centers. <b>Climate, Soil and Vegetation patterns of the world:</b> Life zones, major biomes and major vegetation and soil types of the world. <b>Climate, Soil and Vegetation patterns of India:</b> Life zones, major biomes and major vegetation and soil types of India.

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**PROPOSED TEACHING PLAN FOR THE SESSION 2020-21**

**DEPARTMENT OF BOTANY**

**SEMESTER - III, PAPER- III Biotechnology I- Genetic Engineering of Plants and Microbes**

MONTH	Biotechnology I- Genetic Engineering of Plants and Microbes
<b>JANUARY</b> <b>UNIT I</b>	<b>Biotechnology:</b> Basic concepts, Principles and scope. <b>Recombinant DNA technology:</b> Gene cloning, Principles and Techniques. Construction of Genomics/ cDNA libraries, choice of vectors, DNA synthesis and sequencing.
<b>FEBRUARY</b> <b>UNIT II</b>	Polymerase chain reaction, DNA fingerprinting, Basic concepts of Bioinformatics Functional Genomic, Micro array, Protein profiling and its significance.
<b>MARCH</b> <b>UNIT III</b>	<b>Genetics Engineering of plants:</b> Aims, strategies for development of transgenics (with suitable examples). <b>Agro Bacterium:</b> The Natural Genetic Engineer, T-DNA and Transposon mediated gene tagging, Chloroplast transformation and its utility, Intellectual Property Rights (IPR)
<b>APRIL</b> <b>UNIT III &amp; IV</b>	<b>Microbial Genetic Manipulation:</b> Bacterial transformation, selection of recombinant and transformation, genetic improvement of industrial microbes and nitrogen fixers, types and design of fermenters, immobilization of enzymes.
<b>MAY</b>	Revision , Practicals done every month as per schedule

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**PROPOSED TEACHING PLAN FOR THE SESSION 2020-21**

**DEPARTMENT OF BOTANY**

**M.Sc.-BOTANY SEMESTER III, PAPER IV -Ethnobotany**

<b>MONTH</b>	<b>Course</b>
<b>JAN. UNIT I</b>	<b>Ethnobotany</b> : History, general account and its sub disciplines. Interdisciplinary approaches & aim of ethno botany. Main world centers of Ethnobotanical studies, workers & literature of Ethno botany Ethnobotany with special reference to Chhattisgarh.
<b>FEB. UNIT I ,UNIT II</b>	Ethnobotany in relation to national priorities and health care programme. Ethnobotanical Research done in India: Ethnobotany in relation to national priorities and health care programme. Practical application of ethnobotany for tribal development programme. Methods and techniques in ethnobotany. General account of major and minor tribes of Chhattisgarh with special reference to Gond ,Kamar ,Baiga , Abujhmaria.
<b>MARCH UNIT II UNIT III</b>	Ethnobotanical aspect of Art & literature. Abstract ethnobotany with special reference to folklore, Taboos, Majico-religious beliefs. Ethnobotanical importance of Bacteria, Algae, Fungi, Bryophyta, Pteridophyta and Gymnosperm.
<b>APRIL UNIT III&amp;IV</b>	Ethnoveterinary medicines from plants. Major & Minor Forest Products (NWFPs) of Chhattisgarh. Ethnobotany in relation to livelihood security reference to tribes. Ethnobotanical study of following plants with special reference to <ul style="list-style-type: none"><li>• their medicinal importance 1. <i>Azadirachta indica</i> (Neem)</li><li>• 2. <i>Emblica officinalis</i> (Amla) 3. <i>Ricinus communis</i> (Andi)</li><li>• 4. <i>Madhuca indica</i> (Mahuaa) 5. <i>Cassia fistula</i> (Amaltash)</li><li>• 6. <i>Ficus religiosa</i> (Pipal) 7. <i>Oscimum sanctum</i> (Tulsi)</li><li>• 8. <i>Asparagus racemosus</i> (Satavar) 9. <i>Aloe vera</i> (Ghrit kumari)</li><li><i>Andographis paniculata</i> (Bhui neem).</li></ul>
<b>MAY</b>	Practicals done every month as per schedule

## TEACHING PLAN

Govt. D B Girls P.G. College, Raipur (C.G.)

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Proposed Teaching Plan ( Session-2020-21)

### DEPARTMENT OF BOTANY

#### SEMESTER-III PAPER- IV, Elective Course- ( Microbial Ecology)

MONTH	PAPER- IV ( Microbial Ecology)
<b>JAN. UNIT-I</b>	<b>Ecological Groups:</b> ❖ Ecological groups of microorganism. Microbial growth. Effect of the environment on microbial growth. Gram positive and Gram negative bacteria, Cyanobacteria, sulphur and iron oxidizing bacteria, Methanotrophs, Mycobacterium, Spore forming bacteria Unit
<b>FEB. UNIT-II</b>	<b>❖ Microbial interaction and industrial Microbiology:</b> A. Plant-microbe (Phyllosphere and phylloplane) ❖ <b>Microbial interaction and industrial Microbiology:</b> B. Microbe-microbe. <b>❖ Animal microbe interaction. ❖ Microbes in Industry:</b> • Acid production • Alcohol production • Antibiotic production
<b>MARCH UNIT-III</b>	<b>❖ Soil Microbiology:</b> Soil as a habitat for micro-organisms ❖ Rhizosphere and Rhizoplane microorganisms. ❖ Organic matter decomposition. ❖ Role of micro-organisms in Biogeochemical Cycles, Nitrogen fixation by microorganisms
<b>APRIL UNIT-IV</b>	<b>❖ Water Microbiology:</b> Types of water and water micro-organisms ❖ Microbial Water Pollution, Water Treatment, Bacteriological analysis of water. ❖ Air Microbiology: Distribution of microbes in air. ❖ Indoor aero microbiology, Aeroallergens and allergic disorders by air microflora. ❖ Collection and enumeration of aeroallergen.

TEACHING PLAN FOR THE SESSION 2020-21

DEPARTMENT OF BOTANY

M.Sc.BOTANY, SEMESTER IV, PAPER I

Plant Reproduction

MONTH	Topic
JUNE UNIT I	Reproduction: Vegetative options and sexual reproduction; flower development; genetics of floral organ differentiation; homeotic mutant in <i>Arabidopsis</i> and <i>Antirrhinum</i> ; sex determination.
JULY UNIT I ,UNIT II	<b>Male Gametophyte:</b> Structure of anthers; microsporogenesis, role of Tapetum; Pollen development and Gene expression; Male sterility; Spermatid dimorphism pollen germination, Pollen storage; Pollen allergy <b>Female Gametophyte:</b> Ovule development; megasporogenesis; organization of the embryo sac, structure of the embryo sac cells.
AUGUST UNIT II UNIT III	<b>, Pollen-pistil interaction and Fertilization:</b> Global Characteristics, Pollination mechanisms ; breeding systems; commercial considerations; structure of the pistil; Pollen-stigma interactions, Sporophytic and Gametophytic self compatibility (cytological, biochemical and molecular aspects); double fertilization, in-vitro fertilization.
SEPTEMBER UNIT III& IV	<b>Seed development and Fruit growth:</b> Endosperm development during early, maturation and desiccation stages; embryogenesis, ultra structure and nuclear cytology; cell lineages during late embryo development; storage proteins of endosperm and embryo; Polyembryony; Apomixis; Embryo culture; Dynamics of fruit growth; Biochemistry and Molecular biology of fruit maturation. <b>Latent life-dormancy:</b> Importance and types of dormancy; Seed dormancy overcoming seed dormancy; Bud dormancy; <b>Senescence and programmed Cell death (PCD):</b> Basic concepts, types of cell death, PCD in the life cycle of plants
Oct.	Practicals done every month as per schedule

**PROPOSED TEACHING PLAN FOR THE SESSION 2020-21**

**DEPARTMENT OF BOTANY**

**M.Sc.BOTANY SEMESTER IV, PAPER- II**

**Plant Ecology & Conservation**

<b>MONTH</b>	<b>Topic</b>
<b>JULY</b> <b>UNIT- II&amp;III</b>	<b>Water Pollution &amp; Soil Pollution:</b> Kinds, source, quality parameters, effects on plants and ecosystems. Radioactive pollution. Noise Pollution. Plant used in Social forestry, Agro forestry and in pollution control, Extinction, Environmental status of plants based on International Union for Conservation of Nature (IUCN), Air conditioning by plants
<b>AUGUST</b> <b>UNIT- III&amp;IV</b>	Plant used in Social forestry, Agro forestry and in pollution control, Extinction, Environmental status of plants based on International Union for Conservation of Nature (IUCN), Air conditioning by plants. <b>Ecosystem Stability:</b> Concept (resistance and resilience), Ecological perturbances (natural and anthropogenic) and their impact on plants and ecosystems, Plant invasion, Environmental impact assessment, Ecosystem restoration. <b>Ecological Management:</b> Concepts, Conservation and management of natural resources, Principles of Conservation Sustainable development & Sustainability Bio-indicators
<b>SEPTEMBER</b> <b>UNIT- IV</b>	<b>Strategies for conservation, <i>in-situ conservation</i> :</b> International efforts and India initiatives; protected areas in India-sanctuaries, national parks, biospheres reserves, wetlands, mangroves and coral reefs for conservation of wild biodiversity. <b>Strategies for conservation, <i>Ex-situ conservation</i>:</b> Principles and practices, botanical garden, field gene banks, seed banks, in vitro repositories, cryobanks and general account of the activities of botanical survey of India {BSI} National bureau of plant genetic resources {NBPGR} Indian council of agriculture research {ICAR} Council of scientific and industrial research {CSIR} and the department of biotechnology {DBT} for conservation, non formal conservation efforts.

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**PROPOSED TEACHING PLAN FOR THE SESSION 2020-21**

**DEPARTMENT OF BOTANY**

**SEMESTER IV, PAPER III, Plant Cell, Tissue and Organ Culture**

<b>MONTH</b>	<b>Plant Cell, Tissue and Organ Culture</b>
<b>JUNE</b> <b>Unit – I</b>	<b>PLANTS CELL AND TISSUE CULTURE:</b> General introduction, history, scope, concept of cellular differentiation totipotency. <b>TISSUE CULTURE MEDIA:</b> Media constituents, Media selection, Media preparation. <b>CELL CULTURE:</b> Isolation of single cells, Suspension cultures, Culture of Single cell, Plant cell reactors, application of cell culture. <b>CLONAL PROPAGATION-</b> Auxillary bud proliferation, Meristem and shoot tip culture, bud culture.
<b>JULY</b> <b>UNIT I &amp; II</b>	<b>ORGANOGENESIS AND ADVENTIVE EMBRYOGENESIS:</b> Fundamental aspects of morphogenesis via callus formation, direct adventitive organ formation. <b>SOMATIC EMBRYOGENESIS AND ANDROGENESIS:</b> Mechanism, techniques and utility. <b>SOMATIC HYBRIDIZATION:</b> Methods of Protoplast isolation, Spontaneous and induced methods of protoplasm fusion, identification and selection of hybrid cells, Regeneration of hybrid plants, Verification and Characterization of somatic hybrids, Cybrids, Possibilities achievements and limitation of protoplast research.
<b>AUGUST</b> <b>UNIT – III&amp;IV</b>	<b>CRYOPRESERVATION AND GERMPLASM STORAGE:</b> Raising sterile tissue cultures, Addition of cryoprotectants and pre-treatment, freezing, storage, thawing, determination of survival viability. Plant growth and generation, verification, encapsulation and dehydration, slow growth method. <b>APPLICATION OF PLANT TISSUE CULTURE:</b> artificial seeds, Production of hybrids and somaclones.
<b>SEPTEMBER</b> <b>UNIT IV</b>	<b>APPLICATION OF PLANT TISSUE CULTURE:</b> artificial seeds, Production of hybrids and somaclones. <b>PRODUCTION OF SECONDARY METABOLITES/ NATURAL PRODUCTS:</b> Morphological and chemical differentiation, medium composition for secondary product formation, Growth production patterns, Environmental factors, Selection of cell lines producing high amounts of a useful metabolite, Problems associated with secondary metabolite production, Immobilized cell system. <b>TRANSGENICS IN CROP IMPROVEMENT:</b> Transgenic for Resistance of biotic and abiotic stresses, Transgenic for quality modification, Terminator seed technology.
<b>MAY</b>	Revision, Practicals done every month as per schedule

**PROPOSED TEACHING PLAN FOR THE SESSION 2020-21**

**DEPARTMENT OF BOTANY**

**M.Sc.BOTANY SEMESTER IV, PAPER IV**

**Elective Course – Ethnobotany**

<b>MONTH</b>	<b>Topic</b>
<b>JUNE</b> <b>UNIT I</b>	Plant Conservation by Tribes & role of Joint Forest Management Programme in Plant Conservation specially People's Protected Area Ethnobotany and its role in domestication and conservation of native plant and genetic resources.
<b>JULY</b> <b>UNIT I ,UNIT II</b>	The protection of plant varieties and Intellectual Properties Rights. General account of conservation of medicinal plants. General role of Aromatic plants. General ideas of various system of medicine using plants. Basic knowledge of Ayurvedic, Homeopathic, Allopathic system of medicine.
<b>AUGUST</b> <b>UNIT II UNIT III</b>	General idea of active principles of Plants. Herbal Cosmetics. General account of toxic plants and Harmful effect of plants on human society with special reference to allergic plants of Chhattisgarh. Endemic plants of Chhattisgarh. Endangered plants of Chhattisgarh. Techniques of cultivation and marketing of Aromatic plants –Podina, Lemon grass Kasturibhindi, Palmarosa. Techniques of cultivation ,marketing and importance of mushroom Techniques of cultivation, extraction of juice and importance of wheat grass.
<b>SEPTEMBER</b> <b>UNIT IV</b>	Ethnobotanical study of the following plants with special reference to their medicinal importance- 1. <i>Allium sativum</i> (Lahsun) 2. <i>Aegle marmelos</i> (Bel) 3. <i>Terminallia arjuna</i> (Arjun) 4 <i>T. bellerica</i> (Bahera) 5. <i>T chebula</i> (Harra) 6. <i>Calendula officianallis</i> (Calendula) 7. <i>Thuja occidentalis</i> (Vidhya) 8 <i>Dhatura alba</i> (Dhatura) 9. <i>Argemone maxicana</i> (Pili kateli) 10. <i>Ephedra</i> sps. ( Ephedra). Practicals done every month as per schedule



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**PROPOSED TEACHING PLAN FOR THE SESSION 2020-21**

**DEPARTMENT OF BOTANY**

**SEMESTER IV, PAPER IV -**

**ELECTIVE COURSE MICROBIAL ECOLOGY**

Month	Topic
JUNE Unit-I	<b>Environmental Microbiology:</b> Waste as a resource, Biogas production. Sewage Treatment. Heavy metal tolerance in microbes & mechanism of heavy metal resistance Biodegradation. Biodeterioration, Bioremediation, Biofertilizers , Biopesticides
JULY Unit II	<b>Diseases:</b> symptoms and types of bacterial disease- citrus canker, bacterial blight of rice, scab of potato, angular leaf spot of cotton, leaf spot of mango. <b>Etiology of Nematodal diseases-</b> ear cockle of wheat, molyar disease of barley, root knot of vegetable crops. <b>Etiology transmission of viral diseases-</b> Leaf curl of papaya, mosaic of bhindi, yellow mosaic of legumes, bunchy top of banana. <b>Etiology mycoplasmal diseases-</b> grassy shoot of sugarcane, mycoplasmal disease of potato, citrus greening, little leaf of brinjal. <b>Etiology of fungal diseases-</b> Downey mildews, powdery mildews, rusts, smuts & wilt.
AUG. UNIT III	<b>Medical Microbiology:</b> <b>Protozoan Disease:</b> Name of diseases-Malaria, Giardiasis, Trypanosomiasis, Amoebiasis. <b>Fungal Disease:</b> Phycomycosis, Candidiasis, Actinomycosis, Dermatophytosis, Aspergillosis, Penicilliosis. <b>Bacterial Disease:</b> Tuberculosis, Diphtheria, Cholera, Shigellosis, Typhoid, and Tetanus. <b>Viral Disease:</b> Influenza, Polio
SEP. Unit IV	<b>Instrumentation &amp; Techniques</b> <b>Microscopy:</b> Light microscope, Electron Microscope (Transmission & Scanning), Colorimeter, Spectrophotometry, Chromatography, Electrophoresis, Laminar air flow, Collection sampling and identification of indoor microflora special reference to Library and Class rooms.
OCT.	Practicals done every month as per schedule. Theory and practical exams.

# PROPOSED TEACHING PLAN FOR THE SESSION 2020-21

## M. Sc. Chemistry

### SEMESTER-I

Month	Paper-I	Paper-II
January  UNIT-I	<b>SYMMETRY AND GROUP THEORY IN CHEMISTRY:</b> Symmetry elements and symmetry operation, definitions of group, subgroup, relation between orders of a finite group and its subgroup. Conjugacy relation and classes. Point symmetry group. Schoenflies symbols, representations of groups by matrices (representation for the $C_n$ , $C_{nv}$ , $C_{nh}$ , $D_{nh}$ , etc. Groups to be worked out explicitly). Character of a representation. The great orthogonality theorem (without proof) and its importance. Character tables and their use; spectroscopy.	A. <b>NATURE OF BONDING IN ORGANIC MOLECULES:</b> Delocalized chemical bonding, conjugation, cross-conjugation bonding in fullerenes. Bonds weaker than covalent, alternant and non-alternant hydrocarbons, Crown ether complexes and cryptands. B. <b>AROMATICITY:</b> Aromaticity in benzenoid and non-benzenoid compounds. Huckel's rule, annulenes, anti-aromaticity, homo-aromaticity. PMO approach for Aromaticity, Annulenes.
February  UNIT-II	A. <b>METAL-LIGAND BONDING:</b> Limitation of crystal field theory, molecular orbital theory, octahedral, tetrahedral and square planar complexes, bonding and molecular orbital theory. B. <b>METAL <math>\pi</math> COMPLEXES:</b> Metal carbonyls, structure and bonding, vibrational spectra of metal carbonyls for bonding and structural elucidation, important reactions of metal carbonyls; preparation, bonding, structure and important reactions of transition metal nitrosyl, di-nitrogen and di-oxygen complexes; tertiary phosphine as ligand.	A. <b>CONFORMATIONAL ANALYSIS:</b> Conformational analysis of cycloalkanes, decalins, effect of conformation on reactivity, conformation of sugars, steric strain due to unavoidable crowding. B. <b>STEREOCHEMISTRY:</b> Elements of symmetry, chirality, molecules with more than one chiral center, methods of resolution, optical purity, stereospecific and stereoselective synthesis. Asymmetric synthesis. Optical activity in the absence of chiral carbon (Biphenyls, allenes and spiranes), chirality due to helical shape.
March  UNIT-III	A. <b>METAL-LIGAND EQUILIBRIA IN SOLUTION:</b> stepwise and overall formation constants and their interaction, trends in stepwise constants, factors affecting the stability of metal complexes with reference to the nature of metal ion and ligand, chelate effect and its	A. <b>REACTION INTERMEDIATES:</b> Generation, structure, stability and reactivity of carbocations, carbanions, free radicals, carbenes and nitrenes. Sandmeyer reaction, Free radical rearrangement and Hunsdiecker reaction.

	thermodynamic origin, determination of binary formation constants by pH-metry and spectrophotometry. B. <b>ISOPOLY ACID AND HETEROPOLY ACID:</b> Isopoly and heteropoly acids of Mo and W. Preparation, properties and structure. Classification, preparation, properties and structures of Borides, Carbides, Nitrides and Silicides, Silicates-classification and structure, Silicones-preparation, properties and application.	B. <b>ELIMINATION REACTIONS:</b> THE $E_2$ , $E_1$ and $E_{1cB}$ mechanism. Orientation of the double bond. Reactivity, effects of substrate structures, attacking base, the leaving group and the medium.
April  UNIT-IV	A. <b>METAL CLUSTERS:</b> Higher boranes, carboranes, metalloboranes and metallocarboranes, metal carbonyl and halide cluster, compounds with metal-metal multiple bonds. B. <b>CHAINS:</b> Catenation, Heterocatenation, Interactenation. C. <b>RINGS:</b> Borazines, Phosphazines.	<b>PERICYCLIC REACTIONS:</b> Classification of pericyclic reactions. Woodward-Hoffmann correlation diagrams. FMO and PMO approach. Electrocyclic reactions conrotatory and disrotatory motions, $4n$ , $4n+2$ and allyl systems. Cycloadditions – antarafacial and suprafacial additions, $4n$ and $4n+2$ system, $2+2$ addition of ketenes, 1, 3 dipolar cycloadditions and cheletropic reactions. Sigmatropic rearrangements – suprafacial and antarafacial shifts of H, sigmatrophic shifts involving carbon moieties, 3, 3- and 5, 5-sigmatrophic rearrangements. Claisen, Cope and Aza-Cope rearrangements. Ene reaction.
May	Revision	
Remark	Practical done every month as per schedule	

Month	Paper-III	Paper-IV
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January  UNIT-I	<p><b>A. MATHEMATICAL CONCEPT IN QUANTUM CHEMISTRY:</b> Vector, Dot Cross and triple products. Complex numbers and co-ordinate transformations (Cartesian to Spherical Polar in Quantum Chemistry). Differential and Integral Calculus, Basis rules of differentiation and Integration Applications.</p> <p><b>B. QUANTUM MECHANICS:</b> The Schrodinger equation and the postulates of quantum mechanics. Discussion of solutions of the Schrodinger equation to some model systems viz., particle in a box, the harmonic oscillator, the rigid rotor, the hydrogen atom.</p>	<b>UNIFYING PRINCIPLES:</b> Electromagnetic radiation, interaction of electromagnetic radiation with matter-absorption, emission, transmission, reflection, refraction, dispersion, polarization and scattering. Uncertainty relation and natural line width and natural line broadening, transition probability, transition moment, selection rules, intensity of spectral lines, Born-Oppenheimer approximation, rotational, vibrational and electronic energy levels. Regions of spectrum, representation of spectra, F.T. spectroscopy, computer averaging, lasers.
February  UNIT-II	<b>BASICS OF THERMODYNAMICS:</b> Maxwell's thermodynamic relations and its applications. Reaction isotherm, Vant Hoff hypothesis. Partial molar properties; partial molar free energy, partial molar volume and partial molar heat content. Chemical potential, Gibbs Duhem equation, variation of chemical potential with temperature and pressure. Chemical potential of ideal gases, pure solids, liquids and mixture of ideal gases.	<b>MICROWAVE SPECTROSCOPY:</b> Classification of molecules in term of their internal rotation mechanism, determination of rotation energy of diatomic and polyatomic molecules, intensities of rotational spectral lined, effect of isotopic substitution on diatomic and polyatomic molecules, intensities of rotational spectral lines and parameters of rotational energy of linear and the transition frequencies, non-rigid rotators, spectral lines and parameters of rotational energy of linear and symmetric top polyatomic molecules. Application in determination of bond length.
March  UNIT-III	<b>ELECTROCHEMISTRY:</b> Electrochemistry of solution, Debye-Huckel Onsager treatment and its extension, ion solvent interactions. Debye-Huckel-Limiting Law. Debye-Huckel theory for activity coefficient of electrolytic solutions. Determination of activity and activity coefficient, ionic strength, Thermodynamics of electrified interface equations. Derivation of electrocapillarity, Lippmann equation (surface excess), methods of determination.	<b>SCATTERING SPECTROSCOPY:</b> Principle, instrumentations and application of Auger spectroscopy and Scanning Electron Microscopy for chemical characterization, electron diffraction of gases and vapours, The Wierl equation and co-related method, application of electron diffraction. Theory, instrumentation and application of turbidimetry, nephelometry and fluorometry. Fluorescence and phosphorescence and factors affecting them.
April  UNIT-IV	<b>CHEMICAL DYNAMICS:</b> Methods of determining rate laws, collision theory of reaction rates, steric factor, Activated complex theory, kinetic salt effects, steady state kinetics, and thermodynamic and Kinetic control	<b>RAMAN SPECTROSCOPY:</b> Classical and quantum theories of Raman effect, pure rotational, vibrational and vibrational rotational Raman spectra, selection rules mutual exclusion principle, Resonance Raman spectroscopy, Coherent anti Stokes Raman

	of reactions. Dynamic chain (Hydrogen-Bromine and Hydrogen-chlorine reactions) and Oscillatory reactions (Belousov-Zabolonsky reaction).	spectroscopy (CARS), Instrumentation, Application of Raman effect in molecular structures, Raman activity of molecular vibration, structure of CO <sub>2</sub> , N <sub>2</sub> O, SO <sub>2</sub> , NO <sub>3</sub> <sup>-</sup> , ClF <sub>3</sub> <b>B. MOSSBAUER SPECTROSCOPY:</b> Basic principles, spectral parameters and spectrum display. Application of the technique to the studies of (1) bonding and structures of Fe <sup>+2</sup> , and Fe <sup>+3</sup> compounds including those of intermediate spin, (2), Sn <sup>+2</sup> and Sn <sup>+4</sup> compounds.
May	Revision	
Remark	Practical done every month as per schedule	

## SEMESTER-II

Month	Paper-I	Paper-II
June  UNIT-I	<b>REACTION MECHANISM OF TRANSITION METAL COMPLEXES:</b> Energy profile of a reaction, reactivity of metal complexes inert and labile complexes, kinetic application of valence bond and crystal field theories, kinetics of octahedral substitution, anation reactions, without metal ligand bond cleavage. Substitution reactions in square planar complexes, the trans effect. Redox reactions, electron transfer reactions, mechanism of one electron transfer reactions, outer sphere type reactions, cross reactions and Marcus-hush theory, inner sphere type reactions.	<b>A. ALIPHATIC NUCLEOPHILIC SUBSTITUTION:</b> The SN 2, SN 1 mechanisms. The neighbouring group mechanism, neighbouring group participation by and bond, anchimeric assistance. Reactivity effects of substrate structure, attacking nucleophile, leaving group and reaction medium, phase transfer catalysis, ambident nucleophile and regioselectivity.  <b>B. AROMATIC NUCLEOPHILIC SUBSTITUTION:</b> The S <sub>N</sub> Ar, SN 1 and benzyne mechanisms. Reactivity – effect of substrate structure, leaving group and attacking nucleophile. The von Richter, Sommelet-Hauser, and Smiles rearrangements.
July  UNIT-II	<b>ELECTRONIC SPECTRA AND MAGNETIC PROPERTIES OF TRANSITION METAL COMPLEXES:</b> Spectroscopic ground states, Correlation, Orgel and Tanabe-Sugano diagrams for transition metal complexes (d1-d9 states), Selection rules, mechanism for breakdown of the selection rules. Intensity of absorption, band width, spectra of d-d metal complexes of the type [M (H <sub>2</sub> O)] <sup>n+</sup> spin free and spin paired ML <sub>6</sub> complexes of other geometries, Calculations of Dq, B and parameters, spin forbidden transitions, effect of spin-orbit coupling, Spectrochemical and Nephelouxetic series. Magnetic properties of complexes of various geometries based on crystal field model, spin free-spin paired equilibria in octahedral stereochemistry.	<b>A. ALIPHATIC ELECTROPHILIC SUBSTITUTION:</b> Mechanisms of SE <sub>2</sub> , SE <sub>1</sub> , electrophilic substitution accompanied by double bond shifts. Effect of substrates, leaving group and the solvent polarity on the reactivity.  <b>B. AROMATIC ELECTROPHILIC SUBSTITUTION:</b> The arenium ion mechanism, orientation and reactivity. The ortho/para ratio, ipso attack, orientation in other ring systems. Vilsmeier reaction and Gattermann-Koch reaction
August	<b>A. TRANSITION METAL COMPLEXES:</b> Transition metal complexes with unsaturated organic molecules, alkanes, allyl, diene dienyl, arene and trienyl complex, preparations, properties, nature of bonding and	<b>ADDITION TO CARBON-CARBON MULTIPLE BONDS:</b> Mechanistic and stereochemical aspects of addition reactions involving electrophiles, nucleophiles and free radicals, regio-and

UNIT-III	<p>structure features, important reaction relating to nucleophilic and electrophilic attack on ligands and organic synthesis.</p> <p><b>B. TRANSITION METALS COMPOUND WITH BOND TO HYDROGEN:</b> Transition Metals Compounds with Bond to Hydrogen.</p>	<p>chemoselectivity. Addition to cyclopropane ring. Hydrogenation of double and triple bonds, hydrogenation of aromatic rings</p> <p>Hydroboration, Michael reaction, Sharpless asymmetric epoxidation.</p>
September UNIT-IV	<p><b>A. ALKYL AND ARYL OF TRANSITION METALS:</b> Types, routes of synthesis, stability and decomposition pathways, organocopper in organic synthesis.</p> <p><b>B. COMPOUNDS OF TRANSITION METAL – CARBON MULTIPLE BONDS:</b> Alkylidenes, low valent carbenes nature of bond and Structural characteristics.</p> <p><b>C. FLUXIONAL ORGANOMETALLIC COMPOUNDS:</b> Fluxionality and dynamic equilibria in compounds such as olefin, <math>\pi</math>-allyl and dienyl complexes.</p>	<p><b>ADDITION TO CARBON-HETERO MULTIPLE BONDS:</b> Mechanism of metal hydride reduction of saturated and unsaturated carbonyl compounds, acids, esters, nitriles. Addition of Grignard Reagent, Organo-Zn, Organo-Li reagent to carbonyls and unsaturated carbonyl compounds, Wittig reaction. Mechanism of condensation reactions involving enolates – Aldol, Knoevenagel and Stobbe reactions. Hydrolysis of esters and amides, ammonolysis of esters.</p>
Remark	Practical done every month as per schedule	

Month	Paper-III	Paper-IV
June  UNIT-I	<p><b>A. APPLICATION OF MATRICES IN QUANTUM CHEMISTRY:</b> Addition and multiplication, inverse and transpose of matrices. Determinants, in quantum chemistry.</p> <p><b>B. ANGULAR MOMENTUM IN QUANTUM CHEMISTRY:</b> Angular Momentum, Ordinary Angular Momentum, Generalized Angular Momentum, Eigen-functions for Angular Momentum, Eigen values of Angular Momentum, Operators.</p> <p><b>C. APPROXIMATE METHOD:</b> The variation theorem, linear variation principle. Perturbation theory (first order and nondegenerate). Applications of variation method and perturbation theory to the Helium atom.</p>	<p><b>ULTRAVIOLET AND VISIBLE SPECTROSCOPY:</b> Various electronic transitions (185-800 nm), Beer – Lambert law, effect of solvent on electronic transitions, ultraviolet bands for carbonyl compounds, unsaturated carbonyl compounds, dyes, conjugated polyenes. Fieser-Woodward rules for conjugated dienes and carbonyl compounds, ultraviolet spectra of aromatic and heterocyclic compounds. Steric effect in biphenyls. Intensity of vibrational-electronic spectra and Frank-Condon principle for dissociation energy, rotational fine structure of electronic-vibrational spectra, Shape of some molecular orbitals viz., H<sub>2</sub>, He<sub>2</sub>, N<sub>2</sub>, O<sub>2</sub>. Electronic spectra of organic molecules, chromophores, application of electronic spectroscopy: spectrophotometric studies of complex ions, determination of ligand/metal ratio in a complex, identification of compounds, determination stability constants. Instrumentation.</p>
July  UNIT-II	<p><b>A. THERMODYNAMICS OF NON-IDEAL GASES:</b> Activity and Fugacity, Determination of Fugacity, Variation of Fugacity with Temperature and Pressure.</p> <p><b>B. NON-EQUILIBRIUM THERMODYNAMICS:</b> Fundamental concepts, forces and fluxes, Entropy production, Phenomenological Laws and Onsager's reciprocity relations.</p>	<p><b>A. INFRARED SPECTROSCOPY:</b> Introduction, simple and anharmonic oscillators in vibrational spectroscopy, diatomic-vibrating rotator, Modes of vibration in polyatomic molecules, vibration-coupling, Fourier Transform IR spectroscopy: instrumentation, interferometric spectrophotometer, sample handling, Factors influencing vibrational frequencies, Application of IR spectroscopy: Interpretation of IR spectra of normal alkanes, aromatic hydrocarbons, alcohols and phenols aldehydes and ketones, ethers, esters, carboxylic acids and amines and amides.</p> <p><b>B. FOURIER TRANSFORM INFRARED SPECTROSCOPY:</b> Introduction, instrumentation, Michelson interferometer, slow scan, stepped scan and rapid scan interferometers, sources and detectors,</p>



		resolution and wave number measurements, sources of error, computation and recording advantages.
August UNIT-III	<b>ELECTROCHEMISTRY – II:</b> Structure of electrified interfaces. Gouy-Chapman, Stern, Over potentials and exchange current density, Derivation of Butler – Volmer equation, Tafel plot. Semiconductor interfaces, Theory of double layer at semiconductor, electrolyte solution interfaces, structure of double layer interfaces. Effect of light at semiconductor solution interfaces. Electro catalysis influence of various parameters. Hydrogen electrode.	<b>MASS SPECTROMETRY:</b> Introduction, basic principles, separation of the ions in the analyzer, resolution, molecular ion peak, mass spectral fragmentation of organic compounds, factors affecting fragmentation, McLafferty rearrangement. Instrumentation, Characteristics of mass spectra of Alkanes, Alkenes, Aromatic hydrocarbons, Alcohols, Amines. Nitrogen rule, ring rule, Molecular weight and formula determination, Gas chromatography-Mass spectrophotometry: Introduction.
September UNIT-IV	<b>CHEMICAL DYNAMICS - II:</b> General features of fast reactions by flow method, relaxation method, flash photolysis and the nuclear magnetic resonance method. Dynamics of molecular motions, probing the transition state, dynamics of barrier less chemical reactions in solutions, dynamics of unimolecular reaction. [Lindemann – Hinshelwood and Rice-Ramsperger-Kassel-Marcus {RRKM}] theories of unimolecular reactions.	<b>A. NUCLEAR MAGNETIC RESONANCE SPECTROSCOPY:</b> Chemical shift values & correlation for protons bonded to carbon (aliphatic, olefinic & aromatic) & other nuclei (Alcohols, Phenol ends Carbonylic acids amines, amides and mercapto) chemical exchange effect of deuteration. Nuclear magnetic double resonance, contact shift reagents, solvent effects. Fourier transform techniques. <b>B. CARBON – 13 NMR SPECTROSCOPY:</b> General considerations, chemical shift (aliphatic, olefinic, alkyne, aromatic, heteroaromatic, and carbonyl carbon) coupling constants.
Remark	Practical done every month as per schedule	

## SEMESTER-III

Month	Paper-I	Paper-II
January  UNIT-I	<p><b>A. ELECTRON SPIN RESONANCE SPECTROSCOPY:</b> Hyperfine coupling, polarization for atoms and transition metal ions, spin-orbit coupling and significance of g-tensors, application to transition metal complexes (having one unpaired electron)</p> <p><b>B. NUCLEAR QUADRUPOLE RESONANCE SPECTROSCOPY:</b> Quadrupole nuclei, quadrupole moments, electric field gradient, coupling constant, splittings, applications.</p>	<p>A. <b>BIOENERGETICS:</b> Standard free energy changes in biochemical reactions, exergonic, endergonic, Hydrolysis of ATP, synthesis of ATP from ADP.</p> <p>B. <b>ELECTRON TRANSFER IN BIOLOGY:</b> Structure and function of metalloproteins in electron transport processes – cytochromes and iron-sulphur proteins, synthetic models.</p> <p>C. <b>TRANSPORT &amp; STORAGE OF DIOXYGEN:</b> Heme proteins and oxygen uptake, structure and function of haemoglobin, myoglobin, haemocyanins and haemerythrin, model synthetic complexes of iron, cobalt and copper.</p>
February  UNIT-II	<p>A. <b>PHOTOELECTRON SPECTROSCOPY:</b> Basic principle both for atoms and molecules; Photo-electric effect, ionization process, Koopman's theorem, photoelectron spectra of simple molecules, Debye and Clausius-Mossotti equation, Auger electron spectroscopy, Determination of Dipole moment.</p> <p>B. <b>PHOTOACOUSTIC SPECTROSCOPY:</b> Basic Principle of Photo acoustic Spectroscopy(PAS), PAS – gases and condensed system Chemical and Surface application.</p>	<p>A. <b>METALLOENZYMES:</b> Zinc enzymes – carboxypeptidase and carbonic anhydrase. Iron enzymes – catalase, peroxidase and cytochrome P-450. Copper enzymes – superoxide dismutase. Molybdenum oxotransferase enzymes-xanthine oxidase.</p> <p>B. <b>ENZYME MODELS:</b> Host-guest chemistry, chiral recognition and catalysis, molecular recognition, molecular asymmetry and prochirality. Biomimetic chemistry, Cyclodextrin-based enzyme models, calixarenes, ionophores, synthetic enzymes of synzymes.</p>
March  UNIT-III	<p>A. <b>PHOTOCHEMICAL REACTION:</b> Interaction of electromagnetic radiation with matter, types of excitations, fate of excited molecule, quantum yield, transfer of excitation energy, Actinometry.</p> <p>B. <b>DETERMINATION OF REACTION MECHANISM:</b> Classification, rate constants and life times of reactive energy states –</p>	<p>A. <b>ENZYMES:</b> Nomenclature and classification of Enzyme. Fischer's lock and key and Koshland's induced fit hypothesis, concept and identification of active site by the use of inhibitors.</p> <p>B. <b>CO-ENZYME CHEMISTRY:</b> Structure and biological functions of coenzyme A, Thiamine pyrophosphate, pyridoxal</p>

	<p>determination of rate constants of reactions. Effect of light intensity on the rate of photochemical reactions.</p> <p>C. <b>MISCELLANEOUS PHOTOCHEMICAL REACTIONS:</b> Photo-Fries reactions of anillides, Photo-Fries rearrangement. Barton reaction. Singlet molecular oxygen reactions. Photochemical formation of smog. Photodegradation of polymers, Photochemistry of vision.</p>	<p>phosphate, NAD<sup>+</sup>, NADP<sup>+</sup>, FMN, FAD, lipoic acid, vitamin B<sub>12</sub>.</p> <p>C. <b>BIOTECHNOLOGICAL APPLICATION OF ENZYMES:</b> Techniques and methods of immobilization of enzymes, effect of immobilization on enzyme activity, application of immobilization enzymes in medicine and industry. Enzymes and Recombinant DNA Technology.</p>
<p>April</p> <p>UNIT-IV</p>	<p>A. <b>PHOTOCHEMISTRY OF ALKENES:</b> Intramolecular reaction of the olefinic bond – geometrical isomerism, cyclisation reactions, rearrangement of 1, 4 &amp; 1, 5 dienes.</p> <p>B. <b>PHOTOCHEMISTRY OF CARBONYL COMPOUNDS:</b> Intramolecular reactions of carbonyl compounds, Cyclohexadienones. Intermolecular Cycloaddition reactions – dimerisations and oxetane formation.</p> <p>C. <b>PHOTOCHEMISTRY OF AROMATIC COMPOUNDS:</b> Isomerisations, additions and substitutions.</p>	<p>A. <b>BIOPOLYMER INTERACTIONS:</b> Forces involved in biopolymer interaction. Electrostatic charges and molecular expansion, hydrophobic forces, dispersion force interactions. Multiple equilibria and various types of binding processes in biological systems. Hydrogen ion titration curves.</p> <p>B. <b>THERMODYNAMICS OF BIOPOLYMER SOLUTIONS:</b> Thermodynamics of biopolymer solution, osmotic pressure, membrane equilibrium, muscular contraction and energy generation in mechanochemical system.</p> <p>C. <b>CELL MEMBRANE AND TRANSPORT OF IONS:</b> Structure and functions of cell membrane, ion transport through cell membrane, irreversible thermodynamic treatment of membrane transport and nerve conduction.</p>
May	Revision	
Remark	Practical done every month as per schedule	

Month	Paper-III	Paper-IV
January  UNIT-I	<b>STATISTICAL THERMODYNAMICS:</b> Concepts of probability, Maxwell Boltzmann distribution. Different ensembles and Partition functions. Thermodynamic function using appropriate partition function. Fermi-Diraic and Bose-Einstein Statistics and statistical basis of entropy. Heat capacity of Solids Debye and Einstein Models.	<b>SAMPLE PREPARATION, DIGESTION AND STATISTICAL ANALYSIS</b> A. Sampling - Collection, Preservation and preparation of sample, Techniques of sampling solids, liquids and gases, Operation of drying and preparing a solution of the analyte. Principle, methodology and application of different types of digestions such as acid digestion, base digestion, enzymatic and microwave digestion for liquid and solid materials. B. Evolution and proccession of Analytical Data, Precision and Accuracy, Types of Errors, Propagation of errors, Normal Distribution Curve, Standard deviation, Confidence limit, Graphical presentation of result-method of average, Method of Linear least square, Significant figures, Statistical aid to hypothesis testing-t-test, F-test, Correlation coefficient, Rejection of data.
February  UNIT-II	<b>POLYMER CHEMISTRY:</b> A. Importance of basics polymers, Basic concept monomers, Degree of polymerization linear branched and network polymers, classification of polymers polymerization, Condensation, addition, radical chain-ionic and co-ordination & copolymerization polymerization conditions and polymer reactions polymerization in homogenous and heterogenous system. B. Polymer structure and physical properties-crystalline melting point, T <sub>m</sub> -melting points of homogenous series, effect of chain flexibility and other steric factors, entropy and heat of fusion. The glass transition temperature T <sub>g</sub> relationship between T <sub>m</sub> & T <sub>g</sub> effect of molecular weight, diluents, chemical structure chain topology, branching & cross-linking property requirements and polymer utilization.	<b>SEPARATION TECHNIQUES</b> A. Efficiency of extraction, Selectivity of extraction, Extraction system, Method of Extraction, applications. B. Principle, classification of chromatographic techniques, Technique and applications of paper chromatographic, Thin-layer chromatographic, HPTLC, Column chromatography.

March  UNIT-III	<p><b>A. SOLID STATE CHEMISTRY:</b> Crystal defects and Non-stoichiometry-Perfect and imperfect crystals, intrinsic and extrinsic defects – point defect, line and plane defects, vacancies – Schottky defects and Frankel defects. Thermodynamics of Schottky and Frenkel defect, formation of color centers, non-stoichiometry and defects.</p> <p><b>B. ELECTRONIC PROPERTIES &amp; BAND THEORY:</b> Metal insulators and semiconductors, electronic structure of solids band theory, band structure metals, insulators and semiconductors intrinsic and extrinsic semiconductors, doping semiconductors P-n junction, super conductors.</p>	<p><b>THERMAL AND AUTOMATED METHODS</b> A. Principle, Instrumentation, Application of TGA, DTA and DSC methods. B. Automated methods, Principle, instrumentation and application of flow injection analysis.</p>
April  UNIT-IV	<p><b>MICELLES AND ADSORPTION:</b> Micelles: Classification of surface-active agents, micellization, hydrophobic interaction, critical micellar concentration (CMC), factors affecting the CMC of Surfactants. Thermodynamics of micellization - phase separation and mass action models. Reverse micells, micro-emulsion. Micellar Catalysis, Surface tension capillary action, pressure difference across curved surface (Laplace equation), vapor pressure of droplets (Kelvin equation), adsorption isotherm.</p>	<p><b>ELECTRO ANALYTICAL TECHNIQUES</b> A. Principles and instrumentation of pH potentiometry, coulometry and conductometry. B. Basic principles, Diffusion current, polarized electrode, Micro electrode, Dropping Mercury Electrode Ilkovic equation, Polarographic wave, Qualitative analysis Stripping methods, Cyclic Voltammetry, Amperometric titration: curves, Differential pulse polarography and Square wave polarography.</p>
May	Revision	
Remark	Practical done every month as per schedule	

## SEMESTER-IV

Month	Paper-I	Paper-II
June  UNIT-I	<p>A. <b>TERPENOIDS AND CAROTENOIDS:</b> Occurrence, isolation classification, nomenclature, general methods of structure determination of and synthesis Citral, Geraniol, Terpeneol, Menthol, Farnesol, Zingiberene, Santonin, Phytol, Abietic acid and Carotene.</p> <p>B. <b>ALKALOIDS:</b> Occurrence, isolation nomenclature and physiological action stereochemistry of steroids general methods of structure elucidation, degradation, classification, synthesis of the following alkaloids: Ephedrine, (++) Conine, Nicotine, Atropine, Quinine and Morphine</p>	<p><b>ACID BASES, ELECTROPHILES, NUCLEOPHILES AND CATALYSIS:</b> Acid-base dissociation, Electronic and structural effects, acidity and basicity. Acidity functions and their applications. Hard and soft acids and bases. Nucleophilicity scales. Nucleofugacity. The <math>\alpha</math>-effect. Ambivalent nucleophiles. Acid-base catalysis – specific and general catalysis. Bronsted catalysis, Enzyme Catalysis.</p>
July  UNIT-II	<p>A. <b>STEROIDS:</b> Introduction, structural features, structure determination, stereochemistry and synthesis of Cholesterol, Biosynthesis of cholesterol, Bile acids, Androstereone, Testosterone, Estrone, Progesterone, Aldosterone.</p> <p>B. <b>PLANT PIGMENTS:</b> Occurrence, nomenclature and general method of structure determination. Synthesis of Quercetin, Myricetin, Diadzin, Cyanidin, Hisutin.</p>	<p><b>MATERIAL CHEMISTRY:</b> Preparation and Properties of Nanoparticles, Materials-Metals, Semiconductors, Ceramics (Oxide, carbides, sulphides, nitrides). Physical and Chemical methods. Reduction method, size and shape-controlled synthesis, Sol-gel methods, Optical properties, Electrical and Magnetic properties, Application of Nanoparticles.</p>
August  UNIT-III	<p>A. <b>DRUG DESIGN:</b> Development of new drugs, procedures followed in drug design, concept of lead compound and lead modifications, concept of prodrug and soft drug, structure activity relationship (SAR), factors affecting bioactivity, resonance, inductive effect. Theories of Drug Activity – Occupancy theory, rate theory and induced fit theory.</p> <p>B. <b>PHARMACOKINETICS AND PHARMACODYNAMICS:</b> Definition and general introduction.</p>	<p><b>NUCLEAR THEORY:</b> Nuclear cross section and nuclear radii, nuclear shells and magic numbers, theory of nuclear shell model, nuclear potentials, square well and simple harmonic oscillator potentials, application, liquid drop model. Semi-empirical mass equation, application and limitations.</p> <p><b>NUCLEAR FISSION:</b> Mass, energy and charge distribution of fission products, decay chains, prompt and delayed neutrons, liquid drop model of nuclear fission.</p>

		<b>NUCLEAR ENERGY:</b> Nuclear fission, chain reaction, multiplication factor, nuclear reactors.
September  UNIT-IV	<p>A. <b>ANTIBIOTICS:</b> Constitution and synthesis of Penicillins, chloramphenicol, tetracycline and streptomycin, cephalosporin.</p> <p>B. <b>ANTI MALARIALS:</b> Synthesis and properties of the following Antimalarial: 8-amino quinoline derivatives – Pamaquine, Primaquine, Pentaquine, Isopentaquine, 4-amino quinoline derivatives – Santoquine, camaquine, Acridine derivatives – Mepacrine, Azacrin, Pyrimidine and Biguanid derivatives – Paludrine, Pyremethamine.</p>	<p><b>APPLIED RADIOCHEMISTRY:</b> Radioactive isotopes, purity and strength of radioisotopes. Radiochemical principle in the use of tracers, application of tracers in chemical investigations, Physico-chemical methods, Analytical applications, Age determinations, Medical applications, Agricultural application.</p> <p><b>DETECTION OF NUCLEAR RADIATIONS:</b> Techniques, Equipments, G.M&gt; counter, proportional counter, Scintillation counter, Counting Statistics.</p>
Remark	Practical done every month as per schedule	

Month	Paper-III	Paper-IV
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June  UNIT-I	<b>ADVANCED CHROMATOGRAPHY:</b> A. Ion chromatography: Ion exchange equilibrium, Ion-exchange packing and Inorganic Applications. B. Size exclusion chromatography: Column packing, Theory of size of exclusion chromatography and applications. C. Supercritical fluid chromatography: Properties of supercritical fluid SFC-Instrumentation and operating variables, comparison with other types of chromatography, applications. D. Capillary Electrophoresis and capillary electro chromatography: overviews and applications	<b>AIR POLLUTION MONITORING AND ANALYSIS</b> Classification of air pollution monitoring levels, air quality, standards and index, monitoring and analysis of selected air borne pollutants: SO <sub>2</sub> , NO <sub>x</sub> , SPM, VOC's, Pb, CO <sub>2</sub> , POP's, Hg, carbon and ozone air pollution control devices Viz ESP, scrubber technique, baghouse filters etc. Atmospheric chemistry of acid rains, photochemical smog, greenhouse effect, global warming, ozone hole.
July  UNIT-II	<b>X-RAY AND PROTON INDUCED SPECTROSCOPY</b> A. X-Ray fluorescent method: Principles-Characteristics x-ray emission. Instrumentation x-ray tube, Radioactive sources. Wavelength dispersive instruments. Energy dispersive instruments. Analytical Applications-Qualitative Analysis. B. Proton Induced X-Ray Spectroscopy: Theory, instrumentation and application.	<b>SOIL AND WATER POLLUTION</b> Soil and water quality standards, monitoring and analysis of selected soil water contaminants: COD, pesticides, heavy metals, POP's, fluoride, cyanide, nitrate, phosphate, oil & grease, Geobiochemical impact of municipal solid waste, steel plants effluent, domestic sewage. Control devices of water pollutants.
August  UNIT-III	<b>ATOMIC EMISSION SPECTROSCOPY</b> A. Selectivity, sensitivity and interferences of atomic spectroscopy. B. Theory, instrumentation and application of flame photometer, AES, ICP-AES and AFS.	<b>FOOD ANALYSIS</b> Moisture ash, crude protein, fat, crude fibre, carbohydrate, calcium, potassium, sodium and phosphate. Food adulteration: common adulterants in food, contamination of foodstuffs, microscopic examination of foods for adulterants, pesticides analysis in food products, HPLC, Gas chromatographic technique for analysis of organic phosphates in food products, TLC technique for identification of pesticides in food products.
September	<b>ATOMIC ABSORPTION SPECTROSCOPY AND HYPHENATED TECHNIQUES</b>	<b>A. DRUG ANALYSIS:</b> Narcotics and dangerous drugs, classification of drugs, Mode of action of narcotics, Sedatives, Hypnotics and tranquilizers, Screening



UNIT-IV	<p>A. Theory instrumentation and application of flame and graphite furnace AAS, cold-vapor and hydride generation AAS.</p> <p>B. Theory, instrumentation and application of hyphenated techniques i.e. GC/HPLC/-MS, GC/IC/HPLC-ICP-MS.</p>	<p>by gas and thin layer chromatography, spectrophotometric measurements.</p> <p><b>B. CLINICAL ANALYSIS:</b>  Concepts and principles of analytic methods commonly used in the clinical species: i.e. ammonia, blood urea Nitrogen, Ca, Cl, Co<sub>2</sub>, Fe, K, Li, Mg, Na, P, urea, glucose. Method for analysis of proteins (i.e. albumin, bilirubin, creatinine, cholesterol, HDL-cholesterol, triglycerides, creatinine)</p> <p><b>C. FUEL ANALYSIS:</b>  Solid, liquid and gas fuels, ultimate and proximate analysis, heating values, grading of coal, liquid fuels, flash and fire point, octane number and carbon residue, gaseous fuels, producer gas and water gas, calorific value.</p>
Remark	Practical done every month as per schedule	

## **TEACHING PLAN SESSION 2020-21**

**M.Sc. I<sup>st</sup> Semester**

**Mathematics**

**PAPER-I**

**Advanced Abstract Algebra (I)**

MONTH	PLAN
JANUARY	<b>Unit-I</b> Groups - Normal and Subnormal series. Composition series Jordan-Holder theorem. Solvable groups. Nilpotent groups.
FEBRUARY	<b>Unit-II</b> Field theory- Extension fields. Algebraic and transcendental extensions. Separable and inseparable extensions. Normal extensions.  <b>Internal Test 1</b>
MARCH	<b>Unit-III</b> Perfect fields. Finite fields. Primitive elements. Algebraically closed fields. <b>Internal Test 2</b>
APRIL	<b>Unit-IV</b> Automorphisms of extensions. Galois extensions. Fundamental theorem of Galois theory. Solution of polynomial equations by radicals. Insolvability of the general equation of degree 5 by radicals.  <b>Seminar</b>

**M.Sc. I<sup>st</sup> Semester**  
**Mathematics**  
**PAPER-II**  
**Real Analysis (I)**

MONTH	PLAN
JANUARY	<b>Unit-I</b> Sequences and series of functions, pointwise and uniform convergence, Cauchy criterion for uniform convergence, Weierstrass M-test, Abel's and Dirichlet's tests for uniform convergence, uniform convergence and continuity,
FEBRUARY	<b>Unit I</b> definition and simple properties of Riemann-Stieltjes integral, uniform convergence and Riemann-Stieltjes integration, uniform convergence and differentiation, Weierstrass approximation theorem.  <b>Unit-II</b> Power series, uniqueness theorem for power series, Abel's and Tauber's theorems. Rearrangements of terms of a series, Riemann's theorem. <b>Internal Test 1</b>
MARCH	<b>Unit-III</b> Functions of several variables, linear transformations, Derivatives in an open subset of $R^n$ , Chain rule, Partial derivatives, interchange of the order of differentiation, Derivatives of higher orders, Taylor's theorem, Inverse function theorem, Implicit function theorem.  <b>Internal Test 2</b>
APRIL	<b>Unit-IV</b> Jacobians, extremum problems with constraints, Lagrange's multiplier method, Differentiation of integrals. Partitions of unity, Differential forms, Stoke's theorem.  <b>Seminar</b>

**M.Sc. I<sup>st</sup> Semester**  
**Mathematics**  
**PAPER-III**  
**Topology**

MONTH	PLAN
JANUARY	<b>Unit-I</b> Countable and uncountable sets. Infinite sets and the Axiom of Choice. Cardinal numbers and its arithmetic. Schroeder-Bernstein theorem. Cantor's theorem and the continuum hypothesis. Zorn's lemma, well-ordering theorem. Definition and examples of topological spaces.
FEBRUARY	<p><b>Unit I</b> Closed sets. Closure. Dense subsets. Neighbourhoods. Interior, exterior and boundary. Accumulation points and derived sets. Bases and sub-bases. Subspaces and relative topology.</p> <p><b>Unit-II</b> Alternate methods of defining a topology in terms of Kuratowski Closure Operator and Neighbourhood Systems. Continuous functions and homeomorphism. First and Second Countable spaces. Lindelof's theorems. Separable spaces. Second countability and reparableity.</p> <p><b>Internal Test 1</b></p>
MARCH	<p><b>Unit-III</b> Separation axioms; their Characterizations and basic properties. Urysohn's lemma, Tietze extension theorem.</p> <p><b>Unit IV</b> Compactness. Continuous functions and compact sets. Basic properties of Compactness. Compactness and finite intersection property. Sequentially and countably compact sets.</p> <p><b>Internal Test 2</b></p>
APRIL	<p><b>Unit-IV</b> Locacompactness and one point compactification. Stone-Cech compactification. Compactness in metric spaces. Equivalence of compactness, countable compactness and sequential compactness in metric space. Connected spaces. Connectedness on the real line. Components. Locally connected spaces.</p> <p><b>Seminar</b></p>

**M.Sc. I<sup>st</sup> Semester**  
**Mathematics**  
**PAPER-IV**  
**Complex Analysis (I)**

MONTH	PLAN
JANUARY	<b>Unit-I</b> Complex integration, Cauchy-Goursat. Theorem. Cauchy's integral formula. Higher order derivatives. Morera's Theorem. Cauchy's inequality and Liouville's theorem..
FEBRUARY	<b>Unit I</b> The fundamental theorem of algebra. Taylor's theorem. Laurent's series. Isolated singularities. Meromorphic functions  <b>Unit-II</b> Maximum modulus principle. Schwarz lemma. The argument principle. Rouché's theorem Inverse function theorem <b>Internal Test 1</b>
MARCH	<b>Unit-III</b> Residues. Cauchy's residue theorem. Evaluation of integrals. Branches of many valued functions with special reference to $\arg z$ , $\log z$ and $z^a$ .  <b>Internal Test 2</b>
APRIL	<b>Unit-IV</b> Bilinear transformations, their properties and classifications. Definitions and examples of Conformal mappings. Spaces of analytic functions. Hurwitz's theorem. Montel's theorem Riemann mapping theorem. <b>Seminar</b>

**M.Sc. I<sup>st</sup> Semester**  
**Mathematics**  
**PAPER-V**  
**Advanced Discrete Mathematics (I)**

MONTH	PLAN
JANUARY	<b>Unit-I</b> Formal Logic-Statements. Symbolic Representation and Tautologies. Quantifiers, Predicates and Validity. Propositional Logic. Semigroups & Monoids-Definitions and Examples of Semigroups and monoids (including those pertaining to concatenation operation).
FEBRUARY	<b>Unit-II</b> Homomorphism of semigroups and monoids. Congruence relation and Quotient Semigroups. Subsemigroup and submonoids. Direct Products. Basic Homomorphism Theorem. <b>Internal Test 1</b>
MARCH	<b>Unit-III</b> Lattices-Lattices as partially ordered sets. Their properties. Lattices as Algebraic Systems. Sublattices, Direct products, and Homomorphisms. Some Special Lattices e.g., Complete, Complemented and Distributive Lattices. Boolean Algebras-Boolean Algebras as Lattices. Various Boolean Identities. The Switching Algebra example. Subalgebras, <b>Internal Test 2</b>
APRIL	<b>Unit-IV</b> Direct Products and Homomorphisms. Join-Irreducible elements, Atoms and Minterms. Boolean Forms and Their Equivalence. Minterm Boolean Forms, Sum of Products Canonical Forms. Minimization of Boolean Functions. Applications of Boolean Algebra to Switching Theory (using AND,OR & NOT gates). The Karnaugh Map Method. Grammars and Languages-Phrase-Structure Grammars. Rewriting Rules. Derivations. Sentential Forms. Language generated by a Grammar. Regular, Context-Free, and Context Sensitive Grammars and Languages. Regular sets, Regular Expressions and the Pumping Lemma. Kleene's Theorem. Notions of Syntax Analysis, Polish Notations. Conversion of Infix Expressions to Polish Notations. The Reverse Polish Notation. <b>Seminar</b>

**M.Sc. II<sup>nd</sup> Semester**  
**Mathematics**  
**PAPER-I**  
**Advanced Abstract Algebra (II)**

MONTH	PLAN
JUNE	<b>Unit-I</b> Modules - Cyclic modules. Simple modules. Semi-simple modules. Schuler's Lemma. Free modules. Noetherian and artinian modules and rings-Hilbert basis theorem. Wedderburn Artin theorem. Uniform modules, primary modules, and Noether-Lasker theorem.
JULY	<b>Unit-II</b> Linear Transformations - Algebra of linear transformation, characteristic roots, matrices and linear transformations. <b>Internal Test 1</b>
AUGUST	<b>Unit III</b> Canonical Forms - Similarity of linear transformations. Invariant subspaces. Reduction to triangular forms. Nilpotent transformations. Index of nilpotency. Invariants of a nilpotent transformation. The primary decomposition theorem. Jordan blocks and Jordan forms. <b>Unit-IV</b> Smith normal form over a principal ideal domain and rank. Fundamental structure theorem for finitely generated modules over a Principal ideal domain and its applications to finitely generated abelian groups. Rational canonical form. <b>Internal Test 2</b>
SEPTEMBER	<b>Unit IV</b> Generalized Jordan form over any field. <b>Seminar</b>

**M.Sc. II<sup>nd</sup> Semester**  
**Mathematics**  
**PAPER-II**  
**Real Analysis (II)**

MONTH	PLAN
JUNE	<b>Unit-I</b> Definition and existence of Riemann-Stieltjes integral, Properties of the Integral, integration and differentiation, the fundamental theorem of Calculus, integration of vector-valued functions, Rectifiable curves. <b>Unit-II</b> Lebesgue outer measure. Measurable sets. Regularity.
JULY	<b>Unit II</b> Measurable functions. Borel and Lebesgue measurability. Non-measurable sets. Integration of Non-negative functions. The General integral. Integration of Series. <b>Unit-III</b> Measures and outer measures, Extension of a measure. <b>Internal Test 1</b>
AUGUST	<b>Unit III</b> Uniqueness of Extension. Completion of a measure. Measure spaces. Integration with respect to a measure. Riemann and Lebesgue Integrals. <b>Unit-IV</b> The Four derivatives. Lebesgue Differentiation Theorem. Differentiation and Integration. Functions of Bounded variation. The $L^p$ -spaces. Convex functions. Jensen's inequality. <b>Internal Test 2</b>
SEPTEMBER	<b>Unit IV</b> Holder and Minkowski inequalities. Completeness of $L^p$ , Convergence in Measure, Almost uniform convergence. <b>Seminar</b>



**M.Sc. II<sup>nd</sup> Semester**  
**Mathematics**  
**PAPER-III**  
**General and Algebraic Topology**

MONTH	PLAN
JUNE	<b>Unit-I</b> Tychonoff product topology in terms of standard sub-base and its characterizations. Projection maps. Separation axioms. <b>Unit-II</b> Product spaces. Connectedness and product spaces.
JULY	<b>Unit II</b> Compactness and product spaces (Tychonoff's theorem). Countability and product spaces. <b>Unit-III</b> Embedding and metrization. Embedding lemma and Tychonoff embedding. The Urysohn metrization theorem. Metrization theorems and Paracompactness-Local finiteness. <b>Internal Test 1</b>
AUGUST	<b>Unit III</b> The Nagata-Smirnov metrization theorem. Paracompactness. The Smirnov metrization theorem. <b>Unit-IV</b> Nets and filter. Topology and convergence of nets. Hausdorffness and nets. Compactness and nets. Filters and their convergence. Canonical way of converting nets to filters and vice-versa. Ultra-filters and Compactness. The fundamental group and covering spaces-Homotopy of paths. <b>Internal Test 2</b>
SEPTEMBER	<b>Unit IV</b> The fundamental group. Covering spaces. The fundamental group of the circle and the fundamental theorem of algebra  <b>Seminar</b>

**M.Sc. II<sup>nd</sup> Semester**  
**Mathematics**  
**PAPER-IV**  
**Advanced Complex Analysis (II)**

MONTH	PLAN
JUNE	<b>Unit-I</b> Weierstrass' factorisation theorem. Gamma function and its properties. Riemann Zeta function. Riemann's functional equation. Runge's theorem. Mittag-Leffler's theorem. <b>Unit-II</b> Analytic Continuation. Uniqueness of direct analytic continuation.
JULY	<b>Unit II</b> Uniqueness of analytic continuation along a curve. Power series method of analytic continuation Schwarz Reflection Principle. Monodromy theorem and its consequences. <b>Unit-III</b> Harmonic functions on a disk. Harnack's inequality and theorem. <b>Internal Test 1</b>
AUGUST	<b>Unit III</b> Dirichlet Problem. Green's function. <b>Unit-IV</b> Canonical products. Jensen's formula. Poisson-Jensen formula. Hadamard's three circles theorem. Order of an entire function. Exponent of Convergence. Borel's theorem. Hadamard's factorization theorem. The range of an analytic function. Bloch's theorem. The Little Picard theorem. Schottky's theorem. Montel Caratheodory and the Great picard theorem. Univalent functions <b>Internal Test 2</b>
SEPTEMBER	<b>Unit-IV</b> . Bieberbach's conjecture (Statement only) and the "1/4-theorem." <b>Seminar</b>

**M.Sc. II<sup>nd</sup> Semester**  
**Mathematics**  
**PAPER-V**  
**Advanced Discrete Mathematics (II)**

MONTH	PLAN
JUNE	<b>Unit-I</b> Graph Theory-Definition of (Undirected) Graphs, Paths, Circuits, Cycles, & Subgraphs. Induced Subgraphs. Degree of a vertex. Connectivity. Planar Graphs and their properties. Trees. Euler's Formula for connected planar Graphs. Complete & Complete Bipartite Graphs. Kuratowski's Theorem (statement only) and its use.
JULY	<b>Unit-II</b> Spanning Trees, Cut-sets, Fundamental Cut -sets, and Cycle. Minimal Spanning Trees and Kruskal's Algorithm. Matrix Representations of Graphs. Euler's Theorem on the Existence of Eulerian Paths and Circuits. <b>Unit-III</b> Directed Graphs. In degree and Out degree of a Vertex. Weighted undirected Graphs. <b>Internal Test 1</b>
AUGUST	<b>Unit III</b> Dijkstra's Algorithm.. strong Connectivity & Warshall's Algorithm. Directed Trees. Search Trees. Tree Traversals. <b>Unit-IV</b> Introductory Computability Theory-Finite State Machines and their Transition Table Diagrams. Equivalence of finite State Machines. Reduced Machines. Homomorphism. Finite Automata. Acceptors. Non-deterministic Finite Automata and equivalence of its power to that of Deterministic Finite Automata. <b>Internal Test 2</b>
SEPTEMBER	<b>Unit IV</b> Moore and mealy Machines. Turing Machine and Partial Recursive Functions. <b>Seminar</b>

# M.Sc. III<sup>rd</sup> Semester

## Mathematics

### PAPER-I

### Integration Theory and Functional Analysis (I)

MONTH	PLAN
NOVEMBER	<b>UNIT I</b> Signed measure. Hahn decomposition theorem, mutually singular measures. Radon-Nikodym theorem.
DECEMBER	<b>UNIT I</b> Lebesgue decomposition. Riesz representation theorem. Extension theorem (Caratheodory). <b>UNIT II</b> Lebesgue-Stieltjes integral, product measures, Fubini's theorem. Differentiation and Integration. Decomposition into absolutely continuous and singular parts.
JANUARY	<b>UNIT III</b> Baire sets. Baire measure, continuous functions with compact support. Regularity of measures on locally compact spaces. Integration of continuous functions with compact support, Riesz-Markoff theorem. <b>Internal Test 1</b>
FEBRUARY	<b>UNIT IV</b> Normed linear spaces. Banach spaces and examples. Quotient space of normed linear spaces and its completeness, equivalent norms. Riesz Lemma, basic properties of finite dimensional normed linear spaces and compactness. <b>Internal Test 2</b>
MARCH	<b>UNIT IV</b> Weak convergence and bounded linear transformations, normed linear spaces of bounded linear transformations, dual spaces with examples. <b>Seminar</b>
APRIL	REVISION

## M.SC.III<sup>rd</sup> SEMESTER

### Mathematics

#### PAPER-II

#### Partial Differential Equations and Mechanics (I)

MONTH	PLAN
NOVEMBER	<b>Unit-I</b> Examples of PDE. Classification. Transport Equation-Initial value Problem. Non-homogeneous Equation. Laplace's Equation-Fundamental Solution
DECEMBER	<b>UNIT I</b> Mean Value Formulas, Properties of Harmonic Functions, Green's Function, Energy Methods. Heat Equation-Fundamental Solution, Mean Value Formula, Properties of Solutions, Energy Methods. Wave Equation-Solution by Spherical Means, Non-homogeneous Equations, Energy Methods.
JANUARY	<b>Unit-II</b> Generalized coordinates. Holonomic and Non-holonomic systems. Scleronomic and Rheonomic systems. Generalized potential. Lagrange's equations of first kind. Lagrange's equations of second kind. Uniqueness of solution. Energy equation for conservative fields. Hamilton's variables. Donkin's theorem. Hamilton canonical equations. Cyclic coordinates. Routh's equations. <b>Internal Test 1</b>
FEBRUARY	<b>Unit-III</b> Poisson's Bracket. Poisson's Identity. Jacobi-Poisson Theorem. Motivating problems of calculus of variations, Shortest distance. Minimum surface of revolution. Brachistochrone problem. Isoperimetric problem. Geodesic. Fundamental lemma of calculus of variations. Euler's equation for one dependent function and its generalization to (i) 'n' dependent functions, (ii) higher order derivatives. Conditional extremum under geometric constraints and under integral constraints. <b>Internal Test 2</b>
MARCH	<b>Unit-IV</b> Attraction and potential of rod, disc, spherical shells and sphere. Surface integral of normal attraction (application & Gauss' theorem). Laplace and Poisson equations. Work done by selfattracting systems. Distributions for a given potential. Equipotential surfaces. Surface and solid harmonics. Surface density in terms of surface harmonics. <b>Seminar</b>
APRIL	<b>REVISION</b>

## M.SC.III<sup>rd</sup> SEMESTER

### Mathematics

#### PAPER-III

### Fundamentals of Computer Science-Theory and Practical (Object Oriented Programming and Data Structure)

MONTH	PLAN
NOVEMBER	<b>Unit-I</b> Object Oriented Programming-Classes and Scope, nested classes, pointer class members; Class initialization, assignment and destruction.  <b>Practical:-</b> Practical based on class and constructor
DECEMBER	<b>Unit-II</b> Overloaded functions and operators; Templates including class templates; class inheritance and virtual functions.  <b>Practical :-</b> Practical based on fuction and operator overloading Inheritance, virtual function
JANUARY	<b>Unit-III</b> Data Structures-Analysis of algorithms, q, W, 0, o, w notations ; Sequential and linked representations, Lists,  <b>Practical :-</b> Practical based on array
FEBRUARY	<b>UNIT III</b> Stacks, and queues;  <b>Unit-IV</b> Trees: Binary tree- search tree implementation, B-tree (concept only);  <b>Practical :-</b> Practical based on stack ,queue and tree
MARCH	<b>Unit-IV</b> Sorting: Insertion sort, shell sort, quick-sort, heap sort and their analysis; Hashing-open and closed.  <b>Practical :-</b> practical based on searching and sorting .
APRIL	<b>REVISION</b>

## M.SC.III<sup>rd</sup> SEMESTER

### Mathematics

#### PAPER-IV

#### Operations Research (I)

MONTH	PROPOSED PLAN
NOVEMBER	<b>Unit-I</b> Operations Research and its Scope. Necessity of Operations Research in Industry. Linear Programming-Simplex Method. Theory of the Simplex Method. Duality and Sensitivity Analysis.
DECEMBER	<b>Unit-II</b> Other Algorithms for Linear Programming-Dual Simplex Method.
JANUARY	<b>Unit-II</b> Parametric Linear Programming. Upper Bound Technique. Interior Point Algorithm. Linear Goal Programming. <b>Internal Test 1</b>
FEBRUARY	<b>Unit-IV</b> Transportation and Assignment Problems. <b>Internal Test 2</b>
MARCH	<b>Unit-IV</b> Network Analysis-Shortest Path Problem. Minimum Spanning Tree Problem. Maximum Flow Problem. Minimum Cost Flow Problem. Network Simplex Method. Project Planning and Control I with PERT-CPM. <b>Seminar</b>
APRIL	<b>REVISION</b>

## M.SC.III<sup>rd</sup> SEMESTER

### Mathematics

#### PAPER-V

#### Programming in C (with ANSI features) Theory and Practical

MONTH	PLAN
NOVEMBER	<b>Unit-I</b> An overview of programming. Programming language, Classification .C Essentials-Program Development. Functions. Anatomy of a C Function. Variables and Constants. Expressions. Assignment Statements. Formatting Source Files. Continuation Character. The Preprocessor. <b>Practical:-</b> Practical based on Arithmetic operator
DECEMBER	<b>Unit-II</b> Scalar Data Types-Declarations, Different Types of Integers. Different kinds of Integer Constants. Floating-Point Types. Initialization. Mixing Types. Explicit Conversions-Casts. Enumeration Types. The Void Data Type. Typedefs. Finding the Address of an object. Pointers. <b>Practical :-</b> Practical based on working of different datatypes
JANUARY	<b>Unit-III</b> Operators and Expressions-Precedence and Associativity. Unary Plus and Minus operators. Binary Arithmetic Operators. Arithmetic Assignment Operators. Increment and Decrement Operators. Comma Operator. Relational Operators. Logical Operators. Bit - Manipulation Operators. Bitwise Assignment Operators. Cast Operator. Size of Operators. Conditional Operator. Memory Operators. <b>Practical :-</b> Practical based on different operator
FEBRUARY	<b>Unit-III</b> Control Flow-Conditional Branching. The Switch Statement. Looping. Nested Loops. The break and continue Statements. The goto statement. Infinite Loops. <b>Practical :-</b> Practical based control statement
MARCH	<b>Unit-IV</b> Arrays -Declaring an Array. Arrays and Memory. Initializing Arrays. Encryption and Decryption. <b>Practical :-</b> practical based on Array .
APRIL	<b>REVISION</b>



**M.Sc. IV<sup>th</sup> Semester**  
**Mathematics**  
**PAPER-I**  
**Functional Analysis (II)**

MONTH	PLAN
JUNE	<b>Unit-I</b> Uniform boundedness theorem and some of its consequences. Open mapping and closed graph theorems. Hahn-Banach theorem for real linear spaces, complex linear spaces and normed linear spaces. Reflexive spaces. Weak Sequential Compactness. Compact Operators.
JULY	<b>Unit I</b> Solvability of linear equations in Banach spaces. The closed Range Theorem. <b>Unit-II</b> Inner product spaces. Hilbert spaces. Orthonormal Sets. Bessel's inequality. Complete orthonormal sets and Parseval's identity. <b>Internal Test 1</b>
AUGUST	<b>Unit-III</b> Structure of Hilbert spaces. Projection theorem. Riesz representation theorem. Adjoint of an operator on a Hilbert space. Reflexivity of Hilbert spaces. <b>Internal Test 1</b>
SEPTEMBER	<b>Unit-IV</b> Self-adjoint operators, Positive, projection, normal and unitary operators. Abstract variational boundary-value problem. The generalized Lax-Milgram theorem. <b>Seminar</b>

**M.Sc. IV<sup>th</sup> Semester**  
**Mathematics**  
**PAPER-II**  
**Partial Differential Equations and Mechanics (II)**

MONTH	PLAN
JUNE	<b>Unit-I</b> Nonlinear First Order PDE-Complete Integrals, Envelopes, Characteristics, HamiltonJacobi Equations (Calculus of Variations, Hamilton's ODE, Legendre Transform, Hopf-Lax Formula, Weak Solutions, Uniqueness), Conservation Laws (Shocks, Entropy Condition, LaxOleinik formula, Weak Solutions, Uniqueness, Riemann's Problem, Long Time Behaviour)
JULY	<b>Unit-II</b> Representation of Solutions-Separation of Variables, Similarity Solutions (Plane and Travelling Waves, Solitons, Similarity under Scaling), Fourier and Laplace Transform, Hopf-Cole Transform, Hodograph and Legendre Transforms, Potential Functions. Asymptotics (Singular Perturbations, Laplace's Method, Geometric Optics, Stationary Phase, Homogenization), <b>Internal Test 1</b>
AUGUST	<b>Unit-II</b> Power Series (Non-characteristic Surfaces, Real Analytic Functions, Cauchy-Kovalevskaya Theorem) <b>Unit-III</b> Hamilton's Principle. Principle of least action. Poincare Cartan Integral invariant. Whittaker's equations. Jacobi's equations. Lee Hwa Chung's theorem, canonical transformations and properties of generating functions. <b>Internal Test 2</b>
SEPTEMBER	<b>Unit-IV</b> Hamilton-Jacobi equation. Jacobi theorem. Method of separation of variables. Lagrange Brackets. Condition of canonical character of a transformation in terms of Lagrange brackets and Poisson brackets, invariance of Lagrange brackets and Poisson brackets under canonical transformations. <b>Seminar</b>

**M.Sc. IV<sup>th</sup> Semester**  
**Mathematics**  
**PAPER-III**  
**Operating System and Database Management System**

MONTH	PLAN
JUNE	<b>Unit-I</b> Database Systems-Role of database systems, database system architecture and data modeling. Introduction to relational algebra and relational calculus.
JULY	<b>Unit-II</b> Introduction to SQL: Basic features including views; Integrity constraints; Database design-normalization up to BCNF. <b>Practical :-Practical based on SQL</b>
AUGUST	<b>Unit-III</b> Operating Systems- Overview of operating system, user interface, processor management, memory management.
SEPTEMBER	<b>Unit-IV</b> I/O management, concurrency and Security, network and distributed systems.

**M.Sc. IV<sup>th</sup> Semester**  
**Mathematics**  
**PAPER-IV**  
**Operations Research (II)**

MONTH	PLAN
JUNE	<b>Unit-I</b> Dynamic Programming-Deterministic and Probabilistic Dynamic programming.
JULY	<b>Unit-II</b> Game Theory-Two-Person, Zero-Sum Games. Games with Mixed Strategies.Graphical . Solution. Solution by Linear Programming. <b>Internal Test 1</b>
AUGUST	<b>Unit-III</b> Integer Programming-Branch and Bound Technique.  <b>Internal Test 2</b>
SEPTEMBER	<b>Unit-IV</b> Nonlinear Programming-One/and Multi-Variable Unconstrained Optimization. Kuhn-Tucker Conditions for Constrained Optimization. Quadratic Programming. Separable Programming. I Convex Programming. Non-convex Programming. <b>Seminar</b>

## M.Sc. IV<sup>th</sup> Semester

### Mathematics

#### PAPER-V

#### Programming in C (with ANSI features) (II)

MONTH	PLAN
JUNE	<p><b>Unit-I</b> Storage Classes-Fixed vs. Automatic Duration. Scope. Global variables. The register Specifier. ANSI rules for the syntax and Semantics of the storage-class keywords.</p> <p><b>Unit-II</b> Pointers Pointer Arithmetic. Passing Pointers as Function Arguments.</p> <p><b>Practical :-</b>practical based on storage classes and pointer</p>
JULY	<p><b>Unit II</b> Accessing Array Elements through Pointers. Passing Arrays as Function Arguments. Sorting Algorithms. Strings. Multidimensional Arrays. Arrays of Pointers. Pointers to Pointers.</p> <p><b>Unit-III</b> Functions-Passing Arguments. Declarations and Calls. Pointers to Functions. Recursion. The main Function. Complex Declarations.</p> <p><b>Practical :-</b> practical based on Array and Function</p>
AUGUST	<p><b>Unit III</b> The C Preprocessor-Macro Substitution. Conditional Compilation. Include Facility. Line Control.</p> <p><b>Unit-IV</b> Structures and Unions-Structures. Dynamic Memory Allocation. Linked Lists. Unions, enum Declarations.</p> <p><b>Practical :-</b> practical based on Macro, Structure and Union</p>
SEPTEMBER	<p><b>Unit-IV</b> Input and Output-Streams, Buffering. The &lt;Stdio.h&gt; Header File. Error Handling. Opening and Closing a File. Reading and Writing Data. Selecting an I/O Method. Unbuffered I/O Random Access. The standard library for Input/Output.</p> <p><b>Practical :-</b> practical based on File handling</p>

**GOVT. D. B. GIRL'S P.G. (AUTONOMOUS) COLLEGE, RAIPUR CHHATTISGARH**

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**PROPOSED TEACHING PLAN FOR THE SESSION 2020- 21**

**Name of the Department: PHYSICS**

**CLASS M. Sc. I Semester**

<b>Month/ Days</b>	<b>Paper I</b>	<b>Paper II</b>	<b>Paper III</b>	<b>Paper IV</b>
<b>July</b>	<b>Anmission</b>	<b>Anmission</b>	<b>Anmission</b>	<b>Anmission</b>
<b>January</b>	<b>Admission</b> <b>UNIT-I</b> Variational method, expectation value of energy, application to excited states, ground state of He-atom, Zero point energy of one dimensional harmonic oscillator, Vander-waals interaction, the W.K.B. approximation, approximate solutions, .	<b>Admission</b> <b>UNIT-I</b> Foundation of statistical mechanics : macroscopic and microscopic states, contact between statistics and thermodynamics, physical significance of $\Omega(N, V, E)$ , the classical gas, entropy of mixing and Gibb's paradox,	<b>Admission</b> <b>Unit- I</b> Electrons in Solids and Electronic Properties Energy bands: nearly free electron model, origin of energy gap and its magnitude, Bloch function, Kronig-Penny model, Wave equation of electron in periodic potential, restatement of Bloch theorem, crystal moment of an electron, solution of Central equation,	<b>Admission</b> <b>UNIT - I</b> Number system : Decimal, Binary, Octal and Hexadecimal Number System with mutual conversion, BCD addition and subtraction, 1's and 2's compliments, multiplication & division BCD code (8421), Excess -3 code, gray code, binary to gray code and gray code to binary code conversion. Logic gates: Positive and negative logic , Basic gates,

<p><b>February</b></p>	<p>Diagonalization, Complete orthonormal sets of functions UNIT-II Complex Variables: Cauchy- Riemann condition, analytic functions, Cauchy's theorem, Cauchy integral formula, Laurent series, singularities, residue theorem, contour integration, evaluation of definite integrals, problems. <b>UNIT – III</b> Differential equations, first order differential equation,</p>	<p>(iii) spherical pendulum (iv) Isotropic oscillator (v) Atwood's Machine, conservation of linear momentum angular momentum and energy in Lagrangian formulation Lagrange's equation for nonholonomic system procedure to eliminate consideration of Ignorable coordinates the Routhian function.  <b>UNIT-II</b> Variational Principle, calculus of variation, some techniques of calculus of variables , Euler Lagrange differential equation. Hamilton variational principle Deduction of Hamilton's Principle from D'Alembert's principle. Deduction of Newton's second law of motion from Hamilton's Principle. Deduction of Lagrange's equations of motion from Hamilton's Principle for conservation and for non conservative systems Non conservative forces. Dissipative system, Rayleigh's Dissipation function , Lagrangian for a charged particle in an electromagnetic field.</p>	<p>library functions. Identifiers, qualifiers, define statements, value Initialized variables, operators, and expressions. Operator precedence and associativity. Scanf with specifier, search set arrangements and suppression Character, format specifier for scanf. <b>UNIT - II</b> Control structure, If statement, if else statement, multiway decision, compound statement. Loops: for loop, while loop, do while loop, break statement , compound statement continue statement , go to statement Function: function main , function accepting more than one parameter, user defined and library function concept associatively with functions, function parameter, return value, recursion comparison. Arrays , strings, multidimensional array, array of strings function in string. <b>UNIT - III</b> (Without Programming) Method for determination of zeroes of linear, non linear,</p>	<p>Coefficient of FET, and relation between different coefficient. Metal Oxide Field Effect Transistor (MOSFET) – DE MOSFET and E- MOSFET construction and working principle, static and dynamic characteristics. Uni-junction transistor (UJT) – basics structure, working principle, Voltage – Current characteristics and important parameters <b>UNIT – II</b> MIS Diode : Introduction , Energy band diagram, accumulation, depletion and inversion condition concept of surface space charge, surface potential, surface capacitance, Ideal MIS curves . MOS diode: structure , Ideal MOS, surface depletion region , Ideal MOS curves, Si-SiO<sub>2</sub> MOS diode-(real case) interface trapped charge, oxide charges. Charged Couple Device (CCD) : Basic structure, working principle, charge transfer with clock voltage.</p>
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March

second order differential equation with constant coefficients, second order linear ODEs with variable coefficients, Solution by series expansion, nonhomogenous differential equations and solution by the method of Green's functions  
**UNIT-IV**  
 Special functions, Legendre, Bessel, Hermite and Laguerre functions with their physical applications, generating functions, orthogonality conditions,

**UNIT – III**  
 Hamiltonian formulation of mechanics: Phase space and the motion of the system, Hamiltonian function, Hamilton's canonical equation of motion. Physical significance of HDeduction of Canonical equation from variational principle. Hamilton's canonical equations of motion in different coordinate systems. Application of Hamilton equation of motion (i) Simple pendulum (ii) compound pendulum (iii) Two dimensional Isotropic Harmonic oscillator (iv) Linear Harmonic(v) Particle in central field of force. Hamiltonian for a charged particle in an electromagnetic field . Principle of least action statement and its proof. **UNIT – IV**  
 Canonical or constant transformation, its advantage example of canonical transformation, necessary and sufficient condition for a transformation to be canonical, Infinitesimal contact transformations. Hamilton-Jacobi partial differential equation for Hamilton's Principle function. Solution of Harmonic oscillator problem by Hamilton-Jacobi method. Hamilton- Jacoby theory. Poisson Bracket: Definition and properties. Invariance of Poisson-Brackets with respect to canonical transformation ,

algebraic equations. And transcendental equations and their convergence. Solution of simultaneous linear equations Gaussian elimination pivoting, iterative method matrix inversion. Eigen values and Eigen vectors of matrices. Power and Jacobi method, curve fitting polynomial least squares.  
**UNIT - IV**  
 (Without Programming)  
 Finite difference interpolation with equally spaced and unequally spaced

**UNIT – III**  
 Microwave devices: Tunnel Diode – Introduction, Definition, Tunneling Phenomenon, Energy band Structure, Volt-Ampere Characteristics, Negative Resistance of tunnel diode (Characteristics of tunnel diode) Transfer Electron Devices: Transfer Electron Effect, Gun Diode- Introduction and characteristics. Backward Diode: Introduction and Characteristics. IMPATT Diode : Introduction, Structure, Principle of operation, Static and Dynamic Characteristics.  
**UNIT – IV**  
 Modulation : Definition, Types of Modulation, Mathematical expression of modulation, Percentage of modulation, Amplitude modulation, Generation of Amplitude modulation,



<b>April</b>	recursion relations, Integral transforms, Fourier integral and transforms, inversion theorem, Fourier transform of derivatives, convolution theorem. <b>Preparation leave[Exams]</b>	Equations of motion in Poisson bracket form Jacoby identity. Infinitesimal contact transformations interpretation in terms of Poisson Brackets. The angular momentum and Poisson Bracket Lagrange's Brackets: definition & Properties, Relation with Poisson Brackets. <b>Preparation leave[Exams]</b>	points, Numerical differentiation and Integration, Newton's formula, Monte Carlo's evaluation of Integral Numerical solution of ordinary differential equation. Euler and Runge Kutta methods. Predictor corrector method. <b>Preparation leave[Exams]</b>	Demodulation, Demodulation of Amplitude modulated wave, side bands, band width, DSBSC modulation, Generation of DSBSC waves. SSB modulation, Generation and Detection of SSB waves, Multiplexing: Frequency division multiplexing (FDM). <b>Preparation leave[Exams]</b>
<b>May</b>	<b>Exam</b>	<b>Exam</b>	<b>Exam</b>	<b>Exam</b>

### CLASS M. Sc. II Semester 2020-21

Month/ Days	Paper I	Paper II	Paper III	Paper IV
<b>June</b>	<b>Vacations</b> <b>UNIT - I</b> Inadequacy of classical mechanics, Planck quantum hypothesis and radiation law, Photoelectric effect, de-broglie's theory. Schrödinger equation, continuity equation, Ehrenfest theorem, admissible wave functions, stationary states, one-dimensional problems; walls and barriers,	<b>Vacations</b> <b>Unit-I</b> Laser Characteristics – Spontaneous and stimulated emission, Einstein's quantum theory of radiation, theory of some optical processes, coherence and monochromaticity, kinetics of optical absorption, line broadening mechanism, Basic principle of lasers, population inversion,	<b>Vacations</b> <b>UNIT – I</b> Equation of continuity, Maxwell's equations (SI unit) and its derivation, Integral form of equation, Maxwell's equations in some particular cases, Electromagnetic energy: Poynting Theorem. The wave equation. Plane electromagnetic waves in free space. Plane electromagnetic waves in a non-conducting isotropic medium (i.e. Isotropic dielectrics).	<b>Vacations</b> <b>UNIT – I</b> Radiative and non-radiative transitions, Optical Absorption, bulk and thin film, photoconductive devices (LDR), Emission spectra, Luminescent efficiency, method of excitation. Light emitting diode (LED): high frequency limit, effect of surface and indirect combination current, operation of LED, Visible LEDs and Infrared LEDs.

<p style="text-align: center;"><b>July</b></p>	<p>Schrödinger equation for harmonic oscillator and its solution, uncertainty relations, states with minimum uncertainty product.</p> <p><b>UNIT –II</b></p> <p>Superposition principle, general formalism of wave mechanics, representation of states and dynamical variables, commutation relationship, completeness and normalization of eigen functions, Dirac-delta function, Bra &amp; Ket notation, matrix representation of an operator, harmonic oscillator and its solution by matrix method, Heisenberg equation of motion.</p> <p><b>UNIT -III</b></p> <p>Angular momentum in quantum mechanics, commutation relationships,</p>	<p>laser pumping, two &amp; three level laser systems, resonator, Q-factor, losses in cavity, threshold condition, quantum yield.</p> <p><b>UNIT – II</b></p> <p>Laser Systems</p> <p>Solid state lasers- the ruby laser, Nd:YAG laser, ND: Glass laser, semiconductor lasers – features of semiconductor lasers, intrinsic semiconductor lasers, Gas laser -neutral atom gas laser, He-Ne laser, molecular gas lasers, CO2 laser, Liquid lasers, dye lasers and chemical laser.</p> <p><b>UNIT-III</b></p> <p>Advances in laser Physics</p> <p>Production of giant pulse -Q-switching, giant pulse dynamics,</p>	<p>Plane electromagnetic waves in Anisotropic Non-conducting medium (Anisotropic dielectric ) , Plane electromagnetic waves in conducting medium. A simple model for dynamic conductivity. Propagation of electromagnetic waves in ionized gases.</p> <p><b>UNIT – II</b></p> <p>Boundary conditions at the interface of two media, Reflection and Refraction of electromagnetic waves at the interface of Non-conducting media,. Fresnel's equations</p> <p>experimental verification of fresnel's equations. Reflection and transmission coefficients at the interface between two non conducting media, Brester's law and degree of polarisation , Total internal reflection , Group velocity</p> <p>Propagation of Electromagnetic waves between parallel conducting planes. Wave guides. TM modes and TE modes, Rectangular wave guides.</p>	<p>Diode Laser (Condition for population inversion in active region, light confinement factor , optical gain and threshold current for lasing, Fabry-Perrot Cavity Length for lasing and the separation.</p> <p><b>UNIT – II</b></p> <p>Photo detectors: Photoconductor, equivalent circuit of photoconductor. Phototransistor.</p> <p>Bipolar phototransistor, photo – Darlington transistor, V-I characteristic of bilateral hetero structure phototransistor, Solar cells, Solar radiation, solar spectrum, ideal conversion efficiency, Energy band diagram of solar cell, IV characteristics of solar cell, PN junction solar cells, Hetero junction, Interface thin film solar cells.</p> <p><b>UNIT – III</b></p> <p>Basic Op-amp. Differential amplifier – circuit configurations, dual input, balanced output, differential amplifier – DC analysis,</p>
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<b>August</b>	<p>eigen values, Spin angular momentum, Pauli's matrices, addition of angular momentum, Clebsch-Gordon coefficients. Central force problem, spherically symmetric potentials in three dimensions, separation of wave equation, parity, three-dimensional square-well potential and energy levels</p> <p><b>UNIT – IV</b> Hydrogen atom; solution of the radial equation, energy levels and stationary state wave functions, discussion of bound states, degeneracy. Time-independent perturbation theory, non-degenerate case, first order and second perturbations with the example of an oscillator,</p>	<p>laser amplifiers, mode locking and pulling, Non-linear optics, Harmonic generation, second harmonic generation, Phase matching, third harmonic generation, optical mixing, parametric generation and self-focusing of light.</p> <p><b>UNIT – IV</b> Multi-photon processes; multi-quantum photoelectric effect, Theory of two-photon process, three-photon process, second harmonic generation, parametric generation of light, Laser spectroscopy : Rayleigh and Raman scattering, Stimulated Raman effect,</p>	<p><b>UNIT – III</b> Postulates of Einstein's special theory of relativity, Galilean transformations. Lorentz's transformations and its consequence, Transformation of differential operator, Invariance of D'Alembertian operator, Invariance of charge, Transformation of charge density, Electric field measured in different frames of reference, Minkowski space, concept of four vector, Lorentz transformation of space and time in four vector form, Transformation for charge and current density, Transformation of electromagnetic potential A and <math>\phi</math>. Lorentz condition in covariant form, Covariance or Maxwell field equation in terms of four vector.</p> <p><b>UNIT – IV</b> Electromagnetic vector and scalar potential, Lorentz Gauge, Lienard Wiechart potentials, the electromagnetic field of a uniformly moving point charge, Radiation from an accelerated charge at low velocity – Larmor's formula,</p>	<p>AC analysis, inverting and non-inverting inputs, CMRR, Constant current bias level transistor. Block diagram of a typical Op-amp. Analysis, open loop configuration, inverting and non-inverting amplifier, Op-amp. With negative feedback, Voltage series feedback, effect of feedback on closed loop gain input persistence output, resistance bandwidth and output offset voltage, voltage follower.</p> <p><b>UNIT – IV</b> Practical Op-amp. Input offset voltage, Input offset current, total output offset voltage, CMRR frequency response, DC and AC amplifier summing scaling and averaging amplifiers instrumentation amplifier, integrator and differentiator Oscillators</p>
<b>September</b>	<p>degenerate cases, removal of degeneracy in second order, Zeeman effect without electron spin, first-order Stark effect in hydrogen, perturbed energy levels, correct eigen function, occurrence of permanent electric dipole moments.</p> <p><b>Preparation leave[exams]</b></p>	<p>Hyper-Raman effect, Coherent anti-stokes Raman Scattering, Photo-acoustic Raman spectroscopy. Laser Applications – ether drift and absolute rotation of the Earth, isotope separation, plasma, thermonuclear fusion, laser applications in chemistry, biology, astronomy, engineering and medicine.</p> <p><b>Preparation leave[exams]</b></p>	<p>Relativistic generalization of Larmor's formula, Angular distribution of radiation emitted by an accelerated charge, Radiation damping, The Abraham Lorentz formula, Cherenkov radiation, Radiation due to an oscillating electric dipole, electric quadrupole radiation, Radiation due to small current element, Radiation from linear antenna, Half wave antenna, Antenna array.</p> <p><b>Preparation leave[exams]</b></p>	<p>principles, oscillator types, frequency stability response, The phase shift oscillator. Wein bridge oscillator, Multivibrators, Monostable and Astable, Comparators, square wave and triangle wave generators.</p> <p><b>Preparation leave[exams]</b></p>
<b>October</b>	<b>Practical and Theory Exam</b>	<b>Practical and Theory Exam</b>	<b>Practical and Theory Exam</b>	<b>Practical and Theory Exam</b>

**CLASS M. Sc. III Semester 2020-21**

<b>Month/ Days</b>	<b>Paper I</b>	<b>Paper II</b>	<b>Paper III</b>	<b>Paper IV</b>
<b>July</b>	<b>Admission</b>	<b>Admission</b>	<b>Admission</b>	<b>Admission</b>
<b>January</b>	<b>Admission</b> <b>UNIT-I</b> Variational method, expectation value of energy, application to excited states, ground state of He-atom, Zero point energy of one dimensional harmonic oscillator, Vander-waals interaction, the W.K.B. approximation, approximate solutions, .	<b>Admission</b> <b>UNIT-I</b> Foundation of statistical mechanics : macroscopic and microscopic states, contact between statistics and thermodynamics, physical significance of $\Omega(N, V, E)$ , the classical gas, entropy of mixing and Gibb's paradox,	<b>Admission</b> <b>Unit- I</b> Electrons in Solids and Electronic Properties Energy bands: nearly free electron model, origin of energy gap and its magnitude, Bloch function, Kronig-Penny model, Wave equation of electron in periodic potential, restatement of Bloch theorem, crystal moment of an electron, solution of Central equation,	<b>Admission</b> <b>UNIT - I</b> Number system : Decimal, Binary, Octal and Hexadecimal Number System with mutual conversion, BCD addition and subtraction, 1's and 2's compliments, multiplication & division BCD code (8421), Excess -3 code, gray code, binary to gray code and gray code to binary code conversion. Logic gates: Positive and negative logic , Basic gates,

## February

asymptotic nature of the solution, solution near turning point, connection formulae, energy levels of a potential well and quantization rule

### UNIT -II

Theory of scattering: differential and total scattering cross section, wave mechanical picture of scattering & the scattering amplitude, Green's functions and formal expression for scattering amplitude, The Born approximation and its validity, Partial wave analysis, asymptomatic behavior of partial waves and phase shifts, optical theorem, scattering by a square well potential, scattering by a hard sphere, scattering by a Coulomb potential..

### UNIT- III

Time-dependent perturbation theory, first order perturbation,

phase space of classical system, Liouville's theorem and its consequences, quantum states and phase space.

### UNIT- II

Elements of ensemble theory – A system in microcanonical, canonical, and grand canonical ensembles, partition functions, physical significance of statistical quantities, example of classical system, energy and energy-density fluctuations and mutual correspondence of various ensembles.

### UNIT-III

Formulation of quantum statistics – Quantum mechanical ensemble theory,

Kronig-Penny model in reciprocal space, empty lattice Approximation, approximate solution near zone boundary, Number of orbitals in a band, metals and insulators.

### Unit -II

Fermi surfaces and metals Effect of temperature on F-D distribution, free electron gas in three dimension. Different zone schemes, reduced and periodic zones, construction of Fermi surfaces, nearly free electrons, electron, hole, open orbits, Calculation of energy bands, Tight binding, Wigner-Seitz, cohesive energy, pseudo potential methods. Experimental methods in Fermi surface studies, quantization of orbits in a magnetic field, de Haas van Alphen Effect, External orbits, Fermi surface of copper.

Universal building block. Basic laws of Boolean Algebra, De-Morgan's Theorem, two, three and four variable K-Map, mapping and minimization of SOP and POS expressions, pairs, quads, octet, overlapping, Rolling, concepts of Don't care condition.

### UNIT – II

Ex-OR gate, Ex-NOR gate circuitry, Half adder, Full adder, binary parallel adder, Serial adder, Half Subtractor, Full Subtractor, 1's complements Subtractor circuit and 2's complements Subtractor circuit. Digital logic Families : Introduction, Basic concepts of RTL, DTL, TTL, ECL and CMOS logic. Decoder : 2 line to 4 line decoder, 1 of 16 decoder, BCD to decimal decoder, BCD to seven segment decoder, Encoder : decimal to BCD encoder. Multiplexer : 2-input, 4-input, 16 input Multiplexer, DeMultiplexer : 1 line to 2 line, 1 line to 4 line and 1 line to 16 line DeMultiplexer.

### UNIT – III

Flip-flop and timing diagram, RS flip-flop using NOR gate,

<b>March</b>	<p>Harmonic perturbation, Fermi's Golden rule, Ionization of a H-atom, absorption and induced emission, Selection rules. Identical particles, symmetric and anti symmetric wave functions</p> <p><b>UNIT –IV</b> Relativistic quantum mechanics, formulation of relativistic quantum theory, the Klein-Gordon equation;</p>	<p>density matrix, statistics of various quantum mechanical ensembles, system composed of indistinguishable particles. Theory of simple gases –Ideal gas in various quantum mechanical ensemble, Maxwell-Boltzmann, Bose-Einstein, Fermi-Dirac distributions, statistics of occupation number.</p> <p><b>UNIT - IV</b> Ideal Bose and Fermi gases - Thermodynamic behavior of an ideal Bose gas, Bose-Einstein condensation and, elementary excitations in liquid helium II,</p>	<p>Unit- III Crystal vibration and thermal properties Lattice dynamics in monoatomic and diatomic lattice: two atoms per primitive basis, optical and acoustic modes, quantization of elastic waves, phonon momentum, inelastic neutron scattering by phonons, Anharmonic crystal interactions-thermal expansion, thermal conductivity, thermal resistivity of phonon gas, umklapp processes, imperfections.</p> <p><b>Unit-IV</b> Electron-Phonon interaction-superconductivity Experimental survey: occurrence of superconductivity, Destruction of superconductivity by magnetic field, Meissner effect,</p>	<p>RS flip-flop using NAND gate, Clocked RS flip-flop, D- latch flip-flop, Preset and Clear, JK flip-flop, Positive and negative edge triggered flop-flops., JK Master Slave flip-flop. Counters : Binary ripple counter , up counter , down counter, decade counter and Ring counter and time diagram Registers : Parallel and shift Register, Scaling, PIPO, SIPO, PISO, SOSI Bi-directional shift Register, Application of shift register.</p> <p><b>UNIT – IV</b> Digital to analog converter and Analog to Digital converters : D/A converters using binary weighted resistor network and R-2R ladder Network; Counter type A/D converter,</p>
<b>April</b>	<p>plane wave solutions, charge and current densities, The Dirac equation for a free particle, matrices alpha and beta, Lorentz covariance of the Dirac equation, free particle solutions and the energy spectrum, charge and current densities.</p> <p><b>Preparation leave[exams]</b></p>	<p>Thermodynamic behavior of an ideal Fermi gas, the electron gas, nonrelativistic and relativistic degenerate electron gas, theory of white dwarf stars. Statistical Mechanics of interacting systems – the method of cluster expansion for a classical gas, Virial expansion of the equation of state.</p> <p><b>Preparation leave[exams]</b></p>	<p>heat capacity, energy gap, MW, and IR properties, isotope effect. London equation, Coherence length, Cooper pairing due to phonons, BCS theory of superconductivity, BCS ground state, flux quantization of superconducting ring, duration of persistent currents, Type II superconductors, Vortex states, Josephson superconductor tunneling, DC/AC Josephson effect,.</p> <p><b>Preparation leave[exams]</b></p>	<p>Successive approximation A/D converter and dual slope converters , applications of DACs and ADCs. Intergraded Circuit : Introduction, Technology, Advantages and disadvantages, Basic technology of monolithic IC, Basic processes used in monolithic technology, Fabrication of components on monolithic IC, IC packing, symbol and scale of Integration.</p> <p><b>Preparation leave[exams]</b></p>
<b>May</b>	<b>Exam</b>	<b>Exam</b>	<b>Exam</b>	<b>Exam</b>

**CLASS M. Sc. IV Semester 2020-21**

<b>Month/ Days</b>	<b>Paper I</b>	<b>Paper II</b>	<b>Paper III</b>	<b>Paper IV</b>
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<b>June</b>	<b>Vacations</b> <b>UNIT- I</b> Plasmons, Polaritons Dielectric function of the electron gas, Plasma optics, Dispersion relation for EM wave, Transverse optical modes in Plasma, Transparency of Alkali metals in the ultraviolet, Longitudinal Plasma oscillations, Plasmon,	<b>Vacations</b> <b>UNIT-I</b> Nuclear Interactions : Nucleon-nucleon interaction, Two-nucleon system, The ground state of the deuteron, Tensor forces, Nucleon-nucleon scattering at low energy, Scattering length, Effective range theory, Spin dependence of nuclear forces,	<b>Vacations</b> <b>UNIT – I</b> Bohr theory of spectra of hydrogen and hydrogen like atoms, reduced mass of electron, variation of Rydberg constant. Sommerfeld’s elliptical orbit. Space quantization, Pauli’s vector atom model, four quantum numbers. Spectra of alkali atoms, Fine structure in alkali spectra, selection and intensity rules Spectral terms arising from l-s coupling,	<b>Vacations</b> <b>UNIT – I</b> Microprocessor & Micro Computers : Evolution of Microprocessor, Internal Microprocessor, Architecture, Architecture of digital Computer Memory : - Semiconductor memories (RAM, ROM, PROM, EPROM, Shift register). Magnetic Memory: - Floppy disks, Hard disks,
<b>July</b>	electrostatic screening and screened Coulomb potential, Mott metal-insulator transition, screening and phonons in metals, Polaritons, LST relation . <b>UNIT –II</b> Dielectric and ferroelectrics Maxwell’s equations, polarization, macroscopic electric field, depolarization field, E1;local electric field at an atom, Lorentz field E2, fields of dipoles inside cavity E3; dielectric constant and polarizability, electronic polarizability; structural phase transition; ferro-electric crystals, classification; displacive transition, soft optical phonons, Landau theory of phase transitions, first and second order transition, antiferro-electricity, ferro-electric domain, piezoelectricity, ferro-elasticity, optical ceramics. <b>UNIT –III</b> Magnetism General ideas of dia- and para-magnetisms, quantum theory of paramagnetism, rare earth ions,	Charge independence and charge symmetry of nuclear forces, Iso-spin formalism, Exchange forces, Meson theory of nuclear forces and the Yukawa interaction. <b>UNIT-II</b> Nuclear Decay : Beta decay, Fermi’s theory of beta decay, Shape of the beta spectrum, Total decay rate, Angular momentum and parity selection rules, Comparative half-lives, Allowed and forbidden transitions, Selection rules, Parity violation, Two component theory of neutrino decay, Detection and properties of neutrino Gamma decay, Multiple transitions in nuclei, Angular momentum and Parity selection rules, Internal conversion, Nuclear isomerism.	spin orbit interaction, screening constants for alkali spectra Spectra of Alkaline earth atoms, singlet-triplet series, LS and JJ coupling, interaction energy, selection and intensity rules. <b>UNIT – II</b> Effect of magnetic field on energy levels (mono valent atoms) Gyromagnetic ratio for orbital and spin motion, vector model, Lande’s g-factor, normal and anomalous Zeeman effect, Paschen Back effect. Stark effect Line broadening mechanism. Electron spin resonance, Nuclear magnetic resonance <b>UNIT – III</b> Optical Fibers: Introduction, Structure, Classification, Refraction and Snell’s law, Total internal refraction, Light propagation through and optical fiber,	Optical Disks, Magnetic Bubble Memory. Networking : Local Area Networking (LAN) , LAN topology (Bus, Star, Ring ) . <b>UNIT – II</b> Intel 8085 : ALU, Timing and Control Unit, Registers, Data and Address Bus, Pin Configuration. Instruction Cycle : Op-code and Operands, Fetch Operation, Execute Operation, Machine Cycle, Instruction and Data flow. Time Diagram : Opcode Fetch Cycle, Memory read, I/O Read, Memory write, I/O Write.

August	<p>Hund rule, iron group ions, crystal field splitting, quenching of orbital angular momentum, spectroscopic splitting factor, van vleck temperature dependent paramagnetism, Cooling by isentropic demagnetization, nuclear demagnetization, paramagnetic Susceptibility of conduction electrons.</p> <p><b>UNIT-IV</b> Ferromagnetism and anti ferromagnetism Ferromagnetic order, Curie point and exchange integral, temp dependence of saturation magnetization, saturation magnetization at absolute zero;</p>	<p><b>UNIT-III</b> Nuclear models : Liquid drop model, Bohr-Wheeler theory of fission, Shell Model, Experimental evidence for shell effects, Single particle shell model, Spinorbit interaction and magic numbers, Analysis of shell model predictions, Magnetic moments and Schmidt lines, Collective model of Bohr and Mottelson.</p> <p><b>UNIT-IV</b> Elementary particle Physics: The fundamental interactions, Classification of elementary particles, Leptons and Hadrons, Symmetries, groups and conservation laws,</p>	<p>energy levels and spectra. Rotational energy and spectra of diatomic molecules as rigid rotor and non rigid rotor, inter nuclear distance and isotope effect. Vibrational energy levels and spectra of diatomic molecules as harmonic oscillator- Anharmonicity of molecular vibrations, energy levels and spectrum, Morse potential energy curve, isotope effects and force constants</p> <p><b>UNIT – IV</b> Molecule as vibrating rotor-rotator vibrational spectrum of diatomic molecules-PQR branches</p>	<p><b>UNIT – III</b> Addressing Modes : Direct Addressing, Register addressing, Register Indirect Addressing, Immediate Addressing, Implicit Addressing. Instruction set of 8085 : Data transfer group, Arithmetic group, Logical group. Assembly Language Programs: Addition of Two 8-bit number, Sum 8-bit , Addition of Two 8-bit number, sum 16-bit, 8-bit subtraction, Find the largest number in a data array, To arrange a series of numbers in Descending order, Find the smallest number in a data array, To arrange a data array in ascending order, Shift of 8-bit number of left by one bit and two bit , Shift of 16-bit number left by one and two bit.</p> <p><b>UNIT – IV</b> Optical Fibers: Introduction, Structure, Classification, Refraction and Snell's law, Total internal refraction, Light propagation through and optical fiber,</p>
September	<p>magnons, quantization of spin waves, thermal excitation of magnons; neutron magnetic scattering, Ferrimagnetic order, Curie temp and susceptibility of ferrimagnets, iron garnets. Antiferromagnetic order, susceptibility below neel temp, antiferromagnetic magnons, ferromagnetic domains. <b>Preparation leave[Exams]</b></p>	<p>SU(2) and SU(3) multiplets and their properties, Quark model, Properties of Quarks, the standard model. Q-equation and threshold energies, Reactions cross sections, Resonance: Breit-Wigner single-level formula, Direct and compound nuclear reactions, Formal reaction theory: Partial wave approach and phase shifts, Scattering matrix, Reciprocity theorem. <b>Preparation leave[Exams]</b></p>	<p>Electronic spectra of diatomic molecules- Born Oppenheimer approximation vibrational coarse structure of electronic bands- progression and sequences-Intensity of electronic bands-Franck Condon principle-Rotational fine structure of electronic bands. <b>Preparation leave[Exams]</b></p>	<p>Acceptance angle for incident ray, Numerical Aperture, number of modes and cut-off parameter, single mode propagation, comparison of step and graded index fiber. Types of Optical Fiber : HPSUU, HPSIR, Halide fiber Optical fiber cables : Multifibre cable, Splicing and connectors. Advantage and Disadvantage of optical fiber. <b>Preparation leave[Exams]</b></p>
October	Practical and Theory Exam	Practical and Theory Exam	Practical and Theory Exam	Practical and Theory Exam



**M. Sc. I Semester**  
**Zoology**  
**Paper I**

**SYSTEMATIC ZOOLOGY AND INVERTEBRATE ZOOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<b>Unit-I</b> Historical resume of systematics. <ul style="list-style-type: none"> <li>• Importance and applications of biosystematics in biology</li> <li>• Chemotaxonomy</li> <li>• Cyto taxonomy</li> <li>• Molecular taxonomy</li> <li>• Mechanisms of speciation in panmictic and apomictic species</li> <li>• Species concepts and species category.</li> <li>• Theories of biological classification.</li> <li>• Taxonomic characters and different kinds.</li> </ul>
<b>FEBRUARY</b>	<b>Unit-II</b> Taxonomic procedures-taxonomic collections, preservation, curation <ul style="list-style-type: none"> <li>• Taxonomic keys- Different kinds of taxonomic keys, their merits and demerits.</li> <li>• Process of typification and different Zoological types.</li> <li>• International code of Zoological Nomenclature (ICZN)</li> <li>• Biodiversity</li> <li>• Types of Biodiversity</li> <li>• Hot spots of Biodiversity</li> <li>• Threats to Biodiversity</li> <li>• Conservation of Biodiversity</li> <li>• Evaluation of biodiversity indices</li> <li>▪ Shannon-Weiner index.</li> </ul>
<b>MARCH</b>	<b>Unit-III</b> Organization of coelom <ul style="list-style-type: none"> <li>• Acoelomates and Pseudocoelomates</li> <li>• Coelomates: Protostomia and Deuterostomia.</li> <li>• Locomotion</li> <li>• Flagellar and ciliary movement in Protozoa.</li> <li>• Hydrostatic movement in Coelenterata, Annelida and Echinodermata.</li> <li>• Nutrition and Digestion</li> <li>• Patterns of feeding and digestion in Protozoa</li> <li>• Filter feeding in polychaeta.</li> <li>• Respiration</li> <li>• Organs of respiration Gills, lungs and trachea.</li> <li>• Respiratory pigments.</li> </ul> <p><b>Internal Test 1</b></p>

APRIL	<b>Unit-IV</b> Excretion <ul style="list-style-type: none"> <li>• Organs of excretion.</li> <li>• Excretion and osmoregulation</li> <li>• Nervous System</li> <li>• Primitive nervous system: Coelenterata and Echinodermata.</li> <li>• Advanced Nervous system: Annelida, Arthropoda (Crustacea and Insecta) and Mollusca (Cephalopoda)</li> </ul> <b>Internal Test 2</b>
MAY	<b>Unit-IV</b> Invertebrate larvae <ul style="list-style-type: none"> <li>• Larval forms of free-living and parasitic invertebrates</li> <li>• Minor Phyla - Organization and general characters of (Ctenophore, Rotifera, Ectoprocta, Endoprocta)</li> </ul> <b>Seminar</b>

**M. Sc. I Semester**  
**Zoology**  
**Paper II**

**TOOLS & TECHNIQUES IN BIOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JANUARY	<b>Unit-I</b> 1.Principles and application of 1.1 Ultracentrifugation 1.2 Electrophoresis 1.3 Chromatography (various types) 1.4 Lambert-Beers Law and colorimetry and spectrophotometry 1.5 Flow cytometry.
FEBRUARY	<b>Unit II</b> 2. Principles and Application of 2.1 Light Microscopy and micrometry 2.2 Phase Contrast microscopy 2.3 Interference microscopy 2.4 Fluorescence microscopy 2.5 Transmission Electron microscopy. 2.6 Scanning Electron microscopy.
MARCH	<b>Unit-III</b> 3. Assay 3.1 Chemical assays 3.2 Biological assays-in vivo and in vitro 4. Principles of cytological and cytochemical techniques 4.1 Fixation: chemical basis of fixation by formaldehyde, gluteraldehyde, chromium salts, mercury salts, osmium salts, alcohol and acetone 4.2 Chemical basis of staining of carbohydrate, protein lipids and nucleic acids.  <b>Internal Test 1</b>
APRIL	<b>Unit-IV</b> 5. Principle and techniques of 5.1 Nucleic acid hybridization and cot curve 5.2 Sequencing of proteins and nucleic acids <b>Internal Test 2</b>

MAY	<b>Unit-IV</b> 6. Freeze techniques 7. Media preparation and sterilization 8. Inoculation and growth monitoring  <b>Seminar</b>
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**M. Sc. I Semester**  
**Zoology**  
**Paper III**  
**GENERAL AND COMPARATIVE ENDOCRINOLOGY OF VERTEBRATES**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JANUARY	Unit-I AIMS and scope of endocrinology-Types of chemical messengers, Discovery of hormones, Classification of endocrine glands and hormones, Experimental methods of hormones research Comparative morphology of Endocrine tissue-Hypothalamus, Pituitary gland Thyroid, parathyroid, Adrenal, Gastrointestinal tract, Juxta-glomerular apparatus (kidney), Heart
FEBRUARY	<b>Unit I 2</b> Life history of hormones— Biosynthesis of hormones, Biosynthesis of simple peptide hormone, Biosynthesis of amino acid derived small size hormone (T3, T4, epinephrine and nor-epinephrine ) Biosynthesis of steroid hormone, (cortisol, cortisone, corticosterone, progesterone) Release of hormone from endocrine gland Releasing stimuli, Pulsatile release of hormone, Releasing mechanism. Concentration and transport of hormone in the blood General mechanism of hormone action - Plasma membrane hormone receptor and its action, Cytosolic hormone receptor and its action Termination of hormone action and metabolism of hormone
MARCH	<b>Unit-III</b> Neuroendocrine system - types of neurohormones, synthesis and function of endorphins, enkephalin etc. Synthesis, function and disorder of following endocrine gland hormones- Pituitary hormones, Adrenal hormones, Thyroid and parathyroid hormones, Gastro- intestinal hormones, Juxta-glomerular hormones, Hormones of heart, Synthesis and function of eicosanoid specially Prostaglandin and Leukotriene and its hormonal role <b>Internal Test 1</b>
APRIL	<b>Unit-IV</b> Hormonal regulation and its metabolic activity- Role of hormone in – Carbohydrate metabolism, Protein metabolism, Fat metabolism, and Calcium metabolism. Role of hormone in fasting <b>Internal Test 2</b>

MAY	Unit-IV Hormone & behaviour Role of hormone in growth & development  <b>Seminar</b>
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**M. Sc. I Semester**  
**Zoology**  
**Paper IV**  
**GAMETE BIOLOGY & REPRODUCTIVE PHYSIOLOGY IN HUMAN BEINGS**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JANUARY	<b>Unit-I</b> Endocrinology of sex differentiation & judgment- Chromosomal (genetic) basis of sex determination, Gonadal sex, phenotypic sex differentiation of the internal and external genitalia, Brain sex differentiation Reproductive cycle-Adrenarche, Pubarche and puberty, ovarian cycle, Formation of ova, Luteal cycle, Uterine cycle, Menstruation cycle, Menopause, Estrous cycle
FEBRUARY	<b>Unit-II</b> Male reproductive system-Anatomy, physiology and morphology of male reproductive system, Spermatogenesis and development of spermatozoa Biochemistry of semen, Phallus erection, Ejaculation, Y-specific probes Endocrine function in male-Endocrine control of testicular function, Chemistry and biosynthesis of androgens, Secretion transport and metabolism of testis hormone, Physiological role of androgens-Role in spermatogenesis, Nervous system, Secondary sex characteristics, Anabolic function, Aging, Physiological roles of estrogens in male, Fertility, Male behaviour, Epiphyseal fusion, Cardio vascular function, Mechanism of androgen action and Pathophysiology
MARCH	<b>Unit-III</b> Female reproductive system-Anatomy of female reproductive system-Ovary, Fallopian tube, Uterus, Oogenesis Ovarian hormones-Chemistry, biosynthesis, secretion, transport, function, action and metabolism of Estrogens Progesterone and Relaxin, Control of ovarian function Abnormalities of ovarian function <b>Internal Test 1</b>
APRIL	<b>Unit-IV</b> Fertilization-Pre-fertilization event, Biochemistry of fertilization, Post-fertilization event Collection and cryopreservation of gametes and embryo Formation and development of Placenta and its endocrine function Role of hormone in Parturition and Lactation <b>Internal Test 2</b>

MAY	<b>Unit-IV</b> Hormonal and immune contraception Role of hormone inPregnancy  <b>Seminar</b>
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**M.Sc. II Semester**  
**Zoology**  
**Paper-I**  
**MOLECULAR CELL BIOLOGY AND BIOTECHNOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JUNE	<b>Unit-I</b> Biomembranes <ul style="list-style-type: none"> <li>• Molecular composition and arrangement Transport across membrane</li> <li>• Structure and Function of Mitochondria, golgi body, lysosome, ribosome</li> <li>• Cytoskeleton-Microfilaments and microtubules-structure and dynamics, Role of microtubules in mitosis, Cell movements- intracellular transport role of kinesin and dynein, Signal transduction mechanism</li> <li>• Cilia and flagella</li> </ul>
JULY	<b>Unit-II</b> DNA replication Transcription .Translation <ul style="list-style-type: none"> <li>• Genetic code</li> <li>• Mechanisms of initiation, elongation and termination</li> <li>• Regulation of translation</li> </ul> <b>Internal Test 1</b>
AUGUST	<ul style="list-style-type: none"> <li>• <b>Unit III</b> Genome organization <ul style="list-style-type: none"> <li>• Chromosomal organization: morphological and structural types.</li> <li>• Non-coding DNA</li> </ul> </li> <li>• Molecular mapping of genome <ul style="list-style-type: none"> <li>• Genetic and physical maps</li> <li>• Polymerase Chain Reaction (PCR) and blotting techniques</li> <li>• Molecular markers in genome analysis.</li> </ul> </li> </ul> <b>Unit-IVInternal Test 2</b>
SEPTEMBER	<ul style="list-style-type: none"> <li>• <b>Unit IV</b> Transgenic animals and knock-outs <ul style="list-style-type: none"> <li>• Production and applications</li> <li>• Embryonic stem cells</li> <li>• Application of genetic engineering</li> <li>• Medicine</li> <li>• Agriculture</li> <li>• Industry</li> </ul> </li> </ul> <b>Seminar</b>

**M. Sc. II Semester**  
**Zoology**  
**Paper-II**  
**Environment Biology and Environment Physiology**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JUNE</b>	<b>Unit-I</b> 1. Ecology 1.1 Definition, concept and scope of ecology. 2. Structure and components of ecosystem. 3. Types and functions of ecosystem. 4. Ecological modeling. 5. Limiting factors 5.1 Energy flow, food chain, food web and trophic levels, ecological pyramids. 5.2 Ecological succession 5.3 Biogeochemical cycles: water cycle, carbon, oxygen and nitrogen cycles.
<b>JULY</b>	<b>Unit II</b> Population dynamics 6.1 Dynamics of population growth. 6.2 Factors that increase or decrease population. 7. Community dynamics 7.1 Characteristics and composition 7.2 Development and classification of communities. 8. Renewable and non-renewable resources: Forest, water and mineral resources. 9. Conservation of energy sources. 10. National Parks, Wild life sanctuaries and biosphere reserves.  <b>Internal Test 1</b>
<b>AUGUST</b>	<b>Unit III</b> Adaptations 11.1 Levels of adaptation. 11.2 Mechanisms of adaptation. 12. Adaptations to different environments. 12.1 Marine, shores and estuaries. 12.2 Freshwater. 12.3 Terrestrial Life. 13. Adaptations to different environments. 13.1 Aerial 13.2 Polar 13.3 Deep sea environment 13.4 Desert, Cave

	13.5 Wet land 13.6 Parasitic habitats.  <b>Internal Test 2</b>
SEPTEMBER	<b>Unit IV 14. Stress Physiology</b> 14.1 Basic concepts of environmental stress and strain, Concept of elastic and plastic strain. 14.2. Stress avoidance, stress tolerance and stress resistance. 14.3. Acclimatization, acclimation and adaptation. 14.4. Endothermic and physiological mechanism of regulation of body temperature. 15. Stress physiology in different conditions 15.1 Osmoregulation in aqueous and terrestrial habitats. 15.2 Physiological response to oxygen deficient stress. 15.3 Physiological response to body exercise. 15.4 Effect of meditation and yoga  <b>Seminar</b>

**M. Sc. II Semester**  
**Zoology**  
**Paper-III**

**IMMUNOLOGY & DEVELOPMENT BIOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JUNE	<p><b>Unit-I</b> Innate and Acquired immunity, Cell and Organs of Immune System, Organization and Structure of Lymphoid organs, Cells of the immune system &amp; their differentiation Lymphocyte traffic, Nature of Immune response, Nature of Antigens, Antigenicity and Immunogenicity, Factor influencing immunogenicity, Antigenic determinates/epitopes and heptens.</p>
JULY	<p><b>Unit II</b> Antibodies (Immunoglobulin's), Structure &amp; Function of antibodies, Immunoglobulin Classes &amp; Subclasses, Antigen- Antibody interaction, B-Cell Maturation, Activation and Differentiation, B-Cell Receptors, B-Cell Activation and Proliferation, Humoral Immune Response Kinetics, T- Cell maturation activation and differentiation, T- Cell Receptors, T- Cell Activation and Proliferation, T- Cellular Immune Response</p> <p><b>Internal Test 1</b></p>
AUGUST	<p>Unit III Compliment System, Complement Component, Regulation of Compliment System, Consequence of Compliment Activation, Major and Minor Histocompatibility Complex Inheritance of HLA System, Location and Function, Structure of MHC molecule, Peptide interaction with MHC molecule, Cellular distribution and regulation of MHC expression, MHC &amp; Susceptibility to infectious disease, Hyper sensitivity and immune responses to infectious agents especially intra cellular parasites</p> <p><b>Internal Test 2</b></p>

SEPTEMBER	<p><b>Unit IV</b> The development of Primitive Embryonic form, Cleavage (Segmentation) and Blastulation, Chordate Blastula and its Significance, The late Blastula in relation to Certain Innate Physiological Conditions: Twinning Gastrulation, Tabulation and extension of the Major Organ forming Areas: Development of Primitive body form Basic Feature of Vertebrate Morphogenesis, Histogenesis and Morphogenesis of the Organ System, The Cardio Vascular System, The Nervous System. Teratology</p> <p><b>Seminar</b></p>
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**M. Sc. II Semester**  
**Zoology**  
**Paper-IV**

**QUANTITATIVE BIOLOGY AND COMPUTER APPLICATION**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JUNE	<b>Unit-I</b> 1. Introduction to digital computer and application 1.1 Basic knowledge of hardware and software 1.2 CPU (Central Processing Unit) 1.3 Input and Output devices 1.4 Auxiliary storage system 1.5 Operating systems: Windows, Android 1.6 Binary number system
JULY	<b>Unit II</b> 2.Computer application 2.1 Introduction to MS office 2.1.1 Word 2.1.2 Excel 2.1.3 PowerPoint 2.1.4 Virtual e- learning Platforms 2.1.4.1 Google Platforms (Classroom, Meet, G-Suite & Workspace) 2.1.4.2 Microsoft Group 2.1.4.3 Zoom and related applications 3. Introduction to web browsing software and search engines with special reference to online resources. 4. Use of SPSS  <b>Internal Test 1</b>
AUGUST	<b>Unit III</b> 5. Types of biological data 6. Representation of data (Tabular and Graphical) 7. Sampling methods 8. Measures of central tendency: arithmetic mean, mode, median for ungrouped and grouped data. 9. Measures of dispersion: range, mean deviation, variance, standard deviation and standard error. 10. Skewness, Kurtosis 11. Hypothesis testing: Null and alternate hypothesis  <b>Internal Test 2</b>

SEPTEMBER	<b>Unit-IV</b> 11. Tests of significance 11.1 Chi-square test 11.2. Student's t-test 11.3 parametric and non - parametric tests. 12. Analysis of Variance 13. Simple linear regression 14. Correlation: Pearson's correlation coefficients. 15. Probability distribution: normal, poisson and binomial  <b>Seminar</b>
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**M. Sc. III Semester**  
**Zoology**  
**Paper-I**  
**COMPARATIVE ANATOMY OF VERTEBRATES**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<b>Unit-I</b> 1. Origin of Chordates 1.1 Amphibians, Reptiles, Birds and Mammals. 2. Classification of Vertebrates 2.1 Amphibians 2.2 Reptiles 2.3 Birds 2.4 Mammals.
<b>FEBRUARY</b>	<b>Unit-II</b> 3. Vertebrate integument and its derivatives. 3.1 General structure and functions of Integument. 3.2 Structure and functions of glands, scales, horns, claws, nails, hoof, feather and hair. 4. Skeletal system in vertebrates. 4.1 Comparative account of (i) Jaw suspensorium, (ii) Limbs and Girdles
<b>MARCH</b>	<b>Unit-III</b> 5. Respiration in Vertebrates. 5.1 Comparative account of respiratory organs (structure and functions) 6. Circulation in Vertebrates. 6.1 Structure and function of blood. 6.2 Evolution of heart. 6.3 Evolution of aortic arches.  <b>Internal Test 1</b>
<b>APRIL</b>	<b>Unit IV</b> 7. Nervous System – Central, Peripheral and Autonomic.  <b>Internal Test 2</b>
<b>MAY</b>	<b>Unit IV</b> 8. Sense organs. 8.1 Comparative account of Sensory Receptors. 9. Evolution of Urinogenital system in vertebrates.  <b>Seminar</b>



**M. Sc. III Semester**  
**Zoology**  
**Paper-II**  
**BIOLOGICAL CHEMISTRY**

MONTH	PROPOSED PLAN
JANUARY	<b>UNIT I</b> 1. Properties of Proteins 1.1 Structure and properties of amino acids. 1.2 Classification of proteins. 1.3 Structure of proteins.
FEBRUARY	<b>UNIT I</b> 1.4 Biological Functions of Proteins. 1.5 Protein Metabolism. <b>UNIT II</b> 2. Carbohydrates 2.1 Classification of carbohydrates. 2.2 Structure and Functions of Carbohydrates. 2.3 Carbohydrate metabolism. 2.4 Utilization of Krebs cycle 3. Lipid 3.1 Lipid structure and functions 3.2 Lipid metabolism.
MARCH	<b>UNIT III</b> 4. Vitamins 4.1 Water and Fat soluble vitamins, 4.2 Chemistry, occurrence and physiological role. 5. Enzymes 5.1 Classification and nomenclature. 5.2 Mechanism of action 5.3 Regulation of enzyme activity and functions of Co-enzymes. <b>Internal Test 1</b>
APRIL	<b>UNIT IV</b> 6. Nucleic acid 6.1 Chemistry of DNA. 6.2 Chemistry of RNA
MAY	<b>UNIT IV</b> 6.3 Biological importance of nucleic acids. 6.4 Nucleoproteins. 6.5 Metabolism of nucleic acids. <b>Seminar</b>

**M. Sc. III Semester**  
**Zoology**  
**Paper-III**

**ENVIRONMENTAL BIOLOGY AND POPULATION ECOLOGY**

MONTH	PROPOSED PLAN
JANUARY	<b>Unit-I</b> 1. Ecology 1.1 Definition, concept and scope of ecology. 2. Structure and components of ecosystem.
FEBRUARY	<b>UNIT I</b> 1. Types and functions of ecosystem. 4. Ecological modeling. <b>Unit-II</b> 1. 5. Limiting factors 5.1 Energy flow, food chain, food web and trophic levels, ecological pyramids. 5.2 Ecological succession
MARCH	<b>UNIT II</b> 5.3 Biogeochemical cycles: water cycle, carbon, oxygen and nitrogen cycles. <b>Unit-III</b> 6. Population dynamics 6.1 Dynamics of population growth. 6.2 Factors that increase or decrease population. <b>Internal Test 1</b>
APRIL	<b>Unit-III</b> 7. Community dynamics 7.1 Characteristics and composition 7.2 Development and classification of communities. <b>Internal Test 2</b>
MAY	<b>Unit-IV</b> 8. Renewable and non-renewable resources: Forest, water and mineral resources. 9. Conservation of energy sources. 10. National Parks, Wild life sanctuaries and biosphere reserves <b>Seminar</b>

**M. Sc. III Semester**  
**Zoology**  
**Paper-IV**  
**ANIMAL BEHAVIOUR**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<b>Unit-I</b> 1. Historical perspectives- Ethology 2. Behavioral patterns 3. Innate behavior 4. Biological rhythms 4.1 Types of biological rhythm 4.2 Biological clock
<b>FEBRUARY</b>	<b>Unit-II</b> 5. Communications 5.1 Auditory 5.2 Visual 5.3 Chemical 6. Learning and Memory 6.1 Conditioning 6.2 Habituation 7. Reasoning 8. Reproductive behaviour.
<b>MARCH</b>	<b>Unit-III</b> 9. Orientation 10. Echolocation in bats 11. Bird migration and navigation. 12. Fish migration. <b>Internal Test 1</b>
<b>APRIL</b>	<b>UNIT III</b> 13. Neural and hormonal control of behaviour <b>Unit-IV</b> 14. Hormonal effect on behavioural patterns. 15. Social behaviour 15.1 Social organization in insects and primates 15.2 Schooling in fishes and Flocking in birds <b>Internal Test 2</b>
<b>MAY</b>	<b>Unit-IV</b> 15.3 Homing, territoriality, dispersal 15.4 Altruism 15.5 Host–parasite relation <b>Seminar</b>

**M. Sc. IV Semester**  
**Zoology**  
**Paper-I**  
**ENVIRONMENTAL PHYSIOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JUNE</b>	<b>Unit-I</b> 1. Adaptations 1.1 Levels of adaptation. 1.2 Mechanisms of adaptation. 2. Adaptations to different environments. 2.1 Marine, shores and estuaries. 2.2 Freshwater. 2.3 Terrestrial Life.
<b>JULY</b>	<b>Unit-II</b> 2. Adaptations to different environments. 3.1 Aerial 3.2 Polar 3.3 Deep sea environment 3.4 Desert, Cave 3.5 Wet land 3.6 Parasitic habitats. <b>Unit-III</b> 1. 4. Stress Physiology 4.1 Basic concepts of environmental stress and strain, Concept of elastic and plastic strain. <b>Internal Test 1</b>
<b>AUGUST</b>	<b>Unit-III</b> 4.2. Stress avoidance, stress tolerance and stress resistance. 4.3. Acclimatization, acclimation and adaptation. 4.4. Endothermic and physiological mechanism of regulation of body temperature <b>Internal Test 2</b>
<b>SEPTEMBER</b>	<b>Unit-IV</b> 5. Stress physiology in different conditions 5.1 Osmoregulation in aqueous and terrestrial habitats. 5.2 Physiological response to oxygen deficient stress. <b>Seminar</b>

**M. Sc. IV Semester**  
**Zoology**  
**Paper-II**  
**IMMUNOLOGY AND PARASITISM**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JUNE</b>	<b>Unit-I</b> 1. Cells of immune system 1.1 B-Lymphocytes, T-lymphocytes, Null Cells 1.2 Mononuclear cells 1.3 Granulocytic cells (Neutrophils, Eosinophils and Basophils) 1.4 Mast cells 1.5 Dendritic cells 2. Organs of immune system 2.1 Primary lymphoid organs (Thymus, bone marrow) 2.2 Secondary lymphoid organs (Lymph nodes, spleen, mucosal associated lymphoid tissue, cutaneous associated lymphoid tissue)
<b>JULY</b>	<b>Unit-II</b> 2. Immunoglobulin structure and function 3.1 Molecular structure of Ig, Light chain and Heavy chain 3.2 Immunoglobulin classes 3.2.1 IgG 3.2.2 IgM 3.2.3 IgE 3.2.4 IgD 3.3 Monoclonal antibodies <b>Unit-III</b> 1. 4. Antigens 4.1 Immunogenicity 4.2.1 Complement System: Classical & Alternative Pathways 4.2.2 Contribution of the immunogens. 4.2.3 Contribution of Biological system. 5. Antigen - Antibody Interaction <b>Internal Test 1</b>
<b>AUGUST</b>	<b>Unit-III</b> 6. Vaccine 6.1 Active and passive immunization 6.2 Whole organism vaccine 6.4 Recombinant vector vaccines 6.5 DNA vaccines <b>UNIT IV</b> 7. Immune system in Health disease 7.1 Immune response to infectious disease 7.2 Immune response in cancer <b>Internal Test 2</b>
<b>SEPTEMBER</b>	<b>UNIT IV</b> 8. Pathophysiology of parasitic infection 8.1 Viral infections 8.2 Bacterial infection 8.3 Helminths infection 9. AIDS <b>Seminar</b>

**M. Sc. IV Semester**  
**Zoology**  
**Paper-III**  
**ICHTHYOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JUNE</b>	<b>Unit-I</b> 1. Skin and its derivatives in fishes. 2. Skeleton in fishes. 3. Fins-Types, structure, modification, functions 4. Locomotion in fishes. 5. Food, feeding habit and alimentary canal of fishes.
<b>JULY</b>	<b>Unit-II</b> 6. Respiration and accessory respiratory organs. 7. Swim bladder and Weberian ossicles. 8. Blood, heart and blood vascular system of fishes. 9. Excretion and Osmoregulation in fishes.  <b>Internal Test 1</b>
<b>AUGUST</b>	<b>Unit-III</b> 10. Nervous system and sense organs in fishes 11. Specialized organs in fishes (organs of sound production & electric organs). 12. Reproduction in fishes 13. Development in fishes 14. Endocrine glands  <b>Internal Test 1</b>
<b>SEPTEMBER</b>	<b>Unit-IV</b> 15. Adaptation: 15.1 Colouration 15.2 Deep sea fishes 15.3 Hill stream fishes 16. Larvivorous fishes 17. Exotic fishes 18. Fish products and by-products 19. Setting and maintenance of an aquarium <b>Seminar</b>

**M. Sc. IV Semester**  
**Zoology**  
**Paper-IV**  
**AQUACULTURE AND FISHERIES**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JUNE</b>	<b>Unit-I</b> 1. General characteristics, classification, evolution and phylogeny of the following: Placoderms Elasmobranchs Holocephali Dipnoi. Teleostomi.
<b>JULY</b>	<b>Unit-II</b> 2. Fish culture in fresh water Physicochemical condition of water and its effect on fishes. Construction and maintenance of fish farm, management of ponds Fresh water fish breeding (dry and wet bundh breeding, induced breeding) Stocking and transport of fish seed and brood fish. Intensive culture of air breathing fishes. Fish cum paddy culture.  <b>Internal Test 1</b>
<b>AUGUST</b>	<b>Unit-III</b> 3. Composite fish culture 4. Integrated fish farming 5. Sewage fisheries 6. Prawn fishery 7. Inland fisheries 8. Marine fisheries  <b>Internal Test 2</b>
<b>SEPTEMBER</b>	<b>Unit-IV</b> 9. Fish diseases 9.1 Viral diseases 9.2 Bacterial and protozoan diseases 9.3 Helminth parasites of fishes 9.4 Prophylaxis and treatment of fish diseases  <b>Seminar</b>

**Govt. D.B. Girls P.G. Autonomous College , Raipur (C.G.)**  
**Proposed Teaching Plan For the Session 2020-21**  
**M.Com. Part - I Semester**

Month	UNITS	Managerial Economics	Advanced Accounting	Management Accounting	Statistical Analysis	Corporate Legal Framework
November	UNIT -I	Nature and Scope of Managerial, Economics: Objective of a firm; Economics theory and managerial theory; Managerial economist's role and responsibilities. Fundamental economic concepts-incremental principle, opportunity cost principle, discounting principle. equi-marginal principle.	Accounting for issue, Forfeited and redemption of shares.	Introduction of Accounting: Management accounting as a area accounting; Objectives, nature and scope of management accounting, techniques of management accounting, difference between financial accounting, cost accounting and management accounting, Management accounting and managerial decisions; Management accountant's position, role and responsibilities.	Statistics - Definitions, Characteristics, Scope and Nature, Functions, limitations, Distrust and misuse importance & Statistical Investigations., Classification & Tabulation, Dispersion, Co-efficient of variance and skewness,	The Companies Act, 1956 (Relevant Provisions) : Definition, types of companies Memorandum of association; Articles of association; Prospectus;
December	UNIT-II	Demand Analysis: Individual and Market demand functions Law of demand; determinants of demand; Elasticity of demand-its meaning and importance, Price elasticity; income elasticity and cross elasticity; Using elasticity in managerial decisions.	Accounting for issue and redemption of debentures. Final accounts and financial statements of companies.	Accounting Plan and Responsibility Centers: Meaning and significance of responsibility accounting; Responsibility centers -cost centre, profit centre and investment centre, Problems in transfer pricing, Objectives and determinants of responsibility centers.	Data Sources: Primary and Secondary, Primary data collection techniques, Schedule, Questionnaire and interview & Sources' of Secondary data. correlation - Karl-Pearsons and spearman's ranking method and Regression analysis, two variables case.	Share capital and membership. Meetings and resolutions - Company management; Managerial remuneration; Winding up and dissolution of companies.



January	UNIT-III	Theory of consumer Choice: Cardinal utility approach, indifference approach, revealed preference and theory of consumer choice under risk; Demand estimation for major consumer durable and non-durable products; Demand forecasting technique.	Accounting issues relative to amalgamation and reconstruction of companies.	Budgeting: Definition of Budget; Essentials of budgeting; Types of budgets functional, master etc. Fixed and flexible budget, Budgetary control, Zero-base budgeting; Performance budgeting. Marginal Costing: Concept of marginal cost; Marginal costing and absorption, costing, Marginal costing versus direct, costing; Cost-volume- profit analysis.	Probability Theory: Probability classical, relative and subjective probability, Addition and multiplication probability models - Conditional probability and Baye's Theorem.	The Negotiable Instruments Act, 1881 - Definition, types of negotiable instruments; Negotiation; Holder and holder in due course; payment in due course;
February	UNIT-IV	Production Theory: Production function-production with one and two variable inputs, Stages of production; Economics of scale; Estimation of production function.	Accounting for and subsidiary companies. Accounts relating to Liquidation of Companies.	Standard Costing and Variance Analysis:, Standard costing as a control technique; Setting of standards and their revision; Variance analysis-meaning and importance; Kinds of variances and their uses-material, labour and overhead variances; Disposal: of variances; Relevance of variance analysis to budgeting and standard costing.	Probability Distributions - Binomial, Poisson and Normal Distributions, Their characteristic sand applications.	Endorsement and crossing of cheque; Presentation of negotiable instruments. Legal Environment for Security Markets: SEBI Act 1992-organisation and objectives of SEBI.
March	Seminar And Internal Examination Semester Examination					

**Govt. D.B. Girls P.G. Autonomous College , Raipur (C.G.)**  
**Proposed Teaching Plan For the Session 2020-21**  
**M.Com. Part - II Semester**

Month	UNITS	Business Economics	Advanced Accounting	Accounting For Managerial Decision	Advanced Statistics	Business Law
April	UNIT -I	Cost Theory and Estimation, economic value analysis, Short and long run cost Functions- their nature, shape and inter-relationship; Law of variable proportions;-Law of returns to scale.	Accounts of General Insurance Companies.	Break-even-analysis; Assumptions and practical applications of break- even-analysis; Decisions regarding sales-mix, make or buy decisions and discontinuation of a product line etc.	Statistical Decision Theory: Decision environment, Expected profit under uncertainty and assigning probabilities and utility theory. Interpolation and Extrapolation - Parabolic Binomial, Newton and long ranges method.	SEBI Act-1992: Organization and objectives of SEBI, Functions and Role of SEB Rights and Power of SEBI. FEMA Act 1999: Objectives; Regulation and Management of FEMA, Penalties Appeal.
May	UNIT-II	Price Determination under Different Market Conditions: Characteristics of different market structures; Price determination and firm's equilibrium in short-run and long-run under perfect competition, monopolistic competition, oligopoly and monopoly,	Accounts of Banking Companies.	Analyzing financial Statements: Method, objects and ratio analysis. Cash flow analysis and Fund flow analysis.	Statistical Estimations and Test theory : Point and interval estimation of population mean, proportion and variance Statistical Testing - Hypothesis and Errors, Sample size – Large and Small Sampling test Z tests, T Tests & F Tests.	Competition Act 2002: Introduction, features, objects; Prohibition of certain agreements, Abuse of Dominant position and Regulation of combinations; Competition commission of India- duties, powers and functions, Competition Appellate Tribunal.

June	UNIT-III	Pricing Practices: Methods of price determination in practice, pricing of multiple products; price discrimination; International price discrimination and dumping; Transfer pricing.	Accounts of Public Utility concerns: Double Accounts System.	Contemporary Issues in Management Accounting: Value chain analysis; Activity bases costing, Quality costing, Target and life cycle costing.	Association of Attributes : Two Attributes, consistency of data, measurement of Association of Attributes - Percentage method, Co-efficient of Association, Comparison of Actual and (you le method) Expected frequency's & illusory Association.	Consumer Protection Act 1986: Needs of Act, Rights of consumers, Objectives of Act. Grievance redressal Machinery, District Forum, State Commission, National Commission.
July	UNIT-IV	Business Cycles: Nature and phases of la business .cycle; Theories of business cycles psychological, profit, monetary, innovation, cobweb, Samuelson and Hicks theories. Inflation: Definition, Characteristics and types; Inflation in terms of demand- pull and cost-push factors; Effects of inflation.	Royalty accounts. Investment accounts.	Reporting to Management : Objectives of reporting, reporting needs at different managerial levels; Types of ,reports," modes of reporting; reporting at different levels of management.	Statistical Quality Control: Causes of Variations in quality characteristics, Quality Control charts-purpose and logic, Process under control and out of control, warning limits, control charts for attributes-fraction defectives and number of defects, Acceptance sampling.	W.T.O.: Brief History of WTO, Objectives and Functions, Organization, W.T.O. and India, Regional groupings, anti-dumping duties and other NTBs, Doha declaration, Dispute settlement system, TRIP, TRIMS and GATS.
August	Seminar And Internal Examination Semester Examination					

**Govt. D.B. Girls P.G. Autonomous College , Raipur (C.G.)**  
**Proposed Teaching Plan For the Session 2020-21**  
**M.Com. Part - III Semester**

Month	UNITS	Management Concept	Organizational Behaviour	Advanced Cost Accounting	Income Tax Law and Accounts	Tax Planning and Management
November	UNIT -I	Schools of Management Thought : Scientific, process, human behaviour and social system school; Decision theory school; Quantitative and system school; Contingency theory of management; Functions of a manager. Staffing; Directions - nature, process, and techniques.	Organizational Behaviour : concept and significance ; Relationship between management and organizational behaviour; Emergence and ethical perspective; Attitudes; Perception; Learning; Personality; Transactional analysis.	Introduction – Cost Analysis, concepts and classification, Materials control– Techniques of Materials control. Labour cost – Computation and control, Overheads – Accounting and Control.	Law relating to Income tax :Brief study of the main provisions of the Indian Income Tax Act. Important definitions. Income exempted from tax, Residence and Tax liability.	Calculation of taxable Income and tax of Firm and Companies.
December	UNIT-II	Managerial Functions : Planning - concept, significance, types; Organizing - concept, principles of authority, theories, types of organizations, authority, responsibility, power, delegation, decentralization; Coordinating; Control - nature, process, and techniques.	Leadership : Concept; Leadership styles; Theories - trait theory, behavioural theory, Fielder's contingency theory; Harsey and Blanchard's situational theory; Managerial grid; Likert's four systems of leadership. Organizational Conflict :Dynamics and management; Sources, patterns, levels, and types of conflict; Traditional and modern approaches to conflict; Functional and dysfunctional organizational conflicts; Resolution of conflict.	Job, Batch, Contract Costing and operating costing.	Calculation of taxable income under the head : Salary and House property.	Return of Income, Provisional Regular, Expert and emergency assessment, Re-opening of assessment.

January	UNIT-III	Motivation : Process of motivation; Theories of motivation – need hierarchy theory, theory X and theory Y, two factor theory, Alderfer's ERG theory, McClelland's learned need theory, VictorVroom's expectancy theory, Stacy Adams equity theory.	Interpersonal and Organizational Communication: Concept of two-way communication; Communication process; Barriers to effective communication; Types of organizational communication ; Improving communication; Transactional analysis in communication.	Process Costing, Joint products & By – products costing. Uniform costing and Estimate costing.	Depreciation and Development allowance, Calculation of taxable Income under the head : Business and Profession, capital gains, income from other sources.	Concept of tax Planning ; Tax avoidance and tax evasions ; Tax planning with reference of location, nature and form of organization of new business. Tax planning to capital structure, decision dividend policy ; Inter corporate dividends and bonus shares.
February	UNIT-IV	Group Dynamics and Team Development : Group dynamics - Definition and importance, types of groups, group formation, group development, group composition, group performance factors; Principle- centred approach to team development.	Organizational Development : Concept; Need for change, resistance to change; Theories of planned change; Organizational diagnosis; Organizational Development intervention.	Budgetary control – Importance of budgets in accounting. Nature of budgetary control, Organization for budgetary control preparation of fixed and variable budgets. Cash Budget, Production and sales Budget.	Set off and carry forward of losses, Deduction from gross total Income Calculation of taxable Income and tax of an individual, and Hindu undivided Families. Appeals & Revisions Reference of High Court and Supreme court, offences & penalties, Income tax authorities.	Preparation of income tax returns, Computation of Income tax, Tax deduction at source; Advance payment of tax.
March	Seminar And Internal Examination Semester Examination					

**Govt. D.B. Girls P.G. Autonomous College , Raipur (C.G.)**  
**Proposed Teaching Plan For the Session 2020-21**  
**M.Com. Part - IV Semester**

Month	UNITS	Financial Management	Personnel Management	Production management	Strategic Management	Project
April	UNIT -I	Financial Management :Meaning, nature and scope of finance; Finance functions - investment, financing and dividend decisions. Capital Budgeting : Nature of investment decisions; Investment evaluation criteria - net present value, internal rate of return, profitability index, payback period, accounting rate of return; NPV and IRR comparison; Capital rationing; Risk analysis in capital budgeting.	Concept, Definition, Importance & Objectives of Personnel Management, Historical Development of Personnel Management, Nature, scope planning, Philosophy and Principles of personnel Management and its relation with behavioural sciences.	Fundamentals of production management, Nature, Scope, Functions ;Problems, Production and Productivity organizing for production. Types of manufacturing systems.	Concept of Strategy :Defining strategy, levels at which strategy operates; Approaches to strategic decision making; Mission and purpose, objectives and goals; Strategic business unit (SBU);Functional level strategies. Environmental Analysis and Diagnosis :Concept of environment and its components; Environment scanning and appraisal; Organisational appraisal; Strategic advantage analysis and diagnosis, SWOT analysis.	
May	UNIT-II	Cost of Capital :Meaning and significance of cost of capital; Calculation of cost of debt, preference capital, equity capital and retained earnings; Combined cost of capital (weighted); Cost of equity and CAPM. Operating and Financial Leverage :Measurement of leverages; Effects of operating and financial leverage on profit; Analysing alternate financial plans; Combined financial and operating leverage.	Personnel policies, programmes & procedures. Personnel Department; Personnel Functions, Position of personnel Department & Organization of Personnel Management.	Production planning, Objectives, Factors affecting Production Planning. Planning future activities, forecasting. Qualitative & Quantative forecasting Methods, long range forecasts, project planning method(P.E.R.T. and C.P.M.) Process planning System. Techniques of process planning : Assembly charts, process charts make or buy analysis.Process design, Factors affecting design Relation with types of manufacturing plant location and layout : Factors affecting location. Types of plans layout, evaluation of alternative layout.	Strategy Formulation and Choice of Alternatives : Strategies - modernisation , diversification, integration, Merger, take-over and joint strategies; Turnaround, divestment and liquidation strategies; Process of strategic choice-industry, competitor and SWOT analysis; Factors affecting strategic choice; Generic competitive strategies- cost leadership, differentiation focus, value chain analysis, bench marking, service blue printing.	

June	UNIT-III	Capital structure Theories :Traditional and M.M. hypotheses - without taxes and with taxes; Determining capital structure in practice.Dividend Policies : Issues in dividend decisions, Walter's model, Gordon's model, M-M hypothesis, dividend and uncertainty, relevance of dividend; Dividend policy in practice; Forms of dividends; Stability in dividend policy; Corporate dividend behaviour.	Man power planning Recruitment and Selection, Training &Development of Employees & Executives. Promotion, Demotion, Transfers, Absenteeism & Turnover.	Work measurement and work standards Uses of work measurement data procedure for work measurement. Direct work measurement. Time study, activity sampling, Indirect work measurement : Synthetic timing, Predetermined motion time system, analytical estimating. Methods analysis : Areas of application, Approaches to methods design, Tools for methods analysis, work simplification programme.	Functional Strategies :Marketing, production / operations and R & D plans and policies. Functional Strategies :Personnel and financial plans and policies. Strategy Implementation: Inter-relationship between formulation and implementation; Issues in strategy implementation; Resource allocation.	
July	UNIT-IV	Management of Working Capital :Meaning, significance and types of working capital; Calculating operating cycle period and estimation of working capital requirements; Financing of working capital and norms of bank finance; Sources of working capital; Factoring services; Various committee reports on bank finance; Dimensions of working capital management. Management of cash, and inventory.	Performance Appraisal and Merit Routing, Discipline. Job-evaluation Wage & Salary Administration, plans of Remuneration & Financial Rewards/Incentive payments. Employees Fringe Benefits & Services - Safety, Health & Security programme and welfare. Motivation and Moral.	Production Control – Control functions : Routing Loding, Scheduling, Despatching, Follow up. Quality control & inspection : place of quality control in modern enterprises, organisation of quality control. Statistical quality control, inspection location for inspection, inspection procedure and records, Inspection devices.	Strategy and Structure :Structural considerations, structures for strategies; Organisational design and change. Strategy Evaluation : Overview of strategic evaluation; Strategic control; Techniques of strategic evaluation and control. Techniques of strategic evaluation and control.	
August	Seminar And Internal Examination Semester Examination					

**GOVT. D.B. GIRLS P.G.COLLEGE, RAIPUR(C.G)**

**TEACHING PLAN 2020-2021**

**M.Sc Ist SEMESTER Resource management**

**PAPER - I**

**TITLE OF PAPER- RESEARCH METHODOLOGY**

<b>Month</b>	<b>Plan</b>
<b>October</b>	<b>Science, Scientific methods and approach</b>  <b>Social research &amp; survey: Meaning, definition, nature, scope, objects, types, distinction between social survey and research</b>
<b>November</b>	<b>Pretesting &amp; pilot survey</b>  <b>Hypothesis: Definition, Source, characteristics, importance, main difficulties in the formation of hypothesis, disadvantage</b>  <b>Source of data: primary &amp; secondary sources</b>
<b>December</b>	<b>Methods or techniques of data collection</b>  <b>a. Observation</b>  <b>b. Interview</b>  <b>c. Schedule</b>  <b>d. Questionnaire</b>  <b>e. Case-study</b>  <b>Sampling: Meaning, characteristics, advantages, and disadvantages</b>  <b>Types:</b>  <b>Random sampling</b>  <b>Purposive sampling</b>  <b>Stratified sampling</b>  <b>Other sampling method</b>
<b>January</b>	<b>Classification and tabulation of data analysis and interpretation of data</b>  <b>Research design steps and process of its formulation</b>  <b>Types of research design- exploratory, descriptive, diagnostic and experimental</b>
<b>February</b>	<b>Diagrammatic presentation of data</b>  <b>Revision &amp; SEMINAR</b>



# TEACHING PLAN - HOME SCIENCE - RESOURCE MANAGEMENT

CLASS: M.Sc. I SEMESTER PAPER – II

## THEORY OF MANAGEMENT

2020-21

No.	MONTH		TEACHING PLAN
1	July	Unit-I	<p>-History and development of management in India and 2 in ancient civilization, the management in medieval period. Importance of Management in India.</p> <p><b>Management Function and Process:</b> Definition, what is management, Process of management, Characteristics of management, Types of management</p> <p><b>-Advantages and limitations of management</b></p> <p><b>-Management functions and process</b></p> <p>- Factors Effecting Decision making</p> <p>-making of effective decision</p> <p><b>Planning:</b> Objectives, principles and Types</p> <p><b>Organizing:</b> Purpose, principles, processes, delegations of authority</p> <p><b>-Controlling :</b> Tools for management control,</p> <p><b>-Evaluation :</b> Tool and Techniques</p>
2	August	Unit-II	<p><b>Resources in family :</b> Definitions of resources, Types, Characteristics of resources, Factors affecting Management</p> <p><b>- Guiding, directing</b></p> <p><b>- Leadership :</b> Definitions and Characteristics, Qualities of Leader, Functions of Leader</p>
3	September	Unit-III	<p><b>- Management abilities.</b></p> <p><b>- Ends sought through management :</b></p> <p><b>Goals:</b> Factors affecting endless chain, classification</p> <p><b>Values:</b> Sources of value patterns, status security</p> <p><b>Standards:</b> meaning, types, factors affecting it.</p> <p><b>- Communication:</b> Meaning and definition, characteristics and process, importance of communication in management</p>
4	October	Unit-IV	<p><b>Decision making:</b> Meaning and types, Process of decision making, Consequences of each alternative, Chain decisions, decision conflict, Factors affecting decision making, Making of effective decision, Conflict management.</p> <p><b>Motivation :</b> Meaning and definition, Characteristics and importance, Elements of motivation, Evaluation tools &amp; techniques</p>
5	November		Semester Exam & Project Work

TEACHING PLAN - HOME SCIENCE - RESOURCE MANAGEMENT

**CLASS: M.Sc. I SEMESTER      PAPER – III****CONSUMER ECONOMICS****2020-21**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>
1	July	Unit-I	<b>Consumer and the Indian economic environment.</b> A. Definition and characteristics of consumers B. Definition role types and how does an economy function, problems of economy. C. Role of consumer in the economy of the nation <b>Contemporary economic environment.</b>
2	August	Unit-II	<b>Introduction of market Meaning, definition, characteristics, types.</b> <b>Consumer behavior :</b> A. Understanding consumer and their wants B. Determinants of consumer behavior-Opinion, leadership, group influence, social class and culture, consumer dissatisfaction. C. Market strategies influencing consumer behavior D. Guidelines for wise purchasing.
3	September	Unit-III	<b>Market practices that exploit consumers</b> A. <b>Type of exploitation :</b> Adulteration, packaging, label, weights and measures, advertising and sale gimmicks. B. <b>Causes of exploitation :</b> Consumer problem and their solutions
4	October	Unit-IV	<b>Consumer protections: Need and rationale</b> A. <b>History of consumer movement in India:</b> Origin, growth, causes for slow growth. B. <b>Role of consumer organizations:</b> National, regional and international. C. Role of government agencies, legislation. D. Empowerment of consumers. <b>Consumer credit :</b> A. Definition and types of credit B. Factors affecting consumer credit decisions.
5	November		Project Work & Semester Exam

## **M.SC I SEM RESOURCE MANAGEMENT**

### **PAPER IV**

#### **LAND SCAPING**

JULY- INTRODUCTION, HISTORY OF LAND SCAPING, GARDEN ESTABLISHMENT, ORNAMENTAL GARDENS MANAGEMENT, MAINTENANCE

AUG- LAND PROFILE, SOIL TYPES, TEXTURE, ORNAMENTAL GARDENS CHART, PRINCIPLES OF LAYOUTS GARDEN STYLE, FURNITURE, TOOLS, EQUIPMENT

SEPT- FARM SHED, GREEN HOUSE, BONSAI, STYLE MATERIAL. METHODS, PEDESTAL, MONUMENT STATUES, ABSTRACT, PERGOAL, MANURE, WEED, TYPES, DISTRIBUTION

OCT- INDOOR OUTDOOR PLANTS NATURAL ARTIFICIAL, SHRUBS, CREEPERS, GRASS, POT CULTURE TERRACE GARDEN, IRRIGATION, NEED, SOURCES, METHODS, WASTE MANAGEMENT, TYPES

NOV- PRACTICAL LAND SCAPING AND SEMINAR

DEC- SEMESTER EXAMINATION

PROPOSED TEACHING PLAN FOR THE SESSION OF **2020-21**

## **M.SC II SEM RESOURCE MANAGEMENT**

### **PAPER II**

#### **HOSPITALITY ADMINISTRATION**

JAN- HOSPITALITY MEANING, TYPES, DEFINITION, NATURE, SCOPE SIGNIFICANCE, HISTORY ROLE OF HOUSEKEEPING, RELATION TO COMMERCIAL AND WELFARE SECTORS, MANAGEMENT

FEB- SCOPE, IMPORTANCE OF HOUSEKEEPING, LAYOUT OF HOUSEKEEPING DEPARTMENT, SERVICE MANAGEMENT MAINTENANCE, REPAIR, REDECORATING

MAR- ADMINISTRATIVE POLICIES PERSONNEL MANAGEMENT, BUDGET, HUMAN BEHAVIOUR, PERSONALITY, ATTITUDE

APR- SAFETY, SECURITY, SANITATION, FIRE FIGHTING, FIRST AID, SAFETY IN USE OF EQUIPMENT

PEST CONTROL, UNIFORM TYPES, SELECTION, DISTRIBUTION, CONTROL, HOSTESS TRAINING

BANQUET MANAGEMENT, STRESS MANAGEMENT DEFINITION, TYPES, METHODS OF STRESS REDUCTION, TEAM MANAGEMENT

MAY- SEMINAR

JUNE- SEMESTER EXAMINATION

# TEACHING PLAN - HOME SCIENCE - RESOURCE MANAGEMENT

CLASS: M.Sc. II SEMESTER PAPER – III

## PUBLIC FINANCE

2020-21

No.	MONTH		TEACHING PLAN
1	January	Unit-I	<b>National income:</b> Income distribution, per capita income, Inequalities of income, Consumer price index, Inflation v/s Deflation, Wages and earning principles of wage determination, Wages differentials
2	February	Unit-II	<b>Financial planning and implementation:</b> <b>Budgeting:</b> Allocation of resources, identifying aspiration, expectations and goals, objectives and advantages of budgeting, control. Planning a budget for a Family of fixed income, Restaurant/hostel/any selected organization, Boutique, Small industry
3	March	Unit-III	<b>Tax planning:</b> Types of taxes, Principles and procedures of income tax, Preparation of statement of income and filling of income tax in case of returns, Individuals (Salary class), Knowledge of various exemptions and deductions <b>Saving and investments:</b> Importance of savings components, Saving facilities and investment opportunities, Evaluations of savings components, Economics security and components, Economics security and financial alternatives.
4	April	Unit-IV	<b>Impact of globalization and direct foreign investment on business opportunities in India.</b> a. Income and property rights- Will, trusts and legal aspects of economics insecurity. b. Unemployment, its nature and causes. Government programs designed to increase family financial security. <b>Markets and Marketing:</b> a. Basic concept of market and marketing b. Types of markets: Wholesale, retail, specialty, local, residential. c. Changing nature of the business world i.e. e-business and e-commerce. d. Marketing environment, marketing theories, models. <b>Markets and prices:</b> a. Definition and types of marketing prices. b. Pricing under perfect and imperfect competition and monopoly. <b>International Marketing management</b> a. Meaning, need, organization for international marketing b. scope, elements of international marketing c. analysis product planning for world marketing.
5	May		Semester Exam & Project Work

# TEACHING PLAN - HOME SCIENCE - RESOURCE MANAGEMENT

CLASS: M.Sc. II SEMESTER PAPER – IV

## ENVIRONMENT MANAGEMENT

2020-21

No.	MONTH		TEACHING PLAN
1	January	Unit-I	<b>Fundamentals of environment:</b> a. Environment definition. Scope of environmental studies. b. Life and environment. Physical, chemical factors in the environment, changes in the environment. c. Environment hazards and risks.
2	February	Unit-II	<b>Eco-system:</b> a. Ecology: Definition, objectives and concept of Eco-system, scope of Ecology. b. Tropic structure of Ecosystem c. Ecological pyramid d. Energy flow in Ecosystem
3	March	Unit-III	<b>Environmental pollution:</b> a. Concept of pollution, meaning, definition, causes and classification of pollution. b. Effect of Environmental pollution <b>Urban pollution :</b> Pollution and environment with reference to soil and noise.
4	April	Unit-IV	<b>Sources of pollution :</b> a. Effect of pollution. b. Remedies of control pollution. c. Air pollution control <b>Environment legislation:</b> a. Environment policies b. Human rights issues relating to environment c. Environment movements d. Environment ethics
5	May		Semester Exam & Project Work

PROPOSED TEACHING PLAN FOR THE SESSION OF 2020-21

**M.SC.II SEM RESOURCE MANAGEMENT**

**PAPER I**

**ERGONOMICS**

JULY- MEANING, SCOPE, DEFINITION OF ERGONOMICS, NATURE OF WORK, MAN  
MACHINE ENVIRONMENT SYSTEM, STRUCTURE AND FUNCTION OF MUSCLE,  
BIOCHEMISTRY OF MUSCLE WORK

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AUG- SOURCES OF ENERGY, ATP, CP, FOOD, ENERGY REQUIREMENTS, DEFINITION OF  
ANTHROPOMETRY, HUMAN BODY AS A LEVER PRINCIPLES OF MOTION ECONOMY

SEPT- IDENTIFICATION, ANALYSIS, TYPES OF POSTURE, EFFECTS OF WRONG POSTURE, CORRECT  
TECHNIQUES OF CARRYING AND LIFTING WEIGHTS, PHYSICAL ENVIRONMENT

OCT- HEAT, THERMAL REGULATION, HEAT BALANCE, EXCHANGE OF HEAT, LIGHTING, COLOUR, NOISE

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NOV- PRACTICAL ERGONOMICS, SEMINAR

DEC- SEMESTER EXAMINATION

# TEACHING PLAN - HOME SCIENCE - RESOURCE MANAGEMENT

CLASS: M.Sc. III SEMESTER PAPER – II

## ENTREPRENEURSHIP

2020-21

No.	MONTH		TEACHING PLAN
1	July	Unit-I	<b>- Conceptual Framework :</b> Entrepreneurship ,Concept, nature & type of Entrepreneurship a. Development of Entrepreneurship. b. Entrepreneurship& socio-economic development <b>- Entrepreneurship :</b> Institutional finance and Entrepreneurship Organization, Concept, nature process and importance of Organization
2	August	Unit-II	<b>- The Entrepreneur :</b> i. Meaning , definition characteristics and function ii. Effectiveness of Entrepreneurs. iii. Social responsibility of an Entrepreneur <b>- The Entrepreneurs.</b> <b>- Organization Supporting Entrepreneurs.</b>
3	September	Unit-III	<b>- Licensing &amp; regulation of industries.</b> <b>- Infrastructure facilities.</b> <b>- Launching &amp; organizing Entrepreneurship :</b> Economic and sociological view points. Entrepreneurial development programs.
4	October	Unit-IV	<b>- Preparation of a new project.</b> <b>- Project report.</b> <b>- Start and expansion of a new business.</b>
5	November		Semester Exam & Project Work

# TEACHING PLAN - HOME SCIENCE - RESOURCE MANAGEMENT

CLASS: M.Sc. III SEMESTER PAPER – III

## HOUSING

2020-21

No.	MONTH		TEACHING PLAN
1	July	Unit-I	<ul style="list-style-type: none"><li>- <b>History of Housing.</b></li><li>- <b>Housing –Needs definition and importance.</b></li><li>- <b>Changes in Housing need &amp; standards.</b></li><li>- <b>Housing In India As Affected by Trends In :</b> Population, Establishment of Households, Level of Income per Households, Occupation, Family Mobil, Technological Development.</li></ul>
2	August	Unit-II	<ul style="list-style-type: none"><li>- <b>Present Housing Condition In India :</b> Rural &amp; Urban, Cost of Housing, Quality of Housing Available.</li><li>- <b>Private and Public Housing :</b> Various Housing Schemes &amp; Local Government Programs, Industrial Housing,</li><li>- <b>Housing finance.</b></li></ul>
3	September	Unit-III	<ul style="list-style-type: none"><li>- <b>Factors to be Considered While Designing :</b> Orientation, Grouping of users area, Circulation between &amp; within users area, Light &amp; Ventilation, Flexibility, Privacy, Roominess, Services, Aesthetics, Cost.</li><li>- <b>Type of Floor.</b></li><li>- <b>Study of building materials.</b></li></ul>
4	October	Unit-IV	<ul style="list-style-type: none"><li>- <b>False Ceilings :</b> Different types in various materials.</li><li>- <b>Kitchen Platform and type.</b></li><li>- <b>Storage areas :</b> Need and Rules for storage, Storage arrangements in different rooms.</li><li>- <b>Environmental Issues :</b> Human &amp; Environment.</li><li>- <b>Housing Research</b><ul style="list-style-type: none"><li>a. Agencies for research &amp; Development</li><li>b. Methods &amp; Techniques</li></ul></li></ul>
5	November		Semester Exam & Project Work



PROPOSED TEACHING PLAN FOR THE SESSION OF **2020-21**

**M.SC IIISEM,RESOURCE MANAGEMENT**

**PAPER IV**

**FUEL TECHNOLOGY**

JULY- SOURCES OF ENERGY, ENERGY CONSUMPTION PATTERNS,

AUG- FOSSIL FUEL, FUEL CLASSIFICATION SOLID, LIQUID, GAS, ARTIFICIAL FUEL LIQUID GAS SOLID

SEPT- SOLAR ENERGY, SOLAR TREE, AIR ENERGY, ENERGY FROM BIOMASS

OCT- ENERGY CONSERVATION, PRINCIPLES OF IMPROVING EFFICIENCY, PROPER USE OF ENERGY

NOV- SEMINAR

DEC- SEMESTER EXAMINATION

PROPOSED TEACHING PLAN FOR THE SESSION OF **2020-21**

**M.SC.IV SEM RESOURCE MANAGEMENT**

**PAPER I**

**RESIDENTIAL AND ESTABLISHMENT**

JAN- WATER SUPPLY SYSTEM TO BUILDING, WATER PIPES, VALVES, TYPES OF WATER SUPPLY

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FEB- WATER SUPPLY TO BATH ROOM, WC, TOILET AND KITCHEN, DRAINAGE SYSTEM, SEPTIC TANK,  
DRAINAGE USING SEPTIC TANK AND SOAKPI, DRAIN PIPES, TRAPS, PIPE

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MAR- ELECTRIC LAYOUTS AND WIRING SYSTEMS, AIR CONDITIONING BUILDING DISASTER  
MANAGEMENT

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APR- TERMITE PROOFING, DEMP PREVENTION, HEAT INSULATION, FIRE FIGHTING

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MAY- SEMINAR

JUNE- SEMESTER EXAMINATION

# TEACHING PLAN - HOME SCIENCE - RESOURCE MANAGEMENT

CLASS: M.Sc. IV SEMESTER PAPER – II

## CONSUMER EDUCATION

2020-21

No.	MONTH		TEACHING PLAN
1	January	Unit-I	<b>- Consumer Education :</b> a. Brief History b. Definition, Concept and Significance/need. c. Objectives <b>- Approach to consumer education :</b> Economic, environment, socio cultural, health & safety and legal. <b>- Action line for consumer education :</b> a. <b>Action plan :</b> knowing situation, formulating plan of action, implementing, evaluation and follow up. b. <b>Methods for imparting education :</b> Role-plays and games, project testing and evaluation.
2	February	Unit-II	<b>- Contents:</b> Resource management, decision-making, sound purchasing habits, learning skills, conservation and protection of environment. <b>- Resources:</b> Media-Written, audio and visual. Market place, government agencies consumer organizations. <b>- Problems faced and remedial measures.</b>
3	March	Unit-III	<b>- Teaching Consumerism :</b> a. Plans for teaching better consumption practices, factors b. Consumer aids : Meaning, Classification types. c. Consumer Rights and responsibilities.
4	April	Unit-IV	<b>- Consumer Protection :</b> a. Need, measures and methods. b. Role of consumer organizations: National and International. c. Consumers International regional Office at Pune India. d. Consumer laws: Role and Provisions of the acts-Implications.
5	May		Semester Exam & Project Work

# TEACHING PLAN - HOME SCIENCE - RESOURCE MANAGEMENT

## CLASS: M.Sc. IV SEMESTER

### PAPER – III

### SPACE DESIGN

2020-21

No.	MONTH		TEACHING PLAN
1	January	Unit-I	Analysis of Housing Design 1. Selection of site 2. Analysis of Plan – Needs and definition importance 3. Process of Map making. 4. Site plan & floor plan Types of Designs 1. Structural design decorative design Styles of Interior Designs: Traditional style, cottage style, modern style. 2. Design and Color: Color theory, dimensions of Color, Classification of Colors, Psycho-social and physical effects of colors, types of color schemes.
2	February	Unit-II	Decoration: History of development of decoration. Object of decoration. 1. Furniture Design – Fundamentals of Furniture arrangement in various rooms. 2. Classification selection. 3. Residential Furniture – Sketch, form and sizes of all and details of any 6 items, such as sofa, diwan, chairs, puffed centre table, wall unit, dining table, side board, kitchen unit, bed, wardrobe, dressing table etc.
3	March	Unit-III	1. The Special Need .Division of Rooms and their arrangement. - Circulation in building. - Space needs in relation to furniture and fittings - Space in room and passage. 2. Layout and dimensions of rooms Entrance wall & front door. Living & drawing Room Bedroom & Children Room Guest Room a. The Kitchen Dining Room,Bathroom & W.C.
4	April	Unit-IV	Current Trends in Interior Design 1. Place of Art in the Home 2. Use of Principle of Art in the decoration Uses of color in Home decoration. 3. Current trends of Indian decorative regional art.
5	May		Semester Exam & Project Work

## **M.SC IV SEM RESOURCE MANAGEMENT**

### **PAPER IV**

#### **MANAGEMENT OF HUMAN RESOURCES**

JAN- PRINCIPLES OF HUMAN RESOURCES USE,FATIGUE TYPES CAUSES

FEB- FACTORS, CONCEPT AND TYPES OF EFFICIENCY AND EFFECTIVENESS, MEANING FACTORS OF PRODUCTIVITY ,EFFECT OF MOTIVATION ON PRODUCTIVITY

MAR- MEANING NATURE, CHARACTERISTICS, PROCESS,METHODS, IMPORTANCE, FACTORS OF MOTIVATION, METHODS AND TECHNIQUES OF IMPROVING RESOURCE USE

APR- PERSONALITY AND DEVELOPMENT OF MANAGER TYPES IMPORTANCE, METHODS ,TRAINING, LEADERSHIP, TRAINING FOR PERSONALITY DEVELOPMENT AND LEADERSHIP, GOALS OF TRAINING AND DEVELOPMENT

MAY- SEMINAR

JUNE- SEMESTER EXAMINATION

#### **PROPOSED TEACHING PLAN FOR THE SESSION OF 2020-21**

#### **M.SC I SEM RESOURCE MANAGEMENT PAPER IV LAND SCAPING**

JULY- INTRODUCTION, HISTORY OF LAND SCAPING, GARDEN ESTABLISHMENT, ORNAMENTAL GARDENS MANAGEMENT, MAINTENANCE

AUG- LAND PROFILE, SOIL TYPES, TEXTURE, ORNAMENTAL GARDENS CHART, PRINCIPLES OF LAYOUTS GARDEN STYLE, FURNITURE, TOOLS, EQUIPMENT

SEPT- FARM SHED, GREEN HOUSE, BONSAI, STYLE MATERIAL. METHODS, PEDESTAL, MONUMENT STATUES, ABSTRACT, PERGOAL, MANURE, WEED, TYPES, DISTRIBUTION

OCT- INDOOR OUTDOOR PLANTS NATURAL ARTIFICIAL, SHRUBS, CREEPERS, GRASS, POT CULTURE TERRACE GARDEN, IRRIGATION, NEED, SOURCES, METHODS, WASTE MANAGEMENT, TYPES

NOV- PRACTICAL LAND SCAPING AND SEMINAR

DEC- SEMESTER EXAMINATION

PROPOSED TEACHING PLAN FOR THE SESSION OF **2020-21**

**M.SC II SEM RESOURCE MANAGEMENT PAPER II HOSPITALITY ADMINISTRATION**

JAN- HOSPITALITY MEANING, TYPES, DEFINITION, NATURE, SCOPE SIGNIFICANCE, HISTORY ROLE OF HOUSEKEEPING, RELATION TO COMMERCIAL AND WELFARE SECTORS, MANAGEMENT

FEB- SCOPE, IMPORTANCE OF HOUSEKEEPING, LAYOUT OF HOUSEKEEPING DEPARTMENT, SERVICE MANAGEMENT MAINTENANCE, REPAIR, REDECORATING

MAR- ADMINISTRATIVE POLICIES PERSONNEL MANAGEMENT, BUDGET, HUMAN BEHAVIOUR, PERSONALITY, ATTITUDE

APR- SAFETY, SECURITY, SANITATION, FIRE FIGHTING, FIRST AID, SAFETY IN USE OF EQUIPMENT

PEST CONTROL, UNIFORM TYPES, SELECTION, DISTRIBUTION, CONTROL, HOSTESS TRAINING

BANQUET MANAGEMENT, STRESS MANAGEMENT DEFINITION, TYPES, METHODS OF STRESS

REDUCTION, TEAM MANAGEMENT

MAY- SEMINAR

JUNE- SEMESTER EXAMINATION

PROPOSED TEACHING PLAN FOR THE SESSION OF **2020-21**

**M.SC III SEM, RESOURCE MANAGEMENT PAPER IV FUEL TECHNOLOGY**

JULY- SOURCES OF ENERGY, ENERGY CONSUMPTION PATTERNS,

AUG- FOSSIL FUEL, FUEL CLASSIFICATION SOLID, LIQUID, GAS, ARTIFICIAL FUEL LIQUID GAS SOLID

SEPT- SOLAR ENERGY, SOLAR TREE, AIR ENERGY, ENERGY FROM BIOMASS

OCT- ENERGY CONSERVATION, PRINCIPLES OF IMPROVING EFFICIENCY, PROPER USE OF ENERGY

NOV- SEMINAR

DEC- SEMESTER EXAMINATION

PROPOSED TEACHING PLAN FOR THE SESSION OF **2020-21**

**M.SC IV SEM RESOURCE MANAGEMENT PAPER IV MANAGEMENT OF HUMAN RESOURCES**

JAN- PRINCIPLES OF HUMAN RESOURCES USE, FATIGUE TYPES CAUSES

FEB- FACTORS, CONCEPT AND TYPES OF EFFICIENCY AND EFFECTIVENESS, MEANING FACTORS OF PRODUCTIVITY, EFFECT OF MOTIVATION ON PRODUCTIVITY

MAR- MEANING NATURE, CHARACTERISTICS, PROCESS, METHODS, IMPORTANCE, FACTORS OF MOTIVATION, METHODS AND TECHNIQUES OF IMPROVING RESOURCE USE

APR- PERSONALITY AND DEVELOPMENT OF MANAGER TYPES IMPORTANCE, METHODS , TRAINING, LEADERSHIP, TRAINING FOR PERSONALITY DEVELOPMENT AND LEADERSHIP, GOALS OF TRAINING AND DEVELOPMENT

MAY- SEMINAR

JUNE- SEMESTER EXAMINATION

**GOVT. D.B. GIRLS P.G.COLLEGE, RAIPUR(C.G)**  
**TEACHING PLAN 2020-2021**  
**M.Sc Ist SEMESTER (FOOD & NUTRITION)**  
**PAPER - I**  
**TITLE OF PAPER- RESEARCH METHODOLOGY**

<b>Month</b>	<b>Plan</b>
<b>July</b>	<b>Science, Scientific methods and approach</b>  <b>Social research &amp; survey: Meaning, definition, nature, scope, objects, types, distinction between social survey and research</b>
<b>August</b>	<b>Pretesting &amp; pilot survey</b>  <b>Hypothesis: Definition, Source, characteristics, importance, main difficulties in the formation of hypothesis, disadvantage</b>  <b>Source of data: primary &amp; secondary sources</b>
<b>September</b>	<b>Methods or techniques of data collection</b>  <b>a. Observation</b>  <b>b. Interview</b>  <b>c. Schedule</b>  <b>d. Questionnaire</b>  <b>e. Case-study</b>  <b>Sampling: Meaning, characteristics, advantages, and disadvantages</b>  <b>Types:</b>  <b>Random sampling</b>  <b>Purposive sampling</b>  <b>Stratified sampling</b>  <b>Other sampling method</b>
<b>October</b>	<b>Classification and tabulation of data analysis and interpretation of data</b>  <b>Research design steps and process of its formulation</b>  <b>Types of research design- exploratory, descriptive, diagnostic and experimental</b>
<b>November</b>	<b>Diagrammatic presentation of data</b>  <b>Revision &amp; SEMINAR</b>

**PAPER - II**  
**TITLE OF PAPER- NUTRITIONAL BIOCHEMISTRY**

<b>Month</b>	<b>Plan</b>
<b>July</b>	<p><b>Hetropolysaccharides</b> – Definition, classification, structure and properties of glycoprotein and proteoglycans.</p> <p><b>Plasma proteins</b> – Nature, properties and function.</p> <p><b>Intermediately metabolism</b> – Reactions, standard for energy changes and regulation, carbohydrates – glycolysis, glyconeogenesis, citric acid cycle, hexose-mono-phosphate pathway.</p> <p><b>Lipids</b> – Beta-oxidation, denovo synthesis of fatty acids, synthesis and breakdown of unsaturated fatty acids, cholesterol, phospholipids and triglycerol.</p>
<b>August</b>	<p><b>Purines and pyrimidines</b> –Source and Biosynthesis of purines and pyrimidines.</p> <p><b>Nucleic acids</b> – DNA replication and transcription.</p> <p>DNA Transcription and recombinant –  Bio medical importance, restriction enzymes, cloning, libraries and library construction.</p> <p>Gene Mutation – Codon, characteristics of genetic code, WOBBLE, Single base changes, transition transversion.</p> <p><b>rotein biosynthesis</b> – Initiation, formation of 40s initiation complex, formation of 80s initiation complex, elongation, steps of elongation.</p>
<b>September</b>	<p><b>Hormones</b> – General Characteristics , Classification &amp; Mechanism of action, assay of hormones. Chemistry and functions of different hormones – Thyroxine, TSH, LH, ACTH And Insulin.</p> <p><b>Minerals</b> – Trace elements, their physiological functions, sources, absorption, excretion and deficiency of iron, copper, iodine, zinc and selenium.</p>
<b>October</b>	<p>Detoxification in the body – Metabolism of foreign compounds, oxidation, conjugation, reduction, hydrolysis.</p> <p>Major alteration in carbohydrates, protein and fat metabolism in chronic nutrition relate degenerative disease. (Diabetes, Heart diseases).</p>
<b>November</b>	<b>REVISION &amp; SEMINAR</b>



## PAPER - III

### TITLE OF PAPER- CLINICAL NUTRITION

Month	Plan
<b>July</b>	<p>Etiopathophysiology, clinical symptoms, Complications, prevention and recent advances in nutritional management of GIT Disorders</p> <p>(i) <b>Peptic ulcer</b> – Aetiology, symptoms, dietary modification. Intervals of feeding, bland diet, four stage diet therapy, prevention of recurrence.</p> <p>(ii) <b>Diarrhoea</b>- Classification, modification of diet with special emphasis to fibre and fluids.</p> <p>(iii) <b>Constipation</b> – Classification, dietary consideration.</p> <p>(iv) <b>Ulcerative colitis</b> – Symptoms, dietary treatment</p> <p>(v) <b>Sprue</b> – Types, dietary consideration.</p> <p><b>Pancreatic disorders</b> – Etiology, Pathogenesis and nutritional care.</p>
<b>August</b>	<p>Diseases of <b>liver and gall bladder</b> :</p> <p>(vi) <b>Infective Hepatitis</b> – Types and dietetic management.</p> <p>(vii) <b>Cirrhosis</b> – Types and dietary management.</p> <p>(viii) <b>Cholecystitis and Cholelithiasis</b> –dietetic management.</p> <p><b>Cardio Vascular Diseases</b> –</p> <p>(i) Familial Hypercholesterolemia –nutritional care.</p> <p>(ii) Atherosclerosis–Etiological,factors,pathogenesis,dietetic management.</p> <p>(iii) Hypertension – Classification, etiology, nutritional care.</p>
<b>September</b>	<p><b>Renal Diseases</b> :</p> <p>Basic renal functions, Classification of renal diseases.</p> <p>(i) Glomerulonephritis – Acute and chronic – Symptoms and dietetic treatment</p> <p>(ii) Nephrosis – Symptoms and principles of nutritional care.</p> <p>(iii) Renal failure – Acute and chronic renal failure, dialysis.</p> <p>(iv) Renal Calculi – Etiology, types of stones and nutritional Care. Acid and alkaline ash diet.</p> <p><b>Fevers and infections-</b> Types of fever Tuberculosis, typhoid and malaria -Dietetic management</p>
<b>October</b>	<p>Historical background, prevalence, etiology, biochemical and clinical manifestations, preventive and therapeutic measures for metabolic disorders.</p> <p>Diabetes mellitus</p> <p>(i) Incidence and predisposing factors.</p> <p>(ii) Symptoms, types and diagnosis</p> <p>(iii) Metabolism in diabetes</p> <p>(iv) Dietary management</p>

	<p>(v) Hypoglycemic agents and insulin (vi)Complication of diabetes.</p> <p>Disorders of thyroid gland :</p> <p>Normal Thyroid Function</p> <p>(vii)       Hyperthyroidism – Symptoms and care. Hypothyroidism – Symptoms and care</p>
<b>November</b>	<b>REVISION &amp; SEMINAR</b>

#### PAPER - IV

#### TITLE OF PAPER- FOOD SCIENCE

<b>Month</b>	<b>Plan</b>
<b>July</b>	<p><b>Water-</b> structure and Physical properties of water and ice and chemical nature, adsorption phenomena, types of water solution and colligative properties.</p> <ul style="list-style-type: none"> <li>- Free bound water</li> <li>- Water activity and food spoilage.</li> <li>-</li> </ul> <p><b>Food dispersion</b> – Colloidal sol, stabilization of colloidal systems, Rheology of food dispersion.</p> <ul style="list-style-type: none"> <li>- Gels : Structure, formation, strength, types and permanence.</li> <li>- Emulsion : Formation, stability, surfactants and emulsifiers.</li> </ul> <p>- Foams : Structure, formation and stabilization.</p>
<b>August</b>	<p><b>Polysaccharides, sugars and sweeteners:</b></p> <p><b>Starch:</b> Structure, Gelatinization, Characteristics of some food starches, modified food starches. Non starch polysaccharides : Cellulose, hemicelluloses, pectin, gum, animal polysaccharides.</p> <p><b>Sugars and sweeteners:</b> Sugars, syrups, potent sweeteners, sugar product.</p> <ul style="list-style-type: none"> <li>- Sweetner chemistry related to usage in food products : Structural relationships to sweetness perception, hydrolytic reactions, solubility and crystallization, hygroscopicity, fermentation, non-enzymatic browning.</li> </ul> <p><b>Cereals and cereals products:</b></p> <ul style="list-style-type: none"> <li>- Cereals grains : Structure and composition</li> <li>- Flours and flour quality</li> </ul>

	- Extruded foods, breakfast cereals, wheat germ, bulger, puffed and flaked cereals
<b>September</b>	<b>Fats, oils and related products:</b>  Sources, Composition, effect of composition on fat properties. Functional properties of fat and uses in food preparation. Fat substitutes, fat deterioration (Rancidity) and antioxidants.
<b>October</b>	<b>Dairy products: Milk</b> Composition, physical and functional properties. Denaturation effects of processing and storage.  <b>Milk products:</b> Cultured milk, yogurt, butter, whey, cheese, concentrated and dried products, frozen desserts, dairy product substitutes.  <b>Enzymes:</b> Nature of enzymes, stability and action. Proteolytic enzymes, oxidase, lipases, enzymes decomposing carbohydrates, immobilised enzymes  Protein denaturation, non enzymatic browning
<b>November</b>	<b>REVISION &amp; SEMINAR</b>

**M.Sc IInd SEMESTER (FOOD & NUTRITION)**

**PAPER - I**

**TITLE OF PAPER- STATISTICS & COMPUTER APPLICATION**

<b>Month</b>	<b>Plan</b>
<b>January</b>	<b>Statistics: Meaning, definition, scope, importance, characteristics, distrust of statistics</b>  <b>Measurement of central tendency:</b>  <b>Mean</b>  <b>Median</b>  <b>Mode</b>
<b>February</b>	<b>Graphic presentation of Data: Importance, types</b>  <b>-Histogram</b>  <b>-Fequency Polygon</b>  <b>-Frequency Curve</b>  <b>Correlation: Definition, Meaning and types</b>  <b>Methods of determining coefficientof correlation</b>  <b>-Product moment method</b>  <b>-Rank correlation</b>  <b>Methods of dispersion and variation</b>  <b>Mean deviation</b> <b>Standard deviation</b> <b>Quartile deviation</b>
<b>March</b>	<b>Introduction to computers</b>  <b>What is computer? Characteristics, components of computer system, CPU, I/O devices and memory (RAM and ROM), secondary storage devices (Hard disk, floppy disk, magnetic tape etc.)</b>  <b>Analysis of variance</b>  <b>One way method: Direct and Shortcut</b>

<b>April</b>	<b>Computer generations</b>  <b>Classification of computer: Analog, digital, hybrid, general and special purpose computer</b>  <b>Types of computer: Micro, mini, mainframe and super computer</b>  <b>Chi-square test and goodness of fit</b>  <b>Application of student 't' test for small samples</b>  <b>Working with MS-word:</b>  <b>Getting started with word, formatting text and paragraph. Applying text and language tools. Designing pages with columns and tables, using graphics.</b>
<b>May</b>	<b>REVISION &amp; SEMINAR</b>

## PAPER - II

### TITLE OF PAPER- METHODS OF INVESTIGATION

<b>Month</b>	<b>Plan</b>
<b>January</b>	<p>Electrolytic dissociation : Principle, technique and theory of electrolytic dissociation.</p> <p>Hydrogen ion concentration : Principle and measurement of PH, indicators, buffers.</p> <p>Physiochemical techniques: Principles and methodology of the following-</p> <ul style="list-style-type: none"> <li>(a) Diffusion</li> <li>(b) Osmosis</li> <li>(c) Filtration</li> <li>(d) Surface tension</li> <li>(e) Adsorption</li> <li>(f) Centrifugation</li> </ul>

<b>February</b>	<p>Chromatography: Principles, techniques and application of the following-</p> <ul style="list-style-type: none"> <li>(a) Paper chromatography- Circular, ascending and descending.</li> <li>(b) Ion exchange chromatography</li> <li>(c) Column chromatography</li> <li>(d) Thin layer chromatography</li> <li>(e) Gas liquid chromatography</li> <li>(f) High performance liquid chromatography</li> </ul>
<b>March</b>	<p>Electrophoresis: Principles and techniques of paper and gel electrophoresis.</p> <p>Microbiological assay : Principle and methodology of the following-</p> <ul style="list-style-type: none"> <li>(a) Vitamins</li> <li>(b) Amino acids</li> </ul> <p>Colorimetry : Principles, applications.</p>
<b>April</b>	<p>Radioactive isotopes: Properties, detection and uses of radioactive isotopes in medical science.</p> <p>Immunological methods: Principle and technique of the following-</p> <ul style="list-style-type: none"> <li>(c) Radio Immuno Assay (RIA)</li> <li>(d) Enzyme Linked Immuno sorbent Assay (ELISA)</li> </ul> <p>Collection of biological samples.</p>
<b>May</b>	<b>REVISION &amp; SEMINAR</b>

## PAPER - III

### TITLE OF PAPER- PROBLEMS IN NUTRITION

Month	Plan
January	<p>Nutritional screening and assessment of nutritional status of hospitalized</p> <p>Identification of high risk patients. Assessment of patient need based on interpretation of patient data (Clinical, biochemical, biophysical, personal etc.)</p> <p>Nutritional support service: Recent advances in techniques and feeding methods.(enteral nutrition ,parental nutrition) pre and post operative diets, Diet in burns.</p>
February	<p><b>Weight imbalance–</b></p> <p><b>Obesity</b> – Types, etiology, assessment, treatment, diet and other measures, complications of obesity.</p> <p><b>Under weight</b> – Causes, dietetic management</p> <p><b>Neurological disorders :</b></p> <ul style="list-style-type: none"> <li>(i) Neuritis – Etiology, nutritional care.</li> <li>(ii) Migraine – Symptoms &amp; Dietary management</li> <li>(iii) Anorexia Nervosa – Etiology, treatment.</li> </ul>
March	<p><b>Diet in genetic disorders:</b></p> <p>Fructosuria, Galactosemia, Phenylketonuria.</p> <p><b>Musculoskeletal disorders:</b></p> <p>Gout – Characteristics, nutritional care</p> <p><b>Cancer:</b></p> <ul style="list-style-type: none"> <li>- Types of cancer, Nutritional effect of cancer, Nutritional disorders related to treatment,</li> <li>Nutritional care in cancer.</li> </ul>
April	<p>Prevalence , etiology, clinical manifestation, preventive and therapeutic measures for the following-</p> <p>Vitamin A deficiency</p> <p>IDD</p> <p>Rickets</p>

	<p>Dental carries : Etiology, nursing bottle carries.</p> <p>Nutrition in AIDS.</p>
May	<b>REVISION &amp; SEMINAR</b>



## PAPER - IV

### TITLE OF PAPER- FOOD CHEMISTRY

Month	Plan
January	<p>Meat and Poultry : Muscle composition, characteristics and structure. Post mortem changes during processing, preservation and their effects. Heat induced changes in meat variables in meat preparation, Tenderizing treatments, meat products.</p> <p>Eggs : Structure and composition, changes during storage. Functional properties of eggs, use in cookery. Egg processing, low cholesterol egg substitutes.</p>
February	<p>Fish and sea foods : Types and composition, storage and changes during storage, changes during processing, by- product and newer products.</p> <p>Pulses and Legumes : Structure, composition, processing, toxic constituents.</p> <p>Nuts and oil seeds : Composition, oil extraction and by-products.</p>
March	<p>Fruits and vegetables: Plant, anatomy, gross composition, structure, features and activities of living systems. Enzymes in fruits and vegetables. Flavour constituents, plant phenolics, pigments, post harvest changes. Texture of fruits and vegetables. Effects of storage, processing and preservation.</p> <p>Spices and condiments: Composition, flavouring extracts – Natural and synthetic.</p> <p>Beverages : Synthetic and natural, alcoholic and non-alcoholic, carbonated and non- carbonated, coffee, tea, cocoa, malted drinks.</p>
April	<p>Traditional processed products : jam, jellies &amp; squash.</p> <p>Protein concentrates : Hydrolysates and textured vegetable proteins, milk substitutes.</p> <p>Fermented food-cereal based, pulse based, fruit/vegetables based like vinegar, pickle and alcoholic beverages.</p> <p>Leavened products: Leavened agents biologically leavened and chemically leavened products. Batters and dough, bakery products.</p> <p>Salt and salt substitutes</p>
May	REVISION & SEMINAR

M.Sc IIIrd SEMESTER (FOOD & NUTRITION)

PAPER - I

TITLE OF PAPER- FOOD MICROBIOLOGY

Month	Plan
July	<p>Bacterial morphology, structure, structure, staining, culture media, culture method and identification of Bacteria.</p> <p>Growth and Nutrition of Bacteria :</p> <p>Microbial Criteria of Food.</p> <p>Microbial Standards and food safety.</p> <p>Microorganism important in food microbiology – Mold, Yeast, Bacteria.</p> <p>Controlling the microbial quality of foods –</p> <p>Quality control using microbial crities</p> <p>The HACCP – (Hazard Analysis and Critical Control Point) SYSTEM.</p> <p>Spoilage of different groups of foods :</p> <p>Cereals and cereal products</p> <p>Vegetables and fruits</p> <p>Fish and meat</p> <p>Eggs and poultry</p> <p>Milk and milk products</p> <p>Canned foods</p>
August	<p>Contamination of foods</p> <p>Food Preservation:</p> <p>General principles of food preservation:</p> <p>Asepsis, removal of micro-organism, maintenance of anaerobic conditions.</p> <p>Preservation by use of high temperature</p> <p>Preservation by use of low temperature</p> <p>Preservation by drying</p> <p>Preservation by food additives</p> <p>Preservation by radiation.</p>
September	<p>Preservation by radiation.</p> <p>(i) Food borne illness: Bacterial and viral food borne disorders. Food borne important animal parasites, mycotoxins.</p>
October	<p>Fermented foods:</p> <p>Role of microbes in fermented foods -</p> <p>Fermented dairy products</p> <p>Fermented vegetables</p> <p>Fermented meat</p> <p>Fermented fish</p> <p>Beverage and distilled products.</p> <p>Anti Microbial Therapy</p> <p>Food laws.</p>
November	REVISION & SEMINAR

## PAPER - II

### TITLE OF PAPER- NUTRITION FOR HEALTH OF WOMEN AND CHILDREN

Month	Plan
July	<p>Women in family and community : Demographic changes menarche, marriage, fertility, morbidity, mortality, life expectancy, sex ratio, aging, widowhood.</p> <p>Women and Health : Health facilities. Disease pattern and reproductive health.</p> <p>Policies and programs for promoting maternal and child nutrition and health.</p> <p>Concept of small family. Methods of family planning merits and demerits.</p>
August	<p>Importance of nutrition prior to and during pregnancy-prerequisites for successful outcome.</p> <p>Effect of under nutrition on mother and child including pregnancy outcome and maternal and child health - short term and long term effect.</p> <p>Physiology and endocrinology of pregnancy, embryonic and foetal growth and development.</p> <p>Nutritional requirements during pregnancy: Adolescent pregnancy, pregnancy and T.B., IUGE, gestational diabetes.</p>
September	<p>Lactation – Development of mammary tissue and role of hormones – Physiology and endocrinology of lactation. Synthesis of milk component, let down reflex, role of hormones. Lactational amenorrhea, effect of breast feeding on maternal health.</p> <p>Human milk composition and factors affecting breast feeding. Human milk banking.</p> <p>Management of Lactation : Prenatal breast feeding, skill education. Rooming in problems - sore nipples, engorged breast, inverted breast.</p> <p>Exclusive breast feeding.</p>
October	<p>Infant physiology : Preterm and low birth weight infant – Implication for feeding and management.</p> <p>Growth and development during infancy, childhood and adolescents.</p> <p>Feeding of infants and children and dietary management.</p> <p>Malnutrition – Etiology and management.</p>
November	REVISION & SEMINAR

### PAPER - III

#### TITLE OF PAPER- NUTRITION FOR HEALTH AND FITNESS

Month	Plan
July	<b>Definition, components of fitness</b>  Anatomical fitness  Physiological fitness  Psychological Fitness Physiological fitness :  (a) Growth and development, (b) Strength, (c) Speed, (d) Skill, (e) Stamina or endurance, specific fitness, general fitness and health status.  Holistic approach to the management of fitness and health
August	<b>Review of different energy systems for endurance and power activity:</b>  Endurance : Definition, classification of endurance, factors affecting endurance.  Fuels and nutrients to support physical activity : Shifts in carbohydrates and fat metabolism, mobilization of fat stores during exercise.  Nutrition in Sports : Sports specific requirement.  Pregame and post game meals. Assessment of different nutrigenic aids. Commercial supplements.
September	Diets for persons with high energy requirements, stress, fracture and injury.  Water and electrolyte balance: Losses and their replenishment during exercise and sports. Effect of dehydration.  Alternative systems for health and fitness like ayurveda, yoga, Meditation, Vegetarianism.
October	(A) Significance of physical fitness in the prevention and management of :  Diabetes mellitus, (ii) Cardiovascular disorders, (iii) Bone health and obesity.  Nutrition and exercise regimes for pre and post natal fitness.

	<p>A Defining nutritional goals/guidelines appropriate to health and prevention and management of the chronic degenerative disorder -</p> <p>(a) Cardiovascular disorders, (b) Diabetic mellitus (c) Cancer,</p> <p>(d) Bone health and obesity</p> <p>B. Various dietary regimes for weight reduction.</p>
<b>November</b>	<b>REVISION &amp; SEMINAR</b>

#### **PAPER - IV**

#### **TITLE OF PAPER- ADVANCED NUTRITION**

<b>Month</b>	<b>Plan</b>
<b>July</b>	<p>Energy :</p> <p>Energy content of foods, physiological fuel values.</p> <p>Measurement of energy expenditure – BMR, RMR, Thermal effect of feeding and physical activity. Methods of measurement of basal metabolism.</p> <p>Estimating energy requirements of individuals.</p> <p>Carbohydrates:</p> <p>Classification, general functions of carbohydrates</p> <p>Dietary fiber</p> <p>fructo - oligosaccharids</p> <p>Starch : chemical composition and physiological effects.</p> <p>Glycemic index of foods</p>

<b>August</b>	<p>Proteins :</p> <p>Classification &amp; general functions of Protein</p> <p>Role of liver and gastro intestinal tract in protein metabolism</p> <p>Protein quality – Methods of evaluating Quality</p> <p>Protein and amino acid requirements, specific functions of amino acids.</p> <p>Lipids :</p> <p>Classification &amp; functions of Lipids</p> <p>EFA: Role of N-3, N-6 fatty acids in health and diseases requirement of total fat and fatty acid.</p> <p>Prostaglandins, phospholipids, cholesterol.</p>
<b>September</b>	<p>Water : Water balance and its regulation.</p> <p>Minerals :</p> <p>(For each nutrient sources, bioavailability, metabolism, function, requirements, RDI, deficiency and toxicity to be discussed)</p> <p>Macro Minerals : Calcium, Phosphorus, Magnesium, sodium, potassium and chlorides.</p> <p>Micro Minerals : Iron, copper, zinc, manganese, iodine, fluoride.</p> <p>Trace Minerals : Selenium, Cobalt, chromium, vanadium, boron, nickel.</p>
<b>October</b>	<p>Vitamins:</p> <p>Structure, food sources, absorption and transport, metabolism, biochemical functions, assessment of status physiological and therapeutic effect. The toxicity and deficiency with respect to the following:</p> <p>Fat soluble vitamin - A, D, E and K</p> <p>Water soluble vitamin – Thiamin, riboflavin, niacin, biotin, pyridoxine, folic acid, pantothenic acid, chlorine, cyanocobalamin, inositol, ascorbic acid.</p>

<b>November</b>	<b>REVISION &amp; SEMINAR</b>
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**M.Sc IVth SEMESTER (FOOD & NUTRITION)**

**PAPER - I**

**TITLE OF PAPER- PHYSIOLOGY**

<b>Month</b>	<b>Plan</b>
<b>January</b>	<p>Cell Structure and Functions:</p> <p>Levels of cellular organizations and function - Brief review. Cell Membrane, transport across cell membrane and intercellular communication, Regulations of cell multiplication.</p> <p>Nervous System:</p> <p>Review of structure and function of neuron. Conduction of nerve impulse, synapses, role of neurotransmitters.</p> <p>Organisation of central nervous system, structure and functions of brain and spinal cord, afferent and efferent nerves. Hypothalamus and its role in various body functions – Obesity, sleep, memory.</p> <p>Immune system:</p> <p>Humoral immunity. Development of lymphocytes. Role of inflammation and defence.</p>
<b>February</b>	<p>Endocrine System:</p> <p>Endocrine glands – Structure, function, role of hormones, regulation of hormonal secretion. Disorders of endocrine glands.</p> <p>Sense organs:</p> <p>Review of structure and function. Role of skin, eye, ear, nose and tongue in perception of stimuli.</p> <p>Reproduction:</p> <p>Menstrual cycle, spermatogenesis, physiological changes in pregnancy.</p>
<b>March</b>	<p>Digestive System:</p> <p>Review of structure, secretory, digestive and absorptive functions. Role of liver, pancreas and gall bladder and their dysfunction.</p> <p>Respiratory Function:</p> <p>Review of structure and function. Role of lungs in the exchange of gases.</p>



	<p>Transport of oxygen and carbon dioxide, respiratory quotient, hypoxia and asthma.</p> <p>Excretory System:</p> <p>Structure and function of nephron. Urine formation. Water, electrolyte and acid base balance, diuretics.</p>
<b>April</b>	<p>Circulating System:</p> <p>Structure and function of heart and blood vessels. Regulation cardiac output and blood pressure, heart failure, hypertension.</p> <p>Blood:</p> <p>Formation and function of plasma protein and blood erythropoiesis, blood Clotting, blood group and histocompatibility, blood indices, use of blood for investigation and diagnosis of specific disorders, anaemia.</p> <p>Musculo-Skeletal System:</p> <p>Structure and function of bone, cartilage and connective tissue. Disorders of skeletal system.</p> <p>Types of muscles, Structure and Function.</p>
<b>May</b>	<b>REVISION &amp; SEMINAR</b>

**PAPER - II**

**TITLE OF PAPER- PUBLIC NUTRITION**

<b>Month</b>	<b>Plan</b>
<b>January</b>	Concept of Public Health Nutrition:  - Relationship between health and nutrition.  Role of public nutritionist in the Health care delivery system.  Health Care of the community. National health care delivery system.
<b>February</b>	Population dynamics:  Demography, demographic cycle, world population trend, birth rates, death rates, growth rates, demographic trends in India, age pyramid, sex ratio.  Environment and Health:  Water: Water pollution, surveillance of drinking water quality. Air: Air pollution
<b>March</b>	Nutritional Status:  Determinants of nutritional status of individual and populations.  Major Nutritional Problems:  Etiology, prevalence, clinical manifestations. Preventive and therapeutic measures of- Macro and micro deficiencies – LBW, PEM, xerophthalmia, nutritional anemia.
<b>April</b>	Other nutritional problems like lathyrism, aflatoxicosis, alcoholism and fluorosis.  National Nutrition Policy.  Health Planning in India.  Occupational Health.
<b>May</b>	<b>REVISION &amp; SEMINAR</b>

### PAPER - III

#### TITLE OF PAPER- GERIATRIC NUTRITION

Month	Plan
January	<p>Aging: Definition</p> <p>Molecular changes during aging – (i) Changes in proteins, (ii)Chromatin, (iii) Cross linkers, (iv)Immune response, (v) Hormones, (vi) Ageing of cells in culture,</p> <p>(vii) Age pigment.</p> <p>Mechanism of Aging-</p> <p>Somatic Mutation,</p> <p>Errors in proteins</p> <p>Gene regulation</p> <p>Socio-Psychological aspects of aging- Especially problems of elderly women.</p>
February	<p>Nutritional and Food requirement during old age- Process of aging, nutritional requirements</p> <p>Nutrition related problems of old age-</p> <p>- (i) Osteoporosis, (ii) Obesity, (iii) Neurological dysfunction, (iv) Anemia, (v) Malnutrition, (vii)Constipation.</p> <p>Policies and program of the government to the elderly.</p> <p>Policies and program of the NGO sector pertaining to the elderly.</p>
March	<p>Degenerative diseases in old age-</p> <p>(i) Atherosclerosis, (ii) Hypertension, (iii) Cancer, (iv) Diabetes mellitus, (v) Arthritis</p> <p>Common complaints during oldage.</p> <p>Dietary guidelines</p>
April	<p>Drug – Food and nutrient reaction in elderly.</p> <p>Effect of drugs on food intake and absorption.</p> <p>Effect of various foods and beverages on drug action.</p> <p>Drug nutritional interaction.</p>

	<p>Aging and Immunity.</p> <p>Aging and Nutrition, nutrition and longevity, food habits of elderly people, stress during oldage.</p>
<b>May</b>	<b>REVISION &amp; SEMINAR</b>

#### **PAPER - IV**

##### **TITLE OF PAPER- RESEARCH METHODS IN FOOD &NUTRITION**

<b>Month</b>	<b>Plan</b>
<b>January</b>	<p>Body Composition:-</p> <p>Normal Body Composition</p> <p>Changes through the lifecycle</p> <p>Methods of Assessing body composition</p> <p>Diet Surveys-Following factors to be considered in conducting diet surveys:-</p> <p>Trained personnel</p> <p>Population sampling</p> <p>Methods of diet surveys</p> <p>Calculation of the nutritive value of the diet in terms of adult consumption unit and interpretation.</p> <p>Nutrition Education:-</p> <p>Training in Nutrition</p> <p>Channels of nutrition education of the community</p> <p>Nutrition education methods</p>
<b>February</b>	<p>Principles of Epidemiology – Definition, aims, uses, epidemiological approach</p> <p>Screening for Disease – Concept of screening, aims and objective,</p> <p>-Types of screening ,Uses of screening,</p>

	<p>Design Strategies in research. (Descriptive Studies):-</p> <ul style="list-style-type: none"> <li>- Issues in the design and conduct of descriptive studies–</li> </ul> <p>Defining the population, defining the disease, measurement of disease, comparing with known indices, formulation of hypothesis, uses of descriptive studies.</p>
<b>March</b>	<p>Design strategies in Research – (Analytical Studies I):-</p> <ul style="list-style-type: none"> <li>- Issues in the design and conduct of case control studies – Selection of cases. selection of controls, matching, exposure status, analysis, advantages and disadvantages.</li> </ul> <p>Design Strategies in Research – ( Analytical Studies II):-</p> <ul style="list-style-type: none"> <li>- Issues in the design of cohort studies – Selection of exposed population, selection of comparison group, obtaining data on exposure, follow-up, analysis, advantages, disadvantages.</li> </ul> <p>Health Information – Component of health information system, Sources of health information, Uses of Health information</p>
<b>April</b>	<p>Experimental Studies:-</p> <p>Randomized controlled trials (Clinical trials) -- Protocol, selection of reference and experimental population, randomization, manipulation, follow-up, assessment. Brief Overview of Case Study and Cross Sectional Survey</p> <p>Brief Overview of Case Study and Cross Sectional Survey</p> <p>Qualitative Research-</p> <p>PRA - (a) Concept of PRA</p> <p>Tools and Techniques</p> <p>Evaluation</p>
<b>May</b>	<b>REVISION &amp; SEMINAR</b>

## M.Sc. FOODS AND NUTRITION

### I<sup>st</sup> SEMESTER

SESSION: 2020-2021

### PAPER:III

#### NAME OF PAPER: CLINICAL NUTRITION

January	<p>Etiopathophysiology, clinical symptoms, Complications, prevention and recent advances in nutritional management of GIT Disorders</p> <p>(i) <b>Peptic ulcer</b> – Aetiology, symptoms, dietary modification. Intervals of feeding, bland diet, four stage diet therapy, prevention of recurrence.</p> <p>(ii) <b>Diarrhoea</b>- Classification, modification of diet with special emphasis to fibre and fluids.</p>
February	<p><b>Constipation</b> – Classification, dietary consideration.</p> <ul style="list-style-type: none"><li>• <b>Ulcerative colitis</b> – Symptoms, dietary treatment</li><li>• <b>Sprue</b> – Types, dietary consideration.</li><li>• <b>Pancreatic disorders</b> – Etiology, Pathogenesis and nutritional care.</li></ul>
March	<ul style="list-style-type: none"><li>• Diseases of <b>liver and gall bladder</b> :<ul style="list-style-type: none"><li>○ <b>Infective Hepatitis</b> – Types and dietetic management.</li><li>○ <b>Cirrhosis</b> – Types and dietary management.</li><li>○ <b>Cholecystitis</b> and <b>Cholelithiasis</b> –dietetic management.</li><li>○ <b>Cardio Vascular Diseases</b> –<ul style="list-style-type: none"><li>• Familial Hypercholesterolemia –nutritional care.</li><li>○ Atherosclerosis–Etiological,factors,pathogenesis,dietetic management.</li><li>• Hypertension – Classification, etiology, nutritional care.</li></ul></li></ul></li></ul>
April	<ul style="list-style-type: none"><li>• <b>Renal Diseases</b> Basic renal functions, Classification of renal diseases.<ul style="list-style-type: none"><li>a. Glomerulonephritis – Acute and chronic – Symptoms and dietetic treatment</li><li>b. Nephrosis – Symptoms and principles of nutritional care.</li><li>c. Renal failure – Acute and chronic renal failure, dialysis.</li><li>d. Renal Calculi – Etiology, types of stones and nutritional Care. Acid and alkaline ash diet.</li></ul></li><li>• <b>Fevers and infections</b>- Types of fever Tuberculosis, typhoid and malaria -Dietetic management</li></ul>
May	<p>Historical background, prevalence, etiology, biochemical and clinical manifestations, preventive and therapeutic measures for metabolic disorders.</p> <p>Diabetes mellitus</p> <p>(i) Incidence and predisposing factors.</p> <p>(ii) Symptoms, types and diagnosis</p> <p>(iii) Metabolism in diabetes</p> <p>(iv) Dietary management</p> <p>(v) Hypoglycemic agents and insulin</p> <p>Complication of diabetes Disorders of thyroid gland :</p>

	<p>Normal Thyroid Function</p> <p>(i) Hyperthyroidism – Symptoms and care.</p> <p>(ii) Hypothyroidism – Symptoms and care</p> <p>REVISION</p>
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## M.Sc. FOOD AND NUTRITION

### III<sup>rd</sup> SEMESTER

SESSION: 2020-21

### PAPER: IV

### NAME OF PAPER: ADVANCED NUTRITION

October	<p><b>Energy:</b></p> <p>(a) Review of Energy content of foods, physiological fuel values-.</p> <p>(b) Measurement of energy expenditure – BMR, RMR. Thermal effect of feeding and physical activity. Methods of measurement of basal metabolism.</p> <p>(c) Estimating energy requirements of individuals.</p> <p>(d) Regulation of energy metabolism – Control of food intake, digestion, absorption and body weight.</p>
November	<p><b>Carbohydrates:</b></p> <p>(a) Review of Types, classification, digestion and transport of carbohydrates</p> <p>(b) Dietary fiber, fructo-oligosaccharides</p> <p>Starch :chemical composition and physiological effects.</p> <p>(c) Glycemic index of foods,sweeteners – Nutritive and non-nutritive.</p>
December	<p><b>Proteins:</b></p> <p>(a) Review of Classification, Digestion, absorption and transport of Proteins</p> <p>(b) Role of liver and gastro intestinal tract in protein metabolism.</p> <p>(c) Protein quality – Methods of evaluating Quality.</p> <p>(d) Protein and amino acid requirements, specific functions of amino acids.</p>
January	<p><b>Lipids:</b></p> <p>(a) Review of Classification, digestion, absorption and transport of Lipids</p> <p>(b) Functions of fat, EFA: Role of N-3, N-6 fatty acids in health and diseases requirement of total fat and fatty acid.</p> <p>(c) Prostaglandins, phospholipids, cholesterol.</p>
February	<p><b>Water:</b> Water balance and its regulation</p> <p><b>Minerals :</b>(For each nutrient sources, bioavailability, metabolism, function, requirements, RDI, deficiency and toxicity to be discussed)</p> <p>(a) Macro minerals : Calcium, Phosphorous, Magnesium, sodium, potassium and chlorides.</p> <p>(b) Micro Minerals: Iron, copper, zinc, manganese, iodine, fluoride.</p> <p>(c) Trace minerals: Selenium, Cobalt, chromium, vanadium, boron, nickel</p>

March	<p><b>Vitamins:</b>  Structure, food sources, absorption and transport, metabolism, biochemical functions, assessment of status physiological and therapeutic effect. The toxicity and deficiency with respect to the following:</p> <p>(a) Fat soluble: Vitamin A,D. E And K</p> <p>(b) Water soluble: Thiamin, riboflavin, niacin, biotin, pyridoxine, folic acid, pantothenic acid, choline, cyanocobalamin, inositol, ascorbic acid. Revision</p>
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**M.Sc. FOODS AND NUTRITION**

**II<sup>nd</sup> SEMESTER**

**SESSION: 2020-21**

**PAPER: III**

**NAME OF PAPER: PROBLEMS IN HUMAN NUTRITION**

June	<p>Nutritional screening and assessment of nutritional status of hospitalized and outdoor patients.</p> <p>Identification of high risk patients. Assessment of patient need based on interpretation of patient data (Clinical, biochemical, biophysical, personal etc.)</p> <p>2. Nutritional support service: Recent advances in techniques and feeding methods. (enteral nutrition, parenteral nutrition)</p> <p>3. pre and post operative diets, Diet in burns.</p> <p><b>Weight imbalance</b> –</p> <p><b>Obesity</b> – Types, etiology, assessment, treatment, diet and other measures, complications of obesity.</p> <p><b>Under weight</b> – Causes, dietetic management</p>
July	<p><b>Neurological disorders</b> :</p> <p>(i) Neuritis – Etiology, nutritional care.</p> <p>(ii) Migraine – Symptoms &amp; Dietary management</p> <p>Anorexia Nervosa – Etiology, treatment</p> <p><b>Diet in genetic disorders</b> :</p> <p>Fructosuria, Galactosemia, Phenylketonuria.</p> <p><b>Musculoskeletal disorders</b> :</p> <p>Gout – Characteristics, nutritional care</p>
August	<p><b>Cancer</b> :</p> <p>Types of cancer, Nutritional effect of cancer, Nutritional disorders related to treatment Nutritional care in cancer.</p> <p>Prevalence, etiology, clinical manifestation, preventive and therapeutic measures for the following-</p> <p>Vitamin A Deficiency</p> <p>IDD</p>
September	<p>Dental caries : Etiology, nursing bottle caries.</p> <p>Nutrition in AIDS.</p> <p>Rickets</p> <p>REVISION</p>

**M.Sc.FOOD AND NUTRITION**

**IV<sup>th</sup> SEMESTER**

**SESSION: 2020-2021**

**PAPER: IV**

**NAME OF PAPER: RESEARCH METHODS IN FOOD &NUTRITION**

June	<p>Body Composition :-</p> <ul style="list-style-type: none"><li>(a) Normal Body Composition</li><li>(b) Changes through the life cycle</li><li>(c) Methods of Assessing body composition</li></ul> <p>Diet Surveys-Following factors to be considered in conducting diet surveys:-</p> <ul style="list-style-type: none"><li>(a) Trained personnel</li><li>(b) Population sampling</li><li>(c) Methods of diet surveys</li><li>(d) Calculation of the nutritive value of the diet in terms of adult consumption unit and interpretation.</li></ul> <p>Nutrition Education:-</p> <ul style="list-style-type: none"><li>(a) Training in Nutrition</li><li>(b) Channels of nutrition education of the community</li><li>(c) Nutrition education methods</li></ul>
July	<p>Design strategies in Research – (Analytical Studies I):-</p> <p>Brief overview – Case control, clinical trials.</p> <p>Issues in the design and conduct of case control studies – Selection of cases. selection of controls, matching, exposure status, analysis, advantages and disadvantages</p> <p>Screening for Disease – Concept of screening, aims and objective, -Types of screening ,Uses of screening</p> <p>Design Strategies in research. (Descriptive Studies):-</p> <ul style="list-style-type: none"><li>(a) Brief Overview of Case study, Cross sectional surveys.</li><li>(b) Issues in the design and conduct of descriptive studies – Defining the population, defining the disease, measurement of disease, comparing with known indices, formulation of hypothesis, uses of descriptive studies.</li></ul>
August	<p>Principles of Epidemiology – Definition, aims, uses, epidemiological approach</p> <p>Design Strategies in Research –( Analytical Studies II):-</p> <ul style="list-style-type: none"><li>(a) Overview of types of cohort studies.</li><li>(b) Issues in the design of cohort studies – Selection of exposed population, selection of comparison group, obtaining data on exposure, follow-up, analysis, advantages, disadvantages.</li></ul>

September	<p>Health Information – Component of health information system, Sources of health information, Uses of Health information</p> <p>Experimental Studies:- Randomized controlled trials (Clinical trials) -- Protocol, selection of reference and experimental population, randomization, manipulation, follow-up, assessment.</p> <p>Qualitative Research- PRA - (a) Concept of PRA (b) Tools and Techniques (c) Evaluation</p>
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**PROPOSED TEACHING PLAN FOR THE SESSION 2019-20**

**B.A. I ECONOMICS  
PAPER- I  
MICRO ECONOMICS**

<b>MONTH/DAYS</b>	<b>UNIT</b>	<b>TOPIC</b>
JULY /27	UNIT –I	Introduction-Definitions, Nature and scope of Economics, Methodology in Economics.
AUGUST/24	UNIT-I	Utility–Cardinal and Ordinal Approaches, Indifference Curve, Consumer's equilibrium, Giffin goods, compensated demand. Demand- Law of Demand, Elasticity of demand, Price, income and cross elasticity, Consumer's surplus.
SEPTEMBER/24	UNIT-II	Theory of Production and Cost– Production decision, Production function, Iso-quant, Factor substitution, Law of variable proportions, Returns to scale, Economies of scale. Different concepts of cost and their interrelation, Equilibrium of the firm.
OCTOBER/18	UNIT-III	Market structure-perfect and imperfect markets, Equilibrium of a firm-perfect competition.
NOVEMBER/25	UNIT-III	Monopoly and price discrimination. Monopolistic competition- Duopoly, Oligopoly, controlled and administered prices.
DECEMBER/20	UNIT –IV	Factor Pricing-Marginal productivity theory of distribution. Theories of wage determination- wages and collective bargaining wage differentials.
JANUARY/27	UNIT –IV	Rent – Scarcity Rent, differential rent, Quasi rent, Modern Rent Theory. Interest -Classical and Keynesian Theories, Modern Theory. Profits – Innovation, Risk bearing and Uncertainty theories.
FREBRUARY/25	UNIT –V	Welfare economics – What welfare economics is about? Role of value judgments in welfare economics, Pigou's contribution in the field of welfare economics. Parato's optimality. New welfare economics – Kaldor, Hicks welfare criterion, Scitovsky paradox, Social welfare function and social choice. Bergson's –Samuelsson social welfare function, Prof. Amartya Sens critique, Arrow impossibility theorem

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**PROPOSED TEACHING PLAN FOR THE SESSION 2019-20**

**B.A. I ECONOMICS**

**PAPER- II**

**INDIAN ECONOMY**

<b>MONTH/DAYS</b>	<b>UNIT</b>	<b>TOPIC</b>
JULY /27	UNIT –I	Pre and post independent Indian economy- A short introduction of Economic policies of British India, state of economy at the time of independence.
AUGUST/24	UNIT-I	Planning exercise in India- Planning in India through different five years plans, The Planning Commission and NITI Aayog Growth and development in pre-reform period. New Economic Reforms- Liberalization, Privatization and Globalization. Growth, development and structural change in post reform period.
SEPTEMBER/24	UNIT-II	Population and human development – demographic trends and issues of Education health malnutrition and migration, growth and distribution. Trends and policies in poverty, inequalities, unemployment and occupational distribution. International comparison in human development and poverty reduction
OCTOBER/18	UNIT-III	Agriculture –Nature and importance, Trends in agriculture productivity, factors determining productivity, Land reforms, new agriculture strategies and green revolution ,rural credit,
NOVEMBER/25	UNIT-III	Agricultural marketing, natural resources and infra-structure development: Performance, problems and policies, MUDRA Yojna.
DECEMBER/20	UNIT –IV	Industry: Growth and productivity, Industrial policy and reforms, Growth and problems of small and cottage scale industries,
JANUARY/27	UNIT –IV	Role of public sector enterprises in India's industrialization. Trends and performance in services.
FREBRUARY/25	UNIT –V	External sector- Role of foreign trade, Trends in exports and imports, Composition and direction of India's foreign trade, Export promotion measures and the new trade policies, Recent macroeconomic scenario: National income, investment, saving and inflation, Current macroeconomic policies and their impact, fiscal policies and monetary policy.

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**B.A. II ECONOMICS**

**PAPER- I**

**MACRO ECONOMICS**

MONTH/DAYS	UNIT	TOPIC
JULY /27	UNIT –I	National Income:-Concept and Measurement of National Income; Economic welfare and national income, Social accounting. Circular flow of income. National Income accounting, Green accounting.
AUGUST/24	UNIT-I	Classical theory of employment, Say's Law of Markets, Keynesian theory of employment
SEPTEMBER/24	UNIT-II	Consumption function – Average and marginal propensity to consume; Keynes's psychological law of consumption, determinants of the consumption function. The saving function. The investment multiplier and its effectiveness. , The investment function – marginal efficiency of capital, autonomous and induced investment. Saving and investment equality
OCTOBER/18	UNIT-III	Nature and characteristics of trade cycle; theories of trade cycle , Hawtrey's monetary theory; Hayek's over investment theory
NOVEMBER/25	UNIT-III	Keynes' view on trade cycle; Schumpeter's theory of innovation. Samuelson and Hicks multiplier- accelerator model, Control of trade cycles.
DECEMBER/20	UNIT –IV	International Trade – Inter-regional and international trade, Comparative advantage cost theory, opportunity Cost theory and Hecksher-Ohlin theory.
JANUARY/27	UNIT –IV	International trade and economic development, Tariffs & import Quotas. Concept of optimum tariff. Balance of trade & Balance of Payment- Concept & Components of BOP, Equilibrium & Disequilibrium in BOP. Relative merits & demerits of devaluation. Foreign Trade Multiplier.
FREBRUARY/25	UNIT –V	Functions and objective of international monetary fund, World Bank and world trade organization, international monetary reform and India, Foreign Trade in India- recent Changes in the Composition and direction of foreign trade. India's balance of payment, export promotion and import substitution in India, multinational corporation and India.

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**PROPOSED TEACHING PLAN FOR THE SESSION 2019-20**

**B.A. II ECONOMICS**

**PAPER- II**

**MONEY BANKING AND PUBLIC FINANCE**

<b>MONTH/DAYS</b>	<b>UNIT</b>	<b>TOPIC</b>
JULY /27	UNIT –I	Basic concepts: Money – Meaning and functions, Gresham's law; Quantity theory of money – Cash transaction and cash balance approaches;
AUGUST/24	UNIT-I	Value of Money- Inflation, deflation and reflation, definition, types, causes and effects of inflation on different sectors of the economy; Demand pull and cost push inflation; Measures to control inflation. Phillips curve, concept
SEPTEMBER/24	UNIT-II	Commercial banking- meaning and types; Functions of commercial banks, The process of credit creation purpose and limitations; Liabilities and assets of banks; Functions of a central bank, Role and functions of the Reserve bank of India; Objectives and limitations of monetary policy with special reference to India.
OCTOBER/18	UNIT-III	Meaning and scope of public finance; Distinction between private and public finance; public goods v/s private goods; The principle of maximum social advantage; Role of the government in economic activities;
NOVEMBER/25	UNIT-III	Public expenditure – Meaning, classification and principles of public expenditure, Trends in public expenditure and causes of growth of public expenditure in India.
DECEMBER/20	UNIT –IV	Sources of Public revenue- Taxation – Meaning, Canons and classification of taxes; Division of tax burden. The benefit and ability to pay approaches; Impact and incidence of taxes;
JANUARY/27	UNIT –IV	Taxable capacity; Effects of taxation; Characteristics of a good tax system, equity and justice in taxation Major trends in tax revenue of the Central and state Government in India
FREBRUARY/25	UNIT –V	Public debt and financial administration- Sources of public borrowing effects of public debt. Methods of debt redemption.  The public budget- Kinds of budget, Economic and functional classification of the budget; Preparation and passing of budget in India.

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**PROPOSED TEACHING PLAN FOR THE SESSION 2019-20**

**B.A. III ECONOMICS**

**PAPER- I**

**DEVELOPMENT AND ENVIRONMENTAL ECONOMICS**

<b>MONTH/DAYS</b>	<b>UNIT</b>	<b>TOPIC</b>
JULY /27	UNIT –I	Economic Growth and Development – Factors affecting economic growth, Capital and Technology Development & under development, Population of Under-developed Countries,
AUGUST/24	UNIT-I	Poverty-Absolut & Relative, Measuring development and Under development, Gap per capita income, Inequity of income and wealth. Human Development index GDI, GEM, Poverty Index of development & Quality of life.
SEPTEMBER/24	UNIT-II	Population problem and growth, pattern of population. Theory of demographic transition. Population poverty & Environment. Theory of Social Change, Immutable laws of Capitalist Development-Crisis in capitalism. Karl Marx, Mahalonobis Model. Schumpeter, Big-Push, Balance and unbalanced Growth, Critical Minimum Effort thesis, Low-Income Equilibrium Trap, Dualism: technical, behavioural & social
OCTOBER/18	UNIT-III	Harrod and Domar Growth Model, Neo Classical models, Solow
NOVEMBER/25	UNIT-III	Meade & Mrs. Joan Robinson's Growth model, Unlimited supply of Labour.
DECEMBER/20	UNIT –IV	Environment and Ecology: Economic linkage, Environment as a necessary and luxury, Population environment linkage, Environmental use & environmental disruption as an allocation problem. Market Failure for environmental goods, environment as a public good, the Common Property problem.
JANUARY/27	UNIT –IV	Human Right approach to environmental problem, valuation of environmental damages; land, water, air & forest pollution Control-Prevention. Control and abetment of pollution, Choice of policy instrument
FREBRUARY/25	UNIT –V	Concept of Intellectual Capital – Food Security, Education Health & Nutrition, Efficiency & Productivity in Agriculture, New Technology & Sustainable Agriculture, Globalization & Agriculture growth, the Choice of Technique & appropriate technology & employment, Role of Monetary & Fiscal policies in developing Countries



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**PROPOSED TEACHING PLAN FOR THE SESSION 2019-20**

**B.A. III ECONOMICS**

**PAPER- II**

**STATISTICAL METHODS**

MONTH/DAYS	UNIT	TOPIC
JULY /27	UNIT –I	Statistical Methods Statistics – Definition Statistical Data, Statistical Methods, Functions of Statistics. Importance of Statistics, Limitations of Statistics, Statistical Survey & Report writing.
AUGUST/24	UNIT-I	Collection of Data, Primary & Secondary Data, Sampling & Sampling Designs. Sampling Errors, Frequency Distribution, Diagrammatic & Graphic Presentation
SEPTEMBER/24	UNIT-II	Central Tendency. Measurement of Mean, Median, Mode, Geometric Mean & Harmonic Mean and their uses.
OCTOBER/18	UNIT-III	Dispersion : Meaning of Dispersion, Properties, good measure of Variation – Methods of Dispersion Range, Quartiles Deviation – Mean Deviation,
NOVEMBER/25	UNIT-III	Standard Deviation, Coefficients of Variation, Lorenz Curve, Skewness & Kurtosis.
DECEMBER/20	UNIT–IV	Coefficient of Correlation – Karl Pearson's Method, Probable Error, Spearman's Rank Correlation Coefficient.
JANUARY/27	UNIT–V	Index Number – Construction of Index Numbers, Simple & weighted Index Number's- Fisher's Ideal Index Number & Reversal Test. Consumer Price Index Numbers and Time Series Analysis – Components of Time-Series.
FREBRUARY/25	UNIT –V	Measurement of Trend – Graphic Method, Semi Average Method. Moving averages, Least Square Method, Measuring Trend by logarithms.

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**BA/B.SC /B.COM– I**  
**ENGLISH LANGUAGE (FOUNDATION COURSE)**  
**TEACHING PLAN SESSION: 2019-20**  
**PAPER – II-**

MONTH	PROPOSED PLAN
JULY	Unit – 1-Basic language skills: Grammar and Usage- Grammar and Vocabulary based on the prescribed text-Article –Lesson 1,2
AUGUST	<b>Unit – 2-Comprehension of an unseen passage</b> Lesson 3 ,4,5
SEPTEMBER	<b>Unit – 3-Composition:</b> Paragraph writing. Lesson 6,7
OCTOBER	<b>Unit – 4-Letter writing</b> Lesson 8,9
NOVEMBER	<b>Unit – 5-Texts:</b> Lesson 10 11, Grammar- Tenses
DECEMBER	<b>Unit – 5-Texts:</b> Lesson 12.13 Grammar-Direct & indirect Speech
JANUARY	<b>Unit – 5-Texts:</b> Lesson 14.15 Grammar-Active & Passive Voice
FEBRUARY	Grammar-Preposition/Modals etc. REVISION

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**DEPARTMENT OF ENGLISH**  
**B.A. – I ENGLISH LITERATURE**  
**TEACHING PLAN SESSION: 2019-20**  
**Paper – I Literature in English**  
**(1550 – 1750)**

MONTH	PROPOSED PLAN
July	Introduction to Literature, Definition and characteristics of poetry. Forms of Poetry: Lyric, Ode, Elegy, Sonnet, Epic. Unit – 2 Poetry – a. William Shakespeare – Sonnet Number 1 <i>From Fairest Creatures</i> , Sonnet Number 154 <i>The Little Love God</i>
August	Unit – 2 Poetry Milton – <i>How Soon Hath Time the Subtle Thief of Youth</i> John Donne – <i>Sweetest Love I don't Go, This is my Place Last Scene</i>
September	Unit – 3 Poetry a. John Dryden – <i>Portrait of Shadwell</i> b. Alexander Pope – <i>From 'An Essay on Criticism'</i>
October	Unit – 4 Prose a. Francis Bacon – ' <i>Of Studies</i> ', ' <i>Of Regiment Of health</i> ', ' <i>Of Friendship</i> ' b. Joseph Addison – ' <i>Sir Roger at Home</i> ' c. Richard Steele – ' <i>Of the Club</i> '
November	Unit – 5 Drama William Shakespeare – ' <i>The Merchant of Venice</i> ' Unit – 6 Fiction Johnathan Swift – <i>The Battle of the Books</i>
December	Unit – 7 Historical and Literary Topics <i>The Renaissance, Humanism, Re-Formation, The Civil War and Protectorate, The Restoration, The Rise of Colonialism.</i>
January	Unit – 7 Earlier Drama, Petrarchism and the Sonnet Cycle, The Influence of Seneca and Classical Dramatic Theory, The Elizabethan and Jacobean stage. English Renaissance Drama, Restoration drama, The Rise of Periodical Essay.
February	Revision

GOVERNMENT D. B. GIRLS P. G. AUTONOMOUS COLLEGE RAIPUR,  
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**DEPARTMENT OF ENGLISH**  
**B.A. – I ENGLISH LITERATURE**  
**TEACHING PLAN SESSION: 2019-20**  
**PAPER – II- Literature in English from 1750 – 1900**

MONTH	PROPOSED PLAN
JULY	History and background of English Literature UNIT – II <b>POETRY</b> Blake – Tiger, Tiger Burning Bright.
AUGUST	UNIT – II <b>POETRY</b> Wordsworth – Daffodils and Solitary Reaper Coleridge – Frost at Midnight UNIT – III <b>POETRY</b> Shelley – Ode to Skylark Keats – Ode to Autumn
SEPTEMBER	UNIT – III <b>POETRY</b> Tennyson – Crossing the Bar Browning - Prospice UNIT – IV-PROSE Lamb – Dream Children : A Reverie Hazlitt – On Actors and Acting
OCTOBER	UNIT – V-FICTION Jane Austen – Pride and Prejudice
NOVEMBER	UNIT – VI-FICTION Charles Dickens – David Copperfield
DECEMBER	UNIT – VII Historical and Literary Topics The Reform Act, The Impact of Industrialization, Colonialism and Imperialism ,Scientific thoughts and Discoveries
JANUARY	UNIT – VII Historical and Literary Topics Faith and Doubt Classical and Romantic Concepts of Imagination Varieties of Romantic and Victorian Poetry The Victorian Novel ,Realism and the Novel, Aestheticism
FEBRUARY	UNIT – VII Historical and Literary Topics The Victorian Novel Realism and the Novel Aestheticism REVISION

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**DEPARTMENT OF ENGLISH**  
**BA/B.SC /B.COM– II**  
**ENGLISH LANGUAGE (FOUNDATION COURSE)**  
**TEACHING PLAN SESSION: 2019-20**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
July	Unit – 1 Basic Language Skills, Grammar and Usage – Grammar and Vocabulary based on the prescribed text, Lesson 1 & 2 Articles, Auxiliary Verbs
August	Unit – 2 Lesson 3 & 4, Comprehension of unseen Passage
September	Unit – 3 Lesson 5 & 6, Report Writing
October	Unit – 4 Lesson 7 & 8, Expansion of Idea
November	Unit – 5 Lesson 9 & 10 Nouns and Pronouns, Adjectives and Adverb, Pre-positions
December	Unit – 6 Lesson 11 & 12, Non- Finite Verbs, Tenses
January	Unit – 7 Lesson 13 & 14 Tenses
February	Conditional Tenses, Modal Verbs, Active and Passive Voice Revision

**DEPARTMENT OF ENGLISH**  
**B.A. – II ENGLISH LITERATURE**  
**TEACHING PLAN SESSION: 2019-20**  
**Paper – I Modern English Literatures**

MONTH	PROPOSED PLAN
July	Introduction to syllabus, Characteristics of Modern Literature, Modern Novel, Modern Drama, Modern Poetry
August	Unit – 2 Poetry a. W. B. Yeats – <i>A Prayer for my Daughter, Byzantium.</i> b. T. S. Eliot – <i>Love Song of J. Alfred Prufrock</i>
September	Unit – 3 Poetry a. Dylan Thomas – <i>Lament, A Refusal to Mourn the Death.</i> b. Philip Larkin – <i>Toads, At Grass</i>
October	Unit – 4 Prose a. Bertrand Russel – <i>On the Value of Scepticism</i> b. Oscar Wilde – <i>The Happy Prince</i>
November	Unit – 5 Drama G. B. Shaw – <i>Pygmalion</i>
December	Unit – 6 Fiction and short stories a. Rudyard Kipling – <i>Kim</i> b. Catherine Mansfield – <i>A Cup of Tea</i>
January	Unit – 7 1. Elegy 2. Sonnet 3. Ode 4. Morality and Miracle Play 5. One Act Play 6. Interlude
February	Revision

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**DEPARTMENT OF ENGLISH**

**B.A. – II ENGLISH LITERATURE**

**TEACHING PLAN SESSION: 2019-20**

**Paper – II Modern English Literatures (Paper Code - 0176)**

MONTH	PROPOSED PLAN
JULY	Unit – 1- W.H.Auden-Seascape <b>Unit – 2- POETRY</b> Sassoon-At the Grave of Henry Vaughan Owen, W. H.-Strange Meeting
AUGUST	<b>Unit – 3 POETRY</b> Ted Hughes-The Howling of the Wolves
SEPTEMBER	<b>UNIT –IV</b> <b>PROSE</b> Robert Lynd- Forgetting H.Belloc-A conversation with a Reader
OCTOBER	<b>UNIT –V DRAMA</b> John Galsworthy-Strife
NOVEMBER	<b>Unit – V- DRAMA</b> J.M. Synge-Rider to the Sea.
DECEMBER	<b>UNIT –VI</b> FICTION William Golding-Lord of the Flies
JANUARY	<b>UNIT –VII</b> Simile, Metaphor, Alliteration , Onomatopoeia, Ballad, Epic, Dramatic Monologue
FEBRUARY	REVISION

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**BA/B.SC /B.COM– III**  
**ENGLISH LANGUAGE (FOUNDATION COURSE)**  
**TEACHING PLAN SESSION: 2019-20**  
**PAPER – II-**

MONTH	PROPOSED PLAN
JULY	Unit – 1- Grammar and Vocabulary based on the prescribed text-Articles, Preposition –Lesson 1,2
AUGUST	<b>Unit – 2-</b> Essay writing Lesson 3 ,4,5
SEPTEMBER	<b>Unit – 3</b> Precis writing Lesson 6,7
OCTOBER	<b>Unit – 4-Comprehension of an unseen passage</b> Lesson 8,9
NOVEMBER	<b>Unit – 5-</b> Grammar- Tenses Lesson 10 11
DECEMBER	Grammar-Direct & indirect Speech Lesson 12.13
JANUARY	Lesson 14.15 Grammar-Active & Passive Voice
FEBRUARY	Grammar- Modals/Question Tags etc. REVISION



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**B.A. – III ENGLISH LITERATURE**  
**TEACHING PLAN SESSION: 2019-20**  
**PAPER – I INDIAN WRITING IN ENGLISH**

MONTH	PROPOSED PLAN
JULY	History and background of Indian Writing in English UNIT – II POETRY Toru Dutt - Our Casuarina Tree Tagore - Songs 1 and 103 from ‘Gitanjali’
AUGUST	UNIT – III Kamala Das - The Old Playhouse Gauri Deshpandey - The Female of the species , Jayant Mahapatra - Dawn at Puri K. N. Daruwala - Death by Burial , Shiv K. Kumar - Indian Women
SEPTEMBER	UNIT – IV-PROSE Nirad C. Chaudhary - My Birth Place Dr. S. Radhakrishnan - The call of the Suffering
OCTOBER	UNIT – V -DRAMA Girish Karnad Hayavadana Tendulkar Silence! The Court is in Session.
NOVEMBER	UNIT – V –DRAMA Girish Karnad Hayavadana Tendulkar Silence! The Court is in Session.
DECEMBER	UNIT – VI FICTION- R.K.Narayan -Guide
JANUARY	UNIT – VII Lyric, Subjective Poetry, Couplet, Fable, Hymn, Allegory ,Autobiography
FEBRUARY	REVISION

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**B.A. – III ENGLISH LITERATURE**  
**TEACHING PLAN SESSION: 2019-20**  
**Paper – II American Literature**

MONTH	PROPOSED PLAN
JULY	Unit – 1- POETRY Walt Whitman-Oh Captain! My Captain,
AUGUST	<b>Unit – 2- POETRY</b> Walt Whitman - When the Lilacs lasts in the Dooryard Bloomed. Carl Sandberg-Who Am I? 'I am the People, the Mob'
SEPTEMBER	<b>Unit – 3 POETRY</b> Emily Dickinson-Hope is the Thing with feather, I felt a Funeral in my Brain' E.E. Cummings-The Cambridge Ladies As Freedom is a Breakfast Food
OCTOBER	<b>Unit – 4- PROSE</b> William Faulkner-Nobel Award acceptance Speech, W. Carlos Williams-In the American Grain
NOVEMBER	<b>Unit – 4 – PROSE</b> Walt Whitman-Preface to 'Leaves of Grass'
DECEMBER	<b>UNIT-V DRAMA</b> Eugene O' Neil-The Hairy Ape
JANUARY	<b>UNIT-VI FICTION</b> Ernest Hemingway- A Farewell to Arms, W.Faulkner- The Sound and the Fury
FEBRUARY	<b>UNIT-VII</b> Naturalism, Realism, Art for Art's Sake, Poetic Drama, Symbolism, American Renaissance, Existentialism REVISION

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2019-20**

**TEACHING PLAN**

**B.A. I GEOGRAPHY**

**PAPER-I**

**TITLE OF THE PAPER: PHYSICAL GEOGRAPHY**

MONTH	PLAN
JULY	The Nature and Scope of Physical Geography. Origin of the Earth, Geological Time Scale. Earth's Interior, Continental Drift Theory (Wagner),
AUGUST	Plate Tectonics. Isostasy. Earth movements: Earthquakes and Volcanoes. Ricks, Weathering, Erosion, and Nomia) cycle of erosion,
SEPTEMBER	Evaluation of landscapes- Fluvial, Arid, Glacial, Karts and Coastal landscape
OCTOBER	Elements or Weather and Climate, Composition and Structure of the Atmosphere. World patterns of Atmospheric Temperature
NOVEMBER	Pressure, and Wind. Atmospheric Moisture, and Disturbances, Climatic Classification (Koppen and Thornthwait) types. characteristics
DECEMBER	World patterns of climate. Surface relief of Pacific Ocean, Atlantic Ocean, and Indian Ocean. Distribution of Temperature and Salinity of oceans and seas
JANUARY	Currents and ides, Ocean Deposits and Coral Reefs, and Oceanic Resources.
FREBRUARY	Revision

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2019-20  
TEACHING PLAN  
B.A. I GEOGRAPHY  
PAPER-II**

**TITLE OF THE PAPER: HUMAN GEOGRAPHY**

MONTH	PRAPOSED PLAN
JULY	Definition and Scope of Human Geography. Man - environment relationship; Determinism, Possibilism, and Probabilism
AUGUST	Human development Index (HDD). Classification of Human Races — their Characteristics and Distribution
SEPTEMBER	Human adaptation to environment: Eskimos, Bushman, Pigimy, Gond, Masai, and Naga. Growth, Density and Distribution of World Population
OCTOBER	Factors Influencing spatial distribution; Over . Under. and Optimum Population; Migration  Settlements — Urban Settlements:
NOVEMBER	Urbanization. Evolution and Classification. Trends of Urbanization.
DECEMBER	<b>Rural settlements: Characteristics, Types and Regional Pattern, Rural Houses in India - Types, Classification and Regional Pattern.</b>
JANUARY	Issues — Global Warming. Climate Change. Deformation. Desertification. Air, Water and Soll Pollution.
FEBURARY	REVISION

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2019-20  
TEACHING PLAN  
B.A. I GEOGRAPHY  
PRACTICAL**

MONTH	PRAPOSED PLAN
JULY	
AUGUST	Scale - Plain, Time, Diagonal and Comparative. Methods of showing relief - hachures, contours; Representation of different land forms by contours
SEPTEMBER	Line graph & Bar graph (Simple & Compound), Circle Diagram, wind rose.
OCTOBER	Mean, Median and Mode
NOVEMBER	Chain and tape Survey.
DECEMBER	Chain and tape Survey.
JANUARY	Chain and tape Survey.
FEBURARY	

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2019-20**

**TEACHING PLAN**

**B. A.II GEOGRAPHY**

**PAPER-I**

**TITLE OF THE PAPER: CLIMATOLOGY AND OCEANOGRAPHY**

MONTH	PRAPOSED PLAN
JULY	Weathers and climate; definition and significance of climatology. Elements of weather and climate; their causes. Composition and structure of the atmosphere.
AUGUST	Atmospheric Temperature: Insolation and Global energy budget, vertical, horizontal and seasonal distribution of temperature. : Vertical and horizontal distribution of pressure; planetary, periodic and local winds.
SEPTEMBER	Atmospheric moisture: humidity, evaporation; and condensation; hydrological cycle; types of precipitation, world patterns of rainfall: regional and seasonal distribution
OCTOBER	Atmospheric moisture: humidity, evaporation; and condensation; hydrological cycle; types of precipitation, world patterns of rainfall: regional and seasonal distribution
NOVEMBER	Relevance of oceanography in earth and atmospheric science. Definition of oceanography, Surface configuration of the ocean floor, continental shelf, continental slope, abyssal plain, mid-oceanic ridges and oceanic trenches. Relief of Atlantic, pacific and Indian oceans.
DECEMBER	Distribution of temperature and salinity of oceans and seas Circulation of oceanic waters ; Waves, tides and currents, currents of the Atlantic, Pacific and Indian ocean
JANUARY	storehouse of resources for the future
FEBURARY	Revision

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2019-20**

**TEACHING PLAN**

**B. A.II GEOGRAPHY**

**PAPER-II**

**TITLE OF THE PAPER: REGIONAL GEOGRAPHY WITH SPECIAL REFERENCE TO NORTH AMERICA**

<b>MONTH</b>	<b>PRAPOSED PLAN</b>
<b>JULY</b>	Regional concept, bases of regionalization NORTH AMERICA: Structure, Relief Climate.
<b>AUGUST</b>	Soil, Forest, Mineral and Energy resources
<b>SEPTEMBER</b>	Agriculture - Major crops, Agricultural belts Livestock, Dairy farming
<b>OCTOBER</b>	Industries Localization, development & production - Iron and steel, Cotton Textile, Heavy Engineering,
<b>NOVEMBER</b>	Transport, Trade. Industrial region. Population
<b>DECEMBER</b>	Detailed study of regions: California valley, new England Region, Alaska
<b>JANUARY</b>	Prairie Region, St. Lawrence Valley
<b>FEBURARY</b>	Revision

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2019-20  
TEACHING PLAN  
B. A.II GEOGRAPHY  
PRACTICAL**

MONTH	PROPOSED PLAN
JULY	
AUGUST	Distribution Maps: Dot, Choropleth & Isopleth
SEPTEMBER	Map Projections: Definition and classification, Cylindrical projections- simple, equal area, Gall's, Mercator's
OCTOBER	Interpretation of weather maps : Use of meteorological instruments.
NOVEMBER	Statistical Methods: Quartile: Mean deviation, standard deviation and Quartile deviation; Relative variability and co-efficient of variation.
DECEMBER	Surveying-Prismatic Compass Survey: open and closed traverse, correction of bearing, calculation of interior angles.
JANUARY	Surveying-Prismatic Compass Survey: open and closed traverse, correction of bearing, calculation of interior angles.
FEBURARY	



**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2019-20**

**TEACHING PLAN**

**B.A. III GEOGRAPHY**

**PAPER-I**

**TITLE OF THE PAPER: RESOURCE AND ENVIRONMENT**

MONTH	PRAPOSED PLAN
JULY	Meaning, nature and components of resources and environment. Resources and environment interface. Classification of resources: renewable and nonrenewable: biotic (forests, wild-life, live-stock, fisheries, agricultural crops)
AUGUST	abiotic (land, water, mineral) Distribution and utilization of water mineral and energy resources, their economic and environmental significance and conservation. Types and distribution of forests, fauna and fisheries, their economic, and environmental significance and conservation. Major soil types and their distribution; problems of soil erosion and soil conservation
SEPTEMBER	Number, density, growth and distribution of population; population pressure and resource utilization.
OCTOBER	Classification of environment: Natural and Human. Man, environment interrelations with respect to population size, types of economy and technology;
NOVEMBER	exploitation of natural resources and environmental hazards. Emerging environmental issues - population explosion; food security
DECEMBER	deforestation; global warming, conservation of bio-diversity; sustainable development.
JANUARY	deforestation; global warming, conservation of bio-diversity; sustainable development.
FEBURARY	Revision

# GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

SESSION 2019-20

TEACHING PLAN

B. A. III GEOGRAPHY

PAPER-II

**TITLE OF THE PAPER: GEOGRAPHY OF INDIA WITH REFERENCE TO CHHATTISGARHS**

MONTH	PRAPOSED PLAN
JULY	Physical features: Structure, Relief, climate and soils. Physiographic regions, Drainage, Climate-origin and mechanism of monsoon, and regional and seasonal variation
AUGUST	Natural resources: Soils - types, their distribution and characteristics. Water resources (major irrigation and hydel power projects); Forests-types, distribution, economic significance and conservation. Mineral and Power Resources-Iron-ore, Manganese, Copper, Coal, Petroleum and Natural gas, Non-conventional sources of energy
SEPTEMBER	Cultural Features: Agriculture - Major crops, impact of green revolution and agricultural regions
OCTOBER	Industries Localization, development & production - Iron and steel, Cotton Textile, Cement, Sugar, Population - growth, density and distribution. Transport, Foreign Trade.
NOVEMBER	Physical features: Structure, Physiography, Drainage, Climate.  Soils. Forest resources, Water resources hydel power projects. Mineral resources-power resources
DECEMBER	Cultural Features: Agriculture . Population : Density distribution, Tribal Population. Industries, Trade and Transport, Tourism, Socio Economic development.
JANUARY	Revision
FEBURARY	Revision

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2019-20**

**TEACHING PLAN**

**B. A.III GEOGRAPHY**

**PRACTICAL**

MONTH	PROPOSED PLAN
JULY	
AUGUST	Band graph, Hythergraph and Climograph. Square root, cube-root and vernier scales
SEPTEMBER	Map Projection: Conical Projection: one standard parallel, two standard parallels, Bonne's, Polyconic, Polar Zenithal Projections; Gnomonic, Stereographic and Orthographic
OCTOBER	Study and Interpretation of Indian topographical sheets: classification and numbering system, Interpretation of topographical sheets with respect to cultural and physical features.
NOVEMBER	Importance of field work in Geography. Field work and field report: physical, social and economic survey of a micro-region.
DECEMBER	Surveying - Plane Table Survey, Basic Principles of plane table surveying, Plane table survey including intersection and resection.
JANUARY	Surveying - Plane Table Survey, Basic Principles of plane table surveying, Plane table survey including intersection and resection.
FEBURARY	

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2018-19  
TEACHING PLAN  
B. A. I GEOGRAPHY  
PAPER-I**

**TITLE OF THE PAPER: ELEMENTS OF PHYSICAL GEOGRAPHY**

MONTH	PROPOSED PLAN
JULY	<b>The nature and scope of Physical Geography; Inter relation of Physical Geography with other branches of earth science. The place of Geomorphology in Physical Geography,</b>
AUGUST	<b>Geological Time scale. Earth's interior, Wegner's theory of Continental Drift, Plate Tectonics. Earth movements: - orogenic and epeirogenic</b>
SEPTEMBER	<b>Earthquakes and Volcanoes.</b>  <b>Rocks - Origin and composition of rocks, weathering, formation of regolith and soils, rocks and relief.</b>
OCTOBER	Geomorphic agents and processes-erosion, transportation and deposition, mass wasting. Evolution of Land scape, concept of cycle of erosion, interruption of cycle of erosion.
NOVEMBER	<b>Fluvial, Arid, Glacial, Karst and Coastal Landscapes.</b>
DECEMBER	<b>Application of Geomorphology to Hydrology, Mining, Engineering works.</b>
JANUARY	<b>Hazard management and urbanization.</b>
FEBURARY	Revision

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2018-19  
TEACHING PLAN  
B. A. I GEOGRAPHY  
PAPER-II**

**TITLE OF THE PAPER: INTRODUCTION TO GEOGRAPHY & HUMAN GEOGRAPHY**

MONTH	PRAPOSED PLAN
JULY	The Nature of Geography, objectives and relevance, Place of Geography in the classification of Sciences,
AUGUST	Geography and other disciplines. Geography as the study of environment, man - environment relationship; ecology and ecosystems.
SEPTEMBER	Environmental determinism possibilism Neo - determinism; Dualism in Geography - Systematic / Regional, Physical/Human, Complementarity.
OCTOBER	Definition and scope of Human Geography. Human Races - Their characteristics and distribution. Human adaptation - To the environment; Eskimos, Bushman, Pigmy, Gond, Masai, and Naga
NOVEMBER	Growth of Population; Distribution of Population, world distribution pattern - physical, economic and social factors influencing spatial distribution,
DECEMBER	concept of overpopulation under population and optimum population. Migration - internal and international Settlements - Types and patterns of settlements.
JANUARY	A brief historical overview of Geography as a discipline, recent trends in geography with special reference to India, imperatives for the future, career opportunities for geographers.
FEBURARY	Revision

**प्राचार्य शास. दू.ब. महिला स्नात.(स्वशासी) महाविद्यालय**  
**कालीबाड़ी चौक रायपुर(छ.ग.)**

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टीचिंग प्लान "हिन्दी" सत्र 2019-20

प्रस्तावित पाठ्यक्रम बी.ए. प्रथम वर्ष

क्र.	माह/दिन	स्नातक हिन्दी साहित्य	बी.ए./बी.एस.सी./बी.कॉम. बी.एच.एस.सी. I वर्ष
1	जुलाई/27	इकाई, प्रश्न पत्र I, II	(क) पल्लवन, पत्रचार, अनुवाद, परिभाषिक शब्दावली
2	अगस्त/24	इकाई II जायसी, गबन	इकाई I (क) हिंदी के पदनाम (ख) ईदगाह कहानी
3	सितम्बर/24	इकाई III सूर, कफन, कहानी	इकाई II (क) शब्द शुद्धि, वाक्य शुद्धि, पर्यायवाची शब्द, अनेकार्थी शब्द, समश्रुत शब्द
4	अक्टूबर/18	इकाई IV तुलसी, आकाशदीप, परदा	इकाई II (क) अनेक शब्दों के लिए एक शब्द, मुहावरे, लोकोक्ति (ख) भारत वंदना
5	नवम्बर/25	इकाई V तुलसी, धनानंद सेठ, मलवे का मालिक, चीफ की दावत	इकाई III (क) देवनागरी लिपि, नामकरण, स्वरूप एवं देवनागरी लिपि की विशेषता
6	दिसम्बर/20	इकाई V विद्यापति, रहीम, जली हुई रस्सी, गदल	इकाई III (क) अपठित गद्यांश, संक्षेपण (ख) भोलाराम का जीव
7	जनवरी/27	इकाई V रसखान, अश्क, रेड्डी, शिवानी	इकाई V (क) कम्प्यूटर का परिचय एवं कम्प्यूटर का अनुप्रयोग (ख) शिकागो से स्वामी विवेकानंद का पत्र
8	फरवरी/25	पुनरावृत्ति	(क) मानक हिंदी (ख) सामाजिक गतिशीलता पुनरावृत्ति

**प्राचार्य शास. दू.ब. महिला स्नात.(स्वशासी) महाविद्यालय**  
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टीचिंग प्लान स्नातक हिंदी

सत्र 2019–20

प्रस्तावित पाठ्यक्रम बी.ए. द्वितीय वर्ष

क्र.	माह/दिन	स्नातक हिन्दी साहित्य	बी.ए./बी.कॉम./बी.एस.सी. बी.एच.एस.सी./हिन्दी भाषा
1	जुलाई/27	इकाई I प्रश्न पत्र I, II मैथिलीशरण गुप्त	खण्ड (क) महात्मा गांधी, विनोबा भावे, (ख) हिंदी भाषा के विविध रूप
2	अगस्त/24	इकाई II प्रश्न पत्र I, II सूर्यकांत त्रिपाठी निराला अंधेर नगरी	(क) आचार्य नरेन्द्र देव वर्मा (ख) कार्यालयीन भाषा, मीडिया की भाषा
3	सितंबर/24	इकाई II प्रश्न पत्र I, II पंत, निबंध-क्रोध, बसंत	(क) वासुदेव शरण अग्रवाल (ख) वित्त एवं वाणिज्य की भाषा
4	अक्टूबर/18	इकाई III प्रश्न पत्र I, II चतुर्वेदी, उस अमराई ने राम-राम कही है	खण्ड ग- अनुवाद व्यवहार, अंग्रेजी से हिंदी में अनुवाद
5	नवम्बर/25	इकाई IV प्रश्न पत्र I, II अज्ञेय, एकांकी, स्ट्राईक, एक दिन	खण्ड ग- हिंदी की व्याकरणिक कोटियाँ
6	दिसंबर/20	इकाई V प्रश्न पत्र I, II हरिऔध, सुभद्रा कुमारी चौहान, दस हजार	खण्ड क- हिमालय की व्युत्पत्ति खण्ड ग- संज्ञा, सर्वनाम
7	जनवरी/27	इकाई V प्रश्न पत्र I, II श्रीकांत वर्मा, मम्मी ठकुराइन, राहुल सांकृत्यायन	खण्ड क- डॉ. खूबचंद बघेल खण्ड ग- विशेषण, क्रिया, विशेषण
8	फरवरी/25	पुनरावृत्ति	पुनरावृत्ति

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सत्र 2019-20

प्रस्तावित पाठ्यक्रम बी.ए. तृतीय वर्ष

क्र.	माह/दिन	स्नातक हिन्दी साहित्य	बी.ए./बी.कॉम./बी.एस.सी. बी.एच.एस.सी./टि.या.
1	जुलाई/27	इकाई I प्रश्न पत्र I, II छत्तीसगढ़ी भाषा का इतिहास हिंदी भाषा का स्वरूप	इकाई I (क) भारत माता, परशुराम की प्रतीज्ञा (ख) कथन की शैलियाँ
2	अगस्त/24	इकाई II प्रश्न पत्र I, II संत धर्मदास, हिन्दी साहित्य का इतिहास, भाषा के विभिन्न रूप	इकाई I (क) बहुत बड़ा सक इकाई II (ख) विकासशील देशों की समस्याएँ
3	सितंबर/24	इकाई II प्रश्न पत्र I, II लखनलाल गुप्त, हिन्दी का शब्द भण्डार— तत्सम, तद्भव, देशज, आगत	इकाई II (क) विकासात्मक पुनर्विचार और प्रौद्योगिकी, (ख) विभिन्न संरचनाएँ
4	अक्टूबर/18	इकाई III प्रश्न पत्र I, II अर्वाचीन रचनाकार, युग प्रवृत्तियाँ	इकाई III (क) आधुनिक तकनीकी सभ्यता, पर्यावरण प्रदूषण (ख) कार्यालयीन पत्र और आलेख
5	नवम्बर/25	इकाई III प्रश्न पत्र I, II डॉ. सत्यभामा आड़िल काव्यांग— रस के भेद	इकाई IV (क) जनसंख्या भारत के संदर्भ में और गरीबी तथा बेरोजगारी (ख) अनुवाद
6	दिसंबर/20	इकाई IV प्रश्न पत्र I, II डॉ. विनय पाठक, छंद, अर्थालंकार	इकाई V (क) ऊर्जा और शक्तिमानता का अर्थशास्त्र
7	जनवरी/27	इकाई V प्रश्न पत्र I, II मुकुंद कौशल, द्रुतपाठ, शब्दालंकार	इकाई V (ख) घटनाओं, समारोहों आदि का प्रतिवेदन और विभिन्न प्रकार के निमंत्रण पत्र
8	फरवरी/25	पुनरावृत्ति	पुनरावृत्ति



B A I HISTORY -I PAPER- HISTORY OF INDIA [up to 1206]

SESSION -2019-20

S N	MONTH	PLAN
1	JULY	<p>Survey of sources of Indian history</p> <p>Geographical features of India</p> <p>Pre historic age – Early stone age ,Neolithic age</p> <p>Harappan civilization</p>
2	AUGUST	<p>Salient features of Harappan civilization</p> <p>Political, social and economic life of the Harappan age</p> <p>Pre Vedic age [Rigvedic period]</p> <p>Later Vedic period – social ,political and economic life.</p> <p>Civilization and culture of Epic era</p>
3	SEPTEMBER	<p>India of the 6<sup>th</sup> century B C –</p> <p>Buddhism and Jainism</p> <p>Rise of the Magadha empire</p> <p>Alexander’s invasion of India and their effects</p>
4	OCTOBER	<p>Establishment of Maurya empire-</p> <p>Chandra Gupta Maurya</p> <p>Ashoka- Ashoka’s dharma</p> <p>Maurya administration ,economical arrangement</p> <p>Art and culture</p>
5	NOVEMBER	<p>Post Maurya period -Shunga, Satavahana</p> <p>Kushan dynasty -Kanishka</p> <p>Sangam period- literature and culture</p> <p>Chol dynasty</p>

6	DECEMBER	<p>Chol administration</p> <p>Pandya dynasty</p> <p>Gupta empire – administration.</p> <p>Economic social and cultural condition</p> <p>Rajput period – Pallava and chalukya</p>
7	JANUARY	<p>Vardhan ,Vakataka ,Pratihara</p> <p>Pal ,Sen ,Rashtrakut dynasty</p> <p>India's relations with south east Asia and Shree Lanka</p> <p>Muhammad bin Qasim</p>
8	FEBRUARY	<p>Invasion of Mahmud Gaznabi and Muhammad Gori</p> <p>Status of woman</p> <p>Rivision</p>

**B.A 1<sup>ST</sup> YEAR HISTORY**  
**2<sup>ND</sup> PAPER-WORLD HISTORY (1453 – 1789)**  
**SESSION (2019-20)**

S NO.	MONTH	PLAN
1	JULY	<p>Introduction- General introduction of second paper</p> <p>Feudalism in the medieval world, fall of the Feudalism</p> <p>The beginning of the modern Era, Characteristics of modern era</p> <p>Renaissance (What do you mean by Renaissance) causes and characteristics.</p>
2	AUGUST	<p>Reformation-what do you understand by reformation.</p> <p>Causes of the reformation, form of reformation-reformation in Germany- role of Martin Luther.</p> <p>Reformation in England.</p> <p>Consequences of the reformation movement.</p>
3	SEPTEMBER	<p>Counter reformation.</p> <p>Thirty years war (1618-1648)</p> <p>Causes, events &amp; results.</p> <p>Rise of the Nation states-</p> <p>Nation states in Spain and France.</p> <p>Nation states in England &amp; Russia-Peter the great and Catherine ii.</p>
4	OCTOBER	<p>Partition of Poland (1773-1795)</p> <p>Causes &amp; partition.</p> <p>Economical base of the modern western world-</p> <p>Mercantilism.</p> <p>Commercial Revolution and their impacts.</p>
5	NOVEMBER	<p>Industrial revolution – Causes, nature and their effects.</p> <p>Colonialism and their results.</p>

		<p>Civil war in England – struggle between parliament and monarchy.</p> <p>Causes of the civil war, incidents and their results.</p>
6	DECEMBER	<p>Glorious revolution in England – 1688.</p> <p>Background, causes, incidents and their results.</p> <p>Period of Cromwell's in England.</p> <p>Louise 14<sup>th</sup> (1668-1730) – Home policy, foreign policy.</p>
7	JANUARY	<p>Independence war of America (1776 – 1783 AD) – Causes, incidents and results.</p> <p>French revolution (1789)- Causes, immediate cause, incidents and results.</p> <p>National Assembly (1789 – 1791).</p>
8	FEBRURARY	REVISION

**B.A 2<sup>nd</sup> YEAR HISTORY**  
**1<sup>st</sup>PAPER- HISTORY OF INDIA (1206-1761)**  
**SESSION (2019-20)**

<b>S NO</b>	<b>MONTH</b>	<b>PLAN</b>
1	<b>JULY</b>	<p>General introduction of the first paper (medieval India)</p> <p>Sources of Sultanate Period.</p> <p>Sources of Mughal Period.</p> <p>Establishment of Delhi Sultanate – Slave dynasty.</p> <p>QutubuddinAibak</p> <p>Ilututmish (1211 – 1236) – works of Ilututmish.</p>
2	<b>AUGUST</b>	<p>Razia Sultana (1236 – 1240)</p> <p>Balban (1266 – 1288) – administrative principles of Balban, Achievements and estimate of Balban.</p> <p>The Khilzi dynasty – conquest and reforms of AlauddinKhilzi.</p> <p>Administrative arrangements of Khilzi.</p>
3	<b>SEPTEMBER</b>	<p>Tughlaq dynasty – Mohammad - bin – Tughlaq (1325 – 1351) - home policy – Mohammad Tughlaq’s schemes of reforms and their failure.</p> <p>Firoz Shah Tughlaq (1351 – 1388)</p> <p>Reforms of Firoz Shah Tughlaq</p> <p>Foreign policy of Firoz Shah</p> <p>Invasion of Timur in India and its effects</p>
4	<b>OCTOBER</b>	<p>Foundation of the Mughal Empire –</p> <p>Babur – political condition of India at the time of Babur invasion.</p> <p>The Battle of Panipat (1526 A.D), Battle of Khanwa,</p>

		<p>Chanderi and Ghaggar.</p> <p>Sher Shah Suri and his administration.</p> <p>Rajput policy of Akbar.</p>
5	<b>NOVEMBER</b>	<p>Religious policy of the Mughal Emperors (Akbar – Aurangzeb).</p> <p>Religious policy of Akbar- Din - e – Illahi.</p> <p>Religious policy of Jahangir, Shahjahan and Aurangzeb.</p> <p>Political institutions and administration.</p> <p>Social and economical condition of sultanate period.</p> <p>Social and economical condition of Mughal period.</p> <p>Religious and cultural condition of Mughal period.</p>
6	<b>DECEMBER</b>	<p>Bhakti movement – Causes and saints.</p> <p>Peculiarities of Bhakti movement.</p> <p>Sufism in India.</p> <p>Art and architecture of Sultanate period.</p> <p>Art and architecture of Mughal period.</p> <p>Education and literature of Sultanate period.</p> <p>Education and literature of Mughal period.</p>
7	<b>JANUARY</b>	<p>Vijayanagar Kingdom – King Krishnadev Rai – Battle of Talikot.</p> <p>Bahmani Kingdom – achievements of the Mahmood Gava.</p> <p>Rise of the Maratha power.</p> <p>Shivaji and his administration.</p> <p>3<sup>rd</sup> Battle of Panipat – causes, incidents and results.</p>
8	<b>FEBRURARY</b>	<p>Revision.</p>

**B A SECOND .HISTORY II PAPER-WORLD HISTORY-1789 TO 1870****SESSION- 2019-20**

S N.	MONTH	PLAN
1	JULY	French revolution – national convention to region of terror Administration of directory -problem and works Rise of Napoleon and his achievements Napoleon as a emperor – 1804 – 1815 A D.
2	AUGUST	Downfall of Napoleon. Venna congress – 1815 A D -Problems ,principles and works United system of Europe – 1815 -1825 A D Metternich – foreign policy
3	SEPTEMBER	July revolution – 1830 – causes ,incidents and results February revolution – 1848 – causes, ,incidents and results Industrial revolution in England – cause ,nature and results Liberalism in England -
4	OCTOBER	First reform act 1832 – provisions and results Second reform act- 1867 Chartist movement -1838 to1848 and their failure
5	NOVEMBER	Achievements of Napoleon third – 1852 to 1870 Eastern problem – because of the rise Greek freedom struggle – 1821 to 1829.
6	DECEMBER	Crimean war – 1854 to 1856 cause s incidents and results Russia – Jar Alexander second

		Unification of Italy –contribution of the Mazzini ,Cavour and Garibaldi.
7	January	Bismarck ,unification of Germany – background, Problems Bismarck contribution of unification of Germany Meiji restoration – 1868
8	FEBRUARY	RIVISION



**B.A FINAL YEAR HISTORY**  
**1<sup>st</sup>PAPER- HISTORY OF INDIA (1761-1950)**  
**SESSION (2019-20]**

S.NO	MONTH	PLAN
1.	JULY	<p>General introduction of first paper.</p> <p>Expansion of the British Empire – Anglo – French conflict (Karnataka war), reasons for the success of Britishers.</p> <p>Battle of Plassey (1757) – Background, causes, incident and results.</p> <p>Battle of Buxar (1763) – causes, incidents and results</p>
2.	AUGUST	<p>Subsidiary alliance of Lord Wellesley.</p> <p>Provisions of subsidiary alliance, Merit and demerits of subsidiary alliance.</p> <p>Doctrine of lapse (policy of the Lord Dalhousie).</p> <p>Principal and nature of doctrine of lapse.</p> <p>Administrative reforms in British period -</p>
3.	SEPTEMBER	<p>Reforms of Lord William Bentinck, Lord Lytton, Lord Rippon, Lord Curzon.</p> <p>Commercialism – downfall of Indian industries, downfall of trades, downfall of Indian Agriculture, Peasants movements.</p> <p>Land revenue system in British Period – background.</p>
4.	OCTOBER	<p>Permanent settlement, Raiyat Wadi, Mahal Wadi.</p> <p>Indian renaissance – Brahma Samaj – Raja Ram Mohan Roy.</p> <p>Arya Samaj – Swami Dayanand Saraswati, PrathnaSamaj – Mahadev Govind Ranade, Ramakrishna Mission – Swami Vivekananda, Theosophical Society – Smt. Annie Besant, Aligadh movement – Sir Sayyed Ahmed Khan.</p>
5.	NOVEMBER	<p>Western education and praise.</p> <p>Different Social class – Farmer, lebor , middle class, women's.</p>

		<p>Rise of Nationalism – causes of nationalism, incidents of nationalism.</p> <p>Establishment of Indian National Congress – causes, concepts.</p> <p>Liberalism (1885 – 1904).</p> <p>Extremism (1905 – 1919).</p>
6.	DECEMBER	<p>Revolutionary movements.</p> <p>Gandhian movements – A. Non – cooperation movement (1920 -22), B. Civil disobedience movement (1930-34)</p> <p>C. Quit India movement (1942).</p> <p>Communalism – causes, rise and development.</p>
7.	JANUARY	<p>Subhash Chandra Bose and Azad Hind Fouze.</p> <p>Constitutional development of India – Indian government act 1919(Dyarchy), Indian government act 1935(Provincial Autonomy), Indian Independence act 1947.</p> <p>Independence of India and peculiarities of Indian constitution.</p>
8.	FEBRURARY	REVISION

## **B. A. Final ,History second -1871 – 1945**

### **Session -2019-20**

S NO	MONTH	PLAN
1	JULY	Introduction of second paper Third republican of France and their achievements Home and foreign policy of Bismarck Kaiser William second -1890 -1918.
2	AUGUST	World politics of Kaiser William second Partition of Africa (New imperialism) Modernization of Japan
3	SEPTEMBER	Japanese imperialism – Russia Japan war 1904-5 Causes results Chinas revolution – 1911 -causes and results
4	OCTOBER	DR. San-yat-sen ,his contribution Eastern problem – Berlin congress-1878 A D Young Turkish movement- 1908
5	NOVEMBER	Balkan war- 1912-1913-causes and results First world war – 1914- 1918 – causes ,incidents and results. Paris peace conference – 1919 . Russian revolution – 1917 -causes and results .
6	DECEMBER	Treaty of Versailles – provisions and their review Fascism – Mussolini . Nazism – Hitler . Militarism in Japan
7	JANUARY	Establishment of the league of Nation -14 point of Wilsons Second world war -1939 -45 -causes and results

		United nations organization – foundation . Achievements .
8	FEBRUARY	Rivision

**B. A.I POLITICAL SCIENCE (2019-20)**  
**PAPER-I**  
**Political Theory**

MONTH	PLAN
JULY	Political Science :- Definition, Nature, Scope, Study Methods :- Traditional and Behavioral. Political Theory :- Importance, Authority, Meaning, Definition, Characteristics and Relations
AUGUST	State :- Meaning, Essential Elements of state various Theories of the origin of state, State in an effective Perspective
SEPTEMBER	Sovereignty: – Meaning, Characteristics, Theory, Importance, Citizenship, Rights, Liberty: – Meaning Definition, Characteristics and theory
OCTOBER	Equality And Justice: – Meaning, Definition, Characteristics, Relations. Democracy: – Meaning, Definition, Characteristics,
NOVEMBER	Essential Circumstances of democracy/ Challenges before democracy.
DECEMBER	Concept of development and welfare state: – Characteristics, Function, Achievement, Challenges, Theory of Social Change :- Meaning, Definition, Characteristics.
JANUARU	State in an effective , Citizenship, Rights Challenges before democracy
FREBRUARY	RIVISION

**B.A. – I POLITICAL SCIENCE**  
**SESSION: (2019-20)**  
**PAPER-II**  
**Indian Government & Politics**

MONTH	PRAPOSED PLAN
JULY	Composition and sources of the Indian constitution. Features of the India constitution preamble. Fundamental rights, fundamental duties and Directive principle of state policy.
AUGUST	Union Government: – The President, Parliament, council of ministers and Prime Minister –Organization / Appointing, Functions, Rights and Real position
SEPTEMBER	The State Government: – Governor, council of ministers and chief minister formation, power and functions and position. <del>Center-state relations – Administrative – Judicial and financial</del>
OCTOBER	Supreme court and the constitutional process: – Organization, power and function – changes in today. Political parties: – National and regional Meaning, Characteristics and kinds
NOVEMBER	Election commission and Electoral – Reforms – Organization, Functions and rights and the study of Electoral reforms.
DECEMBER	Major issues in Indian Politics –Caste, Religion, Language, Regions, Poverty – Alleviation.
JANUARU	Governor, council of ministers and chief minister formation, power and functions and position. Political parties: – National and regional Meaning, Characteristics and kinds
FREBRUARY	REVISION

## **B.A. – II POLITICAL SCIENCE**

**SESSION: (2019-20)**

### **PAPER-I**

MONTH	PRAPOSED PLAN
JULY	Plato - In the Context of Ideal state: Justice. Education, Communism & Philosopher King
AUGUST	Aristote – State, Classification of constitutions, slavery, view on Revolution
SEPTEMBER	Machiavelli - Machiavelli's views on State and Government, views on Religion. Morality & contribution to Political Philosophy. Hobbes - Social Contract Theory
OCTOBER	Locke -Locke's views on social contract Theory. Rousseau -Rousseau's views on social contract Theory, Theory of General will.
NOVEMBER	Bentham -Bentham's Utilitarianism. J.S. Mill -J.S. Mill's views on state, Liberty, Rights & Representative Government
DECEMBER	Hegel -Hegel's views on state, Dialectical method. T.H. Green -Green's view's on state & Government, Liberty & contribution to Political Philosophy. s
JANUARU	Karl-Marx- Marx's Dialectical materialism, Theory of class Struggle. Theory of surplus value, Economic interpretation of History, Contribution of Marx.
FREBRUARY	REVISION

**B.A. – II POLITICAL SCIENCE**  
**SESSION: (2019-20)**  
**PAPER-II**  
**Comparative Government and politics (Britain, America, China, Switzerland)**

MONTH	PRAPOSED PLAN
JULY	Meaning of Comparative Politics, Nature, Scope and Problems
AUGUST	Political system approach (David Eastan, Almond and Pawell) Constitutional Traditions and salient feature of the constitution.
SEPTEMBER	Constitutional Structure - Meaning of Chief Executive, Kinds, Centure of power and functions, Comparative study.
OCTOBER	Constitutional structure: - Legislature organization, Functions, Agreements in favour of second Chamber, comparative study.
NOVEMBER	Constitutional structure :- Judiciary, Organization, Functions, Independence Rule of Law Judicial Review
DECEMBER	Political Culture and Political Socialization Political Parties- Importance, Characteristics
JANUARU	Pressure Groups, Meaning, Kinds, Definition and importance, Role of women in the political process.
FREBRUARY	REVISION



**B.A. – III POLITICAL SCIENCE**  
**SESSION: (2019-20)**  
**PAPER-I**  
**International Politics**

MONTH	PRAPOSED PLAN
JULY	Meaning, Nature and Scope of International politics. Approaches to the study of international Politics.
AUGUST	Various theories of international Politics,
SEPTEMBER	Power: - Definition, Elements, Struggle for Power, Accumulation of Power, Increase of <del>power and exhibition of power</del>
OCTOBER	The concept of balance of power: – Theoretical advantage and evaluation.  The concept of the peace and security: – Theory of collective security
NOVEMBER	Diplomacy: – Definition, Kinds, functions, aims and means. Disarmament: – Meaning, definition and development.
DECEMBER	Disarmament: – Meaning, definition and development. Solution and hindrances in the path of Disarmament.
JANUARU	New paradigm of International Politics:- (1) Environmentalism (2) Globalization (3) Human Rights.
FREBRUARY	REVISION

## **B.A. – III POLITICAL SCIENCE**

**SESSION: (2019-20)**

### **PAPER-II**

#### **Public Administration**

<b>MONTH</b>	<b>PRAPOSED PLAN</b>
JULY	Public administration: – Meaning, nature and scope, importance. Evaluation of public administration as a discipline
AUGUST	Differences and similarities between public administration and personal administration.
SEPTEMBER	Public administration: – Methods of study and approaches, the new public administration.
OCTOBER	Politics and public administration: - Administrative, Behavior, Leadership, Decision making, Communication accountability.
NOVEMBER	The bureaucracy and the budget process, the new trends in public administration in the age of globalization & liberalization.
DECEMBER	Legislative control over administration, judicial, control on administration
JANUARU	Decision making, Communication accountability Evaluation of public administration as a discipline
FREBRUARY	REVISION

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PROPOSED TEACHING PLAN FOR THE SESSION 2019-20

Class B.A.I (Psychology)

Paper -I Title of the Paper -Basic Psychological Processes

MONTH/DAYS	Proposed Plan
JULY /27	UNIT-I Introduction-definition and goals of psychology, perspectives-behaviouristic, cognitive, humanistic and cross-cultural,
AUGUST/24	UNIT-I Methods- experimental, observational, interview, questionnaire and case study.
SEPTEMBER/24	UNIT-II Biological basis of behaviour: genes and behaviour, the nervous system-the central nervous system , the autonomic nervous system and the peripheral nervous system, Emotions- types and bodily changes( internal and external). Practical-introduction, test and experiment.
OCTOBER/18	UNIT-III Perceptual processes: nature and types of sensation and perception, Attention -process, definition, type and determinants, Practical- test and experiment.
NOVEMBER/25	UNIT-III Principles of perceptual organization, Illusion- nature and types Practical- test and experiment. .
DECEMBER/20	UNIT -IV Learning and Memory: classical and operant conditioning- basic processes, Verbal and Observational learning Practical- test and experiment
JANUARY/27	UNIT -IV Memory- sensory, short term and long term, Forgetting -process and theory. Practical- test and experiment
FREBRUARY/25	UNIT -V Cognitive and Non- cognitive process: Intelligence- nature and types, Motivation- biogenic and social motives, Thinking process- nature and types, Personality- nature and determinants, approaches to study personality-trait and type, Assessment of personality. Practical exam

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PROPOSED TEACHING PLAN FOR THE SESSION 2019-20

Class B.A.I (Psychology)  
Paper –II Psychopathology

MONTH/DAYS	Proposed Plan
JULY /27	UNIT –I Introduction; concept of Normality and Abnormality.
AUGUST/24	UNIT-I Models of Psychopathology- psychodynamic, behavioral and cognitive.
SEPTEMBER/24	UNIT-II Assessment of psychopathology; Diagnostic tests, Rating scales, Clinical interview. Practical –Introduction, Test& Experiment
OCTOBER/18	Unit-II Projective tests. UNIT-III Anxiety disorders, Panic disorder, Phobias, Obsessive-Compulsive disorder. Practical –Test& Experiment
NOVEMBER/25	UNIT-III Generalized Anxiety disorder UNIT –IV Mood disorders; Manic Depressive episode and Dysthymia. Practical –Test& Experiment
DECEMBER/20	UNIT –Personality disorder, Paranoid, Schizoid and Dependent Personality disorder. Dissociative disorder and Obesity. Practical –Test& Experiment
JANUARY/27	UNIT –IV Management of Psychopathology; Stress management, Medico and Psychosocial Therapy, Shock Therapy, Psychoanalysis, Group Therapy, and Behavior Therapy. Practical –Test& Experiment
FREBRUARY/25	Revision and Practical Exam

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PROPOSED TEACHING PLAN FOR THE SESSION 2019-20

Class B.A.II (Psychology)

PAPER-I

Title of the paper -Social Psychology

MONTH/DAYS	Proposed Plan
JULY /27	UNIT-I Introduction of social psychology – nature, scope and goals , Methods of social psychology – experimental, survey, interview, observational and Sociometry .
AUGUST/24	UNIT-I Approaches to study social behavior – psychoanalytical cognitive and behavioral UNIT- II Social perception – perception of self and others , Impression formation and its determinants
SEPTEMBER/24	UNIT-II Prosocial behavior– co-operation and helping behavior, determinants of prosocial behavior–personal, situational and socio-cultural Practical- Introduction, test & experiment
OCTOBER/18	UNIT-III Stereotype and Prejudice– nature and determinants, Interpersonal Attraction- nature and determinants Group Structure and Function – social facilitation Practical- I test& experiment
NOVEMBER/25	UNIT-III Interpersonal Attraction- nature and determinants Attitude- nature and measurements Practical- test& experiment
DECEMBER/20	UNIT –IV Group functions- cohesiveness , conformity and group norms , Leadership – nature, types, characteristics and functions Practical- test & experiment
JANUARY/27	UNIT –V Social Issues – Aggression –nature, determinants, prevention and control , Mob Behavior , Gender discrimination and Child labor Practical- report writing and checking
FREBRUARY/25	Revision& Practical Exam

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PROPOSED TEACHING PLAN FOR THE SESSION 2019-20

Class -B.A. II

Paper-II Psychological Assessment

MONTH/DAYS	Proposed Plan
JULY /27	UNIT –I I Psychological Assessment; concept, difference between physical and psychological assessment, levels of assessment.
AUGUST/24	UNIT-I Barriers in psychological assessment, unidimensional and multidimensional assessment
SEPTEMBER/24	UNIT-II Psychological test; concept, characteristics and types- standardized and non-standardized, group, performance and verbal, uses of psychological test. Practical –Introduction, Test& Experiment
OCTOBER/18	UNIT-III Test construction; steps in test construction and reliability- test-retest split-half, factors affecting reliability. Practical –Test& Experiment
NOVEMBER/25	UNIT-III Validity- content and predictive, factors affecting the validity, norms-age and grade. Practical –Test& Experiment
DECEMBER/20	UNIT –IV Cognitive and non-cognitive test; introduction to intelligence, aptitude, and achievement testing, introduction to the personality, interest and value testing Practical –Test& Experiment
JANUARY/27	UNIT –V Psychological testing in an applied aspect of life; Education, Occupation, Social, Health, and Organization, Social-Cultural factors in Psychological Assessment. Practical –Test& Experiment
FREBRUARY/25	Revision and Practical Exam

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PROPOSED TEACHING PLAN FOR THE SESSION 2019-20

Class-B.A.III

Paper- I Title of the paper -Psychological Statistics

MONTH/DAYS	Proposed Plan
JULY /27	UNIT –I Statistics: meaning and application in psychology, Nature of score, categorical and continuous variable, Frequency distribution.
AUGUST/24	UNIT-I Graphical representation of data. UNIT-II Measures of central tendency- mean, median and mode of ungrouped and grouped data,
SEPTEMBER/24	UNIT-II Measures of variability-range, standard deviation, quartile deviation and average deviation, Applications of measures of central tendency and variability. Practical – Introduction, Tests and Experiments.
OCTOBER/18	UNIT-III Nature and characteristic is of normal probability curve(NPC), the concept of skewness and kurtosis. Practical – Tests and Experiments.
NOVEMBER/25	UNIT-III Correlation- concept, types and methods-rank difference and product moment (ungrouped data). UNIT –IV Inferential statistics- concept of null hypothesis, level of significance, type-I error and type-II error. Practical – Tests and Experiments.
DECEMBER/20	UNIT –IV t-test for uncorrelated data. Practical – Tests and Experiments.
JANUARY/27	UNIT–V Distribution free statistics- chi-square, median and sign test, Application of computer in psychological statistics. Practical – Tests and Experiments.
FREBRUARY/25	Revision Practical examination

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## PROPOSED TEACHING PLAN FOR THE SESSION 2019-20

Class B.A.III (Psychology)

PAPER-II

Title of the paper – Human Development

MONTH/DAYS	Proposed Plan
JULY/27	UNIT-I Concept of Human Development, Theories of Human Development : Psychoanalytical and Maslow, Determinants of Human Development - Biological, social, cultural factors, Approaches to study human developments: Longitudinal and cross - sectional.
AUGUST/24	UNIT-I Approaches to study human developments : Longitudinal and cross - sectional UNIT-II Socialization : Role of family, peers and school, Media and socialization
SEPTEMBER/24	UNIT-II Cognitive Development : Theoretical Perspectives Piaget, Information Processing, Vyogotsky
OCTOBER/18	UNIT-III Self and Identity : Emergence of self, Development of personal identity, identity crises, Physical and sexual maturation, Sequential development of emotions
NOVEMBER/25	UNIT-IV Development of morality and self concept, Development of gender differences and gender roles. Role of marriage, family and occupation in Human Development.
DECEMBER/20	UNIT-V Problems of Aging - Cognitive, conative, affective, Developmental Disabilities.
JANUARY/27	Psychological Experiments and Tests
FREBRUARY/25	Practical Exam & Revision



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**PROPOSED TEACHING PLAN FOR THE SESSION 2019-20**

**Class -PG Diploma in Psychological Guidance and Counseling (PGC)**

**PAPER-1 Psychological Guidance**

MONTH/DAYS	Proposed Plan
JULY /27	UNIT –I Meaning and Functions of guidance. The bases of present guidance approach Basic Principle and assumption of guidance. Guidance services. Difference between Guidance and Counseling.
AUGUST/24	UNIT –II Understanding Individual ( use of interviews and questionnaires) Appraisals of Aptitude for guidance appraisal of personal qualities and interest : (Test and Inventories rating scale, behavior descriptions. Anecdotal records. Socio- metric devices evaluation of achievement, Cumulative Records, Case study and follow-up.
SEPTEMBER/24	UNIT –III Organization of guidance programme in school. Problems of guidance in India. Types of guidance services, characteristics of a well organized guidance programme.
OCTOBER/18	UNIT –IV Guidance Services for children. Guidance Of young children. Elementary School Children, Junior high school children. Adolescents.
NOVEMBER/25	UNIT –V Guidance services to adults, vocational guidance, Guidance of adults. Guidance towards family life. guidance in personal adjustment, guidance to deviates, guidance in group situation appraisals of guidance programmes, Emerging Trends in guidance.
DECEMBER/20	Internship
JANUARY/27	Internship
FREBRUARY/25	Lab work &Project work
MARCH	Seminars &Practical Exams

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**PROPOSED TEACHING PLAN FOR THE SESSION 2019-20**

Class -PG Diploma in Psychological Guidance and Counseling (PGC)

PAPER-II Counseling Theories and Techniques

MONTH/DAYS	Proposed Plan
JULY /27	UNIT –I COUNSELLING- The art and Science of helping Meaning. Purpose and goals of Counseling with special reference to India. Professional issues. Ethics. Education and training of the counselor. Counseling relationship.
AUGUST/24	UNIT–II COUNSELLING PROCESS: Theories and Techniques of Counseling. Psychodynamic Approach, Freudian, Neo Freudian, Modern. Humanistic Approach: Existential client centered.
SEPTEMBER/24	UNIT –III Cognitive Approach: rational emotive, Transaction analysis. Behavioral Approach: Operant conditioning. Behavior Modification. Indian contribution Yoga and Meditation.
OCTOBER/18	UNIT –IV COUNSELLING APPLICATION - 1 Counseling in schools, Career Counseling, Alcohol and Drug Abuse, Group counseling, Crises Intervention, Counseling Case Studies for each of the above types Of counseling applications, counseling interview.
NOVEMBER/25	UNIT –V COUNSELING APPLICATION – 11 Management of- Shyness, Smoking, Depression, Stress, Marital Maladjustment ,Old age problems, Euresis, Phobias, Fear Of interview, Fear of stage performance, Problems in decision making.
DECEMBER/20	Internship
JANUARY/27	Internship
FREBRUARY/25	Lab work &Project work
MARCH	Seminars &Practical Exam

**TEACHING PLAN**  
**B.A. PART - I (SOCIOLOGY)**  
**PAPER - I**  
**INTRODUCTION TO SOCIOLOGY**  
**2019-20**

<b>NO.</b>	<b>MONTHS</b>	<b>TEACHING PLAN</b>
1	JULY	UNIT-I- Sociology: Meaning, Natures, Scope subject matter and significance
2	AUGUST	UNIT-II- Social Institution: - Marriage family and kinship.
3	SEPTEMBER	UNIT-II- Culture and Society: - Culture, Socialization, The individual and Society, Social control, Norms & Value.
4	OCTOBER	UNIT-III- Social Stratification: - Meaning, forms and theories.
5	NOVEMBER	UNIT-III- Social Mobility: - Meaning, forms and theories.
6	DECEMBER	UNIT-IV- Social Change:- Meaning and Patterns, Types, Tractors
7	JANUARY	UNIT-IV- Social Change: - Evolution & Progress UNIT-V- Social System: Social system, Meaning Characteristics and Elements.
8	FEBRUARY	UNIT-V- Social Progress: - Meaning, Element, Characteristics and types.

**TEACHING PLAN**  
**B.A. PART - I**  
**PAPER – II**  
**FOUNDATIONS OF SOCIOLOGICAL THOUGHT**  
**2019-20**

<b>MONTH</b>	<b>PLAN</b>
JULY	<b>Unit-I: Classical View about Indian Society</b> –Varna Vyavstha; Ashram Vyavastha.
AUGUST	<b>Unit-I: Classical View about Indian Society</b> – Doctrine of Karma; Dharma; Purushartha; <b>Unit-II: Structure and Composition of Indian Society</b> – Structure of Indian Society: Village, Towns and Cities; Rural-Urban Linkage; Composition of Indian Society: Tribes.
SEPTEMBER	<b>Unit-II: Structure and Composition of Indian Society</b> – Dalit Castes; Women in Indian Society; Minorities in India; <b>Unit-III: Basic Institutions of Indian Society</b> – Caste System; Joint Family; Marriage and Changing Dimensions.
OCTOBER	<b>Unit-IV: Familial Problems</b> – Dowry; Domestic Violence; Divorce.
NOVEMBER	<b>Unit-IV: Familial Problems</b> – Intra and Inter-Generational Conflict; Problem of Elderly.
DECEMBER	<b>Unit-V: Social Problems</b> – Problems of Surrogate Motherhood; Live-in Relationship.
JANUARY	<b>Unit-V: Social Problems</b> – Regionalism and Communalism; Corruption; Youth Unrest.
FEBRUARY	<b>Revision</b>
MARCH	<b>Exam</b>

**TEACHING PLAN**  
**B.A. PART – II**  
**PAPER - I**  
**SOCIETY IN INDIA**  
**2019-20**

NO.	MONTHS		TEACHING PLAN
1	JULY	UNIT – I	<b>Views About Indian Society :</b> The Classical Views, Varna, Ashram, karma & Dharma.
2	AUGUST	UNIT – I	<b>Field Views :</b> M.N. Srinivas & S.C. Dubey. Significance & Interface of Classical & Field Views.
3	SEPTEMBER	UNIT-II	<b>The Structure &amp; Composition of Indian Society :</b> Structure : Villages, Towns, Cities & Rural Urban Linkage.
4	OCTOBER	UNIT-II	<b>Composition :</b> Tribes, Dalits, Woman & Minorities.
5	NOVEMBER	UNIT-III	<b>Basic Institutions of Indian Society :</b> Caste System, Kinship, Family, Marriage.
6	DECEMBER	UNIT-III UNIT-IV	Class, Changing Dimension. <b>Familial Problems :</b> Dowry Domestic Violence & Divorce.
7	JANUARY	UNIT-IV UNIT-V	Intra-Intergenerational Conflict, Problems of Elderly. <b>Social problems :</b> Casteism, Regionalism,
8	FEBRUARY	UNIT-V	Communalism, Youth Unrest. Revision

**TEACHING PLAN**  
**B.A. PART – II**  
**PAPER - II**  
**CRIME & SOCIETY**  
**2019-20**

NO.	MONTHS		TEACHING PLAN
1	JULY	UNIT – I	<b>Conception &amp; Types of Crime:</b> Early Explanation- Classical Positives, Psychological.
2	AUGUST	UNIT – II	<b>Social Structure &amp; Anomie :</b> Criminality- Suicide, Organized Crime.
3	SEPTEMBER	UNIT-II	<b>White Collar Crime :</b> Terrorism : Causes, Effects & Remedies.
4	OCTOBER	UNIT-III	<b>Indian Social Problem :</b> Social Change in India & Crime, Social Disorganization.
5	NOVEMBER	UNIT-III	Alcoholism & Drug Addiction, Begary
6	DECEMBER	UNIT-IV	<b>Punishment :</b> Objectives & Forms – Theories of Punishment, Probation, Parole & Open Prison
7	JANUARY	UNIT-V	<b>Correctional Process:</b> Role of Police & Judiciary in India. Development of Jail Reform in India
8	FEBRUARY	UNIT-V	Sociology of Prison. Revision

**TEACHING PLAN**  
**B.A. PART - III**

**PAPER – I**

**SOCIOLOGY OF TRIBAL SOCIETY**

**2019-20**

<b>MONTH</b>	<b>PLAN</b>
JULY	<b>Unit-I:</b> Sociology of Tribal Society; Concept of Tribe, Tribe and Caste.
AUGUST	<b>Unit-II:</b> Classification of Tribal People; Tribal Economy and Economic Classification of Tribes.
SEPTEMBER	<b>Unit-III:</b> Socio Cultural Profile of Tribe; Kinship System amongst Tribes.
OCTOBER	<b>Unit-III:</b> Tribal Marriage; Tribal Family; Religious Beliefs and Cultural Traditions amongst Tribes.
NOVEMBER	<b>Unit-IV:</b> Social Mobility and Change Sensitization among Tribes; Schemes of Tribal Development.
DECEMBER	<b>Unit-IV:</b> Various Tribal Movements; <b>Unit-V:</b> Tribal Problems: Poverty, Illiteracy, Indebtedness.
JANUARY	<b>Unit-V:</b> Tribal Problems: Agrarian Issues and Exploitation;
FEBRUARY	<b>Unit-V:</b> Tribal Communities in Chhattisgarh: Oraon, Kanwar and Gond.

**TEACHING PLAN**  
**B.A. PART - III**  
**PAPER - II**  
**METHODS OF SOCIAL RESEARCH**  
**2019-20**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>
1	JULY	Unit-I	Meaning And Significance Of Social Research, Meaning And Nature Of Social Research Hypothesis, Formulation Of Hypothesis, Scientific Method And Its Applicability
2	AUGUST	Unit II	Positivism And Ethnography, Observation, Case Study Method
3	SEPTEMBER	Unit II	Case Study Method, Content Analysis
		Unit-III	Types Of Research: Historical, Descriptive, Exploratory, Experimental
4	OCTOBER	Unit-IV	Comparative, Exploratory and Experimental
5	NOVEMBER	Unit-IV	Methods And Techniques Of Data Collection : Survey method
6	DECEMBER	Unit-IV	Questionnaire, Interview, Schedule, Interview Guide
7	JANNUARY	Unit -V	Meaning Of Social Statistics: Importance And Limitations, Graphs And Diagrams
8	FEBRUARY	Unit -V	Measures Of Central Tendency: Mean, Median, Mode, Co-Relation



MONTH/DAYS	Graduation (Timeline: Start/End)  BAI	Graduation (Timeline: Start/End)  BAII	Graduation (Timeline: Start/End)  BAIII
JULY /26	<p><b>PAPER – I (THEORY)</b> The Dance related stories of Uma-Shankar and Natwar Shri Krishna according to the Puranas.</p> <p><b>practical</b>  Tatkar in Teental and its Thah,Dugun and Chougun  Practical demonstration of gestures.</p>	<p><b>PAPER – I (THEORY)</b>  Definition of Abhinaya and brief study of its kinds.</p> <p><b>PRACTICAL</b>  Tatkar in Teental – practice  Hastak Sanchalan (hand movements)</p>	<p><b>PAPER – I (THEORY)</b>  Study of the history of Dance.  Brief knowledge of the classical dances:-  Kuchipudi Kathak</p> <p><b>PRACTICAL</b> Tatkar and its variations – practice  Hastak Sanchalan (hand movements)</p>

AUGUST/24	<p><b>PAPER – I (THEORY)</b></p> <p>The importance of Guru-Vandana in Indian theatre tradition.</p> <p>Description of Sangeet.</p> <p>The place of Dance in Sangeet.</p> <p><b>Practical</b></p> <p>Hastak Sanchalan (hand movements)</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Lakshan and Viniyog of Asamyukta Hasta Mudra according to “Abhinaya Darpan”</p> <p>Study of “Drishti-Bheda” described in Abhinaya Darpan.</p> <p><b>Practical</b></p> <p>Bhav Pradarshan on Krishna Vandana.</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Brief knowledge of the classical dances:-</p> <p>(a) Odissi (b) Mohini Attam</p> <p>Definition of Rasa and its types.</p> <p><b>Practical</b></p> <p>Bhav Pradarshan on V Vandana or Shiv Vand</p>
SEPTEMBER/23	<p><b>PAPER – II (THEORY)</b></p> <p>The stories of origin of Natya (described in the first chapter of Natya- Shashtra of Bharat Muni).</p> <p>History of Dance – Sindhu-sabhyata, vedik period, Ramayan and Mahabharat period.</p> <p><b>Practical</b></p> <p>Guru-Vandana Greeva – sanchalan Asamyukta hand gestures</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Study of “Shiro-Bheda” with shloka described in Abhinaya Darpan.</p> <p>Study of Lokadharmi and Natyadharmi.</p> <p><b>Practical</b></p> <p>Presentation on Teentaal (other than learnt in the first year)</p> <p>Aamad, Chakkardar Toda, Chakkardar Paran, Tishra jati Toda or Paran, types of Tatkar.</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Definition of Bhava and its types.</p> <p>Lakshan and Viniyog of Hasta Mudra according to “Abhinaya Darpan”.</p> <p><b>Practical</b></p> <p>Thaat (in detail)</p> <p>Presentation on Teentaal (other than learnt in the previous year)</p> <p>Aamad, two Tode, Chakkardar</p>

OCTOBER/22	<p><b>PAPER – II (THEORY)</b> Physical and mental benefits of practicing Dance</p> <p>General introduction of of any two folk dances of Chhattisgarh (based on the festivals -Parva).</p> <p><b>Practical</b> Anchit-Kunchit</p> <p>Teental – Thaat,Aamad,Paran,Tode</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Brief knowledge of the following classical dances:-</p> <p>(a) Kathak (b) Bharata Natyam (c) Kathakali (d) Manipuri</p> <p><b>Practical</b></p> <p>Presentation on Teentaal (other than learnt in the first year)Aamad,Chakkardar Toda,Chakkardar Paran,Tishra jati Toda or Paran,types of Tatkar.</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Study of Bhrikuti Bhe to “Abhinaya Darpan”</p> <p>Knowledge of Nritt Nriya.</p> <p><b>Practical</b></p> <p>Presentation on Teent than learnt in the prev years)Chakkardar Paran,Primelu,Tihaiya of Tatkar.</p>
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NOVEMBER/19	<p><b>PAPER – I (THEORY)</b> Short description of any two folk theatre tradition:-</p> <p>1-Ramleela    2-Rasleela    3-Bhawai    4-Raai    5-Maach    6-Mahabharat Nacha</p> <p><b>PRACTICAL</b></p> <p>Teental – Chakkardar Tode,Kavitta,Gatnikas (any five),Tatkar and its types.</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Position of Dance in the modern society.</p> <p><b>PAPER –II (THEORY)</b></p> <p>Notation of the Theka in Thah,Dugun,Tigun and Chougun of Choutaal and Ektaal.</p> <p>Notation of the compositions learnt in practical (Choutaal and Ektaal).</p> <p><b>PRACTICAL</b></p> <p>Practise of dance presentation on Choutaal or Ektaal – Aamad,Tode,Paran and Kavitta.</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Study of Guru-Shishya and institutional education in the education of Kalaripayattu</p> <p><b>PAPER – II (THEORY)</b></p> <p>Study of the Ten Pranas</p> <p><b>PRACTICAL</b></p> <p>Practise of dance presentation on Dhamar or Rupak Taal – Thaata,Aamad,Tode,Paran and Tihaiya.</p>
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DECEMBER/21	<p><b>PAPER – II (THEORY)</b></p> <p>Definiton – Hastak,Toda,Salami,Namaskar, Aamad,Paran ,Chakkardar,TatkarTihai,Tukde, Kavitta ,Matra,Sam and Khali.</p> <p><b>PRACTICAL</b></p> <p>Jhaptal – Thaat,Namaskriya,Aamad, Paran,Tode,</p>	<p><b>PAPER – II (THEORY)</b></p> <p>Life sketch and contribution to Kathak Dance of Pt.Bindadin Maharaj,Jaylalji Maharaj,Achchan Maharaj and Lachchu Maharaj.</p> <p>Study of essential aspects of Kathak presentation.</p> <p><b>PRACTICAL</b></p> <p>Gatnikas – Murli and Ghunghat.</p>	<p><b>PAPER – II (THEORY)</b></p> <p>Study of the various Kathak Dance.</p> <p>A brief study of Ashta A brief study of Nayak</p> <p><b>PRACTICAL</b></p> <p>Gatnikas – Revision o of previous years and Rukhsar ki Gat.</p>
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JANUARY/25	<p><b>PAPER – I (THEORY)</b></p> <p>Introduction of Taal.</p> <p>Importance of Taal in Sangeet.</p> <p>Description of Taal.</p> <p><b>PRACTICAL</b></p> <p>Jhaptal – Thaata, Chakkardar Tode, Tihai, Kavitta, Tatkar and its types</p> <p>Description of Laya and its types.</p>	<p><b>PAPER – II (THEORY)</b></p> <p>Definition – Gatnikas, Gatbhav, Thumri, Tandav and Lasya.</p> <p>Corelation of Dance with other fine arts.</p> <p>Place of literature in Dance.</p> <p><b>PRACTICAL</b></p> <p>Bhav Pradarshan on Thumri or Bhajan.</p>	<p><b>PAPER – II (THEORY)</b></p> <p>Life sketch and contribution of Kathak Dance of Narad and Sundar Prasad ji</p> <p>Notation of the Theka, Thah, Dugun, Tigun and Dhamar and Rupak Taal</p> <p>Notation of the learnt in practical (Rupak Taal)</p> <p><b>PRACTICAL</b></p> <p>Presentation of Pangh Gathav.</p>
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FEBRUARY/23	<p><b>PAPER I THEORY</b></p> <p>Notations of the compositions learnt in practical</p> <p><b>PAPER II THEORY</b></p> <p>Life sketch and contribution – Shri Shambhu Maharaj, Shri Kalika Prasad Maharaj, Sitara Devi, Damyanti Joshi.</p> <p><b>PRACTICAL</b></p> <p>Ability to dance on any song or Bhajan and knowledge of folk dance.</p>	<p><b>PAPER – II (THEORY)</b></p> <p>Study of folkdances of India.</p> <p>Study of folk dances of Chhattisgarh region.</p> <p><b>PRACTICAL</b></p> <p>Practical demonstration of the single hand gestures according to the Abhinaya Darpana.</p>	<p><b>PAPER – II (THEORY)</b></p> <p>Essay writing on the topic to Dance:-</p> <p>(a) Kathak and other dances (b) Kathak and religious dances (c) Kathak and Yoga (d) Classical and folk Kathak dance and Navras</p> <p><b>PRACTICAL</b></p> <p>Bhav Pradarshan on Tala and Bhajan.</p> <p>Practical demonstration of double hand gestures according to the Abhinaya Darpana.</p>
MARCH			
APRIL			
MAY			
JUNE			

GOVT.D.B.GIRL'S P.G. (AUTONOMOUS) COLLEGE

RAIPUR CHHATTISGARH

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PROPOSED TEACHING PLAN FOR THE SESSION 2019-20

KATHAK DANCE DEPARTMENT

THEORY and PRACTICAL OF KATHAK DANCE

BAI,BAII and BAIII



**GOVT.D.B.GIRL'S P.G. (AUTONOMOUS) COLLEGE  
RAIPUR CHHATTISGARH  
TEACHING PLAN FOR THE SESSION 2019-20**

**B.Sc. Part-I  
Subject –Biotechnology  
Paper -1**

**Title of the Paper: Biochemistry, Biostatics and Computer**

MONTH/DAYS	PROPOSED PLAN
JULY /27	<b>Unit 1</b> Introduction to biochemistry: History, Scope and Development. Carbohydrates: Classification, Structure and function of Mono, Oligo & Polysaccharides.
AUGUST/24	<b>Unit 1</b> Lipids: Structure, Classification and Function.
SEPTEMBER/24	<b>Unit 2</b> Amino acids and Proteins: Classification, Structure and Properties of amino acids, types of Proteins and their Classification and Function. Enzyme: Nomenclature and classification of enzyme, Mechanism of enzyme action, Enzyme Kinetics and factors affecting the enzyme action. Immobilization of enzymes and their application
OCTOBER/18	<b>Unit 3</b> Hormones: Plant Hormones- Auxin and Gibberellins and Animal Hormone-Pancreas and Thyroid. Carbohydrates, Proteins and Lipid Metabolism- Glycolysis, Glycogenesis, Glyconeogenesis and Krebs cycle. Electron Transport Chain and $\beta$ -oxidation of Fatty acid.
NOVEMBER/25	<b>Unit 4</b> Scope of Biostatics, Samples and Population concept, Collection of data-sampling techniques, Processing and Presentation of data. Measures of Central Tendency: Mean, Meadian and Mode and Standard Deviation. Probability Calculation : Definition of probability, Theorem on total and compound probability
DECEMBER/20	<b>Unit 5</b> Computer –General Introduction. Organization of computer, digital and analogue computers, computers algorithm.
JANUARY/27	<b>Unit 5</b> Concept of Hardware and software, Input and output Devices. Application of computer in co-ordination of solute concentration, pH and Temperature etc. of a fermenter in operation and Internet application.
FREBRUARY/25	Revision and Practical Exam

## TEACHING PLAN FOR THE SESSION 2019-20

### B. Sc. Part-I

### Subject –Biotechnology

### Paper -II

### Title of the Paper: Cell Biology, Genetics and Microbiology

MONTH/DAYS	PROPOSED PLAN
JULY /27	<b>Unit1</b> Concept of life, Cell as a basic unit of living system and Cell theory. Diversity of Cell shape and size. Prokaryotic cell structure: Function and ultra structure of cell (Gram positive and Gram negative Bacteria), Plasma membrane, Flagella, Pili, Endospore and Capsule. Eukaryotic Cell: Plant cell wall and Plasma membrane.
AUGUST/24	<b>Unit 2</b> Cytoplasm: Structure and functions of Endoplasmic reticulum, Ribosome, Golgi complex, Lysosomes, Nucleus, Mitochondria and Chloroplast. Cytoskeleton: Microtubules, Microfilaments and Intermediate filaments. Cell division : Mitosis and Meiosis. Programmed Cell Death.
SEPTEMBER/24	<b>Unit 3</b> Mendel's Laws of Inheritance. Linkage and Crossing over. Chromosome variation in number and structure: Deletion, Duplication,
OCTOBER/18	<b>Unit3</b> Translocation, Inversion and Aneuploidy, Euploidy (Monoploidy and Polyploidy and its importance).
NOVEMBER/25	<b>Unit 4</b> History, Scope and Development of Microbiology. Basic techniques of Microbial Culture. Microbial growth & Nutrition of Bacteria: Isolation, media sterilization physical and chemical agents, pure culture pour plate method, streak plate method and spread plate method. General features and Economic importance of Fungi, Algae and Protozoa etc.
DECEMBER/20	<b>Unit 5</b> Bacterial Reproduction: Conjugation, Transduction and Transformation. Mycoplasma- History, Classification, Structure, reproduction & Diseases.
JANUARY/27	<b>Unit 5</b> Viruses- Basic features, Structure, Classification, Multiplication, Bacteriophages (Morphology, life cycle, infection and medicinal importance).Revision
FEBRUARY/25	Revision and Practical Exam

**TEACHING PLAN FOR THE SESSION 2019-20**  
**B.Sc. Part-II**  
**Subject –Biotechnology**  
**Paper -1**  
**Title of the Paper: Molecular Biology and Biophysics**

MONTH/DAYS	PROPOSED PLAN
JULY /27	Unit1 DNA :Structure, types and replication RNA : Structure, types and Function Structure of gene ,old and new concept
AUGUST/24	Unit 2 Genetic code : Properties, codon assignment, Secondary genetic code Protein Synthesis Mitochondrial genome Chloroplast genome
SEPTEMBER/24	Unit 3 Gene therapy Transposable elements DNA damage and repair Tissue engineering :General concept
OCTOBER/18	Unit 4 Law of Thermodynamics Beer lambert's law Radioisotopes techniques Autoradiography
NOVEMBER/25	Unit 5 Biophysics introduction, scope and application Principle, structure, function of the following : a. Spectroscopy                      b. Electrophoresis c. Centrifugation                      d. Colorimeter
DECEMBER/20	Unit 5 Principle, structure, function of the following : e. Chromatography      f. ELISA
JANUARY/27	Revision
FREBRUARY/25	Practical Exam and Revision

## TEACHING PLAN FOR THE SESSION 2019-20

### B.Sc. Part-II

### Subject –Biotechnology

### Paper -II

### Title of the Paper: Recombinant DNA technology

MONTH/DAYS	PROPOSED PLAN
JULY /27	<b>Unit-I</b> Scope and aim of the Biotechnology Recombinant DNA Technology:General Concept and Application, Strategies of recombinant DNA Technology in prokaryotes. Restriction enzymes: Endonuclease (type, Nomenclature, Restriction, Sequence and Cleavage Pattern).Modifications of cut ends.Steps in gene cloning.Isolation of the desired gene.cDNA Library, Genomic Library.
AUGUST/24	<b>Unit-II</b> Vectors (Animal and Plant vectors) Bacteriophage vectors Introduction of vectors into appropriate host
SEPTEMBER/24	<b>Unit-III</b> Types of PCR Applications Advantages and Limitation of PCR PCR: Procedure ( denaturation , annealing, extension)
OCTOBER/18	<b>Unit-IV</b> Monoclonal Antibodies : Structure ,production, Application
NOVEMBER/25	<b>Unit-IV</b> In vitro fertilization and embryo transfer Genome map and Genome project Apoptosis
DECEMBER/20	<b>Unit-V</b> Stem cell technology Targeted Gene Transfer DNA fingerprinting Transgenic animals and plants
JANUARY/27	Revision
FREBRUARY/25	Practical Exam and Revision

## TEACHING PLAN FOR THE SESSION 2019-20

### B.Sc. Part-III

### Subject –Biotechnology

### Paper -1

### Title of the Paper: Plant, Environment and Industrial Biotechnology

MONTH/DAYS	PROPOSED PLAN
JULY /27	<b>Unit-I</b> Plant cell and tissue culture: General introductio , history, scope.Application of tissue culture. Concept of cellular differentiation.Agro bacterium. Ti and Ri-plasmid.Bt gene, Molecular marker (RFLP,RAPD), edible vaccines.
AUGUST/24	<b>Unit-II</b> Oraganogenesis , Embryogenesis, protoplast isolation and fusion.Germplasm storage and Cryopreservation.Anther and ovary culture.
SEPTEMBER/24	<b>Unit-III</b> General introduction and scope of environmental Biotechnology.Environmental pollution and its types.
OCTOBER/18	<b>Unit-III</b> Control of pollution of through biotechnology. Wastewater treatment: - Physical, Chemical and Biological.
NOVEMBER/25	<b>Unit-IV</b> Biofertilizer , Biopesticides , IPR.Global environmental problem-general introduction, Ozone depletion, Acid rain.Green house effect.
DECEMBER/20	<b>Unit V</b> Bioreactors and its types.Fermentation (Lactic acid, alcohol).Maintenance of Industrial micro-organisms
JANUARY/27	<b>Unit-V</b> Food technology – Introduction, canning, packing and food preservation. and Revision
FREBRUARY/25	Practical Exam and Revision

## TEACHING PLAN FOR THE SESSION 2019-20

### B.Sc. Part-III

#### Subject –Biotechnology

#### Paper -II

#### Title of the Paper: Immunology

MONTH/DAYS	PROPOSED PLAN
JULY /27	<b>Unit-I</b> Immunology- general concept, history and development.Immune system and Immunity, organization of immune system
AUGUST/24	<b>Unit I</b> Antigen and antibody and its types <b>Unit-II</b> Cell involved in immune system, type and cells, basic structure and function ,Cytokines. Cell mediated immunity interferons , hypersensitivity.
SEPTEMBER/24	<b>Unit-III</b> Antigen- Antibody interaction, principles and types.
OCTOBER/18	<b>Unit –III</b> Immunohaematology – general concept blood group system Rh factor Medical application of blood groups.
NOVEMBER/25	<b>Unit -IV</b> Origin and diversity in immune system.Effectors mechanism Immunity of infection disease monoclonal antibodies.
DECEMBER/20	<b>Unit- V</b> Autoimmune disease, hemolytic anemia,  Rheumatoid arthritis, insulin depend diabetes,  Myasthenia gravis, organ transplantation
JANUARY/27	<b>Unit- V</b> immune deficient disease, cancer ,AIDS.  Revision
FEBRUARY/25	Practical Exam and Revision

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**PROPOSED TEACHING PLAN FOR THE SESSION 2019-20****DEPARTMENT OF BOTANY****B.Sc. Part-I****Paper- I : BACTERIA, VIRUSES, FUNGI, LICHENS AND ALGAE**

Month	Course
<b>July</b> <b>Unit I</b>	<b>VIRUSES:</b> General characteristics, types of viruses based on structure and genetic material. Multiplication of viruses (General account), Lytic and Lysogenic cycle. Economic importance. Structure and multiplication of Bacteriophages. General account of Viroids, Virusoids, Prions, and Cyanophages. Mycorrhiza-Types and Significance.
<b>August</b> <b>Unit II&amp;II</b>	<b>BACTERIA:</b> General characteristics and classification (on the basis of morphology), fine structure of bacterial cell, Gram positive and Gram negative bacteria, mode of nutrition and reproduction vegetative, asexual and recombination (Conjugation, transformation and transduction), Economic importance. Microbial Biotechnology, <i>Rhizobium</i> , <i>Azotobacter</i> , <i>Anabena</i> .
<b>September</b> <b>Unit III</b>	<b>FUNGI:</b> General account of habit and habitat, structure (range of thallus organization), cell wall composition, nutrition and reproduction in fungi. Heterothallism and Parasexuality. Outlines of classification of fungi. Economic importance of fungi.
<b>October</b> <b>Unit III &amp; IV</b>	<b>FUNGI:</b> Life cycles of <i>Saprolegnia</i> , <i>Albugo</i> , <i>Aspergillus</i> , <i>Peziza</i> , <i>Agaricus</i> , <i>Ustilago</i> , <i>Puccinia</i> , <i>Alternaria</i> and <i>Cercospora</i> . VAM Fungi <b>ALGAE:</b> Algae: General characters, range of thallus organization, Gaidukov phenomenon, reproduction, life cycle patterns and economic importance. Classification, Systematic position, occurrence, structure and life cycle of following genera : <i>Nostoc</i> , <i>Gloeocapsa</i> , <i>Volvox</i> , <i>Oedogonium</i> , <i>Vaucheria</i> , <i>Chara</i> , <i>Ectocarpus</i> , <i>Polysiphonia</i> .
<b>November</b> <b>Unit IV</b>	<b>ALGAE:</b> Life cycle of following genera : <i>Nostoc</i> , <i>Gloeocapsa</i> , <i>Volvox</i> , <i>Oedogonium</i> , <i>Vaucheria</i> , <i>Chara</i> , <i>Ectocarpus</i> , <i>Polysiphonia</i> .
<b>December</b> <b>Unit V</b>	<b>Lichens-</b> General account, types, structure, nutrition, reproduction and economic importance. Mycoplasma: Structure and importance. Blue Green Algae (BGA) in nitrogen economy of soil and reclamation of Ushar land. Mushroom Biotechnology
<b>January</b>	<b>Revision</b>
<b>February</b>	<b>Practical Exam</b>

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**PROPOSED TEACHING PLAN FOR THE SESSION 2019-20**  
**DEPARTMENT OF BOTANY**  
**B.Sc.I BOTANY PAPER II M.M.50**  
**BRYOPHYTES, PTERIDOPHYTES, GYMNOSPERMS AND**  
**PALAEOBOTANY**

MONTH	BRYOPHYTES, PTERIDOPHYTES, GYMNOSPERMS AND PALAEOBOTANY
July Unit I	<b>BRYOPHYTA:</b> General characteristics, affinities, range of thallus organization, general classification and economic & ecological importance, Systematic position, occurrence, morphology anatomy and reproductive structure in <i>Riccia</i> , <i>Marchantia</i> , <i>Pellia</i> , <i>Anthoceros</i> , <i>Funaria</i> . Vegetative reproduction in Bryophytes, Evolution of sporophytes.
August Unit I & II	<b>BRYOPHYTA:</b> <i>Riccia</i> , <i>Marchantia</i> , <i>Pellia</i> , <i>Anthoceros</i> , <i>Funaria</i> . Vegetative reproduction in Bryophytes, Evolution of sporophytes.  <b>PTERIDOPHYTES:</b> General characteristics, affinities, economic importance and classification, Heterospory and seed habit,
September Unit II	<b>PTERIDOPHYTES :</b> Stellar system in Pteridophytes, Aposory and apogamy, Telome theory, <i>Azolla</i> as Biofertilizer.
October Unit III	Systematic position, occurrence. Morphology, anatomy and reproductive structure of <i>Psilotum</i> , <i>Lycopodium</i> , <i>selaginella</i> , <i>Equisetum</i> , <i>Marsilea</i> .
November Unit IV	<b>GYMNOSPERM:</b> General characteristics, affinities, economic importance and classification, Morphology, anatomy and reproduction in <i>Cycas</i> , <i>Pinus</i> and <i>Ephedra</i> .
December Unit IV & V	<b>GYMNOSPERM:</b> Morphology, anatomy and reproduction in <i>Cycas</i> , <i>Pinus</i> and <i>Ephedra</i> .
January Unit V	<b>PALAEOBOTANY:</b> Geological time scale, types of fossils and fossilization, Rhynia, study of some fossil gymnosperms. <i>Lygenopteris</i>



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**PROPOSED TEACHING PLAN FOR THE SESSION 2019-20**

**DEPARTMENT OF BOTANY**

**B.Sc.- II, PAPER -I**

**DIVERSITY OF SEED PLANTS AND THEIR SYSTEMATICS**

Month	Proposed Topic
JUL Unit-I	Characteristics of seed plants- Evolution of seed habits; seed plants with (angiosperms) & without (gymnosperms) fruits; fossils & living seed plants.  General features of gymnosperms & their classification- Evolution & diversity of gymnosperms, geological time scale, fossilization & fossil gymnosperms.
AUG Unit II	Morphology of vegetative & reproductive parts; anatomy of roots, stem & leaf, reproduction & life cycle of Pinus, Cycas & Ephedra.
SEP Unit III	Angiosperms origin & evolution. Some examples of primitive angiosperms.  Angiosperms taxonomy: brief history, aims & fundamental components; identification, keys taxonomic literature.
OCT Unit III & IV	Botanical nomenclature: Principles & rules; taxonomic ranks; type concept; principle of priority.  Classification of angiosperms; salient features of the systems proposed by Bentham & Hooker, Engler & Prantl.
NOV Unit IV	Major contributions of cytology, phytochemistry & taximetrics to taxonomy.
DEC Unit V	Diversity of flowering plants: general account of families:- Ranunculaceae, Brassicaceae ,Malvaceae, Rutaceae, Fabaceae, Apiaceae, Acanthaceae
JAN Unit V	Apocynaceae, Asclepiadaceae, Solanaceae, Lamiaceae, Chenopodiaceae, Euphorbiaceae, Liliaceae & Poaceae.

FEB	Practical exam Practicals done every month as per schedule
MAR	Theory exam
APR	

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**PROPOSED TEACHING PLAN FOR THE SESSION 2019-20**

**DEPARTMENT OF BOTANY**

**B.Sc.-II, PAPER-II**

**STRUCTURE DEVELOPMENT & REPRODUCTION IN FLOWER PLANTS**

Month	Proposed Topic
JUL  Unit-I	The basic body plan of a flowering plant: modular type of growth.  Diversity in plant form in annuals, biennials & perennials: convergence of evolution of tree habit in gymnosperms, monocotyledons & dicotyledons ; trees- largest & longest- live organisms.
AUG  Unit II	The shoot system: the shoot apical meristem & its histological organization; vascularization of primary shoot in monocotyledons & dicotyledons; formation of internodes, branching pattern; monopodial & sympodial growth, canopy architecture, cambium & its functions, formation of secondary xylem, a general account of wood structure in relation to conduction of water & minerals, characteristics of growth rings, sapwood & heart wood, role of woody skeleton secondary phloem – structure- function relationships, periderm.
SEP  Unit III	<b>Leaf:</b> origin, development, arrangement & diversity in size & shape, internal structure in relation to photosynthesis & water loss, adaptations to water stress, senescence & abscission.  <b>The root system;</b> the root apical meristem, differentiation of primary & secondary tissues & their roles, structural modifications for storage, respiration, reproduction & interaction with microbe
OCT  IV	Flower: a modified shoot; structure, development & varieties of flower, functions, structure of anther & pistil, the male & female gametophytes, types of pollination, attractions & rewards for pollinators, pollen- pistil interaction, self incompatibility, double fertilization, formation of seed- endosperm & embryo, fruit development & maturation.
NOV  Unit IV	Flower: Types of pollination, attractions & rewards for pollinators, pollen- pistil interaction, self incompatibility, double fertilization, formation of seed- endosperm & embryo, fruit development & maturation.
DEC  Unit V	Significance of seed; suspended animation, ecological adaption: unit of genetic recombination & replenishment, dispersal strategies.
JAN  Unit V	Vegetative reproduction: vegetative propagation, grafting & economic aspects.

FEB	Practical exam
MAR	Theory exam
APR	

## TEACHING PLAN

Govt. D B Girls P.G. College, Raipur (C.G.)

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Proposed Teaching Plan ( Session-2019-20)

### DEPARTMENT OF BOTANY

#### B.Sc. –III BOTANY, Paper -I PLANT PHYSIOLOGY, BIOCHEMISTRY AND BIOTECHNOLOGY

MONTH	PAPER-I-PLANT PHYSIOLOGY, BIOCHEMISTRY AND BIOTECHNOLOGY
<b>JULY UNIT-I</b>	<b>Plant water relations:</b> importance of water to plant life; physical properties of water
<b>AUGUST UNIT-I</b>	<b>Plant water relations:</b> diffusion & osmosis; absorption, transport of water, transpiration; physiology of stomata. <b>Mineral nutrition:</b> Essential macro and micro elements and their role; mineral uptake; Deficiency and toxicity symptoms.
<b>SEPTEMBER UNIT-II</b>	<b>Transport of organic substances:</b> Mechanism of phloem transport; source- sink relationship; factors affecting translocation. <b>Basic of enzymology:</b> Discovery and nomenclature; characteristics of enzymes; concepts of holoenzyme, Apoenzyme, coenzyme and cofactor; regulation of enzyme activity, mechanism of action.
<b>OCTOBER UNIT- II &amp; III</b>	<b>Photosynthesis:</b> Significance; historical aspects; photosynthetic pigments, action spectra and enhancement effects, concept of 2 photosystem, Z- scheme, photophosphorylation; Calvin cycle; C4 pathway, CAM plants, photorespiration. <b>Respiration:</b> ATP- The biological energy currency; aerobic and anaerobic respiration;
<b>NOVEMBER UNIT- III</b>	<b>Respiration:</b> Kreb's cycle, electron transport mechanism (Chemi- Osmotic theory); redox potential, Oxidative phosphorylation, pentose phosphate pathway. <b>Nitrogen and lipid metabolism:</b> biology of nitrogen fixation; importance of nitrate reductase and its regulation; ammonium assimilation; saturated and unsaturated fatty acids; storage and mobilization of fatty acids.
<b>DECEMBER</b>	<b>Growth and development:</b> Definitions; phases of growth and development; kinetics of growth, seed dormancy, seed germination and factors of their

<b>UNIT-IV</b>	regulation; plant movements; the concept of photoperiodism; physiology of flowering; florigen concept; biological clocks; physiology of senescence, fruit ripening; plant hormones: Auxins, gibberellins, cytokinins, abscisic acid, ethylene, history of their discovery, biosynthesis and mechanism of action, photomorphogenesis, phytochromes and cryptochromes, their discovery, physiological role and mechanism of action.
<b>JANUARY</b>	<p><b>Genetic engineering:</b> tools and techniques of recombinant DNA technology; Cloning vectors; Genomic and cDNA library; transposable elements; techniques of gene mapping and chromosome walking.</p> <p><b>Biotechnology:</b> functional definition; basic aspects of plant tissue culture; cellular totipotency, differentiation and morphogenesis; biology of agro bacterium; vectors for gene delivery and marker genes; salient achievements in crop biotechnology.</p>

## PROPOSED TEACHING PLAN FOR THE SESSION 2019-20

### DEPARTMENT OF BOTANY

#### B.Sc.- III, PAPER –II

#### ECOLOGY AND UTILIZATION OF PLANTS

Month	Proposed Topic
JULY Unit-I	<p>Plants and environment: Atmosphere (gaseous composition), water (properties of water cycle), light (global radiation, photo synthetically active radiation), temperature, soil (development of soil profiles, physico-chemical properties), and biota.</p> <p>Morphological, anatomical and physiological responses of plants to water (hydrophytes &amp; xerophytes), temperature (thermoperiodicity), light (photoperiodism, heliophytes &amp; sciophytes) &amp; salinity.</p>
AUG Unit II	<p>Community Ecology: Community characteristics, frequency, density; cover, life form, biological spectrum; ecological succession.</p> <p>Ecosystems: Structure, abiotic &amp; biotic components; food chain, food web, ecological pyramid, energy flow; biogeochemical cycles of carbon, nitrogen and phosphorus.</p>
SEP Unit III	<p>Population ecology: Growth curves; ecotypes; ecades.</p> <p>Biogeographical regions of India.</p> <p>Vegetation types of India: Forests &amp; grasslands.</p>

OCT III	Vegetation types of India: Forests & grasslands.
NOV Unit IV	Utilization of plants  Food plants: rice, wheat, maize, potato, sugarcane.  Fibers: Cotton & Jute  Vegetable oils: groundnut, mustard and coconut  General account of sources of firewood, timber & bamboos.
DEC Unit V	Spices: General account.  Medicinal plants: :General account  Beverages :Tea & coffee  Rubber.
JAN	Practical Exam

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PROPOSED TEACHING PLAN FOR THE SESSION 2019-20

B.Sc. PART – ONE (CHEMISTRY)

MONTH	PROPOSED WORK	PAPER - ONE	PAPER – TWO	PAPER - THREE
July	UNIT – I	<b>A. ATOMIC STRUCTURE</b> Bohrs theory, its limitations and atomic spectrum of hydrogen atom, General idea of de-Broglie matter-waves, Heisenberg Uncertainty principle, Schrodinger wave equation, significance of $\Psi$ and $\Psi^2$ , radial & angular wave functions and probability distribution curves, Quantum numbers, Atomic orbital and shapes of s, p, d orbital's, Aufbau and Pauli exclusion principles, Hund's Multiplicity rule, electronic configuration of the elements.	<b>BASICS OF ORGANIC CHEMISTRY</b> Hybridization, Shapes of molecules, Influence of hybridization on bond properties. Electronic Displacements: Inductive, electromeric, resonance and mesomeric effects, hyper conjugation and their applications; Dipole moment, Electrophiles and Nucleophiles;	<b>MATHEMATICAL CONCEPTS FOR CHEMIST</b> Basic of Mathematical Concepts: Logarithmic relations, curve sketching linear graphs, Properties of straight line, sloped and intercept, Differentiation of functions, Maxima and minima, Integrals, Ordinary differential equations, vectors and matrices, determinants,,

<b>August</b>	<b>UNIT – I</b>	<b>B. PERIODIC PROPERTIES</b> Detailed discussion of the following periodic properties of the elements with reference to s- and p-block elements, trend in periodic table and applications in predicting and explaining the chemical behavior. <ul style="list-style-type: none"> <li>a) Atomic and ionic radii</li> <li>b) Ionization energy</li> <li>c) Electron gain enthalpy</li> <li>d) Electronegativity, Paulings, Mullikens, AllredRochow s scale</li> <li>e) Effective nuclear charge, shielding or screening effect, Slaters rule, variation of effective nuclear charge in periodic table</li> </ul>	<b>BASICS OF ORGANIC CHEMISTRY</b> Nucleophilicity and basicity; Homolytic and Heterolytic cleavage, Generation, shape and relative stability of Carbocations, Carbanions, Free radicals, Carbenes and Nitrenes, Introduction to types of organic reactions: Addition, Elimination and Substitution reactions.	<b>MATHEMATICAL CONCEPTS FOR CHEMIST</b> Permutation and combination, and Probability Theory, Significant figures and their applications
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September	UNIT – II	<b>CHEMICAL BONDING I</b> <b>Ionic bond:</b> Ionic solids, Ionic structures, radius ration and c-ordination number, limitations of radius ration rule, lattice defects, semiconductors, lattice energy, Born Haber cycle, salvation energy and solubility of ionic solids, polarizing power and polarisibility of ions, Fajans rule, Ionic character in covalent compounds, Bond Moment and dipole moments, Percentage of ionic character from dipole moment and electronegativity difference, Metallic bond,-free electron, Valence bond and band theories.	<b>INTRODUCTION TO STEREOCHEMISTRY-</b> Optical Isomerism: Optical Activity, Specific rotation, Chirality/Asymmetry Enantiomers,Molecules with two or more chiral-centres, Distereoisomers, meso compounds, Relative and absolute configuration, Fischer Projection, Newmann and Sawhorse Projection formulae and their interconversions; Erythrose & threose, D/L, d/l system of nomen. Cahn Ingold Prelog system of nomen (CIP rules), R/ S nomen, Geometrical isomerism –cis-trans, synanit and E/Z	<b>GASEOUS STATE CHEMISTRY</b> Gaseous state: Kinetic molecular model of a gas: postulates and derivation of the kinetic gas equation; collision frequency; collision diameter; mean free path, Maxwell distribution and its use in evaluating molecular velocities (average, root mean square and most probable) and average kinetic energy, law of equipartition of energy, degrees of freedom and molecular basis of heat capacities. Joule thmson effect, Liquification of gases, Behaviour of real gases: Deviations from ideal gas behaviour, compressibility factor (Z), and its variation with pressure for different gases. Causes of deviation from ideal behaviour.vander Waals equation of state, its derivation and application in explaining real gas behaviour,calculation of Boyle temperature. Isotherms of real gases and their comparison with van der Waals isotherms, continuity of states, critical state, relation between critical constants and van der Waals constants, law of corresponding states.
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<b>October</b>	<b>UNIT – III</b>	<b>CHEMICAL BONDING II</b> <b>Covalent Bond</b> : Lewis structure, valence bond theory and its limitations. Concept of hybridization, Energies of hybridization, equivalent and non-equivalent hybrid orbital's, Valence shell electron pair repulsion theory (VSEPR) shapes of the following simple molecules and ions containing lone pairs and bond pairs of electrons, H <sub>2</sub> O, NH <sub>3</sub> , PCl <sub>5</sub> , SF <sub>4</sub> , H <sub>3</sub> O <sup>+</sup> , SF <sub>6</sub> , ClF <sub>3</sub> and ICl <sub>2</sub> <sup>-</sup> ,	<b>CONFORMATION ANALYSIS OF ALKANES</b> Conformational analysis of alkanes, ethane, butane cyclohexane and sugars, Relative stability and energy diagrams, Types of cycloalkanes and their relative stability, Baeyer strain theory, Theory of strainless rings, chair, boat and twist boat conformations of cyclohexane with energy diagrams,	<b>A. LIQUID STATE CHEMISTRY</b> Inter molecular forces, magnitude of intermolecular force, structure of liquids, Properties of liquids, viscosity and surface tension. <b>B.</b> ideal and non-ideal solutions, modes of representing concentration of solutions, activity and activity coefficient. B. Dilute solution: Colligative Properties, lowering of vapour pressure of solvent, Raoult's law, Osmosis, van Hoff Theory of dilute solutions,
<b>November</b>	<b>UNIT – III &amp; IV</b>	<b>UNIT-III CHEMICAL BONDING II</b> Molecular orbital theory, bond order and bond strength, Molecular orbital diagrams of diatomic and simple polyatomic molecules N <sub>2</sub> , O <sub>2</sub> , F <sub>2</sub> , CO, NO <b>UNIT-IV A. s-BLOCK ELEMENTS</b>	<b>UNIT-III CONFORMATION ANALYSIS OF ALKANES</b> Relative stability of mono substituted cycloalkanes and disubstituted cyclohexane <b>UNIT -IV CHEMISTRY OF ALIPHATIC HYDROCARBONS</b>	<b>UNIT- III</b> B..measurements of Osmotic pressure, relationship between lowering of vapour pressure and osmotic pressure. Elevation of boiling point. Depression in freezing point, abnormal molar masses, Depression of dissociation and association of solutes, Vant Hoff factor. <b>UNIT- IV A. LIQUID CRYSTALS</b>

		General concepts on group relationship and gradation properties, comparative study, silent features of hydrides, solvation and complexation tendencies including their function in biosystems and introduction to alky & aryl, derivation of alkali and alkaline earth metals	<b>A. Carbon-Carbon sigma bonds</b> Chemistry of alkanes: Formation of alkanes, Wurtz Reaction, Wurtz-Fittig Reactions, Freeradical substitutions: Halogenation - relative reactivity and selectivity.	Difference between liquid Crystal, solids and liquids, Classification. Structure "of nematic and cholestric phases, Thermography. Seven segment cell, applications of liquid Crystals. <b>B. COLLOIDAL STATE</b> Classification, Optical. Kinetic, and Electrical Properties of colloid. Coagulation, Hardy Schulze law, flocculation value. Protection, Gold number, Emulsion, micelle. Gel. Syneresis and thixotrophy. Application of colloid.
December	UNIT –IV	<b>B. p-BLOCK ELEMENTS</b> General concepts on group relationship and gradation properties, Halides, hydrides, oxides and oxoacids of Boron, Aluminum, Nitrogen and Phosphorus, Boranes, Borazine, fullerenes, grapheme and silicates, interhalogens and pseudo halides.	<b>CHEMISTRY OF ALIPHATIC HYDROCARBONS</b> <b>B. Carbon-Carbon pi bonds</b> Formation of alkenes and alkynes by elimination reactions, Mechanism of E1, E2, E1cb reactions. Saytzeff and Hofmann eliminations. Reactions of alkenes: Electrophilic additions their mechanisms (Markownikoff/AntiMarkownikoff addition), mechanism of oxy-mercuration-demercuration, hydroboration	<b>C. SOLID STATE</b> Space lattices, unit cells. Elements of Symmetry in crystallize solids, X-rays diffraction, Miller's indices, identification of unit cell by Braggs Spectrometer, Powder method, Neutron and electron diffraction (Elementary idea only)

			oxidation, ozonolysis, reduction (catalytic and chemical), syn and anti hydroxylation (oxidation).1, 2- and 1, 4- addition reactions in conjugated dienes and, Diels-Alder reaction; Allylic and benzylic bromination and mechanism, e.g. propene, 1-butene, toluene, ethyl benzene. Reactions of alkynes: Acidity, Electrophilic and Nucleophilic additions. Hydration to form carbonyl compounds, Alkylation of terminal alkynes.	
<b>January</b>	<b>UNIT – V</b>	<p><b>.UNIT-V A: CHEMISTRY OF NOBLE GASES</b></p> <p>Chemical properties of the noble gases, Chemistry of xenon, structure, bonding in xenon compounds.</p> <p><b>B. THEORETICAL PRINCIPLES IN QUALITATIVE ANALYSIS (H<sub>2</sub>S SCHEME)</b></p>	<p><b>AROMATIC HYDROCARBONS</b></p> <p>Aromaticity: Hückel's rule, aromatic character of arenes, cyclic carbocations/carbanions and heterocyclic compounds with suitable examples. Electrophilic aromatic substitution: halogenation, nitration, sulphonation and Friedel-Craft's alkylation/acylation with</p>	<p><b>A. CHEMICAL KINETICS</b></p> <p>Rate of reaction, Factors influencing rate of reaction, rate constant. Order and molecularity of reactions. Zero, first and second order reaction, methods of determining order of reaction. Complex reactions: Consecutive, opposing and side reactions, Chain reactions. Temperature dependence of reaction rate, Arrhenius theory, Physical significance of Activation energy, collision theory, demerits of collision</p>

		Basic principles involved in the analysis of cations and anions and solubility products, common ion effect, Principles involved in the separation of cations into groups and choice of groups reagents, interfering anions (fluoride, borate, oxalate and phosphate) and need to remove them after group II.	their mechanism. Directing effects of the groups.	theory, non-mathematical concept of transition state theory. <b>B. CATALYSIS</b> Homogeneous and Heterogeneous Catalysis, types of catalyst, characteristics of catalyst.  Enzyme Catalysed reactions. Micellar catalysed reactions. Industrial applications of Catalysis.
<b>February</b>	<b>DOUBT CLASS</b>	<b>REVISION AND PRACTICAL EXAM.</b>	<b>REVISION AND PRACTICAL EXAM.</b>	<b>REVISION AND PRACTICAL EXAM.</b>

GOVT.D.B. GIRL'S P.G. (AUTONOMOUS) COLLEGE  
RAIPUR CHHATTISGARH

**TEACHING PLAN COMPUTER SCIENCE SESSION 2019-20**

**B.Sc I Computer Science**

**PAPER-I**

**Computer Fundamental**

MONTH	PROPOSED PLAN
JULY	<b>UNIT 1</b> -History of computer, generation of computer, calculator vs computer, digital and analog computers and its evolution. Major components of digital computers, memory addressing capability of cpu. word length and processing speed of computers. microprocessor, single chip microcomputer, large and small computers. users interface, hardware, software and firmware.
AUGUST	<b>UNIT 1</b> -Multiprogramming and multi user system, dumb, smart and intelligent terminals, computer network and multi processing. LAN parallel processing. Flynn's classification of computers, control flow and data flow computers. <b>UNIT II</b> -Parts of CPU-ALU, control UNIT, registers, architecture of intel 8085 microprocessor, instructions for intel 8085 microprocessor
SEPTEMBER	<b>UNIT II</b> -Instruction word size, various addressing mode, interrupts, some special control signals, instruction cycle, fetch and execute operation, timing diagram, instruction flow and data flow.  <b>UNIT III</b> -Memory hierarchy, primary and secondary memory, cache memory and virtual memory.
OCTOBER	<b>UNIT III</b> -direct access storage device (DASD), destructive and non destructive readout, program and data memory, memory management UNIT (MMU), PCMCIA cards and Slots.  <b>UNIT IV</b> -I/O devices- keyboard, mouse, monitor, Impact and non-impact printers, plotter, scanner, other input/output devices.
NOVEMBER	<b>UNIT IV</b> -Scan methods of display- Raster scan, Vector scan, Bit Mapped scan, CRT controller, I/O port. Programmable and non-Programmable I/O ports. In-built I/O ports- Parallel and Serial ports, USB, IEEE 1394, AGP, Serial data transfer scheme, Micro controller, Signal Processor, I/O processor, Arithmetic processor.
DECEMBER	<b>UNIT V</b> -Application and System software- Introduction, Example, Differences, etc. Introduction to Open source software such as UNIX, LINUX (UBUNTU), Libre Office, etc. Introduction to Machine Language, Assembly language, and High level language

## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>JANUARY</b>	<b>UNIT V</b> -Programming techniques, stack, subroutine, debugging of programs, macro, program design, software development, flow chart, multi programming, Multiuser, Multitasking Protection, Operating system and Utility programs, Application Packages.
<b>FEBRUARY</b>	REVISION + PRACTICAL EXAM

### B.SC I COMPUTER SCIENCE PAPER-II PROGRAMMING IN 'C'

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT I</b> -Overview of C : History of 'C', Structure of 'C' program.Keywords, Tokens, Data types, Constants, Literals and Variables, Operators and Expressions: Arithmetic operators, Relational operator, Logical operators, Expressions, Operator : operator precedence and associativity. Type casting, Console I/O formatting, Unformatted I/O functions: getch(), getchar, getche(),getc(), putc(), putchar().
<b>AUGUST</b>	<b>UNIT II- Control Constructs:</b> If-else, conditional operators, switch and break, nested conditional branching statements, loops: For, do.. while, while, Nested loops, break and continue, goto and label, exit function.  <b>Functions</b> :-definition, function components: Function arguments, return value, function call statement,function prototype. Type of function t. Scope and lifetime of variable.  <b>Practical</b> - learn how to use c environment ,basic of c software and how to write program, compiling and running a program.programs based on conditional statements like if else,looping,break etc.
<b>SEPTEMBER</b>	<b>UNIT II</b> - Call by value and call by reference. Function using arrays, function with command line argument. User defined function: maths and character functions, Recursive function.  <b>UNIT III-Array</b> :-Array declaration, One and Two dimensional numeric and character arrays. Multidimensional arrays. <b>String</b> :- String declaration, initialization, string manipulation with/without using library function.  <b>Practical</b> -programs based on functions and passing arguments methods,arrays based programs.

## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>OCTOBER</b>	<p><b>UNIT III -Structure, Union &amp; Enum- Structure:</b> basics, declaring structure and structure variable, typedef statement, array of structure, array within structure, Nested structure; passing structure to function,function returning structure. <b>Union:</b> basics, declaring union and union variable, <b>Enum:</b> declaring enum and enum variable.</p> <p><b>Practical-</b> c programs based on string and string handling functions,various logic programs using function and string.</p>
<b>NOVEMBER</b>	<p><b>UNIT IV-Pointers:</b> definition of pointers, pointer declaration, using &amp; and *operators. Void pointer, pointer to pointer, Pointer in math expression, pointer arithmetic, pointer comparison, dynamic memory allocation functions – malloc, calloc, realloc and free, pointers vs. Arrays.</p> <p><b>Practical-</b> programs based on structure,union and user define data type..</p>
<b>DECEMBER</b>	<p><b>UNIT IV -Arrays of pointer, pointer to array, pointers to functions, function returning pointer, passing function as argument to function, pointer to structure, dynamic array of structure through pointer to structure.</b></p> <p><b>Practical-</b> programs based on pointers and using pointers with array,function,structure.</p>
<b>JANUARY</b>	<p><b>UNIT V-File Handling and Miscellaneous Features</b> - File handling: file pointer, file accessing functions,:fopen, fclose, fputc, fgetc, fprintf, fscanf, fread, fwrite,feof, fflush, rewind, fseek, ferror. File handling through command line argument. Introduction to C preprocessor #include, #define, conditional compilation directives: #if, #else, #elif, #endif, #ifndef etc.</p> <p><b>Practical-</b> programs on various logics ,pointers and many more</p>
<b>FEBRUARY</b>	REVISION + PRACTICAL EXAM



**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**B.Sc – II COMPUTER SCIENCE  
PAPER –I  
COMPUTER HARDWARE**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT I- classification and organization of computers</b> -digital and analog computers and its evolution. major components of digital computers; memory addressing capability of cpu; word length and processing speed of computers; microprocessors single chip microcomputers; large and small computers.
<b>AUGUST</b>	<b>UNIT I-</b> users interface hardware, software and firmware. multiprogramming, multiuser system. dumb smart and intelligent terminals computer network and multi processing, lan parallel processing, flinn"s classification of computers. control flow and data flow computers.  <b>UNIT II- central processing UNIT</b> -cpu organization, alu, control UNIT.
<b>SEPTEMBER</b>	<b>UNIT II-</b> registers. instructions of intel 8085. instruction word size, various addressing mode interrupts and exceptions, some special control signals and i/o devices, instruction cycles, fetch and execution operation, time diagram, data flow.  <b>UNIT III- memory of computers</b> -main memory, secondary memory, back up
<b>OCTOBER</b>	<b>UNIT III-</b> real and virtual memory. semiconductor memory, memory controller and magnetic memory.ram disks, optical disks, magnetic bubble memory, dasd, destructive and nondestructive readout ,program of data memory and mmu.
<b>NOVEMBER</b>	<b>UNIT IV-</b> i/o devices of microcontroller; processors, i/o devices, printer . other output devices; i/o port, serial data transfer scheme, micro controller, signal processors, i/o processor, arithmetic processors.
<b>DECEMBER</b>	<b>UNIT V- system software and programming technique</b> ml, al, hll, stac subroutine ,debugging of programs, macro micro programming, program design, software development.
<b>JANUARY</b>	<b>UNIT V-</b> flow & chart multi programming, multiuser, multitasking protection, operating system and utility program, application packages.
<b>FEBRUARY</b>	REVISION + PRACTICAL EXAM

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**B.Sc – II COMPUTER SCIENCE  
PAPER –II  
COMPUTER SOFTWARE**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<p><b>UNIT I-</b> html basics &amp; website design principles concept of website, web standards, what is html? html versions, naming scheme for html documents, html document /file, html editor, explanation of the structure of the home page, elements in the html documents, html tags, basic html tags, comment tag in html, viewing the source of a webpage, how to download the web page source? xhtml, css, extensible markup language (xml) extensible style sheet language (xsl), some tips of designing webpages, html document structure. html document structure- head section, illustration of document structure, &lt;base&gt; element, &lt;isindex&gt; element,&lt;link&gt; element, meta, &lt;title&gt; element, &lt;script&gt;.</p> <p><b>Practical-</b> introduction to html program editor ,how to write html programs, running html program and running html programs.</p>
<b>AUGUST</b>	<p><b>UNIT I-</b> element, practical applications, html document structures- body section:- body elements and its attributes: back ground: back ground color; text: link; active link (alink); visited link (vlink); left margin; top margin, organization of elements in the body of the document; text block elements; text emphasis elements; special elements- hyper text anchors, character- level elements; character references, text block elements; hr (horizontal line); hn (headings); p (paragraph); lists; address: blockquote; table; div(html 3.2 and up); pre (preformatted; form, text emphasis elements, special; elements- hypertext anchors, character- level elements; line breaks (bra) and images (img), lists, address element, blockquote elements, table elements, comments in html, character emphasis modes, logical and physical styles, net scape, microsoft and advanced standard elements list, font, basefont, and center.</p> <p><b>Practical-</b> html programs on various tags like body and its elements,using table tag,address tag,image tag,font tag,list tag.</p>

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<b>SEPTEMBER</b>	<p><b>UNIT II-</b> image, internal and external linking between webpages netscape, microsoft and advanced standard elements list, font ,basefont and center ,insertion of images using the element img (attributes; src (source), width, heighth, alt (alternative), allign, image (in line images), element and attributes, illustration of img alignment, images as hyper text anchors,internal .</p> <p><b>Practical-</b> practicing program on anchor tag, paragraph tag, heading tag ,links frames and many more</p>
<b>OCTOBER</b>	<p><b>UNIT II-</b> external linking between web pages hyper text anchor, href in anchors, links to a particular place in a document, name attribute in an anchor, targeting name anchors, title attribute, practical it application designing web pages links with each other, designing frames in html. practical examples.</p> <p><b>UNIT III-</b> introduction to oop advantages of oop, the object oriented approach, characteristics of object oriented languages- object, classes, inheritance, reusability, polymorphism and c++. function: function declaration, calling function.</p> <p><b>Practical-</b> how to use cpp environment ,writing program,running and compiling a program.</p>
<b>NOVEMBER</b>	<p><b>UNIT III-</b> function defines, passing arguments to function, passing constant, passing value, reference argument, returning by reference, inline function, function overloading, default arguments in function.</p> <p><b>UNIT IV-</b> object classes and inheritance object and class, using the class, class constructor, class destructors, object as function argument, copy constructor.</p> <p><b>Practical-</b> programs on inheritance,constructor,class and objects.</p>
<b>DECEMBER</b>	<p><b>UNIT IV-</b>struct and classes, array as class member, static class data, static member functions, friend function, friend class, operator overloading, type of inheritance, base class, derive class, access specifier protected, function overloading, member function, string, template function.</p> <p><b>UNIT V-</b>pointers and virtual function pointers: &amp; and * operator pointer variables, pointer to pointer.</p> <p><b>Practical-</b> programs on array,function,friend class,operator overloading,strings,templates.</p>

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<b>JANUARY</b>	<b>UNIT V</b> -void pointer , pointer and array, pointer and function, pointer and string, memory management, new and delete, pointer to object, this pointer virtual function: virtual function, virtual member function, accesses with pointer, pure virtual function. file and stream: c++ streams, c++ manipulators, stream class, string i/o ,char i/o, object i/o, i/o with multiple object, disk i/o.  <b>Practical</b> - programs based on pointers,dynamic memory management,using of new delete and this pointer in programs,virtual function etc.
<b>FEBRUARY</b>	REVISION + PRACTICAL EXAM

### B.Sc – III COMPUTER SCIENCE PAPER –I COMPUTER HARDWARE

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT I- ORGANISATION OF MICRO-PROCESSOR &amp; MICRO COMPUTER:-</b>  <b>1. INTRODUCTION &amp; ORGANIZATION OF MICRO COMPUTER:</b> (a) basic components of micro computer: basic block; prom ram memory;data memory; i/o ports; clock generator; integration of functional blocks. (b) interconnecting components in a micro computer: necessary functional block; bussed architecture for microcomputer; memory addressing; addressing i/o ports; comparison of i/o mapped and memory mapped i/o. (c) input output techniques: non-cpu devices, program & interrupt controlled i/o; hardware controlled i/o or dma.  <b>2. AN INTRODUCTION TO THE VARIOUS AS:</b> (a) general understanding of different $\mu$ p or cpu: intel 8088, 286, 386, 486, 586 pentium, p54c, mmx p55c; motorola 6800 & 88100 series; cyrix & amd cpus.

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<b>AUGUST</b>	<p><b>UNIT I-</b> (b) the registers of cpu: (give example of p-8088) register organization of 8088, scratch pad segment, pointer, index and flag, registers.  (c) memory addressing modes of p-8088: segment offset; data addressing modes; addressing for branch instructions.  (d) i/o addressing with p-8088: memory mapped i/o &amp; i/o mapped i/o.</p> <p><b>UNIT II- SYSTEM HARDWARE ORGANISATION OF COMPUTERS:</b></p> <p>1. Hardware Organization Of The Personal Computer :</p> <p>(a) block diagram with various parts of pc.  (b) the mother board of general p.c.: 8088 cpu; rom &amp; ram; keyboard &amp; its interface; system timer/counters; hardware interrupt vectoring; dma controller &amp; channels; interfacing to audio speaker; bus slots &amp; factory cards.  (c) the serial i/o ports, com-1 &amp; com-2.  (d) the parallel port for printer.  (e) expansion slots for ram.  (f) disk controllers: for floppy, hard disk, cd-rom &amp; cassette drives.</p>
<b>SEPTEMBER</b>	<p><b>UNIT II- THE VIDEO DISPLAY OF PCS:</b></p> <p>(a) video monitors ; monochrome and colour.  (b) video display adapters &amp; their video modes; monochrome &amp; colour graphics adapters.  (c) video control through ansi-sys.  (d) video control through rom-bios :int 10h.  (e) direct video control; monochrome &amp; colour graphics adapters.  (f) installing customized character sets.</p> <p><b>UNIT III- ORGANISATION OF OPERATING SYSTEM WITH SYSTEM HARDWARE:</b></p> <p><b>1. THE ROM-BIOS SERVICES:</b></p> <p>(a) introduction to unix, enix, sun, solaris, dos &amp; mac with special reference to dos &amp; windows it's ver., as dos becomes more popular than others in pcs.  (b) the rom-bios diskette services, int 13h.  (c) the rom-bios serial port services, int 14h.  (d) the rom-bios keyboard services, int 16h.  (e) the rom-bios printer services, int 17h.  (f) miscellaneous service provided by the rom-bios: int 05h, int 11h, int 12h.</p>

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<b>OCTOBER</b>	<b>UNIT III- 2. THE FUNDAMENTAL OF OPERATING SYSTEM VIZ.</b> DOS/WINDOWS: (a) the loading of dos & its basic structure ; rom bootstrap, io.sys, dos.sys & command.com (b) the execution of the programs under dos; exec functions , program segment prefix; features of com & exe program files. (c) device handling by dos; fdd,hdd,con, keyboard, prn, aux, clock and nul devices; block devices; character devices; driver installation sequence. (d) file structures of dos; (e) the dos interrupts: int 20h-2fh (f) the dos functions through int 21h; discuss only the understanding part of various other dos function to handle hard & softwares. (g) installation of windows: important system files in windows.
<b>NOVEMBER</b>	<b>UNIT IV-ORGANIZATION &amp; HANDLING BY OPERATING SYSTEMS:</b>  <b>1. disk and files under dos;</b> (a) logical structure of a disk; organization of disk for use ; boot record; fat files; disk or root directory. (b) file organization on a dos disk; logical volumes; sub directories; volume lables. (c) manipulating files under dos: file attributes; date and time, file access; fcb functions. <b>2. memory allocation, program loading and execution</b> (a) memory management under dos; exec loader: memory management and its functions; modifying a program's memory allocation.
<b>DECEMBER</b>	<b>UNIT IV- (b) loading and executing programs under dos: the exec function;</b> memory considerations; parameter blocks; calling & returning from exec. (c) loading the program overlays through exec.
<b>JANUARY</b>	<b>UNIT V-organization of hardware by operating systems</b> <b>1. interrupt handling through dos;</b> (a) types of interrupts. (b) interrupt vector table in pc. (c) interrupt service routines. (d) special interrupts in pc: clock interrupt; the c or break interrupt; dos reserved interrupt int 28h; patching memory resident routines. <b>2. filters for dos:</b> (a) filters in operating systems. (b) redirection of i/o under dos. (c) the filters supplied with dos. (d) writing filters to run under dos. <b>3. handling of various versions of windows o.s.:</b> (a) setup installation. (b) troubleshooting. (c) networking features.
<b>FEBRUARY</b>	REVISION + PRACTICAL EXAM

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**B.Sc – III COMPUTER SCIENCE  
PAPER –II  
COMPUTER SOFTWARE**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT I-concept of d.b.m.s and data models</b> introduction of dbms: - purpose of data base systems, views of data , data modeling, database languages, transaction management, storage management, database administrator and user, database system structure.e-r model: basic concepts, constraints, keys , mapping constraint, e-r diagram, weak and strong entity sets, e-r database schema, reduction of an e-r schema to table.
<b>AUGUST</b>	<b>UNIT II-relational database management system</b>  relational model: structure of relational database, relational algebra, domain relational calculus, extended relational-algebra operation, modification of database, views. relational database design: pitfalls in relational database design decomposition functional dependencies, normalization: 1nf, 2nf, bcnf,3nf, 4nf, 5nf. <b>Practical-</b> learning about oracle environment. how to open software, running and debugging a simple program
<b>SEPTEMBER</b>	<b>UNIT III-introduction to rdbms software-oracle</b> introduction : introduction to personal and enterprises oracle , data types, commercial query language, sql, sql *plus.  (A) ddl and dml: creating table, specifying integrity constraint, modifying existing table, dropping table, inserting deleting and updating rows in as table. where clause, operators, order by, group function, sql function, join, set operation, sql sub queries. views: what is views, create, drop and retrieving data from views. (B) security : management of roles, changing password, granting roles & privilege, with drawing privileges. <b>Practical-</b> making tables and performing various operations on table like updating a table,altering a table,deleting a table etc.

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<b>OCTOBER</b>	<p><b>UNIT III-pl/sql:</b> block structure in pl/sql, variable and constants, running pl/sql in the sql *plus, data base access with pl/sql, exception handling, record data type in pl/sql, triggers in pl/sql.</p> <p><b>UNIT IV- g.u.i programming</b> introduction to visual basic: event driven programming, ide, introduction to object , controlling objects, models and events,working with forms, mdi form working with standard controls.</p> <p><b>Practical-</b> practicing on pl sql programs and vb environment</p>
<b>NOVEMBER</b>	<p><b>UNIT IV-overview</b> of variables, declaring, scope, arrays, user defined data types, constants, working with procedures: function, subroutine and property.working with data, time, format, string and math's function. controlling program execution: comparison and logical operators , if..then statements, select case statement. looping structures, exiting a loop error trapping and debugging.</p> <p>file organization : saving data to file, sequential and random access file. the designing and coding.</p> <p><b>Practical-</b> practicing vb programs based on conditions ,looping,mdi forms,functions,strings.</p>
<b>DECEMBER</b>	<p><b>UNIT V-DATA BASE PROGRAMMING IN VB:</b>introduction :- concept of dao,rdo,ado, input validation : field &amp; form level validation, ado object model: the ado object hierarchy, the connection object, the command object, record set object,parameter object, field object, record object, stream object, error object, parameter object <u>Using</u> bound control to present ado data; using the ado data control, ado data control properties, binding simple controls: data list, data combo, data grid, data form wizard: single form wizard, grid form, master/detail form. programming the ado data control: refresh method, event, hierarchical flex grid control.</p> <p><b>Practical</b> –programs on various logics using different controls of vb.</p>
<b>JANUARY</b>	<p><b>UNIT V- data environment &amp; data report:</b> creating connection, using command object in the data environment, data environment option and operation, binding form to the data environment, ado events in the data report, print preview, print, export, data report in code: data reports events,binding data reports directly.</p> <p><b>Practical-</b> learning how to use various connectivity ,events and using database through vb programs.</p>
<b>FEBRUARY</b>	REVISION + PRACTICAL EXAM



**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**PGDCA I<sup>ST</sup> SEMESTER**

**PAPER I- FUNDAMENTALS OF COMPUTERS**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>AUGUST</b>	<p><b>UNIT I- Introduction to Computers</b></p> <p><b>Computers system:</b> – Characteristics and capabilities. Computer Hardware and Software, Block Diagram of a Computer, Different Data Processing: Data, Data Processing System, Storing Data, Processing Data. Types of Computers: Analog, Digital, Hybrid, General and Special Purpose Computers. Generation of Computers</p> <p><b>UNIT II- Computer Peripherals</b></p> <p><b>Introduction to Input Devices :</b> Categorizing Input Hardware , Keyboard , Direct Entry-Card Readers , Scanning Devices – O.M.R. , Character Readers , Thumb Scanner , MICR ,Smart Card , Voice Input Devices , Pointing Devices –Mouse ,Light Pen , Touch Screen .</p>
<b>SEPTEMBER</b>	<p><b>UNIT II- Computer Output :</b> Output Fundamentals , Hardcopy Devices , Impact Printers , Non-Impact Printers , Plotters , Computer output Microfilm/Microfiche(COM) system , Softcopy Output Devices , Cathode Ray Tube ,Flat Screen Technologies , Projectors ,Speakers..</p> <p><b>UNIT III-: Basic Components &amp; Storage Central Processing UNIT –</b> The Microprocessor, Control UNIT, ALU, Registers, Buses, Main Memory (RAM) for microcomputers, Read Only Memory (ROM) .<b>Storage Devices:</b> - Storage Fundamentals, Primary and Secondary Storage, Data Storage and Retrieval Methods –Sequential , Direct &amp; Indexed Sequential</p>

## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>OCTOBER</b>	<p><b>UNIT III-</b> Tape Storage and Retrieval Methods Tape Storage Devices , characteristics and limitations , Direct access Storage and Microcomputers – Hard Disks ,Disk Cartridges , Direct Access Storage Device For Large Computers system , Mass Storage system and Optical Disks , CD Rom.</p> <p><b>UNIT – IV : Computer Software &amp; Languages – System Software –</b> System Software Vs Application Software , Types of System Software; Introduction and Types of Operating Systems , Boot Loader , Diagnostic Programs , BIOS , Utility Programs.</p> <p><b>Application Software:</b> - Microcomputer Software, Interacting with the system, Trends in PC Software, Types of Application Software, Difference between Program and Packages.</p> <p><b>Computer Language:</b> Definition, Generations of computer Languages, Types of Languages, Language Processors: Assembler; Interpreter, Compiler.</p>
<b>NOVEMBER</b>	<p><b>UNIT – V : Operating System and Linux</b></p> <p>Introduction, Uses of OS , Functions of OS , Booting process , Types of Reboot , Booting from different OS , Types of OS , DOS , Windows ,Linux open source Software concept and evolution of Linux , Features of Multi-User operating system , Structure of Linux OS , Security Features of Linux , File System . Directory Structure and related commands .Linux Editors &amp; editor commands , Linux commands cd , md, rm, mv, cp ,ls , cat ,find , grep.</p>

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**PAPER II- OFFICE AUTOMATION & TALLY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>AUGUST</b>	<p><b>UNIT – I : Using Office with MS-Word :</b>Introduction to word processing software and it's features ,Creating new document , Saving documents, Opening and Printing documents.</p> <p><b>Home Tab:</b> Setting fonts, Paragraph settings, Various styles(Normal, No spacing , Heading1 , Heading2 , Title , Strong), Find &amp; replace , Format painter , Copy paste and paste special .</p> <p><b>Inset Tab :</b> Page ,Tables ,pictures , clipart ,shapes, header &amp; footer ,word art , equation and symbols.</p> <p><b>Page Layout Tab:</b> page setup, page Background, Paragraph (indent and spacing).</p> <p><b>Mailing Tab:</b> Create envelops and Labels, Mail merge.</p> <p><b>Review Tab:</b> Spelling and grammar check, new comment, Protect document.</p> <p><b>View Tab :</b> Document views ,zoom , window( New window , Split , Switch window).</p> <p><b>Practical-</b> basic computer knowledge,using of ms word and usage of different groups and tab buttons.and program based on this commands.</p>
<b>SEPTEMBER</b>	<p><b>UNIT – II : Working With MS-Exce</b> Introducing Excel , Use of excel sheet , Creating new sheet ,Saving ,Opening and printing workbook.</p> <p><b>Home Tab :</b> Font , Alignment , Number, Styles and cells and editing ,Conditional Formatting.</p> <p><b>Insert Tab:</b> Table, Charts(column chart, Pie chart, Bar chart ,Line Chart) and Texts (header &amp; footer, word art, signature line).</p> <p><b>Page Layout Tab :</b> Page setup options , Scale to fit(width ,height, scale).</p> <p><b>Formulas Tab :</b> Autosum (sum , average , min, max), logical(If ,and or ,not , true , false) , Math &amp; trig(sin , cos , tan , ceiling , floor, fact, mod, log) , watch window.</p> <p><b>Data Tab:</b> Get external data from MS Access , Sort and filter option , Data validation , Group and ungroup .</p> <p><b>Review tab:</b> Protect sheet , Protect workbook , Share workbook .</p> <p><b>View Tab:</b> Presentation views, colours and window option.</p> <p><b>Practical-</b> programs on ms excel ,how to use various functionalities of excel through programs.</p>

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<b>OCTOBER</b>	<p><b>UNIT – III : Working With MS-PowerPoint</b>            Introducing power point , Use of power point Presentation , Creating new slides saving , opening and printing.  <b>Home Tab :</b> New slide ,Layout , Reset ,Delete, Setting text direction , Align text , Convert to Smart art , Drawing options.  <b>Insert Tab:</b> Table , picture ,clipart , photo album , smart art, shapes and chart , movie and sound, hyperlink and action , text box , word art, object.  <b>Design Tab :</b> Page setup options , slide orientation , applying various themes , selecting background style and Formatting it.  <b>Animations Tab :</b> Custom animation for entrance , exit and emphasis , applying slide transition , setting transition speech and sound , animation on rehears timing .<b>Slide show &amp; View Tab :</b> Start slide show potion , setup option.  <b>View Tab :</b> Presentation views , colours and window option.</p> <p><b>UNIT – IV : Working With MS-Access:</b>            Front end &amp; Back end of application ,Introduction to DBMS , Features of DBMS , Creating blank database , saving it in accdb format .Defining data type in ms access,  <b>Home Tab :</b> Datasheet view , design view , pivot chart view , pivot table view , sort and filter option.  <b>Create Tab :</b> Creating Table , Creating reports, Query wizard.</p> <p><b>Practical-</b> learning about how to make presentation and usage of different tools of powerpoint like using shapes,slide presentation,animation etc.            How to make database,creating table in ms access and performing various operations on tables.</p>
<b>NOVEMBER</b>	<p><b>UNIT IV-External Data Tab:</b> importing data from access and excel sheet , exporting data to excel and ms word .  <b>Datasheet Tab :</b> Relationships , Fields and columns , Data type and formatting options.  <b>UNIT – V : Tally</b>            Setting up Ledger &amp; Groups. Study of recording of transactions in the *Voucher". (According to Golden rules). Study of „Final A/C preparation &amp; displaying in different mode/format". Study of alteration &amp; Deletion of ledger/Groups. Study of cash &amp; fund flow, day book, sales register, purchase register, bills receivable/Payable etc. Study of data security &amp; backing up data. Outline of entry for Income Tax, ED, VAT, ST/CST, PF, Gratuity, Bonus, Loans &amp; Depreciation etc.</p> <p><b>Practical-</b> about tally software and how to use it.</p>

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**PAPER II- PROGRAMMING IN 'C'**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>AUGUST</b>	<p><b>UNIT I : Introduction :</b>Introduction Character set, Identifiers and Keywords, Variables, Displaying variables, Reading Variables, Character and Character String, Qualifiers, Type define Statements, Value initialized variables, Constants, Constant Qualifier, Operators and Expressions, Operator Precedence and Associativity, Basic input output: Single Character I/O, General Outputs , Types of Characters in format string, Scanf with specifiers , Searchset Arrangements and Suppression Character , Format Specifiers for Scanf</p> <p><b>UNIT II : Control Structure &amp; Functions :</b><b>Control Structure:</b> If - statement, If - else statement, Multi decisions, Nested if statements, Switch statement, for - loop, While -loop, Do-While loop, Break statement, Continue Statement, Go to statement</p> <p><b>Practical-</b> how to use c software, how to run and compile a c program. Basic c programs like addition of numbers, swapping of numbers etc. how to apply conditional and looping statements in programs.</p>
<b>SEPTEMBER</b>	<p><b>UNIT II- Functions :</b> The Main Function, Functions accepting more than one parameter, User defined and library functions, Concept associatively with functions, function parameter, Return value, recursion comparisons of Iteration and recursion variable length argument list</p> <p><b>UNIT III- Arrays &amp; Pointers:</b><b>Arrays :</b> Scope and Extent, Arrays , Strings , Multidimensional Arrays, Strings, Array of Strings, Function in String.</p> <p><b>Pointers:</b> Definition and use of pointer, address operator, pointer variable, referencing pointer, void pointers, pointer arithmetic, pointer to pointer, pointer and arrays</p> <p><b>Practical-</b> programs based on loops, functions and passing arguments in function, arrays.</p>

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<b>OCTOBER</b>	<p><b>UNIT III-</b> passing arrays to function , pointer and functions, accessing in array inside functions , ,pointers and two dimensional arrays, array of pointers, pointers constants, pointer and strings.</p> <p><b>UNIT IV- Structure and Union :</b>Declaring and using Structure, Structure initialization, Structure within Structure, Operations onStructures, Array of Structure, Array within Structure, Creating user defined data type, pointer toStructure and function. Union, difference between Union and Structure, Operations on Union,Scope of Union.</p> <p><b>Practical-</b> programs based on array and its types,pointers,strings.</p>
<b>NOVEMBER</b>	<p><b>UNIT V- Dynamic Memory Allocation and File Handling :</b><b>Dynamic Memory Allocation :</b> Library functions for Dynamic memory allocation , Dynamic Multi-Dimensional Arrays.</p> <p><b>File Handling :</b> Introduction , Structure , File handling ,Functions file type , Un-buffered and buffered , Error handling</p> <p><b>Practical-</b> programs based on structure and union.</p>

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**PGDCA II<sup>2ND</sup> SEMESTER**

**PAPER I- GUI - PROGRAMMING IN VB.NET**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<p><b>UNIT I-. Introduction to .NET -</b> Overview of .net framework features &amp; architecture , Managed Execution process , CLR , common language specification, JIT Compilation ,MSIL , Namespace ,Assemblies , metadata Common Type, system, Visual development &amp; event driven programming , cross language , interoperability , Garbage collection.</p> <p><b>Practical-</b> learning about vb.net framework and various controls of it.</p>
<b>FEBRUARY</b>	<p><b>UNIT II-Programming with .NET Framework –</b></p> <p><b>Windows form :</b> working with Visual Studio IDE , Creating a .NET solution ,MDI application , components and controls , Data types , Variable , Type conversions , Operators , Methods and events , Scope and life time of variables , Creating Enumerations..</p> <p><b>UNIT III- Control Structures</b> -Control Structures: conditional statement , loops , arrays , types of methods , method data , creating Sub Procedures.</p> <p><b>Practical-</b> practicing vb.net programs based on conditions ,looping,mdi forms,programs on mdi application.</p>
<b>MARCH</b>	<p><b>UNIT III-</b> Function , MsgBox ,Inputbox ,Introduction to exception handling try catch statement , finally statement , throw , user define Exception</p> <p><b>UNIT IV- GUI Programming</b> - GUI Programming with window forms , Showing &amp; hiding , Textbox , RichText box , Lable ,Button, Listbox , Combobox, Checkbox , PictureBox , Radio button , Toggle button Panel , Groupbox , Scrollbar , Timer , Dialog boxes , Openfile Dialog , Save File dialog , Print dialog , Front dialog , Color dialog , Designing menus and sub menus.</p> <p><b>Practical-</b> programs on usage of inputbox,error handling and on usage of different controls.</p>

## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>APRIL</b>	<p><b>UNIT V- Database Programming with ADO.net –</b></p> <p>ADO .Net Architecture , .Net data provider , dataset components , creating database application using Window forms (Database connectivity through ADO.Net) , Accessing data using server explorer , Data Adapters &amp; Data sets , Command &amp; Data reader , Data bind controls , displaying data in data grid</p> <p><b>Practical-</b> learning about how to do connectivity and using various database controls.</p>
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### PAPER II- DATABASE MANAGEMENT SYSTEM

MONTH	PROPOSED PLAN
<b>JANUARY</b>	<p><b>UNIT I:- Introduction To DBMS</b> Purpose of database systems , views of data , Data Modeling , Database Languages , Transaction Management , Storage Management , Database Administrator and User , Database System Structure.</p> <p><b>UNIT II-Entity - Relationship model</b> as a tool for conceptual design-entities, attributes and relationships. ER diagrams; Concept of keys; Case studies of ER modeling</p>
<b>FEBRUARY</b>	<p><b>UNIT II</b> Generalization;specialization and aggregation. Converting an ER model into relational Schema</p> <p><b>UNIT III- Relational Model</b> Structure to Relational Database, select , Project, cross Product different types of joins (inner join , outer joins , self-join) , set operations.</p> <p><b>Practical-</b> basic knowledge of oracle software and how to make database. How to make table and running a oracle program</p>
<b>MARCH</b>	<p><b>UNIT III-</b> Tuple relational calculus , Domain relational calculus , Simple and complex queries using relational algebra , stand alone and embedded query languages.</p> <p><b>UNIT IV-Relational Database Design:</b> Normalization concept in logical , Pitfalls in database design , update anomalies , Functional dependencies , join dependencies , Normal forms (1NF , 2NF , 3NF) . Boyce Codd Normal form , Decomposition , Multi-Valued Dependencies , 4NF ,5NF , De- Normalization</p> <p><b>Practical-</b>learning about how to create table,insert data into table,deleting a table,dropping a table,updating and altering a table.</p>



## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>APRIL</b>	<p><b>UNIT V- Introduction to RDBMS Software- SQL/Oracle</b> :Introduction to personnel and Enterprises Oracle , Data , Types , Commercial Query Language ,SQL , SQL* , PLUS .</p> <p><b>DDL and DML:</b> Creating Table, Specify Integrity Constraint, Modifying Existing Table,Dropping Table, Inserting, Deleting and Updating Rows in as Table, Where Clause,Operators, ORDER BY, GROUP Function, SQL Function, JOIN, Set Operation, SQL SubQueries. Views: What is Views, Create, Drop and Retrieving data from views.</p> <p><b>Security:</b> -Management of Roles, Changing Password, Granting Roles &amp; Privilege, with drawing privileges.</p> <p><b>Practical-</b>performing various operations on table like performing group function,applying different operators on table.creating view and deleting it.</p>
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### PAPER III- ESSENTIALS OF E -COMMERCE & HTML

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<p><b>UNIT I- Introduction to Computer and Hard ware</b> –Introduction of Information Technology ,History of Computers , Organization of computers , Number System Programming language and type , Public domain software , Application of Information Technology in business , industry , entertainment science , engineering and medicine.</p>
<b>FEBRUARY</b>	<p><b>UNIT II- Internet and its Application</b> Evolution of internet , Internet application , TCP/IP , Addressing in Internet(IP) , Domains , Internet Service Providers , Connectivity such as dialup , leased line , VSAT, E-mail protocols(X-400 , SMTP , UUCP) , Description of E-Mail headers , Email ,routing , e-mail client, POP-3 , IMAP-4.</p> <p><b>UNIT III- FTP and Telnet</b> Introduction to File Transfer Protocol (FTP) , Type of FTP server (Including anonymous) , Telnet protocol , Telnet client ,Terminal emulation . Usenet and Internet relay chat , Web publishing tool ,</p>

## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>MARCH</b>	<p><b>UNIT III-</b> Website planning , Website Hosting , Multiple sites on one server , Maintaining a web site , WWW server , HTTP &amp; URLs , Registration of website on search engines , maintenance of website .</p> <p><b>UNIT IV- Dynamic HTML and Web Designing</b> HTML Basic concepts , Web designing issue , Structure of HTML document , HTML Elements , core attributes , Language attributes , core Events , Block Level Events , Test Level Events , Linking Basics , Linking in HTML.</p> <p><b>Practical-</b> html programs based on various tag like heading tag,paragraph tag,address tag,anchor tag,pre tag etc.</p>
<b>APRIL</b>	<p><b>UNIT IV-</b> image s and Anchors , Anchor Attributes , Image as Buttons , Introduction to Layout , Backgrounds , Colors and Text , Fonts , Layout with Tables , Introduction to CSS.</p> <p><b>UNIT V-. Internet security:</b> Internet security vulnerability and threats, Firewalls, Introduction to AAA, Malwares.</p> <p><b>E-Commerce</b> - Introduction , Concepts &amp; technology , Advantages , Limitations , Various electronics , payment system , payment Gateways , Introduction to EDI.</p> <p><b>Practical-</b> html programs based on anchor tag,list tag,form tag,table tag,frame tag etc.</p>

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**ADD ON (CERTIFICATE COURSE)**

**PAPER –I**

**COMPUTER FUNDAMENTALS & OFFICE AUTOMATION**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>AUGUST</b>	<p><b>UNIT I-<u>Introduction to Computer</u></b></p> <p>1. What is Computer? Block diagram of computer. CPU, I/O Devices and Memory (RAM &amp; ROM). Secondary storage devices (Hard disk, Floppy, Magnetic tap etc.). Computer generations, Types of Computer- Analog, Digital, Hybrid &amp; general &amp; special purpose computer. Classification of computer – Micro, Mini, Mainframe &amp; Super computer</p>
<b>SEPTEMBER</b>	<p><b>UNIT II--<u>Computer Software &amp; Application</u></b> What is Software? Type of Software. Introduction of System software &amp; application s/w.Generation of languages, Languages Vs Package. Type of Operating System- Single User &amp; Multi User Operating System Function of operating system. DOS software, Internal &amp; External DOS Command.</p> <p><b>Practical-</b> basic knowledge of computer,how to start and shut down the computer.Learning about desktop,icon,files,folders,recycle bin,how to do cut,copy,paste etc.</p>
<b>OCTOBER</b>	<p><b>UNIT II-</b> DOS editor. Window Concept , Multitasking , Desktop, start menu, task bar, My Computer, Accessories, Creating folders, files, Deleting, Hiding , Recycle Bin &amp; Network Neighborhood. Booting Process &amp; File System Structure, Booting Sequences, File Creation and Deletion concept for File System.</p> <p><b>UNIT III- <u>Office Software: Word-Processing, Spreadsheets</u></b></p> <p><b>Word:</b> Creating ,Editing &amp; Preview Documents, Formatting ,Advanced Features, Using Thesaurus , Mail Merge, Table &amp; Charts Handling Graphics</p> <p><b>Practical-</b>making program using various ms word functionalities like using table command, various formatting tools of ms word etc.</p>

## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>NOVEMBER</b>	<p><b>UNIT III- Excel:</b> Worksheet Basics, Creating, Opening &amp; moving in worksheet, working with Formula &amp; cell referencing, Absolute &amp; Relative addressing, working with ranges, formatting of worksheet, Graphic &amp; Charts, Database, Function and Macros.</p> <p><b>UNIT IV-<u>MS-Access</u> Creating and working with databases:</b> Designing databases, Working with database objects, Working with Access files.</p> <p><b>Practical-</b> programs on ms excel, learning about how to use formula, different charts etc.</p>
<b>DECEMBER</b>	<p><b>UNIT IV-</b> retrieval of records in a data base file, modification, insertion &amp; deletion of records, Sorting and Indexing, Working with controls &amp; charts</p> <p><b>UNIT V-<u>Introduction to Internet Application</u></b></p> <p>Concept of Internet, Application of Internet, Services on Internet, World Wide Web (www), Web Browser .</p> <p><b>Practical-</b> how to make tables in ms access and performing various operations on tables in ms access. Also learning about powerpoint presentation and its various functionalities.</p>
<b>JANUARY</b>	<p><b>UNIT V-</b> Internet search Engines: Gopher, Yahoo etc., Surfing the Internet, Electronic mail (e- mail), Internet Security Fire Walls, Type of Firewalls</p>
<b>FEBRUARY</b>	<p><b>REVISION + PRACTICAL EXAM</b></p>

### ADD ON (CERTIFICATE COURSE)

#### PAPER –II

#### Programming With “C “& Introduction to OOPs

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>AUGUST</b>	<p><b>UNIT I-</b>Introduction to “C “, Character set, Identifiers &amp; Keywords, Variables, Variable initialization, Constants, Characters, Strings, Qualifiers, Program structure.</p>

## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>SEPTEMBER</b>	<p><b>UNIT II-Control Structure:</b> - If-Statement, If-else, Nested If statements, Select case, Loops – For-loop, While-loop, Do-while loop, Nested loops, Break Statement, Continue Statement, Go to Statement.</p> <p><b>Practical-</b> how to use c software,making basic c programs ,running and compiling a c program.programs based on control structure</p>
<b>OCTOBER</b>	<p><b>UNIT III- Function:</b> - User define &amp; library function, Function Parameter, Recursive Function.</p> <p>Array: - Array, Array initialization, One dimensional Array, Two &amp; Three dimensional array, Array of Structure .</p> <p><b>Practical-</b> programs based on looping ,functions,array.</p>
<b>NOVEMBER</b>	<p><b>UNIT III- Pointer:</b> - definition &amp; Use of Pointer, Address Operator, Array of Pointers.</p> <p><b>UNIT IV-Structure &amp; Union:</b> - What is structure, declaring &amp; using structure, structure initialization.</p> <p><b>Practical-</b>programs based on pointer,array of pointer,pointer to pointer etc.</p>
<b>DECEMBER</b>	<p><b>UNIT IV- Structure within structure, Union , difference b/w Union &amp; Structure.</b></p> <p><b>UNIT V-</b> Introduction of C++, OOPs Concepts, Objects, Class, Polymorphism, Inheritance,function &amp; Operator Overloading.</p> <p><b>Practical-</b>program based on structure and union.</p>
<b>JANUARY</b>	<p><b>UNIT V-</b> Characteristics of Object Oriented Programming language, benefits of OOPs.</p> <p><b>Practical-</b>programs based on various logics used in c and basic knowledge of cpp environment.</p>
<b>FEBRUARY</b>	<b>REVISION + PRACTICAL EXAM</b>

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**ADD ON (DIPLOMA COURSE)  
PAPER –I  
PROGRAMMING IN VISUAL BASIC**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>AUGUST</b>	<p><b><u>UNIT I- Introduction to Visual Basic</u></b></p> <p>Editions of Visual Basic, Event Driven Programming , Terminology, Working environment, Project &amp; executable files, Understand Modules, Working Screen, Using code editor windows, Code documentation and formatting environment options, code formatting option .</p> <p>Introduction to object, Controlling objects, Properties, Methods &amp; Events, Working with forms. Interacting with user, MsgBox function, Input Box Function, Code statements, Managing forms, Creating a program in VB, Printing.</p> <p><b>Practical-</b> about vb environment and introduction of vb controls like command box,text box,labels etc.</p>
<b>SEPTEMBER</b>	<p><b><u>UNIT II-Variable and Procedures and Controlling Program Execution</u></b></p> <p>Overview of Variables, Declaring Variable, Scope of Variables, Arrays, User Defined data type, Constants working with procedure, Working with date &amp; time, using the Format function, Manipulation text strings.</p> <p>Comparison &amp; logical Operators, if.... Then Statement, if .... Then ... Else Statements, Select Case Statement.</p> <p><b>Practical-</b> vb programs based on various control struture,scope of variables and using timer.</p>
<b>OCTOBER</b>	<p><b><u>UNIT II-</u></b>, Looping Structure, Using Do... Loop Structure, for...Next Statement, Exiting a loop.</p> <p><b><u>UNIT III- Working with Controls &amp; Controlling Program Execution</u></b></p> <p>Type of Control, Overview of standard Controls, Combo Box &amp; List Box, Option Button &amp; Check Button, Frame Control, Menus, Status bar, Tool bar, Advanced standard Controls, Active X Controls.</p> <p><b>Practical-</b> vb program based on looping and controls like list box,making menus,combo box etc.</p>

## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>NOVEMBER</b>	<p><b>UNIT III-</b> Overview of Run Time Errors, Error Handling Process, The Error Object, Error handling in routine, Inline Error handling ,Error handling style, General Window, Local Window.</p> <p><b>UNIT IV- <u>Sequential &amp; Random Files &amp; Data Access Using the ADO Data Control</u></b>Record Structure, Random Access File, The design and coding, saving data to file.</p> <p><b>Practical-</b> programs based on activex controls,error handling techniques.</p>
<b>DECEMBER</b>	<p><b>UNIT IV-</b>Overview of Active X Objects, VB data access features, Relational Database Concepts using the ADO Data Control to access data, Overview of ADO,RDO, Data Control, Structure Query Language (SQL), Manipulating data Using Data Form Wizard.</p> <p><b>Practical-</b> learning about various connectivity methods like ado,dao,rdo and its steps how to do connectivity with database.</p>
<b>JANUARY</b>	<p><b>UNIT V- <u>Report Generation and Advance Tools</u></b></p> <p>Overview of Report, Data Report, Add Groups, Data Environments, Connection to Database, Introduction to Crystal Reports Generator.</p> <p>Overview of drag and drop , Mouse Events, Date- Time Control, Calendar, Print Dialogue, MDI (Multiple Document Interface.)</p> <p><b>Practical-</b> programs on report making and mdi forms.</p>
<b>FEBRUARY</b>	<b>REVISION + PRACTICAL EXAM</b>

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**ADD ON (DIPLOMA COURSE)  
PAPER –II  
DBMS (SQL/Oracle)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>AUGUST</b>	<b>UNIT I- <u>Introduction To DBMS:</u></b> -Purpose of database systems, Views of data, Data Modeling, Database Languages, Transaction Management, Storage Management, Database Administrator and User, Database System Structure.
<b>SEPTEMBER</b>	<b>UNIT II- <u>E-R Model:</u></b> - Basic concepts, Constraints, Keys, Mapping Constraint, E-R Diagram, Weak and Strong Entity sets, E-R Database Schema, Reduction of an E-Schema to Table.  <b>Practical-</b> how to use oracle software,making table and running a program.
<b>OCTOBER</b>	<b>UNIT III-</b> Relational Model: Structure to Relational Database, Relational Algebra, The Domain Relational Calculus, Extended Relational- Algebra Operation, Modification of database, Views. Relational <u>Database Design:</u> - Pitfalls in Relational Database Design, Decomposition.  <b>Practical-</b> making table and using various commands like insert,update etc.
<b>NOVEMBER</b>	<b>UNIT III-</b> Functional Dependencies, and Normalization: 1NF, 2NF, BCNF, 3NF, 4NF, 5NF  <b>UNIT IV- <u>Introduction to RDBMS Software - Oracle</u></b> <b><u>Introduction:</u></b> - Introduction to personnel and Enterprises Oracle, Data Types, Commercial Query Language, SQL, SQL* PLUS.  <b>Practical-</b> performing various operations on tables like where clause,like clause,set operations etc.



## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>DECEMBER</b>	<p><b>UNIT IV-<u>DDL and DML</u>:</b> Creating Table, Specify Integrity Constraint, Modifying Existing Table, Dropping Table, Inserting, Deleting and Updating Rows in as Table, Where Clause, Operators, ORDER BY, GROUP Function, SQL Function, JOIN, Set Operation, SQL Sub Queries.</p> <p><b>Practical-</b> performing sql function on table like group function,using operators on table,applying different constraints on table.</p>
<b>JANUARY</b>	<p><b>UNIT V-<u>Views</u>:</b> What is Views, Create, Drop and Retrieving data from Views. <b><u>PL-SQL/TSQL</u>:</b> Block Structure in PL-SQL/TSQL, Variable and Constraints, Running PL- SQL/TSQL in the SQL *PLUS, Data base Access with PL-SQL/TSQL, Exception Handling, Record Data type in PL-SQL/TSQL Triggers in PL-SQL/TSQL.</p> <p><b>Practical-</b> how to create views,dropping views,some pl sql programs.</p>
<b>FEBRUARY</b>	<b>REVISION + PRACTICAL EXAM</b>

### ADD ON (ADVANCE DIPLOMA) PAPER –I PROGRAMMING IN JAVA

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>AUGUST</b>	<p><b>UNIT I- Introduction :</b>Genesis of java, importance to the Internet, overview of features.</p> <p><b>OOP :</b> OOP features, data types, control structures, arrays, methods and classes, nested &amp; inner classes, string and String Buffer class, Wrapper Class, vectors.</p> <p><b>Practical-</b>introduction to basic java environment. How to use programming tool of java.</p>
<b>SEPTEMBER</b>	<p><b>UNIT II- Inheritance :</b> Basics type, method Override, using abstract and final classes, using super.</p> <p><b>Packages and Interfaces :</b>Defined CLASSPATH, importing packages, implementing interface.</p> <p><b>Practical –</b> practice on basic program based on classes ,objects.inheritance.</p>

## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>OCTOBER</b>	<p><b>UNIT III- Exception Handling</b> :Fundamental: exception types, using try and catch, throwing exceptions, defined exceptions.</p> <p><b>Multithreaded Programming</b> :Java spread model, creating threads, thread priorities, synchronization. Suspending resuming and stopping threads.</p> <p><b>Practical-</b> programming based on abstract class,uses of interface and packages.</p>
<b>NOVEMBER</b>	<p><b>UNIT IV- Input/Output:</b> Basic Streams, Byte and Character Stream, predefined streams, reading and writing from console and files. Using standard Java Packages (lang, util, io)</p> <p><b>JDBC:</b> Setting the JDBC connectivity with backend database.</p> <p><b>Practical-</b> programming on exception handling, steps for doing various connectivity methods like jdbc.</p>
<b>DECEMBER</b>	<p><b>UNIT V- Applets</b> :Fundamentals, life cycle, overriding update, HTML APPLET tag, passing parameters. Developing single applets.</p> <p><b>Introduction to AWT</b> : Window fundamentals, creating windowed, programs waking with graphics, using AWT controls, menus. Delegation event model, handling mouse and keyboard events.</p> <p><b>Practical-</b>practicing in various programs .</p>
<b>JANUARY</b>	<p><b>JAVA PROJECT</b></p> <p><b>Practicals</b></p>
<b>FEBRUARY</b>	<p><b>REVISION + PRACTICAL EXAM</b></p>

# **TEACHING PLAN OF MATHEMATICS FOR SESSION 2019-20**

**B.Sc. I**

**Mathematics**

**PAPER-I**

## **ALGEBRA AND TRIGONOMETRY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>Unit 1 -</b> Elementary operations on Matrices. Inverse of a matrix, Linear independence of row and column matrices. Row rank, column rank and rank of a matrix. Equivalence of column and row ranks.
<b>AUGUST</b>	<b>Unit 1-</b> Eigenvalues, Eigenvectors and the characteristic equation of matrix. Cayley Hamilton theorem and its use in finding inverse of a matrix.
<b>SEPTEMBER</b>	<b>Unit II-</b> Applications of matrices to a system of linear (both homogeneous and non-homogeneous) equations. Theorems on consistency of a system of linear equations. Relations between the roots and coefficients of general polynomial equation in one variable. Transformation of equations. Descartes's rule of signs, solution of cubic equations (Cardan method). Biquadratic Equations.
<b>OCTOBER</b>	<b>Unit III</b> Mappings, Equivalence relations and partitions. Congruence modulo $n$ . Definition of a group with examples and simple properties. Cyclic groups generators, Coset decomposition, Lagrange's theorem and its consequences.
<b>NOVEMBER</b>	<b>Unit III</b> Fermat's and Euler's theorems.. Normal subgroups, Quotient groups. Permutation Groups, even and odd permutations. The alternating groups. Cayley's theorem $A_n$ .
<b>DECEMBER</b>	<b>UNIT – IV</b> Homomorphism and Isomorphism The fundamental theorems of homomorphism. Introduction, properties and examples of rings, subrings, Integral domains and Fields. Characteristic of a Ring and field.
<b>JANUARY</b>	<b>UNIT – V</b> ( Trigonometry ) De Moivre's theorem and its applications. Direct and inverse circular and hyperbolic functions. Logarithm of a complex quantity. Expansion of Trigonometrical functions. Gregory's series. Summation of series.
<b>FEBRUARY</b>	<b>REVISION</b>

**B.Sc. I**  
**Mathematics**  
**PAPER-II**  
**CALCULUS**

MONTH	PROPOSED PLAN
JULY	<b>UNIT – I</b> $\epsilon - \delta$ definition of the limit of a function. Basic properties of limits. Continuous functions and classification of Discontinuities.
AUGUST	<b>Unit I-</b> Differentiability, Successive differentiation. Leibnitz's theorem, Maclaurin and Taylor series expansions.
SEPTEMBER	<b>UNIT – II</b> Asymptotes, Curvature, Tests for concavity and convexity. Points of inflexion, Multiple points. Tracing of curves in Cartesian and polar coordinates.
OCTOBER	<b>UNIT – III</b> Integration of transcendental functions. Reduction formulae, Definite integrals, Quadrature, Rectification, Volumes and surfaces of solids of revolution
NOVEMBER	<b>UNIT –IV</b> Degree and order of a differential equation. equations reducible to the linear form. Exact differential equations, First order higher degree equations solvable for $x, y, p$ . Clairaut's form and singular solutions .
DECEMBER	<b>UNIT – IV</b> Geometrical meaning of a differential equation. Orthogonal trajectories. Linear differential equations with constant coefficients. Homogeneous linear ordinary differential equations. .
JANUARY	<b>UNIT – V</b> Linear differential equations of second order. Transformation of the equation by changing the Dependent variable / the Independent variable. Method of variation of parameters. Ordinary simultaneous differential equations.
FEBRUARY	REVISION

**B.Sc. I**  
**Mathematics**  
**PAPER-III**  
**VECTOR ANALYSIS AND GEOMETRY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT I –</b> Scalar and vector product of three vectors, Product of four vectors, Reciprocal
<b>AUGUST</b>	<b>Unit I-</b> Vector differentiation, Gradient, Divergence and Curl.
<b>SEPTEMBER</b>	<b>UNIT II-</b> Vector Integration, Theorems of Gauss, Green, Stokes and problems based on these.
<b>OCTOBER</b>	<b>UNIT III-</b> General equation of second degree. Tracing of conics
<b>NOVEMBER</b>	<b>Unit III –</b> System of conics, Confocal Conics, Polar equation of a Conic.
<b>DECEMBER</b>	<b>UNIT – IV</b> Sphere, Cone and Cylinder
<b>JANUARY</b>	<b>UNIT –V</b> Central Conicoids, Paraboloids, Plane section of Conicoids, Generating lines, Confocal Conicoids, Reduction of second degree equations.
<b>FEBRUARY</b>	<b>REVISION</b>

**B.Sc. II**  
**Mathematics**  
**PAPER-I**  
**ADVANCED CALCULUS**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT – I</b> Definition of a sequence. Theorems on limits of sequences. Bounded and monotonic sequences. Cauchy’s convergence criterion. Series of non-negative terms. Comparison test,
<b>AUGUST</b>	<b>Unit I-</b> Cauchy’s integral test, Ratio test, Raabe’s test, Logarithmic test, De Morgan and Bertrand’s tests. Alternating series, Liebnitz’s theorem, absolute and conditional convergence.
<b>SEPTEMBER</b>	<b>UNIT – II</b> Continuity, sequential continuity, properties of continuous functions, uniform continuity. Chain rule of differentiability, Mean value theorems and their geometrical interpretations, Darboux’s intermediate value theorem for derivatives. Taylor’s theorem with various forms of remainders.
<b>OCTOBER</b>	<b>UNIT – III</b> Limit and continuity of functions of two variables, Partial differentiation, Change of variables,
<b>NOVEMBER</b>	<b>UNIT –III</b> <b>Euler’s</b> theorem on homogeneous functions. Taylor’s theorem for functions of two variables. Jacobeans.
<b>DECEMBER</b>	<b>UNIT –IV</b> <b>Envelopes</b> , Evolutes, Maxima, Minima and saddle points of functions of two variables, Lagrange’s multiplier method.
<b>JANUARY</b>	<b>UNIT –V</b> <b>Beta</b> and Gamma functions, Double and triple integrals, Dirichlet’s integrals, change of order of integration in double integrals.
<b>FEBRUARY</b>	REVISION

**B.Sc. II**  
**Mathematics**  
**PAPER-II**  
**DIFFERENTIAL EQUATIONS**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT – I</b> Series solutions of differential equations - Power series method. Bessel and Legendre functions and their properties - convergence, recurrence and generating relations.
<b>AUGUST</b>	<b>Unit I –</b> Orthogonality of functions. Sturm-Liouville problem, Orthogonality of Eigen-functions, Reality of Eigen-values, Orthogonality of Bessel functions and Legendre polynomials.
<b>SEPTEMBER</b>	<b>UNIT – II</b> Laplace Transformation - Linearity of the Laplace transformation. Existence theorem for Laplace transforms. Laplace transforms of derivatives and integrals. Shifting theorems.
<b>OCTOBER</b>	<b>Unit II-</b> Differentiation and integration of transforms. Convolution theorem. Solution of integral equations and systems of differential equations using the Laplace transformation.
<b>NOVEMBER</b>	<b>UNIT – III</b> Partial differential equations of the first order. Lagrange's solution. Some special types of equations which can be solved easily by methods other than the general method, Charpit's general method of solution.
<b>DECEMBER</b>	<b>UNIT – IV</b> Partial differential equations of second and higher orders. Classification of linear partial differential equations of second order. Homogeneous and non-homogeneous equations with constant coefficients. Partial differential equations reducible to equations with constant coefficients. Monge's methods.
<b>JANUARY</b>	<b>UNIT – V</b> Calculus of Variations - Variational problems with fixed boundaries - Euler's equation for functional containing first order derivative and one independent variable. External. Functional dependent on higher order derivatives. Functional dependent on more than one independent variable. Variational problems in parametric form. Invariance of Euler's equation under coordinates transformation. Variational problems with moving boundaries - Functional dependent on one and two functions. One sided variations. Sufficient conditions for an Extremum - Jacobi and Legendre conditions. Second Variation. Variational principle of least action.
<b>FEBRUARY</b>	<b>REVISION</b>

**B.Sc. II**  
**Mathematics**  
**PAPER-III**  
**MECHANICS**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT – I</b> Analytical conditions of equilibrium. Stable and unstable equilibrium.
<b>AUGUST</b>	<b>UNIT - I</b> Virtual work. Catenary.
<b>SEPTEMBER</b>	<b>UNIT –II</b> Forces in three dimensions. Poinso't's central axis. Null lines and planes.
<b>OCTOBER</b>	<b>UNIT – III</b> Simple harmonic motion. Elastic strings
<b>NOVEMBER</b>	<b>UNIT III –</b> Velocities and accelerations along radial and transverse directions, Projectile, Central orbits.
<b>DECEMBER</b>	<b>UNIT – IV</b> Kepler's laws of motion, Velocities and acceleration in tangential and normal directions. Motion on smooth and rough plane curves.
<b>JANUARY</b>	<b>UNIT – V</b> Motion in a resisting medium. Motion of particles of varying mass. Motion of a particle in three dimensions. Acceleration in terms of different co-ordinate systems.
<b>FEBRUARY</b>	<b>REVISION</b>



**B.Sc. III**  
**Mathematics**  
**PAPER-I**  
**ANALYSIS**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT I-</b> Series of arbitrary terms, Convergence, Divergence and Oscillation. Abel's and Dirichlet's test. Multiplication of series. Double series. Partial derivation and differentiability of real valued functions of two variables. Schwarz's and Young's theorem. Implicit function theorem. Fourier series. Fourier expansion of piecewise monotonic functions.
<b>AUGUST</b>	<b>UNIT II –</b> Riemann integral. Integrability of continuous and monotonic functions. The fundamental theorem of Integral Calculus. Mean value theorems of integral calculus. Improper integrals and their convergence, comparison tests. Abel's and Dirichlet's tests. Frullani's integral, Integral as a function of a parameter. Continuity, derivability and integrability of an integral of a function of a parameter.
<b>SEPTEMBER</b>	<b>UNIT III-</b> Complex numbers as ordered pairs. Geometric representation of complex numbers. Stereographic projection. Continuity and differentiability of complex functions. Analytic functions, Cauchy Riemann equations, Harmonic functions.
<b>OCTOBER</b>	<b>UNIT III-</b> Elementary functions, mapping by elementary functions. Mobious transformations, Fixed points, Cross ratio, Inverse points and critical mappings, Conformal mappings.
<b>NOVEMBER</b>	<b>UNIT IV</b> Definition and examples of metric spaces. Neighbourhoods, Limit points, Interior points, Open and Closed sets, Closure and interior. Boundary points, Sub-space of a metric space. Cauchy sequences,
<b>DECEMBER</b>	<b>UNIT IV-</b> Completeness, Cantor's intersection theorem, Contraction principle, Construction of real numbers as the completion of the incomplete metric space of rational. Real numbers as a complete ordered field.
<b>JANUARY</b>	<b>UNIT V –</b> Dense subsets. Baire Category theorem, Separable, second countable and first countable spaces. Continuous functions. Extension theorem. Uniform continuity. Isometry and homeomorphism. Equivalent metrics.
<b>FEBRUARY</b>	<b>UNIT V –</b> Compactness, Sequential compactness. Totally bounded spaces. Finite intersection property. Continuous functions and compact sets. Connectedness, Components, Continuous functions and connected sets.

**B.Sc. III**  
**Mathematics**  
**PAPER-II**  
**ABSTRACT ALGEBRA**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT – I</b> Group-Automorphism, inner automorphisms. Automorphism groups and their computations, Conjugacy relation, Normaliser, Counting principle and the class equation of a finite group. Center for group of prime-order, Abelianizing of a group and its universal property. Sylow's theorems, Sylow's subgroup, structure theorem for finite Abelian groups.
<b>AUGUST</b>	<b>UNIT-II</b> Ring theory- Ring homomorphism, Ideals and Quotient Rings. Field of Quotients of an Integral Domain, Euclidean Rings, Polynomial rings, Polynomials over the Rational Field. The Eisenstein Criterion, Polynomial
<b>SEPTEMBER</b>	<b>UNIT-III</b> Definition and examples of vector spaces. Subspace, Sum and direct sum of subspaces, Linear span. Linear dependence, independence and their basic properties.
<b>OCTOBER</b>	<b>UNIT III</b> Basis Finite dimensional vector spaces, existence theorem for bases, invariance of the number elements of a basis set. Dimension, Existence of complementary subspace of a finite dimensional vector space. Dimension of sums of subspaces. Quotient space and its dimension.
<b>NOVEMBER</b>	<b>UNIT-IV</b> Linear transformations and their representation as matrices. The Algebra of linear transformations. The rank nullity theorem. Change of basis. Dual space, Bidual space and natural isomorphism, forms.
<b>DECEMBER</b>	<b>UNIT IV</b> Adjoint of a linear transformation, Eigenvalues and Eigen vectors of a linear transformation. Diagonalisation. Annihilator of a subspace, Bilinear, Quadratic and Hermitian
<b>JANUARY</b>	<b>UNIT-V</b> Inner product spaces-Cauchy-Schwarz inequality, Orthogonal vectors, Orthogonal complements, Orthonormal sets and bases. Bessel's inequality for finite dimensional spaces, Gram-Schmidt orthogonalization process.
<b>FEBRUARY</b>	<b>REVISION</b>

**B.Sc. III**  
**Mathematics**  
**PAPER-III**  
**DISCRETE MATHEMATICS**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JULY	<b>UNIT –I</b> <b><u>Sets and Propositions</u></b> - Cardinality, Mathematical induction, Principle of inclusion and exclusion. Computability and Formal Languages - Ordered sets, languages, Phrase structure Grammars, Types of Grammars and languages. Permutations, Combinations and Discrete probability.
AUGUST	<b>UNIT-II</b> <b><u>Relations and Functions</u></b> - Binary relations, Equivalence relations and Partitions. Partial Order Relations and Lattices. Chains and Antichains. Pigeon Hole Principle. <b><u>Graphs and Planar Graphs</u></b> - Basic Terminology, Multigraphs, Weighted graphs, Paths and circuits, Shortest paths, Eulerian Paths and circuits. Travelling Salesman Problem, Planner graphs. Trees.
SEPTEMBER	<b>UNIT-III</b> <b><u>Finite State machines</u></b> - Equivalent machines. Finite state machines as language recognizers
OCTOBER	<b>UNIT III</b> Analysis of Algorithms - Time complexity, Complexity of problems, Discrete Numeric functions and Generating functions.
NOVEMBER	<b>UNIT-IV</b> <b><u>Recurrence Relations and Recursive Algorithms</u></b> - Linear Recurrence Relations with constant coefficients. Homogeneous solutions, Particular solutions, Total solutions, Solution by the method of Generating functions, Brief review of Groups and Rings.
DECEMBER	<b>UNIT-V</b> <b><u>Boolean Algebra</u></b> - Lattices and Algebraic structures. Duality, distributive and complemented Lattices. Boolean Lattices and Boolean Algebras. Boolean functions and expressions.
JANUARY	<b>UNIT V</b> Propositional Calculus, Design and implementation of Digital Networks, Switching Circuits.
FEBRUARY	REVISION

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PROPOSED TEACHING PLAN FOR THE SESSION 2019-20

Name of the Department: PHYSICS

CLASS B. SC. I

Month/ Days	Paper I	Paper II
July	<b>Admission work</b> Motion under a central force, Kepler's laws. Effect of centrifugal and Coriolis force due to earth's rotation. Center of mass (C.M.). Lab and CM frame of reference, motion of C.M. of system of particles subject to external forces,	<b>Admission work</b> Kirchoff's law Ideal constant-voltage and Constant-current Sources. Thevenin theorem, Norton theorem. Superposition theorem, Reciprocity theorem and Maximum Power Transfer theorem.
August	elastic and inelastic collisions in one and two dimensions, Scattering angle in the laboratory frame of reference. Cartesian, Cylindrical and Spherical co-ordinate system, Inertial and non-inertial frames of reference, uniformly rotating frame, Coriolis force and its applications. Conservation of linear and angular momentum. Conservation of energy.	Repeated integrals of a function of more than one variable, definition of a double and triple integral. Gradient of a scalar field and its geometrical interpretation, divergence and curl of a vector field and their geometrical interpretation, line, surface and volume integrals, flux of a vector field. Gauss's divergence theorem. Green's theorem and Stoke's theorem and their physical significance.
September	Rigid body motion, rotational motion, moment of inertia and their products, principal moments and axes. Introductory idea of Euler's equations. Potential well and periodic oscillations, case of harmonic oscillations, differential equation and its solution, kinetic and potential energy, examples of simple harmonic oscillations, spring and mass system, simple and compound pendulum, torsional pendulum.	Coulomb's law in vacuum expressed in vector form. Calculations of E for simple distributions of charges at rest, dipole and quadrupole fields. Work done on a charge in an electrostatic field expressed as a line integral, conservative nature of the electrostatic field. Relation between Electric potential and electric field, torque on a dipole in a uniform electric field and its energy, flux of the electric field. Gauss's law and its application for finding E due to (1) an infinite line of charge, (2) a charged cylindrical conductor, (3) an infinite sheet of charge and two parallel charged sheets, capacitors, electrostatic field energy. Force per unit area on the surface of a conductor in an electric field, conducting sphere in a uniform field.

<b>October</b>	Bifilar oscillations, Helmholtz resonator, LC circuit, vibrations of a magnet, oscillations of two masses connected by a spring. Superposition of two simple harmonic motions of the same frequency, Lissajous figures, case of different frequencies. Damped harmonic oscillator, power dissipation, quality factor, examples, driven (forced) harmonic oscillator, transient and steady states, power absorption, resonance.	Dielectric constant. Polar and Non Polar dielectrics. Dielectrics and Gauss's Law. Dielectric Polarization. Electric Polarization vector $P$ , electric displacement vector $D$ . Relation between three electric vectors, Dielectric susceptibility and permittivity. Polarizability and mechanism of Polarization. Lorentz local field. Clausius Mossotti equation, Debye equation. Ferroelectric and Paraelectric dielectrics. Steady current, current density $J$ , non-steady currents and continuity equation, rise and decay of current in LR, CR and LCR circuits, decay constants, AC circuits,
<b>November</b>	$E$ as an accelerating field, electron gun, case of discharge tube, linear accelerator, $E$ as a deflecting field, CRO, sensitivity. Transverse $B$ field, 180 degree deflection, mass spectrograph, curvature of tracks for energy determination, principle of a cyclotron. Mutually perpendicular $E$ and $B$ fields, velocity selector, its resolutions. Parallel $E$ and $B$ fields, positive ray parabolas, discovery of isotopes, elements of mass spectrographs, principle of magnetic focusing (lens).	complex numbers and their applications in solving AC circuit problems, complex impedance and reactance, series and parallel resonance, $Q$ factor, power consumed by an AC circuit, power factor. Magnetization Current and magnetization vector $M$ , three magnetic vectors and their relationship. Magnetic permeability and susceptibility. Diamagnetic, paramagnetic and ferromagnetic substances.
<b>December</b>	Elasticity : Strain and stress, elastic limit, Hook's law. Modulus of rigidity. Poisson's ratio. Bulk modulus. Relation connecting different elastic-constants, twisting couple of a cylinder (solid and hollow). Bending moment, Cantilever, Young modulus by bending of beam.	B.H. Curve, cycle of magnetization and hysteresis, Hysteresis loss. Biot and Savart's law and its applications: $B$ due to (1) a straight Current Carrying Conductor and (2) Current Loop. Current Loop as a Magnetic Dipole and its Dipole Moment (Analogy with Electric Dipole), Ampere's circuital law (Integral and Differential Forms.
<b>January</b>	Viscosity : Poiseuille's equation of liquid flow through a narrow tube, equations of continuity. Euler's equation, Bernoulli's theorem, viscous fluids, streamline and turbulent flow. Poiseuille's law. Coefficient of viscosity, Stoke's law. Surface tension and molecular interpretation of surface tension, surface energy. Angle of contact. Wetting.	Electromagnetic induction, Faraday's law, electromotive force, $\mathcal{E} = \int E \cdot dr$ , integral and differential forms of Faraday's law, mutual and self inductance, transformers, energy in a static magnetic field. Maxwell's displacement current, Maxwell's equations, electromagnetic field energy density. The wave equation satisfied by $E$ and $B$ , Plane electromagnetic waves in vacuum, Poynting's vector.
<b>February</b>	Revision and Practical Examination	Revision and Practical Examination
<b>March</b>	Annual Examinations	Annual Examinations
<b>April</b>	Annual Examinations	Annual Examinations
<b>May</b>	Annual Examinations	Annual Examinations

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PROPOSED TEACHING PLAN FOR THE SESSION 2019-20

Name of the Department: PHYSICS

CLASS B. SC. II

Month/ Days	Paper I	Paper II
July	<b>Admission work</b> <b>UNIT I</b> The law of thermodynamics: The Zeroeth law, first law of thermodynamics, internal energy as a state function, reversible and irreversible change, Carnot's theorem and the second law of thermodynamics.	<b>Admission work</b> <b>UNIT I</b> Waves in media: Speed of transverse waves on a uniform string, speed of longitudinal waves in a fluid, energy density and energy transmission in waves.
August	Clausius theorem inequality. Entropy, Change of entropy in simple cases: ( i ) Isothermal expansion of an ideal gas (ii) Reversible isochoric process (iii) Free adiabatic expansion of an ideal gas. Concept of Entropy, Entropy of the universe. Entropy change in revercible and irrevercible process. Entropy as a thermodynamic variable,S-T diagram. Principle of increase of entropy.	Waves over liquid surface: gravity waves and ripples. Group velocity and phase velocity and relationship between them. Production and detection of Ultrasonic and Infrasonic waves and application. Reflection, refraction and diffraction of sound: Acoustic impedance of a medium, percentage reflection and refraction at a boundary, impedance matching for transducers, diffraction of sound, Principle of a sonar system, sound ranging.
September	The thermodynamic scale of temperature. Third law of thermodynamics. Concept of negative temperature. UNIT IIThermodynamic functions , Internal energy, Enthalpy, helmholts functions and Gibb's free energy, Maxwell thermodynamical equations and their applications. TdS equations, energy and heat capacity equations, Applications of Maxwell's equations in joul-Thomsom cooling, adeabetic cooling of system, Wanderwall Gas, Clausius-Clapeyron heat equation.	UNIT II Fermat's principle of extremum path, the aplanatic points of a sphere and other applications.Cardinal points of an optical system, thick lens and lens combinations. Lagrange's equation of magnification, telescopic combination, telephoto lenses. Monochromatic aberrations and their reductions; aspherical mirrors and Schmidt corrector plates, alpanatic points, oil immersion objectives, meniscus lens. Optical instruments: entrance and exit pupils, need for a multiple lens eyepiece, common types of eyepieces (Ramsden & Huygen's eyepieces).

<b>October</b>	Black body radiation: Pure temperature dependence, Stefan – Boltzmann law, pressure of radiation, spectral distribution of black body radiation, Wien's displacement law, Rayleigh – Jean's law, Planck's quantum theory of radiation. Transport phenomena in gases: Molecular collisions mean free path and collision cross sections. Estimates of molecular diameter and mean free path. Transport of mass, momentum and energy and interrelationship, dependence on temperature and pressure.	UNIT III Interference of light : The principle of superposition, two slit interference, coherence requirement for the sources, optical path retardation, Conditions for sustained interference, Theory of Interference, Thin films. Newton's rings and Michelson interferometer and their applications for precision determination of wavelength, wavelength difference and the width of spectral lines. Multiple beam interference in parallel film and Fabry – Perot interferometer. Rayleigh refractometer, Twyman Green Interferometer and its uses.
<b>November</b>	Behaviour of real Gases: Deviations from the Ideal Gas Equation. The Virial equation. Andrew's experiments. Experiments on CO <sub>2</sub> gas. Critical constant. The statistical basis of thermodynamics: Probability and thermodynamic probability, principle of equal a priori probabilities, statistical postulates. Concept of Gibbs's ensemble, accessible and inaccessible states.	UNIT IV Fresnel half- period zones, Phasor diagram and integral calculus methods, the intensity distribution, Zone plates, Diffraction due to straight edge, Fraunhofer diffraction at a slit and double slit, Diffraction at N parallel slits, plane diffraction grating, Rayleigh criteria, resolving power of grating, prism, telescope. Polarized light and its mathematical representation, production of polarized light by reflection, refraction and scattering.
<b>December</b>	Concept of phase space, Gamma phase space and mu phase space. Equilibrium before two systems in thermal contact, Probability and entropy, Boltzmann entropy relation. Boltzmann canonical distribution law and its applications, law of equipartition of energy. Transition to quantum statistics: 'h' as a natural constant and its implications, cases of particle in a one – dimensional box and one – dimensional harmonic oscillator.	Polarization by double refraction and Huygen's theory, Nicol prism, retardation plates, production and analysis of circularly and elliptically polarized light. Optical activity and Fresnel's theory, Biquartz polarimeter.
<b>January</b>	Indistinguishability of particles and its consequences, Bose–Einstein & Fermi–Dirac conditions. Concept of partition function, Derivation of Maxwell - Boltzmann, Bose - Einstein and Fermi - Dirac statistics through canonical partition function. Limits of B–E and F–D statistics to M – B statistics. Application of B – E statistics to black body radiation. Application of F- D statistics to free electrons in a metal.	UNIT V Laser system: Basic properties of Lasers, coherence length and coherence time, spatial coherence of a source, Einstein's A and B coefficients, Spontaneous and induced emissions, conditions for laser action, population inversion. Types of lasers: Ruby and He – Ne lasers and Application of lasers: Application in communication, Holography and basics of non – linear optics and generation of harmonics.
<b>February</b>	Revision and Practical Examination	Revision and Practical Examination

<b>March</b>	Annual Examinations	Annual Examinations
<b>April</b>	Annual Examinations	Annual Examinations
<b>May</b>	Annual Examinations	Annual Examinations

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**PROPOSED TEACHING PLAN FOR THE SESSION 2019-20**

**Name of the Department: PHYSICS**

**CLASS B. SC. III**

<b>Month/ Days</b>	<b>Paper I</b>	<b>Paper II</b>
<b>July</b>	<b>Admission work</b> <b>Unit-I</b> Reference system, inertial frames Gallilean invariance and conservation laws, propagation of light, Michelson-Morley experiment; search for ether.	<b>Admission work</b> Amorphous and crystalline solids, elements of symmetry, seven system, Cubic lattices, Crystal planes, Miller indices, Laue's equations for X- ray diffraction.
<b>August</b>	Postulates for the special theory of relativity, Lorentz transformations, length contraction time dilation, velocity addition theorem, variation of mass with velocity, mass – energy equivalence, particle with zero rest mass ,Compton effect. <b>Unit- II</b> Origin of the quantum theory: Failure of classical physics to explain the phenomena such as black body spectrum, photoelectric effect.	Bragg's law. Bonding in solids classification. Cohesive energy of solid.Modelung constant, evaluation of parameters. Specific heat of solids, classical theory (Dulong-Petit's law). Einstein's and Debye theories. Vibrational modes of one dimensional monoatomic lattice, Dispersion relation, Brillouin zone.
<b>September</b>	Wave particle duality and uncertainty principle: de Broglie's hypothesis for matter waves; the concept of wave and group velocities, evidence for diffraction and interference of particles, experimental demonstration of matter waves. Davisson and Germer's experiment.Consequence of de Broglie's concepts; quantization in hydrogen atom; energies of a particle in a box, wave packets. Consequence of the uncertainty relation: gamma ray microscope, diffraction at a slit.	<b>Unit- II</b> Free electron model of a metal, solution of one dimensional Schrodinger's equation in a constant potential. Density of states. Fermi energy , Energy bands in a solid (kronig – penny model without mathematical details). Metals, insulators and semiconductors. Hall effect.Die, Para and Ferromagnetism. Langevin's theory of die and para magnetism. Curie – Weiss's law. Qualitative description of Ferromagnetism (Magnetic domains), B – H curve and hysteresis loss.



<b>October</b>	<p>Unit – III</p> <p>Quantum Mechanics: Schrodinger's equation. Postulatory basis of quantum mechanics; operators, expectation values, transition probabilities, applications to particle in a one and three dimensional boxes, harmonic oscillator in one dimension, reflection at a step potential, transmission across a potential barrier.</p> <p>Hydrogen atom: natural occurrence of <math>n</math>, <math>l</math> and <math>m</math> quantum numbers, the related physical quantities.</p>	<p>Unit –III</p> <p>Intrinsic semiconductors, Carrier concentration in thermal equilibrium, Fermi level, Impurity, semiconductor, donor and acceptor levels, Diode equation, junctions, junction breakdown, Depletion width and junction capacitance, abrupt junction, Tunnel diode, Zener diode. Light emitting diodes, solar cell, bipolar transistors,</p>
<b>November</b>	<p>Unit – IV</p> <p>Spectra of hydrogen, deuteron and alkali atoms, spectral terms, double fine structure, screening constants for alkali spectra for <math>s</math>, <math>p</math>, <math>d</math> and <math>f</math> states, selection rules,</p> <p>Discrete set of electronic energies of molecules, quantization of vibrational and rotational</p>	<p>PNP and NPN transistors, characteristics of transistors, different configurations, current amplification factor, FET. Unit – IV</p> <p>Half and full wave rectifier, rectification efficiency, ripple factor, Bridge rectifier, filters, Inductor filter, <math>T</math> and <math>\pi</math> filters, Zener diode, regulated power supply.</p>
<b>December</b>	<p>Energies, determination of internuclear distance, pure rotational and rotational vibrational spectra. Dissociation limit for the ground and other electronic states, transition rules for pure vibration and electronic spectra. Raman effect, Stokes and anti – Stokes lines complimentary character of Raman and infrared spectra, experimental arrangements for Raman spectroscopy.</p>	<p>Application of transistors. Bipolar transistor as amplifier. Single stage and CE small signal amplifiers, Emitter follower, Transistor as power amplifier, Transistor as oscillator. Wein bridge oscillator and Hartley oscillator.</p>
<b>January</b>	<p>Unit - V</p> <p>Interaction of charged particles and neutrons with matter, working of nuclear detectors, G-M counter, proportional counter and scintillation counter, cloud chamber, Spark Chambers emulsions. Structure of nuclei, basic properties (<math>I</math>, <math>\mu</math>, <math>Q</math> and binding energy), deuteron binding energy, <math>p</math>-<math>p</math> and <math>n</math>-<math>p</math> scattering and general concepts of nuclear forces. Beta decay, range of alpha particle, Geiger- Nuttall law. Gamow's explanation of beta decay, alpha decay and continuous and discrete spectra.</p> <p>Nuclear reactions, channels, compound nucleus, direct reaction (concepts). Shell model: liquid drop model, fusion (concepts), energy production in stars by <math>p</math>-<math>p</math> and carbon- nitrogen cycles (concepts).</p>	<p>Unit – V</p> <p>Introduction to computer organization, time sharing and multiprogramming systems, window based word processing packages, MS Word. Introduction to C programming and application to simple problems of arranging number in ascending/descending orders; sorting a given data in an array, solution of simultaneous equation.</p>

<b>February</b>	<b>Practical Exam and Revision</b>	<b>Practical Exam and Revision</b>
<b>March</b>	<b>Annual Examination</b>	<b>Annual Examination</b>
<b>April</b>	<b>Annual Examination</b>	<b>Annual Examination</b>
<b>May</b>	Annual Examinations	Annual Examinations

# **TEACHING PLAN OF ZOOLOGY FOR SESSION 2019-20**

**B. Sc. I**

**Zoology**

**PAPER-I**

## **CELL BIOLOGY AND INVERTEBRATE**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>Unit I -</b> The cell (Prokaryotic and Eukaryotic) Organization of Cell-extra-nuclear and nuclear
<b>AUGUST</b>	<b>Unit I-</b> Plasma membrane, Endoplasmic reticulum, Golgi bodies, Ribosome, Mitochondria, Lysosomes, Nucleus, Chromosome, DNA and RNA
<b>SEPTEMBER</b>	<b>Unit II-</b> Cell division (Mitosis and Meiosis). An elementary idea of Cancer cells and cell transformation. An elementary idea of Immunity Innate & Acquired Immunity, Lymphoid organ, Cells of Immune system, Antigen, Antibody and their interaction.
<b>OCTOBER</b>	<b>Unit III</b> General characters and classification of Phylum Protozoa up to orders Protozoa-Type study-Paramecium.
<b>NOVEMBER</b>	<b>Unit III</b> General characters and classification of Phylum Porifera and Coelenterata up to orders Porifera- Type study-Sycon. Coelenterata-Type study-Obelia.
<b>DECEMBER</b>	<b>UNIT – IV</b> General characters and classification of Phylum Helminthes, Annelida and Arthropoda up to orders Platyhelminthes and Nema-helminthes-Type Study-Fasciola. And Ascaris Annelida-Type Study-Pheretima. Arthropoda- Type Study-Palaemon.
<b>JANUARY</b>	<b>UNIT – V</b> General characters and classification of Phylum Mollusca and Echinodermata up to orders Mollusca- Type Study-Pila. Echinodermata- Type Study- Asterias (Starfish).
<b>FEBRUARY</b>	<b>REVISION</b>

**B. Sc. I**  
**Zoology**  
**PAPER-II**  
**VERTEBRATES AND EMBRYOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT – I</b> Classification of Hemichordata Hemichordata – Type study - Balanoglossus Classification of Chordata up to Order
<b>AUGUST</b>	<b>UNIT- I</b> Protochordata-Typestudy-Amphioxus. A comparative account of Petromyzon and Myxine.
<b>SEPTEMBER</b>	<b>UNIT – II</b> Fishes-Skin & Scales, migration in fishes, Parental care in Fishes. Amphibia-Parental care, Neoteny. Reptilia- Poisonous & Non-poisonous Snakes, Poison apparatus, snake venom and Extinct Reptiles
<b>OCTOBER</b>	<b>UNIT – III</b> Birds- Flight Adaptation, Migration and Perching Mechanism. Discuss-Birds are glorified reptiles. Mammals-Comparative account of Prototheria, Metatheria, Eutheria and Affinities. Aquatic Mammals and their adaptation
<b>NOVEMBER</b>	<b>UNIT –IV</b> Fertilization Gametogenesis, Structure of Gamete and Types of Eggs Cleavage
<b>DECEMBER</b>	<b>UNIT – IV</b> Development of Frog upto formation of three germ layers Parthenogenesis.
<b>JANUARY</b>	<b>UNIT –V</b> Embryonic induction, Differentiation and Regeneration. Development of Chick (a) Up to formation of three germ layer b) Extra-embryonic membranes. Placenta in mammals.
<b>FEBRUARY</b>	<b>REVISION</b>

**B. Sc. II**  
**Zoology**  
**PAPER-I**  
**ANATOMY AND PHYSIOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JULY	<b>UNIT I</b> – Comparative anatomy of various organ systems of vertebrates. Integument and its derivatives: structure of scales,
AUGUST	<b>UNIT I</b> - hair and feathers, Alimentary canal and digestive glands invertebrates Respiratory organs : Gills and lung , air-sac in birds
SEPTEMBER	<b>UNIT II</b> - Endoskeleton: Limbs, girdles and vertebrae Circulatory System: Evolution of heart and aortic arches Urinogenital System: Kidney and excretory ducts
OCTOBER	<b>UNIT III</b> -Nervous System: General plan of brain and spinalcord Endocrine glands- classification and histology
NOVEMBER	<b>Unit III</b> – Gonads and genital ducts <b>UNIT – IV</b> Digestion and absorption of dietary components Physiology of heart, cardiac cycle and ECG
DECEMBER	<b>UNIT IV</b> – Blood Coagulation Respiration: mechanism and control of breathing
JANUARY	<b>UNIT –V</b> - Excretion: Physiology of excretion,osmoregulation Physiology of musclecontraction Physiology of nerve impulse, Synaptic transmission Ear and Eye: structure and function
FEBRUARY	REVISION

**B. Sc. II**  
**Zoology**  
**PAPER-II**

**VERTEBRATE ENDOCRINOLOGY, REPRODUCTIVE BIOLOGY  
BEHAVIOUR, EVOLUTION AND APPLIED ZOOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT I-</b> General Characters of Hormones Hormone receptor Biosynthesis and secretion of thyroid, adrenal, ovarian and testicular hormones Endocrine disorder due to hormones and other glands
<b>AUGUST</b>	<b>UNIT I-</b> Endocrine disorder due to hormones and other glands <b>UNIT II –</b> Reproductive cycle in vertebrates Menstruation, lactation and pregnancy Mechanism of parturition
<b>SEPTEMBER</b>	<b>UNIT II –</b> Hormonal regulation of gametogenesis Extra-embryonic membrane <b>UNIT III-</b> Evidences of organic evolution. Theories of organic evolution.
<b>OCTOBER</b>	<b>UNIT III-</b> Variation, Mutation, Isolation and Natural selection. Evolution of Horse
<b>NOVEMBER</b>	<b>UNIT IV-</b> Introduction to Ethology. Patterns of Behaviour: Taxes, Reflexes, Drives and Stereotyped behaviours.
<b>DECEMBER</b>	<b>UNIT IV-</b> Reproductive behavioural patterns. Hormones, drugs and behavior <b>UNIT V –</b> Aquaculture Sericulture Apiculture Pisciculture
<b>JANUARY</b>	<b>UNIT V –</b> Poultry keeping Elements of pest control- Chemical control Biological control
<b>FEBRUARY</b>	<b>REVISION</b>

**B. Sc. III****Zoology****PAPER-I****ECOLOGY, ENVIRONMENTAL BIOLOGY, TOXICOLOGY,  
MICROBIOLOGY AND MEDICAL ZOOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JULY	<b>UNIT – I</b> Aims and scopes of ecology Major ecosystems of the world-Brief introduction Population- Characteristics and regulation of densities Communities and ecosystem Bio-geo chemical cycles Air & water pollution Ecological succession
AUGUST	<b>UNIT-II</b> Laws of limiting factor Food chain in fresh water ecosystem Energy flow in ecosystem- Trophic levels Conservation of natural resources Environmental impact assessment
SEPTEMBER	<b>UNIT-III</b> Definition of toxicity Classification of toxicants Principle of systematic toxicology
OCTOBER	<b>UNIT III</b> Toxic agents & their action-Metallic & inorganic agents Animal poisons- snake venom, scorpion & bee poisoning Food poisoning
NOVEMBER	<b>UNIT-IV</b> General and applied microbiology Microbiology of domestic water and sewage
DECEMBER	<b>UNIT IV</b> Microbiology of milk & milk products Industrial microbiology
JANUARY	<b>UNIT-V</b> Brief introduction to pathogenic microorganisms, Rickettsia, Spirochaetes & Bacteria Brief account of life history & pathogenicity of the following pathogens with reference to man: prophylaxis & treatment Pathogenic protozoans- Entamoeba, Trypanosome & Giardia Pathogenic helminthes-Schistosoma Nematode pathogenic parasites of man Vector insects
FEBRUARY	REVISION

**B. Sc. III**  
**Zoology**  
**PAPER-II**  
**GENETICS, CELL PHYSIOLOGY, BIOCHEMISTRY, BIOTECHNOLOGY AND**  
**BIOTECHNIQUES**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JULY	<b>UNIT – I</b> Linkage & linkage maps Varieties of gene expression- multiple alleles; Lithogenesis, Pleiotropic Gene; Gene interaction; Epistasis Sex chromosomes systems & sex linkage Mutation & chromosomal alteration; meiotic consequences Human genetics, chromosomal & single gene disorders (somatic cellgenetics)
AUGUST	<b>UNIT-II</b> General idea about pH &buffer Transport across membrane- cell membrane; mitochondria and endoplasmic reticulum Active transport & its mechanism; active transport in mitochondria & endoplasmic reticulum Hydrolytic enzymes-their chemical nature, activation &specificity
SEPTEMBER	<b>UNIT-III</b> Amino acids & peptides- Basic structure & biologicalfunction Carbohydrates & its metabolism- Glycogenesis; Gluconeogenesis; Glycolysis; Glycogenolysis; Cori-cycle
OCTOBER	<b>UNIT III</b> Lipid metabolism- Oxidation of glycerol; Oxidation of fattyacids Protein metabolism- Deamination,
NOVEMBER	<b>UNIT III</b> transamination, transmethylation; Biosynthesis of protein <b>UNIT-IV</b> Biotechnology- Scope &importance Recombinant DNA & Gene cloning
DECEMBER	<b>UNIT IV</b> Cloned genes & other tools of biotechnology Applications of biotechnology in (i) Pharmaceutical industry (ii) Food processing industry
JANUARY	<b>UNIT-V</b> Principles & techniques about the following: (i) pHmeter (ii) Colorimeter (iii) Microscopy- Light microscopes, Phase contrast & Electron microscopes (iv) Centrifugation (v) Separation of biomolecules by chromatography &electrophoresis (vi) Histo-chemical methods of determination of protein, lipid &carbohydrates
FEBRUARY	REVISION



**GOVT.D.B.GIRLS' P G (AUTONOMOUS) COLLEGE, RAIPUR**  
**TEACHING PLAN / SESSION 2019-20**

**B.SC.HOME SCIENCE PART I GROUP A PAPER II INTRODUCTION TO RESOURCE MANAGEMENT ECOLOGY AND ENVIRONMENT**

- JULY- INTRODUCTION, CONCEPT, PURPOSE OF MANAGEMENT, ACHIEVEMENT OF GOALS
- AUG- OBSTACLE TO IMPROVE MANAGEMENT, FACTORS AFFECTING MANAGEMENT, LIFESTYLE.  
TYPES OF FAMILY, SIZE, STAGES OF FAMILY LIFE CYCLE
- SEPT- DEFINITION, TYPES, UTILITY OF GOALS, IMPORTANCE, SOURCES CLASSIFICATION  
CHARACTERISTICS OF VALUE, CHANGING VALUES, STANDARD DEFINITION, QUANTITATIVE  
QUALITATIVE, CONVENTIONAL, NON CONVENTIONAL, ROLE OF DECISION IN MANAGEMENT ,  
AVAILABILITY OF RESOURCES, AND PRACTICAL
- OCT- MEANING OF MANAGEMENT PROCESSES PLANNING, CONTROLLING, EVALUATION, DECISION  
MAKING ,PLANNING IMPORTANCE, TYPES, TECHNIQUES, CONTROLLING PHASES ENERGIZING  
CHECKING, SUCCESS FACTORS, SUITABLY, PROMPTNESS, NEW DECISIONS, FLEXIBILITY &  
PRACTICAL
- NOV- SUPERVISION DIRECTIONS & GUIDANCE, ANALYSIS OF SUPERVISION, EVALUATION, IMPORTANCE  
RELATION TO GOALS, SELF EVALUATION, EVALUATION OF MANAGEMENT PROCESSES, TYPES  
AND FACTORS OF RESOURCES AND PRACTICAL
- DEC- MEANING, DEFINITION, SCOPE OF ECOLOGY AND ENVIRONMENT, LAND ENERGY, MINERALS  
RESOURCE, POLLUTION, SOURCES, DOMESTIC WASTE, HEALTH HAZARD PREVENTION  
CONTROL, WATER PROBLEM ISSUES, POLLUTION SCARCITY, POLLUTANTS, HEALTH HAZARD,  
CONTROL AND PRACTICAL
- JAN- UTILITY & RESOURCE OF FOREST, DEFORESTATION, CONSERVATION, AIR COMPOSITION,  
POLLUTANTS, SOURCES, HEALTH HAZARD, GREEN HOUSE EFFECT, & PRACTICAL
- FEB- ENERGY SOURCES, ALTERNATIVE, CONSERVATION, UNCONTROLLED POLLUTION GROWTH AND  
CONTROL, ENVIRONMENT EDUCATION, NEED, OBJECTIVES, ROLE OF GOVERNMENT, NGOS  
EDUCATION INSTITUTIONS, NATIONAL, INTERNATIONAL AGENCY, ENVIRONMENTAL  
PROTECTION POLICY, PROGRAMME, LEGISLATION

**GOVT.D.B.GIRLS'P G (AUTONOMOUS) COLLEGE, RAIPUR**  
**TEACHING PLAN / SESSION 2019-20**  
**BSc./ B.A. Part- I (FASHION DESIGNING)**  
**Group B / Paper-I**  
**NAME OF PAPER : TEXTILE SCIENCE**

MONTH	TEACHING PLAN
JULY	Introduction of the Subject. A brief historical background of Textile. Common Terminology used in Textile. Physical Properties of Textile fibers.
AUGUST	Chemical properties of Textile fibers. Introduction of Textile fibers Classification of Textile fibers : Natural fiber Vegetative Fiber : Cotton , Linen ( History, Cultivation , Manufacturing process & properties of each fiber )
SEPTEMBER	Animal Fiber : Silk,Wool ( History, Cultivation , Manufacturing process & properties of each fiber ) Mineral Fiber : Gold, Silver, Asbestoss Man-Made Fiber : Rayon ( History , Types, Production & Properties )
OCTOBER	Thermoplastic Fiber: Nylon ( History , Types, Production & Properties) Yarn : Meaning, yarn making. Types of yarn : Simple, Complex, Novelty. Yarn Twist
NOVEMBER	Methods of Fabric Construction:Weaving – Essential parts of Handloom Different types of Weaves. Other Methods of Fabric Construction.
DECEMBER	Identification of Fabric : Appearance test , Microscopic test , Burning test , Creasing test ,Breaking test ,Tearing test and Chemical test. Importance of Clothing
JANUARY	Selection of fabric for Dress according to Climate , Age, Occupation , Personality , Occasion , Figure type , Fashion etc. Wardrobe Planning
FREBRUARY	REVISION

**GOVT.D.B.GIRLS' P G (AUTONOMOUS) COLLEGE, RAIPUR**  
**TEACHING PLAN / SESSION 2019-20**  
**BSc./ B.A. Part- I (FASHION DESIGNING)**  
**Group B / Paper-II**  
**NAME OF PAPER : COLOR THEORY AND CONCEPTS**

MONTH	TEACHING PLAN
JULY	Introduction to Element of Design <ul style="list-style-type: none"> <li>• Color</li> <li>• Line &amp;</li> <li>• Texture</li> </ul>
AUGUST	Color Theories <ul style="list-style-type: none"> <li>• Prang's Color Theory</li> <li>• Munshell's Color Theory</li> </ul> Principles of Design <ul style="list-style-type: none"> <li>• Proportion</li> </ul>
SEPTEMBER	<ul style="list-style-type: none"> <li>• Balance</li> <li>• Harmony</li> <li>• Rhythm</li> <li>• Emphasis</li> </ul>
OCTOBER	Classification of Lines and its Significance. Combination of Lines, Different types of Patterns : Structural , Decorative , Geometrical , Abstract , Floral and Scrawly pattern.
NOVEMBER	Color Wheel ( According to Prang's Color Theory ) <ul style="list-style-type: none"> <li>• Single line design</li> <li>• Double line design</li> <li>• Four fold design</li> </ul>
DECEMBER	Color Scheme : Complementary, Double Complementary, Split Complementary, Traid Color Scheme, Pastel & Dusty Pastel, Contrast color scheme, Analogous color scheme, VIBGYOR color scheme, Neutral color scheme with Metallic colors, Nursery prints.
JANUARY	Enlargement of Pint. Texture : Fevicol texture , Thumb Impression, Rope Impression, Leaf Impression, Smoke and Spray texture, Wax drop & rubbing, Blowing, Stencils, Vegetable blocks, Stone Impression, Marble texture ,Dry brush etc.
FEBRUARY	REVISION

**GOVT.D.B.GIRLS'P G (AUTONOMOUS) COLLEGE, RAIPUR**  
**TEACHING PLAN / SESSION 2019-20**  
**BSc. Part- I ( HOME SCIENCE )**

**Group IV / Paper-B**

**NAME OF PAPER : PERSONAL EMPOWERMENT AND COMPUTER BASICS**

MONTH	TEACHING PLAN
JULY	Personal growth and personality development. The challenges: understanding and managing oneself. Personality development: Factors and influences. Peer pressures: Issues and management. Conflicts and stress, Simple coping strategies
AUGUST	Adjustment and readjustment to changing needs and conditions of contemporary society (technological changes, social changes, changes in values).Empowerment of women- Women and development: personal, familial, societal and national perspective.Capacity building for women: Education, decision-making abilities and opportunities.
SEPTEMBER	Women's organizations and collective strength: Women's action groups Women's participation in development initiatives.Study and discussion of life histories, case studies of illustrious Indian women from different walks of life eg. IndiraGandhi, Jhansi ki Rani, Kiran Bedi, Ha Bhat etc.
OCTOBER	Case studies: Medha Patkar, Vijaylaxmi Pandit, Sudha Chandran, Bhanvari Devi, Anutai Wagh. Home Science Education as Empowerment :The interdisciplinary of Home Science Education, the role of Home Science education for personal growth and professional development.
NOVEMBER	Home Science as holistic education with integration of goals for persons, enhancement and community development.Some Significant Contemporary Issues of Concern -Gender issues: inequities and discriminations, biases & stereotype; myths and facts.
DECEMBER	Substance abuse: Why and how to say no. Healthy habits: In relation to physique, to heterosexual interests. AIDS : Awareness and Education Computer Fundamentals : Overview about computers.
JANUARY	Computer Fundamentals : Components of a computer, Input / Output devices, Secondary storage devices, Number system : Decimal, Binary, Octal, Hexadecimal. Representation of information : BCD, EBCDIC, ASCII. Representation of Data : Files, Records, File organization and access. Security and safety of data. Introduction to operating systems.
FREBRUARY	RIVISION

**GOVT.D.B.GIRLS'P G (AUTONOMOUS) COLLEGE, RAIPUR**  
**TEACHING PLAN / SESSION 2019-20**  
**BSc./ B.A. Part- II (FASHION DESIGNING)**

**Group B / Paper-I**

**NAME OF PAPER: INTRODUCTION TO FASHION ILLUSTRATION & MODEL**

MONTH	TEACHING PLAN
JULY	Fashion : Definition ,Theories Fashion Trends In India. Terms Related To Fashion Industry. Factors Affecting Fashion.
AUGUST	Anatomy Of Human Body Skeleton & Muscular System Joints Of Human Body Normal Body , Abnormal Body
SEPTEMBER	Figure Problems & Different Types Of Figure Defects :Erect, Stooping, Low Shoulder, Square Shoulder, Thin Waist, Stout Waist, Long Body, Short Body, Full Back, Flat Back, Cylindrical, Corpulent, Head Forward, Head Backward
OCTOBER	Deformity : Natural & Accidental Principle Of Figure Drawing Sketching Of Different Body Features
NOVEMBER	Figure Head Theories : 7 ½ (Average Figure) 8 ½ (Average Figure) Drawing Of Human Form In Different Angles : Front , Back , Side .
DECEMBER	Figure Head Theories 10 ½ (Block Figure) 12 ½ (Fashion Figure) Drawing Of Human Form In Different Angles : Front , Back , Side .
JANUARY	Drawing Different Silhouettes Rendering Of Figure In Different Postures Sketching Styles For Different Age Group Male , Female , Kids
FREBRUARY	RIVISION

**GOVT.D.B.GIRLS'P G (AUTONOMOUS) COLLEGE, RAIPUR**

**TEACHING PLAN / SESSION 2019-20**

**BSc./ B.A. Part- II (FASHION DESIGNING)**

**Group B / Paper-II**

**NAME OF PAPER: DESIGN IDEAS IN GARMENTS**

MONTH	TEACHING PLAN
JULY	Body Measurements Anthropometric Measurements Methods Of Taking Body Measurements Standard Measurement Charts Based On Different Age Group
AUGUST	Pattern Making Principles, Techniques, And Application For Different Styles Basic Paper Pattern For : Children Wear (Any 3)
SEPTEMBER	Men's Wear (Any 2) Ladies Wear (Any 3) Preparing Layouts For Above Mention Paper Pattern Cloth Estimation For Different Garments
OCTOBER	Necklines :Study Of Different Types Of Necklines Variations Of Necklines Collars : Study Of Different Types Of Collars Collars Above The Necklines (Band Collars)
NOVEMBER	Collars Below The Necklines (Flat Collars) Tucks : Different Types Of Tucks (Pin, Diagonal, Blind, Cross, Spaced, Diamond, Shell, Corded)
DECEMBER	Pleats : Different Types Of Pleats (Simple, Knife, Box, Accordion, Kick, Reverse, Inverted Box) Seam : French & Counter Seam Gathers : Sheerings & Smocking
JANUARY	Yoke : Different Types Of Yokes (Body, Waist, Hip, Shoulder) Sleeves : Different Types Of Sleeves (Plain, Puff, Raglan, Kimono, Dolman)
FREBRUARY	REVISION

**GOVT.D.B.GIRLS'P G (AUTONOMOUS) COLLEGE, RAIPUR****TEACHING PLAN / SESSION 2019-20****BSc./ B.A. Part- III (FASHION DESIGNING)****Group B / Paper-I****NAME OF PAPER : MARKETING & SALES MANAGEMENT**

MONTH	TEACHING PLAN
JULY	Introduction to Marketing : Meaning, Definition, Nature & Scope ,Types, Functions & Method ,Marketing Process Standardization & Grading : Meaning, Definition, Importance & Advantages.
AUGUST	Product Policy Decision , Product Life Cycle Pricing Policies : Pricing Economic Concept & Objects Meaning of cost ,Methods of setting Price ,Factors Affecting Pricing Decisions, Sales Promotion: Meaning, Method, Strategies & Planning
SEPTEMBER	Salesmanship: Meaning,Definition,Characteristics & Scope Essentials of Successful Salesmanship, Duties & Main Qualities of Successful Salesmanship, Salesmanship & Advertisement,Channels of Distribution : Meaning, Definition, Types & Functions .
OCTOBER	Channels of Distribution of Consumer Goods & Industrial Goods,Role of Middleman. Channels of Distribution In India Advertisement: Meaning, Definition, Functions & Principles ,Advantages & Disadvantages, Media of Advertisement
NOVEMBER	Factors to be considered when selecting a medium of Advertisement,Consumer Education. Marketing Research &Information: Meaning,Definition,Object,Types,Procedure Importance & Advantages
DECEMBER	Market Report : Meaning & Types Market Terminology , Consumer Protection Entrepreneurship :Meaning, Definition, Nature & Types Qualities Of A Successful Entrepreneur
JANUARY	Theories & Models Of Entrepreneurship (Psychological, Sociological, Economic & 7 Integrated Models) Factors Affecting The Development Of Entrepreneurship Self Employment Programmes In India Consumer Association In India.
FREBRUARY	RIVISION

**GOVT.D.B.GIRLS'P G (AUTONOMOUS) COLLEGE, RAIPUR****TEACHING PLAN / SESSION 2019-20****BSc./ B.A. Part- III (FASHION DESIGNING)****Group B / Paper-II****NAME OF PAPER: CLOTHING CONSTRUCTION & FASHION DESIGNING**

MONTH	TEACHING PLAN
JULY	Clothing: Origin of Clothing, Meaning & Significance, Costumes of Ancient Age, Costumes of Modern Age. Personality : Meaning, Types & Factors Affecting Personality. Clothing & Personality. Selection of Children Clothing according to Age.
AUGUST	Fabric For Garment Making: Handling Of Different Types Of Fabric, Selection Of Suitable Fabric For Clothing, Suggestions For Persons Of Different Figures, Factors Affecting Clothing Decisions, Industrial Machines & Equipment Used For Cutting, Sewing And Finishing.
SEPTEMBER	Interrelationship Of Needles, Thread, Stitch Length, & Fabric Fitting : Fundamentals Of Fitting, Problems Area In Fitting, Factors Affecting Good Fit. Tailoring : General Principles, Proper Measurements , Principles Of Commercial Tailoring
OCTOBER	Pattern Making : General Instructions For Pattern Making, Method, Types & Layout, Use Of Commercial Paper Pattern, Pattern Alteration, Meaning & Types, Dart Manipulation & Dart Concealment, Drafting & Draping, Trimming Materials Used For Making Garment, Ornamentation Techniques
NOVEMBER	Embroidery : Fundamentals , Techniques , Design Color Combination , Use Of Different Threads , Different Types Of Stitches. Traditional Embroidery Of India: Kutch & Kathiyawar Of Gujrat, Zari Embroidery, Applique Work
DECEMBER	Traditional Embroidery of India: Kashida of Kashmir & Bihar, Kantha If Bengal, Phulkari of Punjab. Chikenkari of Lucknow, Kasuti of Karnataka, Costume of Men For Different States, Details of Costumes, Jewellery & Accessories
JANUARY	Costume of Women For Different States , Details of Costumes Jewellery & Accessories, Marriage Costumes For Different States of India, Various Dance Costumes Of India, Accessories: Importance & Types, Factors Affecting Selection Of Accessories
FREBRUARY	REVISION



PROPOSED TEACHING PLAN FOR THE SESSION OF **2019-20**

**B.SC.HOME SCIENCE PART III GROUP C PAPER I I**

JULY- DESIGN DEFINITION, TYPES STRUCTURAL, DECORATIVE, ELEMENTS OF DESIGN LINE, SIZE, FORM, STRUCTURE,SPACE, PATTERNS, SHAPES

AUG- LIGHT CHARACTERISTICS, CLASSIFICATION, STUDY OF COLOUR, CLASSIFICATION, DIMENSION, COLOUR SCHEMES, EFFECT, PRINCIPLES OF DESIGN DEFINITION CHARACTERISTICS, TYPES OF BALANCE, HARMONY, SCALE, PROPORTIONS, RHYTHM, EMPHASIS

SEPT- INDIAN REGIONAL, TRADITIONAL, CONTEMPORARY ART IN FLOOR DECORATION, HOME DECORATION, ACCESSORIES AND PRACTICAL, APPRECIATION OF ART IN TERMS OF PRINCIPLES OF ART &DESIGN, IN TERMS OF COMPOSITION And AESTHETIC APPEAL And PRACTICAL

OCT- FAMILY HOUSING NEED PROTECTIVE, ECONOMIC, AFFECTIONAL,SOCIAL, STANDARD OF LIVING , HOUSING GOALS, STYLE, FUNCTION, OCCUPATION, FACTORS INFLUENCING SELECTION & PURCHASE OF SITE FOR HOUSE BUILDING LEGAL ASPECT, LOCATION, PHYSICAL FEATURE, SOIL CONDITIONS, COST, SERVICES &PRACTICAL

NOV- HOUSE PLANNING READING HOUSE PLANS, GROUPING OF ROOMS, ORIENTATION, CIRCULATION, FLEXIBILITY, PRIVACY, SPECIOUSNESS, SERVICES, AESTHETIC, ECONOMY LIGHT VACCINATION, PLANNING OF DIFFERENT ROOMS LIVING,SLEEPING, DINING ROOM KITCHEN, STORE TOILET, PASSAGE, STAIRCASE ,LAND SCAPING PRINCIPLES &APPLICATION

DEC- FINANCIAL CONSIDERATIONS AVAILABILITY OF FUND FOR HOUSING HDFC, COOPERATIVE HOUSING SOCIETY, LIC,COOPERATIVE BANK, PF,FCI&PRACTICAL

JAN DISABILITY OF OWNING VERSUS RENTING,  
HOUSING PROBLEMS AND REMEDIES &PRACTICAL

FEB- FURNITURE STYLE TRADITIONAL, CONTEMPORARY, MODERN, SELECTION OF FURNITURE FOR COMFORT, REST, RELAXATION, WORK, STORAGE, ARRANGEMENT OF FURNITURE OF LIVING, SLEEPING, DINING AND MULTIPURPOSE ROOM, UPHOLSTERED FURNITURE MATERIAL TECHNIQUES, DESIGN, TYPES OF CURTAINS, DRAPERIES, FLOOR COVERINGS, RUGS, CARPETS CUSHION COVERS, SELECTION AND USE OF ACCESSORIES AND THEIR ROLE IN INTERIORS

**B.SC.HOME SCIENCE PART III GROUP C PAPER II FOUNDATION OF ART &DESIGN**

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JULY- DESIGN DEFINITION & TYPES STRUCTURAL, DECORATIVE, ELEMENTS OF DESIGN, LINE, SIZE, FORM STRUCTURE, SPACE, PATTERN, SHAPE, LIGHT CHARACTERISTICS CLASSIFICATION

AUG- STUDY OF COLOUR, CLASSIFICATION, DIMENSION, COLOUR SCHEMES, EFFECT, PRINCIPLES OF DESIGN, DEFINITION, CHARACTERISTICS & TYPES OF BALANCE, HARMONY, SCALE, PROPORTIONS. RHYTHM, EMPHASIS

SEPT- INDIAN REGIONAL, TRADITIONAL CONTEMPORARY ART IN FLOOR DECORATION, HOME DECORATION, ACCESSORIES, APPRECIATION OF ART IN TERMS OF PRINCIPLES OF ART & DESIGN IN TERMS OF COMPOSITION & AESTHETIC APPEAL AND PRACTICAL

OCT- FAMILY HOUSING NEED PROTECTIVE, ECONOMIC, AFFECTIONAL, SOCIAL STANDARD OF LIVING HOUSING GOALS, STYLE, FUNCTION OCCUPATION FACTORS INFLUENCING SELECTION &

PURCHASE OF SITE FOR HOUSE BUILDING LEGAL ASPECT LOCATION PHYSICAL FEATURE SOIL

CONDITIONS, COST, SERVICE AND PRACTICAL

NOV- HOUSE PLANNING READING HOUSE PLANS, GROUPING OF ROOMS. ORIENTATION,

CIRCULATION, FLEXIBILITY, PRIVACY, SPECIOUSNESS, SERVICES, AESTHETICS,

ECONOMY, LIGHT, VENTILATION, PLANNING OF DIFFERENT ROOMS LIVING, DINING, BEDROOM KITCHEN, STORE, TOILET, PASSAGE, STAIRCASE, LAND SCAPING PRINCIPLES & APPLICATION AND PRACTICAL

DEC- FINANCIAL CONSIDERATIONS AVAILABILITY OF FUNDS FOR HOUSING HDFC, COOPERATIVE HOUSING SOCIETY, LIC, COOPERATIVE BANK, FCI, PF & PRACTICAL

JAN- DISABILITY OF OWNING VERSUS RENTING, HOUSING PROBLEMS, CAUSES, REMEDIAL MEASURES

PRACTICAL

FEB- FURNITURE STYLE TRADITIONAL, CONTEMPORARY, MODERN, SELECTION OF FURNITURE FOR

COMFORT, REST, RELAXATION, WORK, STORAGE, ARRANGEMENT OF FURNITURE FOR LIVING,

SLEEPING, DINING AND MULTIPURPOSE ROOM, UPHOLSTERED FURNITURE MATERIAL,

TECHNIQUES, DESIGN, TYPES OF CURTAINS, DRAPERIES, FLOOR COVERINGS, RUGS, CARPETS

CUSHION COVERS, SELECTION AND USE OF ACCESSORIES AND THEIR ROLE IN INTERIORS

**DEPARTMENT OF HOME SCIENCE**  
**B.Sc. (H.Sc.)-III**  
**SESSION 2019-20**  
**GROUP-C**  
**PAPER-1**  
**EARLY CHILDHOOD EDUCATION**

Month	Plan
July	<b>UNIT-I</b> Significance and objectives of early childhood care and education. <ul style="list-style-type: none"> <li>1. Significance of early childhood years in individuals development.</li> <li>2. Meaning and need for intervention programmes for better growth and development.</li> <li>3. Objectives of ECCE.</li> <li>4. Different types of programs currently offered. Objectives of the program routine and target group covered by each of the following. ECE programme - Balwadi, anganwadi, Nursery school, Kindergarten, Montessori, laboratory nursery school ECCE Program - ICDS and mobile cretch. Play group : day care.</li> </ul>
August	<b>UNIT-II</b> Current Status and Expansion of Scope of ECE to ECCE <ul style="list-style-type: none"> <li>Expansion from ECE to ECCE.</li> <li>Current Status of ECCE programme.</li> <li>Objectives : staff qualifications, teacher-children ratio, indoor and outdoor play space and play facilities, equipment, curriculum and evaluation.</li> <li>Admission tests and effects on children.</li> <li>Effects of pressures on young children due to formal education.</li> <li>Need for ECCE programmes to provide quality care where mothers are at work.</li> <li>Historical overview of ECCE.</li> <li>Global perspective - views of educationists - Froebel, Mac Millan sister, Deweu and Montessori,</li> <li>ECE in India : Overview of pre.and post independence period.</li> <li>Contributions of Ravindranath Tagore, Mohandas Gandhi, Gijubhai Bodheka, Tarabai Modak, Anutai Wagh</li> </ul>
September	<ul style="list-style-type: none"> <li>Recent Developments : Policies, Institutions and contributions of NGOs</li> <li>national policy on children.</li> <li>National policy on education 1986.</li> <li>Adoption of Ram Joshi Committee Report on Child Education by Government of Maharashtra.</li> <li>Role of Indian Association of Preschool Education, National Institute of Public Cooperation and Child Development, National Council for Educational Research and Training, SCERT and NGOs</li> </ul>
October	<b>UNIT-III</b> <ul style="list-style-type: none"> <li>Meaning of curriculum, Foundation of. curriculum development.</li> <li>Impact of play as means of development and learning.</li> <li>Developmental stages of play. Types of Play - Solitary play, parallel play, associative play and coopertives play.</li> <li>Functions of play - play as a means of assessing children's development.</li> <li>Teachers Role in creating environment and Promoting play.</li> <li>Classical theories of play - Surplus energy theory relaxation theory, Preexercise &amp; recapitulation theory.</li> </ul>
November	<ul style="list-style-type: none"> <li>Programme Planning - Approaches to learning : Incidental and planned learning.</li> <li>Principles of programme planning : - from known to unknown, simple to complex, concrete to abstract.</li> <li>Balance between individual and group activity, indoor and outdoor play, quiet and active plays, guided and free activities.</li> <li>Factors influencing programme planning.</li> </ul>

	<ul style="list-style-type: none"> <li>Formal versus non-formal approach in education : advantages and disadvantages. - Integrated learning approach or project method that is covering various components of curriculum that is focussing on one topic/theme at a time.</li> <li>Short and long term planning.</li> </ul>
December	<p><b>UNIT-IV Languages</b></p> <ul style="list-style-type: none"> <li>Goals of language teaching.</li> <li>Readiness for reading and writing. Meaning of readiness.</li> <li>Factor to be considered for readiness : Age, Vision, Hearing, Physical, emotional, social, experiential background, attention span, finer motor coordination, eye hand coordination, reading from left to right and top to bottom.</li> </ul> <p><b>Mathematics</b></p> <ul style="list-style-type: none"> <li>Importance of number and mathematics.</li> <li>- Number as a language and history of its development.</li> <li>Abstract nature of number.</li> <li>Mathematical readiness.</li> <li>Analysis of prerequisite skill for 'number classification, comparing, seriation, patterning, counting, shape and space, measurement fractions, vocabulary, numeral operations.</li> <li>Decimal system of numeration (base 10)</li> <li>Number line-position and relevance of zero.</li> <li>Operations and relevant rules and properties; subtraction, multiplication and division.</li> <li>Two and three dimension shapes, properties, characteristics.</li> <li>Basic principles of measurements 0 time/distance, weight, capacity and money.</li> </ul>
January	<p><b>Environmental studies</b></p> <ul style="list-style-type: none"> <li>Scope of environmental studies.</li> <li>Importance and goals of environmental studies.</li> <li>Content : to conclude understanding from biological, physical and social environment.</li> </ul> <p><b>UNIT-V Project method</b></p> <ul style="list-style-type: none"> <li>Introduction</li> <li>Meaning and advantages of using project method.</li> <li>Planning .</li> <li>Resource unit.</li> </ul> <p><b>Alternative to Home Work</b></p> <ul style="list-style-type: none"> <li>Disadvantages of learning by role.</li> <li>Suitable alternatives such as observations, exploration, experimentation and reporting orally, picture or at. Something related to the concepts covered in class.</li> </ul>
February	<p><b>Evaluation</b></p> <ul style="list-style-type: none"> <li>Need for evaluation.</li> <li>Formative and summative evaluation.</li> <li>Methods of evaluation : Observations.</li> <li>Evaluation of daly work, tools for evaluation</li> <li>Reporting to parents.</li> <li>Revision</li> </ul>

**Govt. D.B. Girls P.G. Autonomous College , Raipur (C.G.)**  
**Proposed Teaching Plan For the Session 2019-20**  
**B.Com. Part - I**

Month	Financial Accounting	Business Communication	Business Mathematics	Business Regulatory Framework	Business Environment	Business Economics
July	UNIT-I Accounting : An introduction: Development, Definition, Needs, Objectives; Branches of accounting; Basic Accounting principles, Concept & Conventions. Accounting Standards: International accounting standards only outlines; Accounting standards in India.	UNIT -I Introducing Business Communication: Definitions, concepts and Significance of communication, Basic forms of communication; Communication models and process, Principles of effective communication; Theories of communication;	UNIT-I Simultaneous Equations – Meaning , Characteristics, Methods of solving Equations in two Variables- Graphical, Substitution, Elimination and cross Multiplication.	UNIT-I Law of Contract(1872)- I : Nature of contract ; Classification ; Offer & Acceptance ; Capacity of parties to contract , free consent , considerations, legality of object ; Agreement declared void;	UNIT-I Business Environment : Concept , Components and Importance, Economic Trends (over view) : Income ;	UNIT-I Introduction: Definition, Nature and Scope of Economics, Difference between Micro and Macro Economics Study: Inductive and Deductive Methods. Basic problems of an economy; Working of price mechanism.
August	UNIT-I Accounting Transactions: Concept of Double Entry System, Concept of Capital & Revenue, Book of original records: journal ; Ledger; Sub-division of Journal: cashbook.	UNIT-I Self – Development and Communication: Development of positive personal attitudes, SWOT Analysis;	UNIT- I Linear Programming – Formulation of LLP: Graphical method of solution; Problems relating to two variables including the case of mixed constraints ;	Law of Contract (1872)-II: Performance of contract; Discharge of contract; Remedies for breach of contract.	UNIT-I Saving and investments ; Trade and balance of payments , money and Finance.	UNIT-I Utility Analysis: Measurement of Utility, Law of diminishing marginal Utility, Law of Equi-Marginal Utility.

September	UNIT-II Final Accounts : Trial Balance; Manufacturing accounts ; Trading account ; Profit & loss account; Balance Sheet ; Adjustment entries.	UNIT-II Corporate communication: Formal and Informal communication networks; Grapevine; Miscommunication (Barriers); improving communication.	UNIT-II Matrices & Determinants: Definition of a matrix; Types of matrices; Algebra of matrices; Properties of determinants; Calculation of values of determinants up to third order;	UNIT-II Special Contracts: Indemnity; Guarantee; B ailment and pledge; Agency.	UNIT-II Problems of Growth: Unemployment; Poverty;	UNIT-II Law of Demand: Meaning and Definitions, Effecting Factors, Types; Exception of Law of Demand
October	UNIT-II Rectification of errors: Classification of errors; Location of errors; Rectification of errors; Suspense account; Effect on profit.	UNIT-II Practices in business communication: Group discussions; Seminars; Effective listening: Principles of affective listening; Factor affective listening exercises; Oral, Written, and video sessions. Audience analysis and Feedback.	UN IT-II Logarithms & Antilogarithm's. UNIT-III Simple Interest and Compound Interest.	UNIT-III Sale of Goods Act, (1930) : Formation of contract of sale ; Goods and their classification , price , conditions and warranties ; Transfer of property in goods ; Performance of the contract of sales; Unpaid seller and his rights , sale by auction ; Hire purchase agreement.	UNIT-II Regional imbalances; Social injustice; Inflation Parallel economy; Industrial sickness.	UNIT-II Elasticity of Demand: Concept, Definitions, Importance, Types and measurement of Elasticity of demand, Factors affecting the Elasticity of demand.
November	UNIT-III Depreciation, Provisions, & Reserves : Concept of depreciation ; Causes of depreciation ; Depreciation, depletion , amortization; Depreciation accounting; Methods of recording depreciation ; Methods of providing depreciation;	UNIT-III Writing Skill: Business letters- Definition, concept, structure, advantages disadvantages, need and kind of business letter. Essentials of effective business letter. Good news & bad news letters; Office memorandum. Writing Resume and letter of job application.	UNIT-III Annuities: Types of Annuities; Present value and amount of an annuity, Including the case of continuous compounding; Valuation of simple loans and debentures; Problems relating to sinking funds.	UNIT-IV Negotiable Instrument Act (1881) : Definition of negotiable instruments; Features ; Promissory Note ; Bills of Exchange & Cheque ; Holder & Holder in the due course ;	UNIT-III Role of Government : Monetary and fiscal policy ; Industrial policy ; Industrial Licensing; Privatization ; Liberalization, Globalization Devaluation ; Demonetization; Export – Import policy.	UNIT-III Production: Factors of Production, their characteristics and importance. Production Function: Law of variable proportions;

December	UNIT-III Depreciation of different assets ; Depreciation of replacement cost; Depreciation policy; as per Indian accounting standard : .Provisions & Reserves. Accounts of Non–Trading Institutions	UNIT-IV Report Writing: Introduction to a proposal, short report and formal report, report preparation.Oral Presentation : Principles of oral Presentation , factors effecting presentation, sales presentation , training Presentation , conducting surveys , speeches to motivate ,Presentation skills.	UNIT-IV Ratio & Proportion.	UNIT- IV Crossing of a cheque , Types of crossing ; Negotiation ; Dishonor and Discharge of negotiable instrument	UNIT- IV Economic Planning in India: Need Objectives, strategy; Review of Previous Plans, Planning Commission. Foreign Exchange Management Act 2000 : Basic Concept and main Provisions.	UNIT-III Returns to scale and Equal product Curve Analysis; Internal & External economies and dis-economies.
January	UNIT-IV Special Accounting Areas: Hire-purchase and installment purchase system; Meaning of hire-purchase contract; Legal provision regarding hire-purchase contract; Accounting for goods of substantial sale values and accounting records for goods of small values; Installment purchase system ; After sales service.	UNIT-V Non-Verbal Aspects of Communicating: Body language: Kinesics, Proxemics, Para language. Interviewing Skills: Appearing in interview; conducting interview; Mock Interview.	UNIT-IV Average, Percentage UNIT-V Commission, Brokerage	UNIT-V The Consumer Protection Act 1986 : Main Provision, Definition of consumer ; Consumer disputes, Grievances Redressal Machinery; Indian Partnership Act 1932. Limited Liabilities Partnership Act 2008.	UNIT-V International Environment : Trends in World trade and the problems of developing countries ; Foreign trade and economic growth;	UNIT-IVMarket Structures: Concept, characteristics, classification. Determination of Price under condition of Perfect Competition, Imperfect Competition and Monopoly, Monopolistic Competition, Oligopoly and Duopoly.
February	UNIT-V Partnership Accounts : Dissolution of a Partnership firm, Amalgamation of Partnership Firms, Conversion of Partnership Firm into Joint Stock Company.	UNIT-V Modern Forms of Communication: Fax; E-mail; Video conferencing, etc. International Communication for global business.	UNIT-V Discount, Profit & Loss	UNIT -V Introduction of Intellectual Property Right Act – Copyright, Patent and Trademark.	UNIT-V International economic groupings - GATT , WTO , UNCTAD, World Bank , IMF , FDI.	UNIT-V Theories of distribution, Marginal Productivity theory of distribution, Concept and theories of Wages, Rent, Interest &Profit.

**Govt. D.B. Girls P.G. Autonomous College , Raipur (C.G.)**  
**Proposed Teaching Plan For the Session 2019-20**  
**B.Com. Part - II**

Month	Corporate Accounting	COST ACCOUNTING	COMPANY LAW	PRINCIPLES OF BUSINESS MANAGEMENT	BUSINESS STATISTICS	FUNDAMENTALS OF ENTREPRENEURSHIP
July	Unit-I Issue , Forfeiture and Re-issue of Shares	Unit-I Introduction : Nature and scope of cost accounting; Cost concepts and classification; methods and techniques ; Installation of costing system ; Concept of cost audit.	Unit-I Corporate Personalities : Kinds of companies , Nature & Scope, promotion and Incorporation of companies.	Unit-I Introduction: Concept, nature, process and significance of management ; Management roles (Mintzberg) ;	UNIT-I Introduction : Statistics as a subject ; Descriptive Statistics – compared to Inferential Statistics ; Types of data ; Summation operation ; Rules of Sigma $\Sigma$	Unit-I Introduction : The entrepreneur , Definition ; Emergence of entrepreneurial class ; Theories of entrepreneurship ; Role of socio - economic environment ; Characteristics.
August	Unit-I Redemption of preference shares ; Issue and Redemption of debentures .	UNIT-I Accounting for Material : Material Control and techniques ; Pricing of material Issues ; Treatment of material losses.	UNIT-II Memorandum of Association ; Articles of Association ; Prospectus ,	UNIT-I An overview of functional areas of management ; Development management thought ; Classical and neo-classical system ; Concept	UNIT-I Operations ; Analysis of University Data ; Construction of a frequency distribution; Concept of central tendency.	Unit-II Promotion of a Venture : Opportunities analysis ; External environmental analysis : Economic , social and technological ; Competitive factors ;
September	Unit-II Final Accounts (as per company act 2013),	Unit-II Accounting for Labour : Labour cost control procedure; Labour turnover ; Idle time and overtime; Methods of wage payment–time and piece rates; Incentive schemes.	UNIT-II Share ; Share Capital – transfer and transmission.	Unit-II Planning : Concept , process and types . Decision making – concept and bounded Rationality; management by objectives ; Corporate planning ; Environment	UNIT-II Dispersion and their measurements: Partition values; Moments; Skewness and measures .	UNIT-II Legal requirements for establishment of a new unit and raising of funds ; Venture capital sources and documentation required



October	Unit-II Liquidation of Company	UNIT-II Accounting for overheads ; Classification and departmentalization ; Absorption of Overheads ; Determination of overhead rates ; Under and over absorption and its treatment.	UNIT-III Capital Management : borrowing powers , mortgages and charges , debentures.	UNIT-III Organizing : Concept , nature , process and significance; Authority and resident Relationships; Centralization and Decentralization ; Departmentalization ; Organization	UNIT-III Analysis of Bivariate Data: Linear regression two variables & correlation.	Unit-III Entrepreneurial Behavior : Innovation and entrepreneur ; entrepreneurial Behavior and Psycho – Theories , Social responsibility.
November	<b>Unit-III</b> Valuation of Goodwill and Shares.	Unit-III Cost Ascertainment : Unit costing ;	UNIT-III Directors – Managing Director, whole time director, Appointment, Remuneration and duties.	Unit-IV Motivating and Leading People at Work : Motivation – concept ; Theories Herzberg , McGregor and Ouchi ; Financial and non-financial incentives.	Index Number : Meaning , types and uses ; Methods of Constructing price and quantity indices ; Test of adequacy ; Chain - base index numbers; Base shifting , splicing and defaulting ; Problems of constructing index numbers ; Consumer price index. Analysis of time series : Causes of variation in time series data ; Components of time series ;	Unit-IV Entrepreneurial Development Programs ( EDP ) : EDP , their role, relevance and achievements ; Role of government in organizing EDPs ;Critical evaluation.
December	UNIT -IV Accounting for Amalgamation of Companies as per Indian Accounting Standard-14;	UNIT-III Job , batch and contract costing.	Unit-IV Companies Meetings : Kinds ,notices , quorum , voting,proxy , resolutions , minutes.	UNIT-IV Leadership – concept and leadership styles ; Leadership theories ( Tannenb Schmidt) ; Likert's System Management Communication – nature, process , networks and barriers , Effective communication.	UNIT-IV Decomposition – Additive and multiplicative models; Determination of trend – Moving Averages Method and method of least squares ; Computation of seasonal indices by simple averages, ratio – -to-moving average , and link relative methods.	Unit-V Role of Entrepreneur : Role of Entrepreneur in economic growth as an innovator, generation of employment opportunities , complementing and supplementing economic growth , bringing about social stability and balanced regional development of industries ;

January	UNIT-IV Accounting for Amalgamation of Companies as per Indian Accounting Standard-14;	Unit-IV Operating costing ; Process costing – excluding inter – process profits and joint and by – products.	Unit-V Majority powers and Minority rights ; Prevention of oppression	Unit-V Managerial Control : Concept and process ; Effective control system ; Technical Control – traditional and modern.	UNIT-V Forecasting and Methods : Forecasting – Concept , types and importance ; General approach to forecasting ; Methods of forecasting ; Demand ; Industry Vs Company sales forecast ; Factors affecting company sales.	UNIT-V Role in export promotion and import substitution, forex earning and augmenting and meeting local demands.
February	UNIT-V Consolidated Balance Sheet of holding companies with one subsidiary only	Unit-V Cost Records : Integral and non-integral system ; Reconciliation of cost and financial accounts ; Break Even Point.	UNIT-V mismanagement . Winding up : Kinds and conduct.	UNIT-V Management of change : Concept , nature , and process of planned Resistance to Change ; Emerging horizons of management in a environment.	UNIT-V Theory of Probability : as a concept ; The three approaches to defining probability ; Addition and Multiplication laws of probability ; Conditional probability ; Bayes' Theorem ; Expectations and variances of a random variable.	

**Govt. D.B. Girls P.G. Autonomous College , Raipur (C.G.)**  
**Proposed Teaching Plan For the Session 2019-20**  
**B.Com. Part - III**

Month	Income Tax	Indirect Taxes	Management Accounting	Auditing	Principles of Marketing	International Marketing
July	<b>UNIT-I</b> Basic Concepts : Income, agriculture Income , casual income, assessment year, previous year, gross total income, total income, person ; Basis of charge :	UNIT-I Central Excise : Nature & Scope of Central Excise; Important terms and definitions under the Central Excise Act. ; General procedure of Central Excise ; Clearance and excisable goods ; Concession to small scale industries under Central Excise Act.	UNIT-I Management Accounting : Meaning , nature ,scope and function of management accounting ; Role of management accounting in decision making ; Management accounting Vs financial accounting ; Tools and techniques of management accounting ;	UNIT-I Introduction : Meaning and objectives of auditing ; Types of audit ; Internal audit. Audit Process : Audit programme ;	UNIT -I Introduction : Nature and scope of marketing ; Importance of marketing as a business function and in the economy ; Marketing Concepts –traditional and modern ; Selling Vs marketing ; Marketing Mix ; Marketing environment.	UNIT -I International Marketing : Nature , definition and scope of international marketing; Domestic marketing Vs International marketing ; International environment – internal and external.
August	<b>UNIT-I</b> : Scope of total income, residence and tax liability, income which does not form part of total income .	UNIT-II State Excise ; CENVAT. Detail study of State excise during calculation of tax.	UNIT-I Financial statement ; Objectives and methods of financial statements analysis ; Ratio analysis ; Classification of ratio – Profitability ratios ; turnover ratios , liquidity ratios , Advantages of ratio analysis ; Limitations of accounting ratios.	UNIT- I Audit and books ; Working papers and evidences .  UNIT-II Internal Check System : Internal control.	UNIT_II Consumer Behavior and Market Segmentation : Nature , scope and Significance of consumer behavior ; Market segmentation – Concept and Importance ; Bases for market segmentation.	UNIT-II Identifying & Selecting Foreign Market: Foreign market entry mode decisions. Product Planning for international market : Product designing ; Standardization Vs adaptation; Branding & Packaging ; Labeling and quality Issues ;

September	<b>UNIT-II</b> Heads of Income : UNIT-IIe Salaries ;	UNIT-III Customs : Role of Customs in international trade ; Important terms and definitions; Goods ; Duty ; Exporter ; Foreign going vessel ; Aircraft goods Export Manifest ; Letter of credit ; Kinds of duties Basic , auxiliary , additional and countervailing ; Basics of levy-advallorem, Specific duties ; Prohibition of export and import of goods and provisions regarding notified & specified goods;	UNIT-II Funds Flow Statement as per Indian Accounting Standard – 3 ; Cash Flow Statement.	UNIT-II Audit Procedure : Vouching : Verification of assets and liabilities.	UNIT-III Product : Concept of product, consumer and industrial goods ; Product Planning and development ; Packaging role and functions ; Brand name and Trade mark ; after sale service ; product-life-cycle concept.	UNIT-II After sale service . International Pricing : Factors influencing International price; Pricing process and methods ; International price quotations and payment terms.
October	<b>UNIT-II</b> Income from House Property.	UNIT-III Import of goods – Free import and restricted import; Type of import - Import of cargo , import of personal baggage, import of stores. Clearance Procedure : For home consumption, for warehousing for re- export; Clearance Procedure for import by post ; Prohibited export of cargo , export of baggage ; Export of Cargo by land , sea , and air routes.	UNIT -III Absorption and Marginal Costing : Marginal and differential costing as a tool for decision making – make or buy ; Change of price mix ; Pricing ;	UNIT-III Audit of Limited Companies : a) Company auditor – Appointment , powers , duties & liabilities. b) Divisible profits and dividends. c) Auditors report – standard report and qualified report.	UNIT-III Price : Importance of price in the marketing mix ; Factors affecting price of a product/service ; Discounts and rebates.	UNIT-III Promotion of Product and Service Abroad : Methods of international promotion ; Direct mail and sales literature ;
November	<b>UNIT-III</b> Profit and gains of business or profession, including provisions relating to specific Business	Unit-IV Central Sales Tax : Important terms and definitions under the Central Sales Tax Act. 1956 : Dealer , dealer goods ,	UNIT- III Break-even analysis ; Exploring new markets ; Shut down decisions.	UNIT -III d) Special audit of banking companies. e) Audit of	UNIT-IV Distribution channels and Physical Distribution : Distribution channels – Concept and role ; Types of	UNIT-III Advertising ; Personal selling ; Trade fairs and exhibitions.

	Capital gains	place of business , sale , sale price, turnover, year, appropriate Authority ; Nature & scope of Central Sales Tax Act. ;		educational institutions. f) Audit of Insurance companies.	distribution channel ; Factors affecting choice of a distribution channel ; Retailers & wholesalers.	
December	<b>UNIT-III</b> Income from other sources. <b>UNIT-IV</b> Computation of Tax Liability : Set-off and carry forward of Losses ; Deduction from gross total income.	UNIT-IV Provisions relating to inter-state sales; Sales/Purchase in the course of imports and export out of India. Registration of dealers and procedure thereof ; Rate of tax ; Exemption of subsequent sales ; Determination of turnover.	UNIT-IV Budgeting for Profit Planning and Control : Meaning of budget and Budgetary control; Objectives ; Merits and limitations ; Types of budgets; Fixed and flexible budgeting ;	UNIT- IV Investigation : Investigation ; Audit of non profit companies a)Where fraud is suspended , and b)When a running a business is proposed.	UNIT-IV Physical Distribution of goods – Transportation , warehousing , Inventory Control ; Order processing.	UNIT-IV International Distribution : Distribution Channels and logistic decisions ; Selection and appointment of foreign sales agents.
January	<b>UNIT-IV</b> Aggregation of income ; Computation of total income and tax liability of an Individual , H.U.F, and Firm	Unit-V State Commercial Tax Definition , Registration , Tax liability , Procedure of computation & collection of Tax , Penalties & Prosecution calculation of tax .	UNIT- IV Control ratio ; Zero based budgeting ; Responsibility accounting ; Performance budgeting.	<b>UNIT-V</b> Recent Trends in Auditing : Nature and significance of cost audit ; Tax audit;	UNIT -V Promotion : Methods of promotion ; Optimum promotion mix ; Advertising Media – their relative merits and limitations ;	UNIT-V Export Policy and Practices in India : EXIM Policy – an overview ; Trends in India's foreign trade ; Steps in starting an export business ; Product selection ;
February	<b>UNIT-V</b> Tax Management : Tax deduction at source , Advance payment of tax ; Assessment procedures ; Tax planning for individuals. Tax evasion, Tax avoidance and Tax Planning Tax Administration : Authorities , appeals , penalties.	UNIT-V VAT- Preliminary Knowledge.	<b>UNIT-V</b> Standard Costing and Variance Analysis : Meaning of Standard cost and Standard costing; Advantages and application ; Variance analysis – material ; Labour and overhead ( Two-way analysis) ; Variances .	<b>UNIT-V</b> Management audit . Company auditing – Qualification , Appointment ,Resignation and Liabilities.	UNIT -V Characteristics of an effective advertisement ; Personal selling ; Selling as a career ; Classification of successful sales person ; Functions of salesman.	UNIT-V Export pricing; Export finance; Documentation; Export procedures ; Export assistance and incentives.

**CLASS: P.G.DIPLOMA IN DIETETICS**  
**SESSION:2019-20**

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**NAME OF PAPER: BASIC DIETETICS**

August	<b>CONCEPT OF DIET THERAPY</b>  Growth and source of dietetics, Purpose & principles of therapeutic diets, Modification of Normal Diet, Classification of therapeutic Diets.
September	<b>ROLE OF DIETICIAN</b>  Definition Of Nutritional Care, Inter Personal Relationship with Patient, Planning and Implementing dietary care, Team approach to nutritional care.  <b>INTRODUCTION TO HOSPITAL FOOD SERVICE MANAGRMENT</b>  Types of food services, Selection of food material, Cost Control ,Sanitation and safety(In brief).
October	<b>ROUTINE HOSPITAL DIETS</b>  Per-operative and post-operative diets, study and review of hospital diets, Basic Concepts and methods of (I)Oral Feeding(II)Tube Feeding(III) Parental Nutrition.  .
November	<b>DIET IN FEVERS AND INFECTIONS</b>  Types, Metabolism In Fevers, General Dietary Considerations, Diet in Influenza ,Typhoid Fever, Recurrent malaria and Tuberculosis <b>DIET IN BURNS AND FRACTURES</b> <b>OBSESITY AND LEANNESS</b>  Causes, complications & Health effects, Dietary treatment & other recommendations.

December	<p><b>1. DIET IN ALLERGY</b> Definition ,Classifications. Manifestation , Common food Allergy Tests and dietetic treatment.</p> <p><b>2. DIET AND DRUG INTERACTION</b> A The effects of Drugs on Nutrient intake, Absorption metabolism and requirements. B The effects of Nutrients and Nutritional status on the Absorption and Metabolism of Drugs.</p>
January	<p><b>1. PLANNING AND PREPARTION OF THE FOLLOWING DIET:</b> A Sodium – High &amp; Low B Protein - High &amp; Low c. Calorie - High &amp; Low D. Fiber - High &amp; Low</p> <p><b>2. DIET &amp; DENTAL DISEASES:</b> Dental Caries, Periodontal Disease.</p>
February	REVISION

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PROPOSED TEACHING PLAN FOR THE SESSION 2019-20

ECONOMICS

M.A. I & II SEMESTER

PAPER-I MICRO ECONOMICS

MONTH	UNIT	TOPIC
JULY	UNIT-I	Demand Analysis; Economic models. Equilibrium and Disequilibrium Systems. Elasticity of supply. Theories of demand-Utility.
AUGUST	UNIT-II	Indifference curve ; Consumer's Surplus, Price formation - Theory of Production and Costs.
SEPTEMBER	UNIT-III	Isoquants- ; Returns to factor; Economies of scale; Elasticity of substitution; Euler's theorem, Monopoly .
OCTOBER	UNIT-IV	Monopolistic Competition, Oligopoly.
NOVEMBER	Seminars & Internal assessment	
DECEMBER	Semester Exam	
JANUARY	UNIT-I	Critical evaluation of marginal analysis.
FREBRUARY	UNIT-II	NEO-Classical Approach of Distribution and General Equilibrium Theory of distribution.
MARCH	UNIT-III	welfare economics.
APRIL	UNIT-IV	Partial and General equilibrium.
MAY	Seminars & Internal assessment	
JUNE	Semester Exam	



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PROPOSED TEACHING PLAN FOR THE SESSION 2019-20  
ECONOMICS  
M.A. I & II SEMESTER  
PAPER-II MACRO ECONOMICS

MONTH	UNIT	TOPIC
JULY	UNIT-I	National income and accounts, Social accounting,
AUGUST	UNIT-II	Consumption function
SEPTEMBER	UNIT-III	Investment function
OCTOBER	UNIT-IV	Demand for money – Quantity theory of money
NOVEMBER	Seminars & Internal assessment	
DECEMBER	Semester Exam	
JANUARY	UNIT-I	Theory of Inflation, control of inflation.
FREBRUARY	UNIT-II	Business Cycles.
MARCH	UNIT-III	Monetary Policy.
APRIL	UNIT-IV	Fiscal Policy.
MAY	Seminars & Internal assessment	
JUNE	Semester Exam	

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PROPOSED TEACHING PLAN FOR THE SESSION 2019-20

ECONOMICS

M.A. I & II SEMESTER

PAPER-III QUANTITATIVE METHODS & RESEARCH METHODOLOGY

MONTH	UNIT	TOPIC
JULY	UNIT-I	Skewness Correlation-
AUGUST	UNIT-II	Regression analysis: Interpolation and extrapolation
SEPTEMBER	UNIT-III	Association of Attributes Probability
OCTOBER	UNIT-IV	Index Number Time series
NOVEMBER	Seminars & Internal assessment	
DECEMBER	Semester Exam	
JANUARY	UNIT-I	Research Methodology and Research Methods. Methods of collection of data.
FREBRUARY	UNIT-II	Classification and tabulation of data, Frequency distribution of data,. Hypothesis,
MARCH	UNIT-III	Sampling and sample designs .
APRIL	UNIT-IV	Test of Significance – meaning, Procedure of test of significance, Student 't' test, Chi-square test.
MAY	Seminars & Internal assessment	
JUNE	Semester Exam	

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PROPOSED TEACHING PLAN FOR THE SESSION 2019-20  
ECONOMICS  
M.A. I & II SEMESTER  
PAPER-IV INDIAN ECONOMICS

MONTH	UNIT	TOPIC
JULY	UNIT-I	GDP and National Income of India
AUGUST	UNIT-II	Demographic Features of Indian Population
SEPTEMBER	UNIT-III	Agricultural Development in Indian Economy
OCTOBER	UNIT-IV	Industrial Development in India
NOVEMBER	Seminars & Internal assessment	
DECEMBER	Semester Exam	
JANUARY	UNIT-I	Planning in India
FEBRUARY	UNIT-II	Problem of Poverty and Inequality Problem of Unemployment in India
MARCH	UNIT-III	Public Finance in Indian Economy
APRIL	UNIT-IV	External Sector Behavior of Indian Economy
MAY	Seminars & Internal assessment	
JUNE	Semester Exam	

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PROPOSED TEACHING PLAN FOR THE SESSION 2019-20

ECONOMICS

M.A. I & II SEMESTER

PAPER-V LABOUR & INDUSTRIAL ECONOMICS

MONTH	UNIT	TOPIC
JULY	UNIT-I	Industrialization pattern, Market Structure, Theories of Industrial Localization.
AUGUST	UNIT-II	Size & Growth of the firm, Industrial Productivity Industrial Policy of India, Industrial Policy of Chhattisgarh. Role of Public & Private Sectors. Liberalization and privatization. Regional industrial growth in India.
SEPTEMBER	UNIT-III	Industrial Finance.
OCTOBER	UNIT-IV	Industrial Labour and Labour Legislation.
NOVEMBER	Seminars & Internal assessment	
DECEMBER	Semester Exam	
JANUARY	UNIT-I	Labour Market, Employment and development relationship - Poverty, Unemployment – concept, types and measurement.
FREBRUARY	UNIT-II	Impact of rationalization, public sector and employment in agricultural sector; analysis of educated employment policy in five year plans its evaluation. Wage Determination
MARCH	UNIT-III	Productivity and wage relationship. Asymmetric information and efficiency of labour markets in wage determination; National wage policy,
APRIL	UNIT-IV	Labour legislation in India.
MAY	Seminars & Internal assessment	
JUNE	Semester Exam	

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PROPOSED TEACHING PLAN FOR THE SESSION 2019-20

ECONOMICS

M.A. III & IV SEMESTER

PAPER-I ECONOMICS OF GROWTH

MONTH	UNIT	TOPIC
JULY	UNIT-I	Economic Growth and Development, Physical Quality of Life Index, Human development index,
AUGUST	UNIT-II	Capital Output Ratio, input-output Analysis, Project evaluation and Cost – Benefit Analysis.
SEPTEMBER	UNIT-III	The Adam Smith model, The Ricardian model, The Marxian model. The Schumpeterian model, Keynesian, Mahalanobis .
OCTOBER	UNIT-IV	Harrod-Domar Model, Kaldor model, John Robinson model, Meads, Solow .
NOVEMBER	Seminars & Internal assessment	
DECEMBER	Semester Exam	
JANUARY	UNIT-I	Economic Planning- Objective. Achievements and Failures of Indian Plans
FREBRUARY	UNIT-II	Vicious circle of Poverty, Unlimited Supply of labour model, Big-Push Theory, Theory of critical minimum efforts, Balanced and unbalanced growth. Ranis and Fai model
MARCH	UNIT-III	Investment criterion in economic development
APRIL	UNIT-IV	measuring poverty and Income inequalities, unemployment, The choice of techniques, sustainable development, Role of state in Economic development. Problem of Price-rise in India.
MAY	Seminars & Internal assessment	
JUNE	Semester Exam	

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**PROPOSED TEACHING PLAN FOR THE SESSION 2019-20**

**ECONOMICS**

**M.A. III & IV SEMESTER**

**PAPER-II International Trade**

<b>MONTH</b>	<b>UNIT</b>	<b>TOPIC</b>
JULY	UNIT-I	Theory of International Trade
AUGUST	UNIT-II	Heckschar-Ohlin Theory of International Trade, Terms of Trade & Economic Development.
SEPTEMBER	UNIT-III	The Theory of Intervention – Tariffs, Quotas, and nontariff barriers.
OCTOBER	UNIT-IV	Balance of Payments, Foreign Exchange Rate.
NOVEMBER	Seminars & Internal assessment	
DECEMBER	Semester Exam	
JANUARY	UNIT-I	The Theory of Regional Blocks-Forms of Economic Co-operation, reforms for the emergence of trading blocks at the Global level
FREBRUARY	UNIT-II	Regionalism of European Union, NAFTA, Multilateralism and WTO,
MARCH	UNIT-III	Theory of short term & long term capital movement and international trade
APRIL	UNIT-IV	WTO and World Bank, Export policies of India, working and regulations of MNCs in India.
MAY	Seminars & Internal assessment	
JUNE	Semester Exam	

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PROPOSED TEACHING PLAN FOR THE SESSION 2019-20

ECONOMICS

M.A. III & IV SEMESTER

PAPER-III Public Finance

MONTH	UNIT	TOPIC
JULY	UNIT-I	Role of Government in organized Society. Principles of maximum social advantages, Taxation.
AUGUST	UNIT-II	Indian tax System, Indirect & direct tax, personal income tax..
SEPTEMBER	UNIT-III	Public Expenditure.
OCTOBER	UNIT-IV	Public Debt , Growth of Public Debt in India, Burden of Public Debt.
NOVEMBER	Seminars & Internal assessment	
DECEMBER	Semester Exam	
JANUARY	UNIT-I	Fiscal Policy,
FREBRUARY	UNIT-II	Federal Finance, Finance commission-Report, Gadgil formul.
MARCH	UNIT-III	Budgets and Budgetary procedure in India, Budget Theory – Classical Viewpoint. Balance Budget, Modern View Point, Imbalanced Budget.
APRIL	UNIT-IV	Analysis of Chhattisgarh Govt. Financial Responsibilities and budget management Act.
MAY	Seminars & Internal assessment	
JUNE	Semester Exam	

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**PROPOSED TEACHING PLAN FOR THE SESSION 2019-20**

**ECONOMICS**

**M.A. III & IV SEMESTER**

**PAPER-IV ENVIRONMENTAL ECONOMICS& ECO OF SOCIAL SECTOR**

<b>MONTH</b>	<b>UNIT</b>	<b>TOPIC</b>
JULY	UNIT-I	Welfare Economics – Definition of welfare Economics. Criterion of Social Welfare-Bentham Criteria, Cardinalize Criterion, Pareto Optimality Criterion, .
AUGUST	UNIT-II	Social Welfare function, Maximization of social welfare, Maximization in perfect competition, public goods and private goods. Market failure & public goods
SEPTEMBER	UNIT-III	Environmental Economics – Definition of Environmental Economics, Relation between Environmental Economics and Economics.
OCTOBER	UNIT-IV	Theories of Externalities –Pigouvian Taxes and Subsidies. Environmental values , international carbon Tax, Environment and W.T.O.
NOVEMBER	Seminars & Internal assessment	
DECEMBER	Semester Exam	
JANUARY	UNIT-I	Pollution – Classification of pollution
FREBRUARY	UNIT-II	Environmental Protection- Environmental laws.
MARCH	UNIT-III	Classification of Resource, social forestry
APRIL	UNIT-IV	Economics of Education, Human Capital, Human Capital Vs. Physical capital. Health Economics- Prospective HDI, GDI, GEM and HPI.
MAY	Seminars & Internal assessment	
JUNE	Semester Exam	



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PROPOSED TEACHING PLAN FOR THE SESSION 2019-20  
ECONOMICS  
M.A. III & IV SEMESTER  
PAPER-V DEMOGRAPHY

MONTH	UNIT	TOPIC
JULY	UNIT-I	Demography – Meaning and importance, Theories of Population – Theory of optimum population and Theory of demographic transition.
AUGUST	UNIT-II	Migration.
SEPTEMBER	UNIT-III	Mortality.
OCTOBER	UNIT-IV	Fertility.
NOVEMBER	Seminars & Internal assessment	
DECEMBER	Semester Exam	
VIVA		

**DEPARTMENT OF ENGLISH**  
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**M. A. ENGLISH LITERATURE**  
**SEMESTER - I**  
**PAPER-I**  
**POETRY-I**

<b>MONTH</b>	<b>PLAN</b>
<b>JULY</b>	Introduction: History and background of English Literature <b>UNIT-I</b> Types of poetry, Elements of poetry, Poetic devices, Sub-genres of poetry John Donne: Death Be Not Proud, A Valediction: Forbidding Mourning (Detailed) William Shakespeare: Sonnet no: 1, 154 (non-Detailed)
<b>AUGUST</b>	<b>UNIT-II</b> Geoffrey Chaucer: Prologue to the Canterbury Tales (Detailed)
<b>SEPTEMBER</b>	<b>UNIT-III</b> John Milton: Paradise Lost Book-I (Lines 1-300) (Detailed) John Dryden: The Portrait of Shadwell (Non-Detailed) <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>UNIT IV</b> Alexander Pope: The Rape of the Lock (Detailed) Thomas Gray: Elegy written in a Country Churchyard (Non-Detailed) <b>Internal Test 2</b>
<b>NOVEMBER</b>	<b>UNIT IV</b> Thomas Gray: Elegy written in a Country Churchyard (Non-Detailed) <b>SEMINAR/EXAM</b>
<b>DECEMBER</b>	<b>EXAM /SEMESTER BREAK</b>

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**SEMESTER - I**  
**PAPER-II**  
**DRAMA-I**

<b>MONTH</b>	<b>PLAN</b>
<b>JULY</b>	<b>UNIT-I</b> Origin and development of drama, Elements of drama (Theme, Plot, Characters, Dialogue) Dramatic devices Christopher Marlowe: Dr. Faustus (Detailed)
<b>AUGUST</b>	<b>UNIT-I</b> Christopher Marlowe: Dr. Faustus (Detailed) <b>UNIT-II</b> John Webster: The Duchess of Malfi (Detailed) Ben Jonson: The Alchemist (Non-Detailed)
<b>SEPTEMBER</b>	<b>UNIT-III</b> William Shakespeare: Hamlet(Detailed) <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>UNIT-IV</b> William Shakespeare: The Tempest (Detailed) William Congreve: The Way of the World (Non-Detailed) <b>Internal Test 2</b>
<b>NOVEMBER</b>	<b>UNIT-IV</b> William Congreve: The Way of the World (Non-Detailed) <b>SEMINAR/EXAM</b>
<b>DECEMBER</b>	<b>SEMESTER BREAK</b>

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**SEMESTER - I**  
**PAPER-III**  
**PROSE-I**

<b>MONTH</b>	<b>PLAN</b>
<b>JULY</b>	<b>UNIT-I</b> The elements of prose (Characters, Setting, Plot, Point of view, Theme, Mood) Varieties of Prose (Descriptive prose, Narrative prose, Expository prose) Forms of Prose (Short story, Essay, Letter, Travelogue, Biography, Autobiography, Diary, Speech)
<b>AUGUST</b>	<b>UNIT-I</b> Forms of Prose (Short story, Essay, Letter, Travelogue, Biography, Autobiography, Diary, Speech) <b>UNIT-II</b> Francis Bacon: Of Studies, Of Beauty, Of Truth (All Detailed) Thomas Browne: Urn Burial (Non-Detailed)
<b>SEPTEMBER</b>	<b>UNIT-III</b> Joseph Addison: Sir Roger at Home, Sir Roger at Assizes, Sir Roger at Church (All Detailed) Richard Steele: Recollections of Childhood, The Spectator Club (Non-Detailed) <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>UNIT-IV</b> Samuel Johnson: Life of Milton (Non-Detailed) R. L. Stevenson: Walking Tours, An Apology for Idlers, El Dorado (All Detailed) <b>Internal Test 2</b>
<b>NOVEMBER</b>	<b>UNIT-IV</b> William Congreve: The Way of the World (Non-Detailed) <b>SEMINAR/EXAM</b>
<b>DECEMBER</b>	<b>SEMESTER BREAK</b>

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**SEMESTER - I**  
**PAPER-IV**  
**FICTION-I**

<b>MONTH</b>	<b>PLAN</b>
<b>JULY</b>	<b>UNIT-I</b> Development of novel from Bunyan to Modern age John Bunyan: The Pilgrim's Progress Daniel Defoe: Robinson Crusoe
<b>AUGUST</b>	<b>UNIT-II</b> Henry Fielding: Tom Jones Oliver Goldsmith: The Vicar of Wakefield
<b>SEPTEMBER</b>	<b>UNIT-III</b> Sir Walter Scott: Ivanhoe Jane Austen: Pride and Prejudice <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>UNIT-IV</b> Charles Dickens: Great Expectations Emily Bronte: Wuthering Heights
<b>NOVEMBER</b>	<b>Internal Test 2</b> <b>SEMINAR/EXAM</b>
<b>DECEMBER</b>	<b>EXAM /SEMESTER BREAK</b>

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**SEMESTER - I**  
**PAPER –V**  
**LANGUAGE MANAGEMENT AND COMMUNICATION SKILLS-I**

<b>MONTH</b>	<b>PLAN</b>
<b>JULY</b>	<b>UNIT-I: Communication Skills (A)</b> The Role of Communication Meaning and Definition Process of Communication Models of Communication Elements of Communication Essentials of Communication
<b>AUGUST</b>	<b>UNIT-II: Communication Skills (B)</b> Types of Communication: Verbal and Non-Verbal Barriers to Communication 7Cs of Effective Communication
<b>SEPTEMBER</b>	<b>UNIT-III: Oral Communications</b> Meaning, advantages and Limitations Meeting People, Exchanging Greetings and Taking Leave Introducing Oneself, Giving Personal Information Introducing People to Others Complaining, Apologizing and Responding to Apology Inviting, Accepting and Refusing an Invite Asking for, Giving and Refusing Permission Asking for Directions and Giving Directions <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>UNIT-IV: Listening Skills</b> Significance, Nature and Purpose of Listening Types of Listening Barriers to Active Listening Developing Listening Skills <b>Internal Test 2</b>
<b>NOVEMBER</b>	<b>SEMINAR/EXAM</b>
<b>DECEMBER</b>	<b>EXAM /SEMESTER BREAK</b>

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**M. A. ENGLISH LITERATURE**  
**SEMESTER - II**  
**PAPER-I**  
**POETRY-II**

<b>MONTH</b>	<b>PLAN</b>
JANUARY	<b>UNIT-I</b> <b>William Wordsworth:</b> Immortality Ode (Non-Detailed) Tintern Abbey (Detailed) <b>Samuel Taylor Coleridge:</b> Kubla Khan (Detailed)
FEBRUARY	<b>UNIT-II</b> <b>P. B. Shelley:</b> Ode to the Westwind (Non-Detailed) <b>John Keats:</b> Ode to Nightingale (Detailed) <b>Alfred Tennyson:</b> Ulysses (Detailed) <b>Robert Browning:</b> The Last Ride Together (Detailed) My Last Duchess (Non-Detailed)
MARCH	<b>UNIT-III</b> <b>Mathew Arnold:</b> Scholar Gypsy (Non-Detailed) <b>W.B.Yeats:</b> The Second Coming, Sailing to Byzantium(Non-Detailed) <b>T.S.Eliot:</b> The Waste Land (Detailed)
APRIL	<b>UNIT-IV</b> <b>W.H.Auden:</b> The Shield of Achilles (Non-Detailed) <b>Wilfred Owen:</b> Strange Meeting (Detailed) <b>Edith Sitwel:</b> Still Falls the Rain(Non-Detailed)
MAY	SEMESTER EXAM

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**SEMESTER - II**  
**PAPER-II**  
**DRAMA**

<b>MONTH</b>	<b>PLAN</b>
<b>JANUARY</b>	<b>UNIT-I</b> Types of Drama, Tragedy, Melodrama, The Heroic play, Problem, Play, Comedy, Comedy of errors, Comedy of Manners, Sentimental comedy, Comedy of character or Humour, Farce, Didactic drama, Historical plays, Tragic-comedy, Expressionistic drama, Poetic drama.
<b>FEBRUARY</b>	<b>UNIT-II</b> <b>Oliver Goldsmith</b> : She Stoops to Conquer (Detailed) <b>R.B.Sheridan</b> :The Rivals (Non -Detailed)
<b>MARCH</b>	<b>UNIT-III</b> <b>George Bernard Shaw</b> : Arms and the Man (Detailed) <b>John Galsworthy</b> : Justice (Non-Detailed)
<b>APRIL</b>	<b>UNIT-IV</b> <b>Thomas Stearns Eliot</b> : Murder in the Cathedral (Detailed) <b>J. M. Synge</b> : Riders to the Sea (Non-Detailed) <b>Seminar</b>
<b>MAY</b>	<b>SEMESTER EXAM</b>



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**SEMESTER - II**  
**PAPER-III**  
**PROSE-II**

MONTH	PLAN
JANUARY	<b>UNIT-I</b> <b>Background:</b> Essay: Definition, Origin and development, Aphoristic essay, the character writers, the critical essay, the Periodical and social essay, the reviews, the personal essay.
FEBRUARY	<b>UNIT-II</b> <b>Charles Lamb:</b> Dream Children, A Bachelor's Complaint, Christ Hospital (Detailed) <b>William Hazlitt:</b> On going on a Journey, Indian Jugglers (Non-Detailed) <b>Thomas Moore:</b> Utopia (Non-Detailed)
MARCH	<b>UNIT-III</b> <b>Thomas Carlyle:</b> Hero as a Poet (Detailed) <b>John Ruskin:</b> Sesame and Lilies (Non-Detailed) <b>Machiavelli:</b> The Prince (Non-Detailed)
APRIL	<b>UNIT-IV</b> <b>A.G. Gardiner:</b> On saying "Please", On the rule of the Road (Detailed) <b>Virginia Woolf:</b> A Room of One's Own (Non-Detailed) <b>Seminar</b>
MAY	SEMESTER EXAM

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**SEMESTER - II**  
**PAPER-IV**  
**FICTION-II**

<b>MONTH</b>	<b>PLAN</b>
JANUARY	<b>UNIT-I</b> Figures of speech, Structuralism, Imagism, Symbolism, Stream of Consciousness, Science Fiction <b>Thomas Hardy:</b> Tess of Du'rbervilles <b>James Joyce:</b> Portrait of the Artist as a Young Man
FEBRUARY	<b>UNIT-II</b> <b>Iris Murdoch:</b> The Sand Castle <b>D. H. Lawrence:</b> Sons and Lovers
MARCH	<b>UNIT-III</b> <b>Joseph Conrad:</b> Heart of Darkness <b>George Orwell:</b> Animal Farm
APRIL	<b>UNIT-IV</b> <b>William Golding:</b> Lord of the Flies <b>Doris Lessing:</b> The Grass is singing <b>Seminar</b>
MAY	SEMESTER EXAM

**DEPARTMENT OF ENGLISH**  
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**M. A. ENGLISH LITERATURE**  
**SEMESTER -II**  
**PAPER-V**

**LANGUAGE MANAGEMENT & COMMUNICATION SKILLS**

<b>MONTH</b>	<b>PLAN</b>
<b>JANUARY</b>	<b>UNIT-I: Reading Skills</b> <ul style="list-style-type: none"> <li>• Basic Purpose of Reading</li> <li>• Characteristics of Efficient Reading</li> <li>• The Five Pillars of Reading: Phonemic Awareness, Phonics, Fluency, Vocabulary and Comprehension</li> </ul>
<b>FEBRUARY</b>	<b>UNIT-II: Written Communications (A)</b> <ul style="list-style-type: none"> <li>• Précis Writing</li> <li>• Paragraph Development</li> <li>• Advertisement</li> <li>• Note Making and Note Taking</li> </ul>
<b>MARCH</b>	<b>UNIT-III: Written Communications (B)</b> <ul style="list-style-type: none"> <li>• Writing Book and film Reviews</li> <li>• Notices, Meetings, Agenda and Minutes</li> <li>• Writing a Resume/Curriculum Vitae</li> <li>• Content of good Resume, Guidelines for writing Resume, Different types of Resume</li> </ul>
<b>APRIL</b>	<b>UNIT-IV: Group Discussion and Oral Presentation Skills</b> <ul style="list-style-type: none"> <li>• Purpose of Group Discussion</li> <li>• Types of Group Discussion</li> <li>• Considerations in Group Discussion</li> <li>• Seminar, Conference and Other Discussion Groups</li> <li>• Planning, Designing and Making a Speech/Presentation</li> <li>• Audio-visual Aids in Presentation</li> <li>• Essential Features of a Good Presentation</li> </ul>
<b>MAY</b>	<b>SEMESTER EXAM</b>

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**M. A. ENGLISH LITERATURE**  
**SEMESTER - III**  
**PAPER-I**  
**CRITICAL THEORY- I**

<b>MONTH</b>	<b>PLAN</b>
<b>JULY</b>	<b>UNIT-I</b> Aristotle: Poetics Longinus: On the Sublime
<b>AUGUST</b>	<b>UNIT-II</b> Philip Sidney: An Apology for Poetry John Dryden: Essay on Dramatic Poesy
<b>SEPTEMBER</b>	<b>UNIT-III</b> William Wordsworth: Preface to Lyrical Ballads S. T. Coleridge: Biographia Literaria chapter XIII to XVII <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>UNIT-IV</b> Mathew Arnold: The Study of Poetry, The Function of Criticism in Present Times <b>Internal Test 2</b>
<b>NOVEMBER</b>	SEMINAR/EXAM
<b>DECEMBER</b>	EXAM /SEMESTER BREAK

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**SEMESTER - III**  
**PAPER-II**  
**INDIAN WRITING IN ENGLISH - I**

<b>MONTH</b>	<b>PLAN</b>
<b>JULY</b>	<b>UNIT-I</b> Sri Aurobindo: Savitri- Book I, Canto I Rabindranath Tagore: Songs 1 to 15 from Gitanjali Nissim Ezekiel: Enterprise, Poet Lover and Birdwatcher
<b>AUGUST</b>	<b>UNIT-II</b> Girish Karnad: Nagmandala Vijay Tendulkar: Silence 'The Court is in Session'
<b>SEPTEMBER</b>	<b>UNIT-III</b> Nirad C. Chaudhari: An Autobiography of an Unknown Indian. M.K. Gandhi: The Story of My Experiments with Truth <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>UNIT-IV</b> Raja Rao: Kanthapura Mulk Raj Anand: Coolie <b>Internal Test 2</b>
<b>NOVEMBER</b>	<b>SEMINAR/EXAM</b>
<b>DECEMBER</b>	<b>EXAM /SEMESTER BREAK</b>

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**SEMESTER - III**  
**PAPER-III**  
**AMERICAN LITERATURE - I**

MONTH	PLAN
JULY	<b>UNIT-I</b> Puritanism, Democracy in America, Romanticism in America, Indian Thought in Emerson, Thoreau and Whitman, New England Renaissance, Expressionism
AUGUST	<b>UNIT-I</b> Walt Whitman: When Lilacs last in the Dooryard Bloomed I Hear America Singing. <b>UNIT-II</b> Robert Frost: Birches, The Road not Taken. Emily Dickinson: Bring Me the Sunset in a Cup (128); The Soul selects her own Society (303); Sylvia Plath: Daddy, Lady Lazarus
SEPTEMBER	<b>UNIT-III</b> Eugene o'Neil: The Emporer Jones Tennessee Williams: The Glass Menagerie <b>Internal Test 1</b>
OCTOBER	<b>UNIT-IV</b> Ralph Waldo. Emerson: Self-Reliance Henry David Thoreau: Civil Disobedience <b>Internal Test 2</b>
NOVEMBER	SEMINAR/EXAM
DECEMBER	EXAM /SEMESTER BREAK

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**SEMESTER - III**  
**PAPER-IV**  
**LINGUISTICS - I**

<b>MONTH</b>	<b>PLAN</b>
<b>JULY</b>	<b>UNIT-I</b> Language: Definition, Characteristics of Human Language, Development of English Language (Chaucerian, Middle English & Modern English)
<b>AUGUST</b>	<b>UNIT-II</b> Linguistics: Definition, Objective, Branches of Linguistics: Phonetics, Phonology, Morphology, Syntax and Semantics, Linguistics and its Related Disciplines.
<b>SEPTEMBER</b>	<b>UNIT-III</b> Phonetics: Definition, Branches: Articulatory /Acoustic Phonetics, Auditory Phonetics, <b>The</b> Organs of Speech and their Functions.  Classification of Human Speech Sounds: Characteristics of Vowels and Consonants, Similarities and Dissimilarities between Vowels and Consonants, Phonetics Symbols (IPA). <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>UNIT-IV</b> Classification of Vowels: On the Basis of Height of the Tongue, Parts of the Tongue, Position of Soft Palate, Position of Muscles and Length. Classification of Consonants: On the Basis of Place and Manner of articulation, aspiration and voicing. <b>Internal Test 2</b>
<b>NOVEMBER</b>	<b>SEMINAR/EXAM</b>
<b>DECEMBER</b>	<b>EXAM /SEMESTER BREAK</b>

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**SEMESTER -III**  
**PAPER-V**  
**NEW LITERATURES IN ENGLISH - I**

<b>MONTH</b>	<b>PLAN</b>
<b>JULY</b>	<b>UNIT-I</b> African Culture, Religion & the World view, Colonial and Post- Colonial experiences in African & Caribbean Context, The Oral Tradition, The specificity of Caribbean Literature (Caribbean Poetry), Ethnicity, Hybridity, Creolisation
<b>AUGUST</b>	<b>UNIT-I</b> Kamau Brathwaite: Wings of a Dove <b>UNIT-II</b> Wole Soyinka: The Dance of the Forest
<b>SEPTEMBER</b>	<b>UNIT-III</b> Ngugi Wa Thiong O: A Grain of Wheat <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>UNIT-IV</b> Chimamanda Ngozi Adichie: The Purple Hibiscus <b>Internal Test 2</b>
<b>NOVEMBER</b>	SEMINAR/EXAM
<b>DECEMBER</b>	EXAM /SEMESTER BREAK



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**SEMESTER - IV**  
**PAPER-I**  
**CRITICAL THEORY - II**

<b>MONTH</b>	<b>PLAN</b>
JANUARY	<b>UNIT-I</b> <b>Bharata:</b> Natyashastra (Rasa and Bhava Theory)
FEBRUARY	<b>UNIT-II</b> <b>T. S. Eliot:</b> Tradition and Individual Talent <b>I. A. Richards:</b> Four Kinds of Meaning, Communication and the Artist, Analysis of a Poem
MARCH	<b>UNIT-III</b> <b>Ferdinand S Sassure:</b> Nature of Linguistic sign <b>Michael Foucault:</b> What is an Author?
APRIL	<b>UNIT-V</b> <b>Northrop Frye:</b> The Function of Criticism <b>Elaine Showalter:</b> Feminist Criticism in Wilderness <b>Seminar</b>
MAY	SEMESTER EXAM

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**M. A. ENGLISH LITERATURE**  
**SEMESTER - IV**  
**PAPER-II**  
**INDIAN WRITING IN ENGLISH - II**

<b>MONTH</b>	<b>PLAN</b>
JANUARY	<b>UNIT-I</b> <b>A.K. Ramanujan:</b> Obituary, Love Poem for a Wife <b>Jayant Mahapatra:</b> Indian summer, A Missing Person, Hunger
FEBRUARY	<b>UNIT-II</b> <b>Jawaharlal Nehru:</b> The Discovery of India ( Ch.1 to 5) <b>A.P.J. Kalam:</b> Ignited Minds
MARCH	<b>UNIT-III</b> <b>Mahashweta Devi:</b> The Mother of 1084(play) <b>Mahesh Dattani:</b> Tara
APRIL	<b>UNIT-IV</b> <b>Arundhati Roy:</b> The God of Small Things <b>Arvind Adiga:</b> The White Tiger <b>Jhumpa Lahiri:</b> Interpreter of Maladies(The Title Story) <b>Seminar</b>
MAY	SEMESTER EXAM

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**PAPER-III**  
**AMERICAN LITERATURE -II**

<b>MONTH</b>	<b>PLAN</b>
<b>JANUARY</b>	<b>UNIT-I</b> Naturalism, Realism, Existentialism, The Theatre of the Absurd <b>Wallace Stevens:</b> Peter Quince at the Clavier, of Modern Poetry, Sunday Morning, A Postcard from the Volcano.
<b>FEBRUARY</b>	<b>UNIT-II</b> <b>Arthur Miller:</b> All My Sons <b>Edward Albee:</b> Who's Afraid of Virginia Woolf?
<b>MARCH</b>	<b>UNIT-III</b> <b>William Faulkner:</b> The Sound and the Fury <b>Ernest Hemingway:</b> The Old Man and the Sea
<b>APRIL</b>	<b>UNIT-IV</b> <b>Nathaniel Hawthorne:</b> The Scarlet Letter <b>Mark Twain:</b> The Adventures of Huckleberry Finn
<b>MAY</b>	<b>SEMESTER EXAM</b>

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**M. A. ENGLISH LITERATURE**  
**SEMESTER - IV**  
**PAPER-IV**  
**LINGUISTICS - II**

<b>MONTH</b>	<b>PLAN</b>
JANUARY	<b>UNIT-I</b> <b>Phonology:</b> Definition, Distinctive features of Sounds, Allophones and Classification of English Phonemes Suprasegmental Features: Length, Stress, Pitch, Intonation and Juncture. <b>Morphology:</b> Morpheme, Morph, Allomorph, Types of Morphemes, Word-Classes
FEBRUARY	<b>UNIT-II</b> <b>Syntax:</b> Constituents, Immediate Constituents, Models of I C Analysis, <b>Syntactic Devices:</b> Word order, Function Words and content Words, Government, Concord.
MARCH	<b>UNIT-III</b> <b>Semantics:</b> Semene, Types of meaning: Synonymy, Antonymy, Polysemy, Homonymy, Collocation, Sets.
APRIL	<b>UNIT-V</b> Introduction to Phrase Structure Grammar, Limitation to Phrase Structure Grammar
MAY	SEMESTER EXAM

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**M. A. ENGLISH LITERATURE**  
**SEMESTER - IV**  
**PAPER-V**  
**MODERN LITERATURE-II**

<b>MONTH</b>	<b>PLAN</b>
JANUARY	<b>UNIT-I</b> <b>Samuel Beckett:</b> Waiting for Godot <b>UNIT-II</b> <b>John Osborne:</b> Look Back in Anger
FEBRUARY	<b>UNIT-III</b> <b>Alice Walker:</b> The Color Purple <b>Ralph Allison:</b> The Invisible Man
MARCH	<b>UNIT-IV</b> <b>Edward Said:</b> Orientalism
APRIL	<b>UNIT-V</b> <b>Toni Morrison:</b> Beloved <b>George Lamming:</b> The Pleasures of Exile
MAY	SEMESTER EXAM

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**SESSION 2019-20**

**TEACHING PLAN**

**M. A.I SEMESTER GEOGRAPHY**

**PAPER-I**

**TITLE OF THE PAPER: GEOMORPHOLOGY**

MONTH	PLAN
JULY	Nature and scope of geomorphology, fundamental concepts. Interior of the earth.
AUGUST	Earth movements: Endogenic movement: Plate tectonics, volcanic with special reference to Himalayas. Exogenic process: concept of gradation agents and processes of gradation
SEPTEMBER	weathering mass wasting, Normal cycle of erosion, Interruption of the cycle of erosion, Drainage patterns
OCTOBER	Glacial, Aeolian and Marine (Coastal) River, Karst: processes and resulting landforms, slope, Analysis by penck wood & king
NOVEMBER	Geological structure and landforms: development of drainage and landscape on folded and domal structure, Applied geomorphology.

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**TEACHING PLAN**

**M. A.I SEMESTER GEOGRAPHY**

**PAPER-II**

**TITLE OF THE PAPER: CLIMATOLOGY**

MONTH	PROPOSED PLAN
JULY	Nature and scope of climatology and its relationship with meteorology. Composition of atmosphere; Insulation, heat balance of the earth, stability and instability, green house effect, vertical and horizontal distribution of temperature; Jet stream
AUGUST	General circulation in the atmosphere, acid rain, concept of air masses and atmospheric disturbances, ocean- atmospheric interaction, El Nino and La Nino; Monsoon winds & cyclones.
SEPTEMBER	application of general principles of elementary, physical and synoptic meteorology to the study and classification of climate, climatic classification of Koppen and Thornthwaite.
OCTOBER	Major climates of the world: Tropical, Temperate, Desert and Mountain climate; Climatic change and Global warming, Environment impact and Society's response.
NOVEMBER	Applied climatology.

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**TEACHING PLAN**

**M. A.I SEMESTER GEOGRAPHY**

**PAPER-III**

**TITLE OF THE PAPER: GEOGRAPHICAL THOUGHT**

MONTH	PROPOSED PLAN
JULY	Definition, scope and function of geography, geography as a science of aerial differentiation. Environmentalism, Determinism, Possibilism and Neo- determinism. Laws and theories in geography
AUGUST	The growth of geographical knowledge from earliest time up to 15 <sup>th</sup> century, contribution of Greek and Roman thinkers, <b>Arab</b> geographers:- Al- baruni. Al-masudi, Ibn-e-batuta and Al- idarsi . Geographical information in ancient Indian literature. The Dark Age in geography. The great age of maritime discovery and exploration.
SEPTEMBER	Contribution of Various Schools of thought in modern geography.  German school -Humbolt, Ritter, Ratzel. 2. French school - Vidal -de- la-blache.3. British school - Mackinder.4.American - Davis and Huntington. Models in geography, quantitative revolution, positivism.
OCTOBER	Behaviouralism, Humanistic geography-relevance and the movement, Radical geography. Changing paradigm, status of Indian geography. Dualism in geography. :- Physical and Human, Systematic VS regional
NOVEMBER	Inductive VS Deductive.



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**TEACHING PLAN**

**M. A.I SEMESTER GEOGRAPHY**

**PAPER-IV**

**TITLE OF THE PAPER: ADVANCED GEOGRAPHY OF INDIA**

MONTH	PROPOSED PLAN
JULY	Physical & Biological elements in the geography of India, Geological structure, relief, climate water resources. Vegetation and Soils
AUGUST	Agriculture : major characteristics and problems, Important crops : wheat. rice, cotton, sugarcane, oil seeds, tea and coffee: Agricultural regions.
SEPTEMBER	Population : distribution density and growth, problems and policies. Sources of power coal, petroleum, natural gas, hydroelectricity .Mineral resources with specific reference to Iron-ore. Manganese. Bauxite and Copper
OCTOBER	Industrial development with special reference to Iron and steel. Cement. Cotton Textile and Sugar. Industrial regions Industrial Policy.
NOVEMBER	Trade Transport & Communication.

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**TEACHING PLAN**

**M. A.I SEMESTER GEOGRAPHY**

**PAPER-PRACTICAL**

**TITLE OF THE PAPER: ADVANCED CARTOGRAPHY**

MONTH	PROPOSED PLAN
JULY	
AUGUST	Thematic maps- Chorochromatic and choropleth map, isolines, dot map, routed map. flow map,
SEPTEMBER	Morphometric analysis: Profiles, Slope analysis, Altimetric and Hypsometric curves, Drainage analysis, Block diagram
OCTOBER	Map projection: Properties and principles of construction of world projection
NOVEMBER	Interpretation of maps: Topographical sheets

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**SESSION 2019-20**

**TEACHING PLAN**

**M. A.III SEMESTER GEOGRAPHY**

**PAPER-I**

**TITLE OF THE PAPER: ECONOMIC GEOGRAPHY**

MONTH	PLAN
JULY	Nature, scope and systematic development of Economic geography. Fundamental concepts in economic geography. Approaches and methods to study of Economic Geography
AUGUST	Mineral: - Iron - ore, Bauxite, Manganese .Energy resource: - Coal, Hydro-electricity, Petroleum and Non conventional resource
SEPTEMBER	Weber 's Theory of industrial location. Case studies of selected industries: Iron and Steel; Chemical, Engineering Textile; Industrial Regions, Transport and trade. Trade blocks: EEC, LAFTA and ASIAN
OCTOBER	Distribution factors of Economic Activities: - Primary and Secondary Economic Activities, World economies and economic regions, Market orientated economy.
NOVEMBER	Globalization and with special reference to India.

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**TEACHING PLAN**

**M. A.III SEMESTER GEOGRAPHY**

**PAPER-II**

**TITLE OF THE PAPER: RESEARCH METHODOLOGY**

MONTH	PLAN
JULY	Research Methodology : An over view Procedure of Scientific Research, Defining research problem, formulating Hypothesis, Research Design.
AUGUST	Methods of data collection : Observation, Questionire, Schedule and Interview, Sampling : sampling Methods, Si, of samples.
SEPTEMBER	Processing and analysis of Data : Processing, Editing, Coding, Classification and Tabulation. Analysis, Measurement of Central Tendency, Disperssion, Correlation
OCTOBER	Preparation of Research Reports; Steps layout Types of Report
NOVEMBER	Revision

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**TEACHING PLAN**

**M. A.III SEMESTER GEOGRAPHY**

**PAPER-III**

**TITLE OF THE PAPER: REGIONAL DEVELOPMENT AND PLANNING**

	PLAN
JULY	Concept of Planning, Region and Planning regions, Origin Definition and scope of Regional Planning. Evolution, Functions and Objectives of Regional Planning
AUGUST	Spatial Organisation: Von Thunen's Isolated State, Industrial Location Theory of Weber. Central Place theory: Single Function Central Place System, Multiple Functions and Hierarchies, Loschian Modification,
SEPTEMBER	Regional Development Theories: Export Base Theory, Neoclassical Exogeneous Growth Theory, Cumulative Causation Theory of Myrdal, Regional Development Theory of Hirschman., Core –periphery theory of Friedmann, Growth Pole Theory , New Economic Geography.
OCTOBER	Concept of Development. Planning for special areas: River basins- Damodar Valley Corporation, National Capital Region,
NOVEMBER	Development programme (HADP)/ Western Ghats Development programme (WGDP) and Tribal area of Chhattisgarh,

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**TEACHING PLAN**

**M. A.III SEMESTER GEOGRAPHY**

**PAPER-IV**

**TITLE OF THE PAPER: POPULATION GEOGRAPHY**

MONTH	PLAN
JULY	Definition and scope of Population geography. Historical development of population geography in western countries and in India. Sources of demographic data. Census and its history.
AUGUST	: Population density and its types, factors affecting population distribution. Population distribution in the world with special reference to Europe and Asia. Distribution of population in India
SEPTEMBER	Prehistoric and modern trends of population growth in the world. Regional aspect of population growth in India. Population theories. Demographic transition, future growth of population.
OCTOBER	Population composition in terms of age and sex, rural-urban, educational status and occupational structure, Significance of these elements in population analysis,
NOVEMBER	Migration of population: causes, characteristics and types. Methods of estimating internal migration. Internal migration in India. Important international migration

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**SESSION 2019-20**

**TEACHING PLAN**

**M. A.III SEMESTER GEOGRAPHY**

**PRACTICAL**

**Quantitative Techniques, Remote Sensing and Aerial Photographs**

MONTH	PLAN
JULY	
AUGUST	<b>Quantitative Techniques</b>  (i) Measures of Central tendency. Dispersion and Variability. Product Moment and Rank Correlation Coefficient, Linear Regression.  (ii) Hypothesis Testing: Chi-Square and 't' tests, Analysis of Variance and F test: Sampling,
SEPTEMBER	Running mean. Mean centre, Nearest Neighbour Analysis Lorenz Curve, Normal Distribution curve, probability
OCTOBER	<i>Remote Sensing and GIS</i> Air Photos and Photogrammetry: Elements of Photographic Systems: types, scales and ground coverage resolution, films with aerial Cameras, vertical photographs, relief displacement, airphoto interpretation.
NOVEMBER	Image Processing; types of imagery, basic concepts and techniques of visual interpretation, ground verification and transfer of interpreted thematic information to base maps. Remote sensing programme of India: image interpretation, mapping of land use and study of water resources. Application of remote sensing , elements of GIS

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**SESSION 2019-20**

**TEACHING PLAN**

**M. A.II SEMESTER GEOGRAPHY**

**PAPER-I**

**TITLE OF THE PAPER: GEOGRAPHY OF CHHATTISGARH**

MONTH	PLAN
JANUARY	Physical setting- location, extent, geology, physical, features, climate, drainage, soil and vegetation.
FEBURARY	Socio-economic-, major crops and agriculture region Water resources, irrigation, major irrigation projects, mineral and power resources [renewable and non- renewable] and power projects.
MARCH	Major industries - Iron and Steel, Cement, Aluminium, Agro and Forest-industries.  Population: Distribution of Population, Social, Cultural characteristics of population and tribes of Chhattisgarh
APRIL	Urbanization.Transport and Trade, Tourist places of Chhattisgarh, National parks, wild LIFE



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**TEACHING PLAN**

**M. A.II SEMESTER GEOGRAPHY**

**PAPER-II**

**TITLE OF THE PAPER: OCENOGRAPHY**

MONTH	PLAN
JANUARY	Nature and scope of oceanography, Detailed study of distribution of land and water, major features of ocean basins: continental shelf, continental slope oceanic plain and deeps, composition of sea water.
FEBURARY	Inter link between atmospheric circulation and circulation pattern in. the oceans, oceanic currents; Temperature, Salinity, Density, waves and tides.
MARCH	Marine sediments: Marine-biological environments, Bio- geo- chemical cycle in the ocean, bio-zones, types of organisms, food and mineral resources of the sea.
APRIL	Major marine environments: coastal, estuary, delta barrier Island, rocky coasts Pelagic environment impact of humans on the marine environment. Exclusive Economic Zone: with special reference to Indian ocean. Applied oceanography.

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**TEACHING PLAN**

**M. A.II SEMESTER GEOGRAPHY**

**PAPER-III**

**TITLE OF THE PAPER: AGRICULTURAL GEOGRAPHY**

MONTH	PLAN
JANUARY	Definition, nature, scope and significance of agricultural geography, approaches to the study of agriculture in geography commodity, deterministic, systematic, regional, behavioral and ecosystem Origin and dispersal of agriculture.
FEBURARY	Determinants of agricultural land use – Physical, economic, social, and technological, Land holding and land tenure systems, Land reforms, land use policy and planning. Cropping pattern, crop concentration, intensity of cropping, degree of commercialization, diversification and specialization efficiency and productivity, crop combination regions and agricultural development.
MARCH	Theories of agricultural location :- Von Thunen's theory of agricultural location and its recent modifications; Whittlesey's classification of agricultural regions; land use and land capability
APRIL	Agriculture in India : Landuse pattern, regional pattern of productivity : Green Revolution, Food deficit and food surplus regions; Specific Problems in Indian agriculture and their management; Agricultural policy in India.

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**TEACHING PLAN**  
**M.A. II SEMESTER GEOGRAPHY**  
**PAPER- IV**  
**TITLE OF THE PAPER: URBAN GEOGRAPHY**

MONTH	PLAN
JANUARY	Definition and scope of urban geography. Centrifugal and centripetal forces in urban Geography , urban morphology and landuse pattern :- Burgess concentric zone theory , Hoyt sector model ,Ullman and Harris multiple Nuclei model.
FEBURARY	Evolution and growth of urban settlement . the geographical setting of urban centers :- site, situation and location , rank size rule. Functional classification of towns-Harris and Nelsion,
MARCH	Central place theory:- Christaller theory . Growth centre theory. Umland. Rural-urban fringe. Economic bases of Town. Basic -Non Basic concept.
APRIL	Urban Planning : Types and elements ,Urban Problem, Blight and renewal Urbanization in World and in India, Urban planning with reference to Naya Raipur.

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**SESSION 2019-20**

**TEACHING PLAN**

**M.A. II SEMESTER GEOGRAPHY**

**PAPER-PRACTICAL**

**TITLE OF THE PAPER: ADVANCED CARTOGRAPHY AND SURVEYING**

MONTH	PLAN
JANUARY	Graphs and Diagrams: Triangular graph. Ergograph, Snail diagram climatograph ; Pie- diagram and divided rectangles, proportional circles, spheres and cubes. Interpretation of Maps :-Geological maps and Thematic maps
FEBURARY	Principles and Methods of topographical survey involving the use of Theodolite and Dumpy level

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**SESSION 2019-20**  
**TEACHING PLAN**  
**M. A.IV SEMESTER GEOGRAPHY**  
**PAPER- I**  
**TITLE OF THE PAPER: SOCIAL GEOGRAPHY**

MONTH	PLAN
JANUARY	Definition meaning and scope of Social geography . Nature and Relationship with other social sciences. Development of social geography. Approaches to the study of social geography, Evolution of Man. , Definition , Origin and Types of Society and Human Races.
FEBURARY	Society and Environment , Quality of Social Environment, Man's impact on Social environment-environmental pollution. Social well being and human development. Cultural Realms , Cultural Regions of Asia
MARCH	Indian Society in Historical Perspective, Traditional Hindu Social Organisation. Human Race of India .Religious and Linguistic groups of India .Backward and Scheduled Castes. Tribes Of India
APRIL	Social Change in India , Status of Woman in India , Human Development in India, Social Planning In India, Gender Inequality , Woman Empowerment, Urbanization and Related Problems in India.

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**TEACHING PLAN  
M. A.IV SEMESTER GEOGRAPHY  
PAPER-II**

**TITLE OF THE PAPER: POLITICAL GEOGRAPHY**

MONTH	PLAN
JANUARY	Nature, scope, history and recent development in Political geography; approaches to study, major schools of political thought. Global Strategic Views.
FEBURARY	Geographic Elements and the State: Physical Elements; Human elements: Economic elements; Cultural elements and Political geography and environment interface .Concept of State , Nation, Frontiers and Boundaries
MARCH	Capital and Core Area , Geographical studies of Election , Supra - Nationalism i.e Emergance of International Organisation and their Role in World Politics, The changing patterns of World Powers.
APRIL	Geopolitical significance of Indian Ocean: Political geography of SAARC Region. Political geography of contemporary India with special reference to its spirit: Unity in Diversity. Emerging Politico - geographical issues in modern World.

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**SESSION 2019-20**

**TEACHING PLAN**

**M. A.IV SEMESTER GEOGRAPHY**

**PAPER-III**

**TITLE OF THE PAPER: ENVIRONMENT GEOGRAPHY**

MONTH	PLAN
JANUARY	Meaning, definition, Concepts and theories related to environment. Environment and its components, Man environment relationship, Ecology and Ecosystem.
FEBURARY	Plant and Animal Kingdom, Bio-diversity. Biomes. Food Chains, Tropic level and productivity, Energy flow, Circulation of Elements, hydrological cycle.
MARCH	Soil system-erosion, Man and Climate, Environment Degradation. Environment Planning and Management, Pollution.
APRIL	Deforestation and Desertification, Hazards and Disaster. Environment Problem- global and in Indian scenario, Global Co-operation, World Summit on Sustainable development.

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**TEACHING PLAN**  
**SESSION 2019-20**  
**M.A. IV SEMESTER GEOGRAPHY**  
**PAPER-IV**  
**TITLE OF THE PAPER: DISASTER MANAGEMENT**

MONTH	PLAN
JANUARY	Disaster meaning and concept- hazard, risk, vulnerability, disaster management, plans, managing environment. Disaster its effect on different social group. Poverty and vulnerability. Disaster management prevention, preparedness and mitigation.
FEBRUARY	Disaster - Classification of disaster; Natural disaster - earthquake, floods, drought and global warming causes consequences and mitigation, natural disaster prone areas of world and India
MARCH	manmade disasters, their types-technological and industrial disasters. Social disaster: cause consequences and mitigation. With special reference to India.
APRIL	Disaster management- relief and response, reconstruction and rehabilitation. Disaster - Strategies for survival, types of strategies. Importance of information in disaster management, significance of Remote Sense and GIS. Planning in the context of Disaster management.



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**SESSION 2018-19**

**TEACHING PLAN**

**M. A.IV SEMESTER GEOGRAPHY**

**PROJECT WORK**

**TITLE OF THE PAPER: SOCIO ECONOMIC SURVEY**

MONTH	PLAN
JANUARY	Physical aspect- Location, Physical feature, Climate, Vegetation, Drainage, Soil and Land use. Cultural aspect- Population, Economic activities, Services and Settlements. Analysis of the findings and report writing.
FEBURARY	
MARCH	
APRIL	

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**टीचिंग प्लान हिंदी स्नातकोत्तर सेमेस्टर परीक्षा**

**सत्र 2019-20**

क्र.	माह/दिन	स्नातकोत्तर I, II सेमेस्टर	स्नातकोत्तर III, IV सेमेस्टर
1	जुलाई/27	इकई 1 प्रश्न पत्र I, II, III, IV स्नातक हिन्दी साहित्य का इतिहास कबीर ग्रंथावली, गुप्त नाटक	इकई I प्रश्न पत्र I, II, III, IV भारतीय काव्यशास्त्र, भाषा और भाषाविज्ञान, हिंदी के विभिन्न रूप, भारतीय साहित्य
2	अगस्त/24	इकई II आदिकाल चंद्रवरदाई, प्रसाद, राकेश	इकई II प्रश्न पत्र I, II, III, IV अलंकार, रूपन, परिभाषिक शब्द
3	सितम्बर/24	इकई III काल, जायसी, निराला, निबंध	इकई III प्रश्न पत्र I, II, III, IV पाश्चात्य काव्यशास्त्र, व्याकरण, इन्टरनेट
4	अक्टूबर/18	इकई III सूफी काव्य, रहीम, रैदास, निबंध	इकई IV प्रश्न पत्र I, II, III, IV लॉजाइनस, अर्थ विज्ञान, पत्रकारिता
5	नवम्बर/25	इकई IV भक्ति, खुसरो, मीराबाई, रत्नाकर, महादेवी वर्मा, आंतरिक मूल्यांकन, सेमिनार	इकई IV प्रश्न पत्र I, II, III, IV लेखन कला, संपादन, पत्रकार वार्ता, आंतरिक मूल्यांकन, सेमिनार
6	दिसम्बर/20	सेमेस्टर परीक्षा	सेमेस्टर परीक्षा
क्र.	माह/दिन	II, IV सेमेस्टर	
1	जनवरी/27	इकई I प्रश्न पत्र I, II, III, IV उत्तर मध्यकाल, सूरदास, गोदान	इकई I प्रश्न पत्र I, II, III, IV अभिसाव्यवाद, भाषाएँ, मीडिया, छत्तीसगढ़ का इतिहास
2	फरवरी/25	इकई II प्रश्न पत्र I, II, III, IV आधुनिककाल, तुलसीदास, मुक्तिबोध, मैला आँचल	इकई II प्रश्न पत्र I, II, III, IV काव्यशास्त्रीय चिंतन, बोली, दृश्य, श्रव्य माध्यम, छत्तीसगढ़ के साहित्यकार
3	मार्च	इकई III प्रश्न पत्र I, II, III, IV द्विवेदी युग, बिहारी, नागार्जुन कहानी	इकई III प्रश्न पत्र I, II, III, IV आलोचना, हिंदी के विविध रूप, अनुवाद, क्षया उपन्यास
4	अप्रैल	इकई IV प्रश्न पत्र I, II, III, IV गद्य द्रुतपाठ, द्रुतपाठ कहानी	इकई IV प्रश्न पत्र I, II, III, IV समीक्षा, लिपि. अनुवाद प्रकार, करमछड़हा नाटक
5	मई	इकई IV प्रश्न पत्र I, II, III, IV आन्तरिक मूल्यांकन, सेमिनार	इकई IV प्रश्न पत्र I, II, III, IV आन्तरिक मूल्यांकन, सेमिनार
6	जून	सेमेस्टर परीक्षा	सेमेस्टर परीक्षा

M A I ,II SEM. HISTORY , 1<sup>st</sup> PAPER

HISTORY METHOD WRITING

SESSION – 2019-20

S.NO.	MONTH	PLAN
1	AUGUST	History meaning and definition . The extent and types of history. History relation to other social sciences. Utility of history.
2	SEPTEMBER	Cause of Action in history. Objectivity in history. Facts in history. Is history a science or an art.
3	OCTOBER	Relativistic theory of history . The cyclist theory of history . Sociological theory of history . Idealistic theory of history .
4	NOVEMBER	Comparative theory of history . Critical theory of history . Materialistic theory of history . Etihasvad .
5	DECEMBER	RIVISION
1	JANUARY	II SEM Greek and Roman historiography . Chinese historiography . Arab and Persian historiography . The tradition of writing historiography in ancient India .
2	FEBRUARY	Medieval Indian historiography . Modern Indian historiography . Themes of indian history - economic history . Thimes of indian history - social and cultural history .
3	MARCH	Imperialist interpretation of indian history . Nationalist interpretation of indian history . Marxist interpretation of indian history . Nationalist interpretation of indian history . Democratic interpretation of indian history .
4	April	Ancient indian history – nomenclature of Indus valley civilization , Origin of Rajput's . Medieval indian history – Muhammad Bin Tughlaq ,Aurangzeb's religious fanaticism .  Modern indian history – Form of revolution 1857 ,partition of india .

M A I , II SEM ,HISTORY

SECOND PAPER – WORLD HISTORY 1871 -1919

SESSION 2019-20

S NO	MONTH	PLAN
1	AUGUST	New imperialism – partition of Africa . Development of Capitalism . Rise of Labaralism in England ,France. Rise of Socialism .
2	SEPTEMBER	Home and foreign policy of Bismark . Foreign policy of Kaiser William II . Foreign policy of Italy [1871 -1914] Industrial development in United State of America .
3	October	Meiji Restoration in Japan . Russio –Japanese war –1904-5 . Chinese revolution – 1911 . Eastern problem –1878 -1913—Berlin congress – 1878
4	NOVEMBER	Balkan war – 1912 -13. First world war – 1914 -1918 –causes incidents and results . Russian revolution -1917—causes and results Peace treaties of Paris .
1	JANUARY	II SEM Achievement and failure of league of nations . Problem of compensation . Problem of disarmament . World recession - 1929
2	FEBRUARY	Fascism in Italy - Mussolini Nazism in Germany – Hitler . Second world war – causes Incidents and results .
3	MARCH	Communism in China National movement in Indochina . National movement in Indonesia . Arab nationalism .
4	April	United Nations Organization Cold war Non –Alignment movement. Role of India in non alignment movement

M A I,II SEM 3<sup>rd</sup> PAPER – HISTORY OF CHHATTISGARH

SESSION 2019-20

S N	MONTH	I SEM PLAN
1	AUGUST	Introduction of Chhattisgarh – nomenclature and geographical location Vedic to Maurya period Chhattisgarh -political social economic and cultural condition . Chhattisgarh during the Satavahana period Gupta vakataka era Chhattisgarh
2	SEPTEMBER	Nala and Rajershitulya dynasty Sharabhpuriya dynasty Pandu dynasty Chindacknagvansh and Phaninagvansh
3	OCTOBER	Establishment of Kalchuri rule Early Kalchury king Post Kalachuri king- arrival before Marathas Social economic and cultural condition of Kalchuris
4	NOVEMBER	Maratha invasion Bimbaji Bhosle Suba administration Socio economic and cultural condition of Maratha period
1	JANUARY	II SEM Chhattisgarh under British protection and Raghuji 3 <sup>rd</sup> [1818-1830] British administration in Chhattisgarh Governance system after the formation of the central provinces British land revenue system
2	FEBRUARY	Social change in British era Chhattisgarh Economic condition in British era Chhattisgarh Cultural condition in British era Chhattisgarh British policy towards the princely states of chhattisgarh
3	MARCH	The Revolt of 1857 in Chhattisgarh National movement in Chhattisgarh – 1885-1919 National movement in Chhattisgarh – 1920-1947 Peasant ,lebar and tribal movement in Chhattisgarh
4	APRIL	Religious faith of chhattisgarh -Shaiva, shakta, Vaishnav ,Jain Buddha Kabir sect, Satnam sect Folk culture of Chhattisgarh Background of Chhattisgarh state formation

M A I,II SEM,HISTORY,4<sup>th</sup> PAPER- Tourism theory and practice  
SESSION 2019-20

1	AUGUST Unit -1	Explanation of tourism Principles and objectives of tourism . Concept of tourism. Tourism information.
2	SEPTEMBER Unit - 2	History of tourism . Travel agency formation . Functions of travel agencies . Tour operators and guides .
3	OCTOBER Unit -3	Impact of tourism on the industry . Tourism – Accommodation and Hotel industry . Tourism and Handicrafts industry . Shops ,emporium and Fair.
4	NOVEMBER Unit -4	Tourism and folk culture . Important historical tourist center of India --Agra ,Ajanta Ellora Caves, Bhimbetka Caves ,Hampi ,Sun temple- Konark ,Khajuraho ,Rameshwaram . Important historical tourist center of Chhattisgarh – Sirpur, Giroudpuri ,Bhoramdev ,Dantewada, DongargarhRatanpurRamgiri . Vibrant culture and performing spiritual arts .
1	JANUARY Unit -1	Tourism organization . Central tourism organization of india. Tourism department and organization of Chhattisgarh . State government tourism -encouragement plans-with reference of Chhattisgarh.
2	FEBRUARY	Tourism Marketing . International tourism. Tourism and transport. Wildlife of Chhattisgarh -Barnawapara ,Achanackmarga.
3	MARCH	Tourism and environment . Importance of national parks in tourism . Tourism and fair- in a national perspective. Monuments and Museums.
4	APRIL	Tourism prospects in Chhattisgarh . Major tourist places of Chhattisgarh.

M A III ,IV SEM ,HISTORY – I PAPER – Ancient India

SESSION -2019-20

S NO	MONTH	II SEM PLAN
1	AUGUST	A review of sources related to ancient Indian history Stone age culture Megalithic civilization Harappan civilization
2	SEPTEMBER	Pre Vedic society – political ,economic ,social and religious life Later Vedic society – political economic social and religious life Culture of Epic era Religious movement – Jainism and Buddhism
3	OCTOBER	Mahajanapada period – sixteen Mahajanapadas Republic system Urban centers and economic development Body corporate -castsystem ,Aashram system, tradition ,marriage Status of woman
4	NOVEMBER	Agricultural development of ancient India Development of industry and trade Scientific advancement in ancient times Ancient religious architecture
1	JANUARY	IV SEM Rise of Magadha empire -Haryak to Nand dynasty Alexander's invasion -causes and result Sangam era – social economic and religious condition of south India Administrative arrangement in Maurya period
2	FABRUARY	Art and architecture Ashoka's dhamma Downfall of Maurya empire Culture of Kushan satavahana period
3	MARCH	Gupta period administrative system Scientific ,literary and cultural development in Gupta period Harshvardhan period Development of Vaishnavism and Shaivism in ancient India
4	APRIL	Rise of cast system in ancient India ,untouchability Social and religious status of woman Development of education in ancient India Development of Temple architect sculpture art

M A III & IV SEM HISTORY -II PAPER- HISTORY OF INDIA[650 to 1200]

SESSION -2019-20

S N	MONTH	III SEM PLAN
1	AUGUST	Means of knowing history Political changes Economic and social changes Eastern India – Pal ,Sen dynasty
2	SEPTEMBER	Indian state – Pratihara, Chauhan , Parmar dynasty Kalchuri ,Chandel dynasty Pallava ,Chalukya dynasty Rashtrakoot, Chola dynasty
3	OCTOBER	Origin of Rajput Raj system and administration of Rajput Socio, economic ,religious condition of Rajput period Trade relation with south east Asia and western Asia
4	NOVEMBER	Early contact with Arab , Arab invasion in Sindh Arrival of Turks in India – Mahmud Ghaznavi Muhammad Gori -invasion -causes and result Success of Turks
1	JANUARY	IV SEM Agricultural economic arrangement – land donation Development of agricultural technology Urban economy -craft and trade Contribution of 'Guild' in economic arena
2	FEBRUARY	Development of new Trade and craft class Origin of caste system Untouchability Social status of woman
3	MARCH	Educational development and teaching institution Development of regional languages and literatures Temple architecture Development of Sculpture art
4	APRIL	Bhakti movement -with special reference of south India – Shaivism , Vaishnavism and Tantricism Vedanta ,Mimamsa philosophy Sufi movement



M A III ,IV SEM – III PAPER- INDIANs NATIONAL MOVEMENT

SESSION 2019-20

S N.	MONTH	III SEM PLAN
1	AUGUST	Revolt of 1857 – causes , nature results and failure Indian Renaissance -means and cause Social religious reform movement -Bramhasamaj, Arya samaj Ramacrishana mission, theosophical socity ,Aligarh movement
2	SEPTEMBER	Political organization of pre congress Establishment of national congress Liberalism Militancy
3	OCTOBER	Swadeshi movement Revolutionary movement -first step- Bengal Maharashtra Panjab " " step Marle -Minto reforms -1909
4	NOVEMBER	Home -rule movement Gandhian political thought Khilafat movement Indian government act 1919
1	JANUARY	IV SEM Non co operation movement Swaraj party Civil dis obedience movement Indian government act - 1935
2	FEBRUARY	Development of Indian industries Peasant and labor movement Tribes movement Quit India movement and Subhash Chandra Bos
3	MARCH	Communalism in Indian politics Cripps mission Cebinet mission plan Mount batton plan
4	APRils	Integration of Indian princely states -contribution of Sardar Patel Great leaders of india Twenty years of post independence -internal change ,foreign policy Five years plans

M A III ,IV SEM – IV PAPER- INDIANs NATIONAL MOVEMENT

SESSION 2019-20

S N.	MONTH	III SEM PLAN
1	AUGUST	SOURCE OF WOMAN STUDIES IDEOLOGY OF WOMAN STUDIES- LIBRILIST , EXTRIMIST IDEOLOGY OF WOMAN STUDIES- SOCILIST , COMMUNIST IDEOLOGY OF WOMAN STUDIES- PHYCISOLOGIEST
2	SEPTEMBER	POSITION OF WOMANS IN DIFFERENT RELIGIONS – HINDU RELIGION IN BUDDHISM AND JAINISM POSITION OF WOMANS IN ISLAM POSITION OF WOMAN IN SIKH RELIGION
3	OCTOBER	LIGEAL POSITION OF WOMANS- IN ANCIENT INDIA LIGEAL POSITION OF WOMANS -IN MEDIVAL INDIA SOCIAL RIGHTS-PROPERTY RIGHTS WOMAN ORGANISATION IN REFERENCE OF 20 <sup>TH</sup> CEN.
4	NOVEMBER	WOMANS AND FREEDOM MOMENT GANDHIAN MOMENT AND WOMANS WOMANS LIBERATION MOMENT WOMANS AND POLITICS IN POST INDEPENDECE INDIA
1	JANUARY	IV SEM WOMANS AND THERE WORK AREA DOMESTIC WORK AREA AGRICULTURE AND INDUSTRIAL AREA , TRADE WORK AREA EMPLOYED WOMAN
2	FEBRUARY	WOMANS AND CULTURE CENEMA THEATER AND MEDIA AREA LITRATURE AND RELIGION AREA LITRARY WRITING AND HISTEREOGRAPHY
3	MARCH	REFORM MOMENT AND WOMANS- BHAKTI MOMENT RELIGIOUS REFORM MOMENT AND WOMANS- BRAMH SAMAJ ARYA SAMAJ REFORM MOMENT AND WOMANS- ALIGARH MOMENT REFORM MOMENT AND WOMANS- THIOSOPHICAL SOCEITY , SELF RESPECT MOMENT
4	APRIL	ROLE OF WOMANS IN MOMENT AND POLITICS AREA- TRIBLE MOMENT PEASANT MOMENT LABOUR MOMENT ROLE OF MOMENTS IN LOCAL BODIES

**M.A. I SEM.  
SESSION 2019-20  
TEACHING PLAN**

**PAPER-I**

**पाश्चात्य राजनीतिक चिंतन**

MONTH	PLAN
JULY	प्लेटो, अरस्तु
AUGUST	मैकियावली, जेरेमी, बेन्थम
SEPTEMBER	टॉमस हाब्स, जॉन लाक, जीन जैक्स,रुसो
OCTOBER	जॉन स्टुअर्ट मिल, थामस हिल ग्रीन
NOVEMBER	कार्ल मार्क्स एवं मार्क्सवाद

**SESSION 2019-20**  
**TEACHING PLAN**

**PAPER-II**  
**तुलनात्मक राजनीति**

MONTH	PLAN
JULY	राजनीतिक व्यवस्था के अध्ययन में तुलनात्मक पद्धति। तुलनात्मक राजनीति का अर्थ, प्रकृति
AUGUST	तुलनात्मक राजनीति का क्षेत्र। तुलनात्मक राजनीति का विकास। राजनीतिक व्यवस्था की अवधारणा
SEPTEMBER	तुलनात्मक राजनीति के अध्ययन के विविध उपागम – परम्परागत, मार्क्सवादी
OCTOBER	तुलनात्मक राजनीति के अध्ययन के विविध उपागम—निवेश—निर्गत। संरचनात्मक :- प्रकार्यात्मक, राजनीतिक समाजशास्त्रा उपागम।
NOVEMBER	राजनीतिक संस्कृति एवं राजनीतिक समाजीकरण। राजनीतिक संचार

**SESSION 2019-20**  
**TEACHING PLAN**

**PAPER-III**  
**लोक प्रशासन**

MONTH	PLAN
JULY	लोक प्रशासन :- परिभाषा, प्रकृति, क्षेत्र । निजी प्रशासन एवं लोक प्रशासन में अंतर ।
AUGUST	अध्ययन के उपागम :- व्यावहारवादी, तुलनात्मक, निर्णयपरक, विकास प्रशासन एवं नवीन प्रशासन
SEPTEMBER	संगठन के सिद्धांत:- नियंत्रण का क्षेत्र, पदसोपान, प्रत्यायोजन, समन्वय, केन्द्रीयकरण एवं विकेन्द्रीयकरण ।
OCTOBER	मुख्य कार्यपालिका :- प्रकार एवं भूमिका , सूत्रा एवं स्टॉफ अभिकरण,
NOVEMBER	विभागीय संगठन, स्वतंत्रा नियामकीय आयोग, लोक निगम

**SESSION 2019-20**  
**TEACHING PLAN**

**PAPER-IV**  
**भारत की विदेश नीति**

MONTH	PLAN
JULY	विदेशनीति :- अर्थ एवं निर्धारक तत्व । भारतीय विदेशनीति :- सिद्धांत एवं उद्देश्य ।
AUGUST	भारत की विदेशनीति के आंतरिक निर्धारक :- भूगोल, इतिहास, संस्कृति
SEPTEMBER	भारतीय विदेशनीति के बाह्य निर्धारक :- वैश्विक, क्षेत्रीय एवं द्विपक्षीय । विदेशनीति निर्माण प्रक्रिया की संरचना
OCTOBER	भारतीय विदेशनीति में नैरन्तर्य एवं परिवर्तन । भारतीय विदेशनीति तुलनात्मक परिपेक्ष्य में
NOVEMBER	पड़ोसी देशों के प्रति भारतीय नीति, प्रमुख वैश्विक मुद्दों के प्रति भारतीय दृष्टिकोण, सीमापार आतंकवाद, पर्यावरण एवं मानव अधिकारों का प्रश्न ।

**SESSION 2019-20**  
**TEACHING PLAN**  
**PAPER-I**  
**भारतीय शासन एवं राजनीति**

MONTH	PLAN
JULY	संविधान सभा की पृष्ठभूमि, संगठन (संरचना) एवं कार्यप्रणाली, वैचारिक आधार, प्रस्तावना
AUGUST	मौलिक अधिकार एवं मौलिक कर्तव्य, राज्य के नीति निर्देशक सिद्धांत, सामाजिक परिवर्तन के उपकरण के रूप में संविधान संशोधन प्रक्रिया
SEPTEMBER	संघीय सरकार – राष्ट्रपति, प्रधानमंत्री, मंत्रीपरिषद, संसद
OCTOBER	सर्वोच्च न्यायालय एवं न्यायिक पुनरीक्षण, न्यायिक सक्रियतावाद
NOVEMBER	दलपद्धति की प्रकृति, राष्ट्रीय एवं क्षेत्रीय दल, दबाव समूह

**SESSION 2019-20**  
**TEACHING PLAN**  
**PAPER-II**  
**अंतर्राष्ट्रीय राजनीति के सिद्धांत**

MONTH	PLAN
JULY	अंतर्राष्ट्रीय राजनीति का विषय के रूप में विकास, प्रकृति एवं क्षेत्रा । अध्ययन पद्धतियाँ :- परम्परागत एवं वैज्ञानिक
AUGUST	अंतर्राष्ट्रीय राजनीति के सिद्धांत :- (वृहत्) यथार्थवाद, आदर्शवाद, साम्यावस्था, निर्णय-निर्माण, खेल, संचार, व्यवस्था सिद्धांत
SEPTEMBER	शक्ति संकल्पना :- तत्व एवं सीमाएं । शक्ति प्रबंधन – शक्ति संतुलन । सामूहिक सुरक्षा
OCTOBER	अंतर्राष्ट्रीय राजनीति में राष्ट्रीय हित । निःशस्त्रीकरण । परमाणु अप्रसार – सी.टी.बीटी. एन.पी.टी. ।
NOVEMBER	क्षेत्रवाद, क्षेत्रीय संगठन । साम्राज्यवाद, नव-साम्राज्यवाद



**SESSION 2019-20**  
**TEACHING PLAN**  
**PAPER-III**  
**शोध प्रविधि**

MONTH	PLAN
JULY	सामाजिक अनुसंधान – अर्थ एवं प्रकृति, वैज्ञानिक पद्धति
AUGUST	वैज्ञानिक पद्धति एवं सामाजिक विज्ञानों में उपयुक्तता, सामाजिक विज्ञान में अध्ययन की कठिनाईयों, शोध के चरण।
SEPTEMBER	सामाजिक सर्वेक्षण – उद्देश्य, महत्व, प्रमुख चरण, वैयक्तिक अध्ययन पद्धति।
OCTOBER	अनुसंधान, अभिकल्पना, उपकल्पना, तत्वों के प्राथमिक एवं द्वितीयक स्रोत।
NOVEMBER	तथ्य संग्रहण के एवं प्रविधियाँ : अवलोकन पद्धति, साक्षात्कार पद्धति :- गुणदोष एवं सीमाएं

**SESSION 2019-20**  
**TEACHING PLAN**  
**PAPER-IV**  
**अंतर्राष्ट्रीय संगठन**

MONTH	PLAN
JULY	अंतर्राष्ट्रीय संगठनों की प्रकृति एवं विकास। अंतर्राष्ट्रीय संगठन – राष्ट्र राज्य एवं अंतर्राष्ट्रीय व्यवस्था का समन्वय
AUGUST	राष्ट्रसंघ – उत्पत्ति संरचना कार्य एवं असफलता
SEPTEMBER	संयुक्त राष्ट्र संघ – संरचना एवं कार्य
OCTOBER	विवादों का शांतिपूर्ण समाधान एवं बाध्यकारी उपाय, अंतर्राष्ट्रीय न्यायालय
NOVEMBER	आर्थिक एवं सामाजिक विकास में संयुक्त राष्ट्र संघ की भूमिका। उत्तर शीत युद्धकाल और संयुक्त राष्ट्रसंघ

**SESSION 2019-20**  
**TEACHING PLAN**

**PAPER-I**  
**राजनीतिक चिंतन**

MONTH	PLAN
JANUARY	मनु, कौटिल्य
FEBURARY	महात्मा गांधी, डॉ. भीमराव अम्बेडकर जार्ज बिल्हेलम
MARCH	फ्रेडरिक हीगल, हेरल्ड जे. लास्की एवं बहुलवाद परम्परागत राजनीतिक सिद्धांत एवं आधुनिक राजनीतिक सिद्धांत की विशेषताएं
APRIL	परम्परागत राजनीतिक सिद्धांत एवं आधुनिक राजनीतिक सिद्धांत की विशेषताएं

## SESSION 2019-20

### TEACHING PLAN

#### PAPER-II

विकासशील देशों की राजनीति एवं तुलनात्मक राजनीति

MONTH	PLAN
JANUARY	राजनीतिक विकास । राजनीतिक अभिजन
FEBURARY	सरकार का वर्गीकरण :- एकात्मक व संघात्मक, संसदीय व अध्यक्षतात्मक
MARCH	नौकरशाही :- संरचना, कार्य व भूमिका । राजनीतिक दल, दबाव समूह  राजनीतिक संस्थाएँ :- व्यवस्थापिका – संरचना, कार्य व भूमिका । कार्यपालिका :- संरचना, कार्य व भूमिका
APRIL	न्यायपालिका :- न्यायिक पुनरीक्षण । शक्ति पृथक्करण । अवरोध एवं संतुलन

## SESSION 2019-20

### TEACHING PLAN

#### PAPER-III

#### लोक प्रशासन (स्थानीय स्वायत्त शासन)

MONTH	PLAN
JANUARY	कार्मिक प्रशासन : भर्ती पदोन्नति, प्रशिक्षण, सेवानिवृत्ति
FEBURARY	संघ लोक सेवा आयोग, नौकरशाही, कार्मिकों की समस्याओं के निवारण की व्यवस्था।
MARCH	वित्तीय प्रशासन :- अर्थ प्रकृति, विशेषताएं। बजट :- सिद्धांत एवं महत्व, भारत में बजट निर्माण प्रक्रिया  कार्यपालिका, व्यवस्थापिका, न्यापालिका एवं जन समूह का प्रशासन पर नियंत्रण
APRIL	लोक प्रशासन में भ्रष्टाचार, आम्बुड्समेन, लोकपाल, लोकायुक्त एवं लोक संपर्क स्थानीय स्वायत्तशासी संस्थाओं की भूमिका

**SESSION 2019-20**

**TEACHING PLAN**

**PAPER-IV**

**प्रमुख शक्तियों की विदेशनीति**

MONTH	PLAN
JANUARY	विदेशनीति के अध्ययन के उपागम । अमेरिका की विदेशनीति
FEBURARY	ब्रिटेन एवं फ्रांस की विदेशनीति जर्मनी एवं जापान की विदेशनीति
MARCH	सोवियत संघ / रूस की विदेशनीति, चीन की विदेशनीति
APRIL	प्रमुख वैश्विक मुद्दों के प्रति भारतीय दृष्टिकोण – वैश्वीकरण, निःशत्रुीकरण एवं शस्त्र नियंत्रण ।

**SESSION 2019-20**

**TEACHING PLAN**

**PAPER-I**

**भारतीय शासन में राज्यों की राजनीति**

MONTH	PLAN
JANUARY	निर्वाचन आयोग, संघ लोक सेवा आयोग भारतीय संघवाद तथा केन्द्र राज्य संबंध, राज्यपाल, मुख्यमंत्री एवं मंत्रीमंडल
FEBURARY	राज्य विधान मंडल, राष्ट्रीय राजनीति का राज्य, राजनीति पर प्रभाव
MARCH	राज्यों की स्वायत्ता की मांग – गठबंधन की राजनीति
APRIL	दलबदल की राजनीति, भारतीय राजनीति में जाति, धर्म, क्षेत्रवाद, भाषा का प्रभाव ।

**SESSION 2019-20**

**TEACHING PLAN**

**PAPER-II**

**अंतर्राष्ट्रीय राजनीति के सिद्धांत (समकालीन मुद्दे)**

MONTH	PLAN
JANUARY	अंतर्राष्ट्रीय राजनीति में असंलग्नता – आधार, भूमिका, महत्व एवं प्रासंगिकता । शीतयुद्ध एवं शीतयुद्ध की समाप्ति – कारण एवं परिणाम । नई विश्व व्यवस्था
FEBURARY	उत्तर शीत युद्धकालीन महत्वपूर्ण मुद्दे – वैश्वीकरण, मानवधिकार  उत्तर शीत युद्धकालीन महत्वपूर्ण मुद्दे – पर्यावरण, आतंकवाद
MARCH	प्रमुख राष्ट्रों की विदेश नीतियां – भारत, संयुक्त राज्य अमेरिका
APRIL	चीन एवं रूस की विदेश नीति



**SESSION 2019-20**

**TEACHING PLAN**

**PAPER-III**

**शोध प्रविधि – क्षेत्रीय कार्य**

MONTH	PLAN
JANUARY	प्रश्नावली एवं अनुसूची :- प्रकार, गुण, दोष, सीमाएं ।  निदर्शन :- अर्थ, प्रकार, सारणीयन, प्रतिवेदन लेखन, अनुमापन प्रविधियाँ
FEBURARY	अनुसंधान दल, अनुसंधान की समस्याएँ, प्रक्षेपी प्रविधियाँ
MARCH	सामाजिक अनुसंधान में साँख्यिकी की उपयोगिता एवं सीमाएँ – मीन, मोड, मीडियन
APRIL	कम्प्यूटर का उपयोग एवं संकेतन

## SESSION 2019-20

### TEACHING PLAN

#### PAPER-IV

#### अंतराष्ट्रीय कानून

MONTH	PLAN
JANUARY	अंतराष्ट्रीय कानून :- प्रकृति क्षेत्रा, विकास, स्रोत एवं संहिताकरण । राष्ट्रीय एवं अंतराष्ट्रीय कानून ।
FEBURARY	अंतराष्ट्रीय कानून एवं राष्ट्र उत्तराधिकार एवं मान्यता । राज्यों के अधिकार एवं कर्तव्य । क्षेत्राधिकार समानता एवं आत्मरक्षा
MARCH	युद्ध :- परिभाषा, प्रकृति, लक्षण, घोषणा, प्रभाव । स्थल युद्ध के नियम :- समुद्री युद्ध के नियम एवं वायु युद्ध के नियम, आणविक युद्ध, अधिग्रहण न्यायालय  युद्ध की समाप्ति, शांति संधि एवं पूर्वावस्था । युद्ध अपराध, युद्धबंदी एवं दण्ड
APRIL	तटस्थता :- परिभाषा, प्रकार, लक्षण । तटस्थ राज्यों के अधिकार एवं कर्तव्य ।  नाकाबंदी, राजनयिक उन्मुक्तियों एवं विशेषाधिकार । अंतराष्ट्रीय कानून एवं आर्थिक विकास, नवीन विश्व के संदर्भ में

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**PROPOSED TEACHING PLAN FOR THE SESSION 2019-20**

Class - M.A. Psychology (I<sup>st</sup> & II<sup>nd</sup> Semester)

Paper- I– Basic Psychological process-I & Basic Psychological processes-II

MONTH/DAYS	PROPOSED PLAN
JULY /27 SEM-I	UNIT-I Psychophysics: Nature, Problem And methods, Signal detection theory, Subliminal perception and related factors. Perceptual process- Approaches to study Perception: Gestalt, Physiological, processing and Ecological Approaches. Perceptual Organization: Gestalt, Figure and Ground, Law of organization. Perceptual Constancy: Size, Shape and Brightness, Depth perception; Monocular and Binocular cues, Movement Perception: Nature, Types and Theories.
AUGUST/24	UNIT-II Attention: Nature, Concept and Mechanism of Attention. Types, Theories and Applications UNIT-III Motivation and Emotion: Basic Motivational concept: Instincts, needs, drive, incentive,
SEPTEMBER/24	UNIT-III Motivational cycle. Approaches to study Motivation; Psychoanalytical, Ethological, S-R Cognitive, Humanistic, Biological Motives, Social motives: Achievement, Affiliation, and Approval. Emotion concept; physiological correlates of Emotions. Theories of Emotions; James- Lange, Canon- Bard. Schechter and Singer. Conflicts: Sources and Types
OCTOBER/18	UNIT-IV Consciousness: Nature and concept of consciousness, Theories of Consciousness, Methods to Studying Consciousness, Consciousness Self and identity.
NOVEMBER/25	Lab work, Seminars & Project work
DECEMBER/20	Semester Exam (Theory & Practical)
JANUARY/27 SEM-II	UNIT- I Learning Process: Classical Conditioning: Procedure, Phenomena and related issue. Instrumental Learning: phenomena, paradigms And Theoretical issue, Process Escape Conditioning, Avoidance Conditioning, Generalization, Reinforcement: Basic variable and schedule. Experimental Analysis of behavior: Behavior Modification, Shaping, Discrimination Learning, Neurophysiology of Learning
FREBRUARY/25	UNIT-II Verbal Learning: Methods and Materials, Organizational Process, learning Theories: Hull, Tolman, and Skinner. Cognitive Approaches In Learning: latent Learning, Observational Learning.
MARCH	UNIT-III Memory and Forgetting: Memory Processes; Encoding, Storage and Retrieval. Stages of Memory: Sensory Memory, Short Term Memory and Long Term Memory. Episodic and Semantic Memory.
APRIL	UNIT-IV Forgetting: Nature and causes of Forgetting, Theories of Forgetting; Interference, Decay, Retrieval. Improving Memory.
MAY	Lab work, Seminars & Project work
JUNE	Semester Exam

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**PROPOSED TEACHING PLAN FOR THE SESSION 2019-20**

**Class - M.A. Psychology (I<sup>st</sup>&II<sup>rd</sup>Semester)**

**Paper II– Social Psychology & Group Processes and Cultural Psychology**

MONTH/DAYS	Proposed Plan
JULY /27 SEM-I	UNIT-I Introduction and Social Psychological Perspective Social Psychology- Nature And Scope , Historical Background and Methods of Social Psychology, Theoretical Perspectives- Cognitive Dissonance, Attribution, Field and Psychodynamic, Symbolic Interaction and Socio-Biology
AUGUST/24	UNIT-II Social Cognition and Person Perception Sources of Errors in Social Cognition, Social Perception and Person Perception, Determinants of Person Perception, Impression Formation and Management, Role of Stereotypes in Person Perception
SEPTEMBER/24	UNIT-III Process of Social Influences Meaning and Nature of Social Influence , Social Facilitation, Conformity, Compliance and Obedience, Social Power , Reactance Attitude– Nature and Characteristics, Development and Formation of Attitudes, Theories of Attitude Change
OCTOBER/18	UNIT-IV Social Psychology and Social Situations Prosocial Behavior, Aggression and Violence- nature, characteristics, determinants and theories, Management of Aggression
NOVEMBER/25	Seminars &Project work Practical- Psychological Experiments
DECEMBER/20	Semester Exam (Theory &Practical)
JANUARY/27 SEM-II	UNIT-I Intergroup Relations Group Dynamics and Group Behavior, Group Effectiveness and Group Cohesiveness-Meanings, Formation, Decision Making, Problem Solving and Group Level Behaviors
FREBRUARY/25	UNIT-II leadership Leadership –meaning, nature and functions, Styles and Effectiveness of Leadership, Psychology of Followers
MARCH	UNIT-III Social Issues Poverty, Caste, Gender and Population Issues in India Communal Tension and Harmony Culture and Behavior-I Culture, Cognition and Emotions, Culture and Organization
APRIL	UNIT-IV Culture And Behavior-II Culture And Health, Culture and Personality, Health , Environment and Law Practical – Psychological Tests
MAY	Seminars &Project work
JUNE	Semester Exam

## PROPOSED TEACHING PLAN FOR THE SESSION 2019-20

Class - M.A. Psychology ( I<sup>st</sup> & II<sup>nd</sup> Semester ) Paper- III<sup>rd</sup>

Title of the paper- Basic Research Methodology &amp; Advance Research Methodology

MONTH/DAYS	PROPOSED PLAN
JULY /27	UNIT-I Introduction to Psychological Research Meaning, Purpose and Dimensions of Research. Types of Psychological Research: Qualitative and Quantitative. Parametric and Non-Parametric Statistics. Methods of Psychological Research: Experimental. Quasi-Experimental. Case Studies, Field Studies. Variables: Nature and Types. Techniques of experimental manipulation, controlling experiment.
AUGUST/24	UNIT-II Research Process Research Process: Consideration of Research Problem and Hypothesis, Operationalization .Sampling: Probability and Non probability Sampling. Sources of Bias. Ethical Issues in Psychological Research.
SEPTEMBER/24	UNIT-III Research Designs: Cross Sectional and Longitudinal, Experimental, Correlation. Single Factor, Quasi - Experimental.
OCTOBER/18	UNIT-IV Central Tendencies, Measures of Dispersion, Normal Probability Curve, its properties and utility. Null Hypothesis, Type-I and Type-II Errors, Level of Significance. Inferential Statistics: t -Test. Method of Data Collection Survey and Observation Method: Questionnaire, Interview. Tests and Scales.
NOVEMBER/25	Lab work, Seminars & Project work
DECEMBER/20	Semester Exam (Theory & Practical)
JANUARY/27	UNIT-I Experimental Design; Randomized groups, Matched Groups, Factorial Designs; Between and within Groups, Repeated Measures (One Factors).
FREBRUARY/25	UNIT-II Analysis of Variance; ANOVA; One Way and Two-Way
MARCH	UNIT-III Measures of Relationships; Bi-serial, point Bi-serial, Tetra choric and Phi, Multiple and partial Correlations
APRIL	UNIT-IV Regression and Factor Analysis: Simple and Multiple, factor Analysis: Assumptions, Methods, Rotation and Interpretation. Report Writing; Uses of computer in Psychological Researches, Research Report Writing.(APA Style)
MAY	Seminars & Project work
JUNE	Semester Exam

PROPOSED TEACHING PLAN FOR THE SESSION 2019-20

Class - M.A. Psychology (I<sup>st</sup>&II<sup>nd</sup>Semester)

Paper IV – Psychopathology and Physiological Psychology and Health

Behaviour

MONTH/DAYS	PROPOSED PLAN
JULY /27 SEM-I	UNIT-I Concept of Psychopathology and Classification System Diagnosis: Purpose, diagnostic system: Mental Status Examination (MSE). Clinical Interview and Diagnostic Tools. Classification Systems: ICD and DSM .Evaluation of Classification System. Theoretical Models of Psychopathology Psychodynamic, Behavioral, Cognitive, Humanistic, Biological and Socio-Cultural.
AUGUST/24	UNIT – II Disorders of Anxiety, Somatoform, and Behavioral Syndromes Panic, Phobic, OCD, Post-Traumatic, GAD, Somatoform Disorders, Impulse Control Disorder, Eating Disorder, Sleep Disorder. Dissociative Disorder: Types, Characteristics, Etiology and Management.
SEPTEMBER/24	UNIT – III Psychotic Spectrum Disorders Schizophrenia, Mood Disorder. Personality Disorders: Clinical Characteristics, Etiology and Management.
OCTOBER/18	UNIT – IV Substance Related Disorders and Developmental Disorders of Childhood Mental Retardation. Disorders of Childhood: Autism Spectrum Disorder (ASD), Attention Deficit Disorder (ADD), Attention Deficit and Hyperactive Disorder (ADHD). Learning disabilities.
NOVEMBER/25	Lab work, Seminars & Project work
DECEMBER/20	Semester Exam (Theory & Practical)
JANUARY/27. SEM -II	UNIT – I Methods and Basic Concepts Methods of Physiological Psychology: Lesion and Brain Stimulation. Receptors, Effectors and Adjuster Mechanisms. Neural Impulse: Origin. Conduction and Measurement.
FREBRUARY/25	UNIT – II Sensory System Vision and Audition. Human Nervous System: Structure and Functions.
MARCH	UNIT – III Sleep and Waking: Stages of Sleep, Disorders of Sleep and Physiological Mechanisms of Sleep and Waking .Drinking and its Neural Mechanism; Hunger and its Neural Mechanism .Endocrine System: Chemical and Glandular.
APRIL	UNIT - IV Approach to Therapy Psychoanalytic, Biological, Behavioral, Behavioral Medicine and Spiritual Therapy. Mental Health- Mental Health Promotion and Maintenance. Current Issues and Trends in Health Psychology.
MAY	Lab work, Seminars & Project work
JUNE	Semester Exam

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**PROPOSED TEACHING PLAN FOR THE SESSION 2019-20 Class - M.A.**

**Psychology (III<sup>rd</sup> & IV<sup>th</sup> Semester)**

**Paper- I<sup>ST</sup> Personality and Indigenous Psychology-I & Life Span Development  
(Compulsory)**

MONTH/DAYS	PROPOSED PLAN
JULY /27 III <sup>TH</sup>	UNIT-I Personality; Meaning, Perspective and measurement of Personality Concept of Mature Personality, Personality Theory- Problems and Procedures.
AUGUST/24	UNIT – II Approaches to Personality- I Psychodynamic Perspectives of Personality: Theories of Personality: Freud, Erikson, Adler. Structure, Dynamics and Development of Personality. Methods to study Personality. Approaches to Personality –II Theories of Personality: Cattell and Eysenck - Structure, Dynamics and Development of Personality. Research Methods.
SEPTEMBER/24	UNIT – III Approaches to Personality-III Cognitive, Behavioral and Humanistic. Kelly, Bandura and Roger's. Structure, Dynamics and Development of Personality. Research Methods.
OCTOBER/18	UNIT – IV Approaches to Personality-IV Indigenous Concept and Models of Personality – Yogic, Samkhya. Current Researches in the Field of Personality.
NOVEMBER/25	Internship, Seminars & Project work
DECEMBER/20	Semester Exam (Theory & Practical)
JANUARY/27. IV <sup>th</sup>	UNIT-I Scope, Nature and Principles of development, Concepts-maturity, experience factors in development: Biogenic, Psychogenic and Sociogenic. Factors influencing development: Heredity, Environment, Motivation and Learning. Development processes: Nature, Principles and related.
FREBRUARY/25	UNIT-II Methods; Cross-sectional, longitudinal approach, Research strategies: Co relational, Experimental and other sequential techniques. The Developmental tasks and theories of Development. Psychoanalytic, Behaviorist and cognitive.
MARCH	UNIT-III How life begins Infancy, baby hood and childhood. The Characteristics, adjustment, hazards and Personality Development.
APRIL	UNIT-IV Adolescence and Adulthood. Characteristic, Physical, Social and Cognitive development psychosocial Changes and adjustment. Middle and Old age, Characteristics, problems. Personal social and vacation adjustment.
MAY	Seminars & Project work
JUNE	Semester Exam

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**PROPOSED TEACHING PLAN FOR THE SESSION 2019-20**

**M.A. Psychology (III<sup>rd</sup> & IV<sup>th</sup> Semester)**

**PAPER- II PSYCHOLOGICAL ASSESSMENT I**

MONTH/DAYS	Proposed Plan
JULY /27	UNIT-I Nature of psychological assessment: difference between physical and psychological assessment, problems in psychological assessment. Levels of assessment
AUGUST/24	UNIT-II SCALING- Unidimensional and multidimensional scale. Scale construction technique. Difference between tests, scales, questionnaires and schedule. Characteristics of a good psychological test. Difference between psychometric and projective tests.
SEPTEMBER/24	UNIT-III Construction of a psychological tool: steps in test construction, item writing, pre try- out, item difficulty, discrimination power, types of psychological tests.
OCTOBER/18	UNIT-IV Adaptation of Tests. Test taking Response Styles: Social Desirability, Acquiescence and Faking. Use of Psychological tests in Applied Field of Life: Diagnosis, Psychotherapy, Education, Occupations and Organizations.
NOVEMBER/25	Seminars & Project work
DECEMBER/20	Semester Exam (Theory & Practical)
JANUARY/27	UNIT-I Concept and Measurement of Intelligence, Major Tests of Intelligence developed under Western and Indian Cultural set up.
FREBRUARY/25	UNIT-II Concept and Measurement of Aptitude; Major Test of Aptitude developed under Western and Indian Cultural set up. Achievement; concept and measurement of Achievement Test; Major Test of Achievement
MARCH	UNIT-III Test of Personality: Projective and Psychometric Approaches, Major Test of Personality, developed under Western and Indian Cultural set up.
APRIL	UNIT-IV Test of Adjustment, Values, Interest, Stress and Anxiety development under Indian condition. Psychological Testing in Applied Field: Neuropsychological Testing: Objectives and Major Neuropsychological Test. Emotional Intelligence: Concept and Major Test of emotional Intelligence developed under western and Indian cultural set up.
MAY	Lab work, Seminars & Project work
JUNE	Semester Exam



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PROPOSED TEACHING PLAN FOR THE SESSION 2019-20

Class - M.A. Psychology (III<sup>st</sup> & IV<sup>th</sup> Semester )  
 Paper III – Cognitive Psychology &  
 Psychology of Cognitive Abilities

MONTH/DAYS	PROPOSED PLAN
JULY /27	UNIT-I Theories of thought processes: Associationism, Gestalt, Information processing. Concept formation: Rules and Strategies.
AUGUST/24	UNIT-II Problem- Solving: Type and strategies. Role of concepts in thinking. Cognitive Strategies: Algorithms and heuristics. Convergent and divergent thinking. Decision- making; impediments to problem-solving.
SEPTEMBER/24	UNIT-III Models of memory: Atkinson and Shiffrin, Craik and Lockhart, Tulving. Semantic memory: Episodic, trace model and network model.
OCTOBER/18	UNIT-IV Biological basis of memory: The search for the engram, PET scan, and biochemical factors in memory. Improving memory: Strategies.
NOVEMBER/25	Lab work, Seminars & Project work
DECEMBER/20	Semester Exam (Theory & Practical)
JANUARY/27	UNIT-I Creative thinking and problem - solving. Language and thought. Theories of intelligence: Cattell, Jensen, Sternberg, Goleman. Creativity: Views of Torrance, Getzels, Guilford.
FEBRUARY/25	UNIT-III Intelligence and creativity: Relationship. Abilities and achievement: Concept and role of emotional intelligence.
MARCH	UNIT-III Intelligence; Biological, Social, Eco- cultural determinants. Theories of intelligence: Spearman, Thurston, Guilford.
APRIL	UNIT-IV Individual and group differences: Extent and causes. Measurement of human abilities.
MAY	Internship, Seminars & Project work
JUNE	Semester Exam

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**PROPOSED TEACHING PLAN FOR THE SESSION 2019-20**

Class - M.A. Psychology (III<sup>st</sup>&IV<sup>rd</sup>Semester )

Paper IV (Elective)–Educational Instructional Psychology &  
Basics of Psychological Guidance and Counseling

MONTH/DAYS	PROPOSED PLAN
JULY /27	Conceptual and Theoretical Perspectives in Educational Psychology. Theories: Behaviouristic, Social Learning and Cognitive Applications in Teaching.
AUGUST/24	UNIT-II Instructional Models Programmed Learning, Concept, Characteristics and Models.
SEPTEMBER/24	UNIT-III Learning Styles: Nature, Approaches to Learning Style, Measurement of Learning Styles. Attempt to Modify Learning Styles.
OCTOBER/18	UNIT-IV Individual and Group Differences in Intelligence. Theories of Intelligence, Gender Differences issues in the Classroom. Learning and Motivation, Study Habit, importance, Levels of Learning.
NOVEMBER/25	Lab work/Internship, Seminars &Project work
DECEMBER/20	Semester Exam(Theory &Practical)
JANUARY/27	UNIT-I Nature, Need and Functions of Counseling. Counseling and Psychotherapy. Intervention, Goal and objectives of Counseling. Approaches of Counseling: Directive, Non-directive, Eclectic. Individual and group counseling. Evaluation of counseling. Follow up and placement services. Techniques of appraising the client: Standardized Techniques, Intelligence, Personality, Aptitude and Interest Interview.
FREBRUARY/25	UNIT-II Characteristics of a good Counselor. Counselors, Training, Issues and trends in guidance and counseling. Ethical standards. Nature, Need and Functions of Guidance. Principles of Guidance. Techniques of appraising the client: Non-Standardized Methods. Anecdotal Record, Auto biography, Case study, Sociometric, Observation, Rating scale, Questionnaire.
MARCH	UNIT-III Guidance service: - Kinds of guidance services. Various services in guidance programme- 1. Information 2. Self inventory 3. Preparation, follow up4 . Placement 5. Individual data collection 6. Counseling 7. Research Services. Organization of a guidance program Relevance of Guidance under 10+2+3 educational patterns.
APRIL	UNIT-IV Special areas of Guidance and Counseling: Marital, Family. Counseling for the pre-school and elementary school children adolescent. Special areas of Guidance- Vocational Guidance, Educational Guidance's personal Guidance Problems of Guidance in India.
MAY	Seminars &Project work
JUNE	Semester Exam

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PROPOSED TEACHING PLAN FOR THE SESSION 2019-20

Class - M.A. Psychology (III<sup>rd</sup>&IV<sup>th</sup>Semester)

Paper –IV(Elective ) Clinical Diagnosis and Psychotherapeutic Counseling

MONTH/DAYS	PROPOSED PLAN
JULY /27 III <sup>RD</sup> SEM	UNIT-I History And Current trends, Growth of the Branch; Growth in numbers, Differentiation. Professionals spiral of growth. Growth in India, Approach of Clinical Psychology: Psychodynamic, Behaviouristic, Humanistic, Cognitive and Socio- Cultural.
AUGUST/24	UNIT–II Personality assessment: Projective, psychometric and behavioral measures. Projective tests: Characteristics and clinical use, Rorschach & TAT.
SEPTEMBER/24	UNIT – III Human Diversity and Education Psychometric tests: MMPL, WAIS & WISC.
OCTOBER/18	UNIT – IV Individual and Group Differences Dynamic diagnosis: Observation, Case history, and Interview. Neuropsychological examination: Approaches; Approaches; Halstead Neuropsychological test battery, Luria Nebraska.
NOVEMBER/25	Seminars & Project work
DECEMBER/20	Semester Exam (Theory & Practical)
JANUARY/27. IV <sup>TH</sup> SEM	UNIT-I Methods for preventing problems and developing resourcefulness: Training family members, sibling's behavior change agents, Maintenance of parent raining. Development of academic skills- Teaching study skills to adults, improving study behavior through self- control technique. Assertiveness Training, Developing Assertive Behavior through Converts Modeling Training, Developing Assertive Behavior through Converts Modeling. Personal Appearance, Improving clients grooming.
FREBRUARY/25	UNIT-II Methods for Promoting Wise Decision- Making: With Children, Career Decision Making Evaluation of Problem Solving Competence. Social Interaction: Conversational Skills, Weight: Control: Psychological techniques, improving Physical Fitness, Cardio Vascular Problems: Psychological prevention. Drug Abuse: Drug abuse perception Reimforment of alternatives Peer Counseling: Peer Guidance program and behavioral interventions, Counselor Accountability System.
MARCH	UNIT-III Psychotherapeutic Counseling: Psychoanalytic Technique, Behavioral. Technique, Client centered technique, Community interventions and Group therapeutic techniques. Methods for Altering Maladaptive Behavioral deficits: Shyness, delinquency, depression, Speech and sexual dysfunctions.

APRIL	UNIT-IV Methods of altering inappropriate behavior: Marital maladjustment, child-misbehavior, homosexuality, and exhibitionism. Methods for altering maladaptive behavioral excesses: Excessive smoking, alcoholism, drug addiction and temper-outburst, physical aggression. Methods for altering fears and anxiety and treating psycho physiological disorders: test-anxiety, generalized anxiety, stress, school phobia, snake phobia, combination of fears, CHD, asthma and peptic ulcer.
MAY	Seminars & Project work
JUNE	Semester Exam

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**PROPOSED TEACHING PLAN FOR THE SESSION 2019-20**

**Class -PG Diploma in Psychological Guidance and Counseling (PGC)**

**PAPER-1 Psychological Guidance**

MONTH/DAYS	Proposed Plan
JULY /27	UNIT –I Meaning and Functions of guidance. The bases of present guidance approach Basic Principle and assumption of guidance. Guidance services. Difference between Guidance and Counseling.
AUGUST/24	UNIT –II Understanding Individual ( use of interviews and questionnaires) Appraisals of Aptitude for guidance appraisal of personal qualities and interest : (Test and Inventories rating scale, behavior descriptions. Anecdotal records. Socio- metric devices evaluation of achievement, Cumulative Records, Case study and follow-up.
SEPTEMBER/24	UNIT –III Organization of guidance programme in school. Problems of guidance in India. Types of guidance services, characteristics of a well organized guidance programme.
OCTOBER/18	UNIT –IV Guidance Services for children. Guidance Of young children. Elementary School Children, Junior high school children. Adolescents.
NOVEMBER/25	UNIT –V Guidance services to adults, vocational guidance, Guidance of adults. Guidance towards family life. guidance in personal adjustment, guidance to deviates, guidance in group situation appraisals of guidance programmes, Emerging Trends in guidance.
DECEMBER/20	Internship
JANUARY/27	Internship
FREBRUARY/25	Lab work &Project work
MARCH	Seminars &Practical Exams

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**PROPOSED TEACHING PLAN FOR THE SESSION 2019-20**

Class -PG Diploma in Psychological Guidance and Counseling (PGC)

PAPER-II Counseling Theories and Techniques

MONTH/DAYS	Proposed Plan
JULY /27	UNIT –I COUNSELLING- The art and Science of helping Meaning. Purpose and goals of Counseling with special reference to India. Professional issues. Ethics. Education and training of the counselor. Counseling relationship.
AUGUST/24	UNIT–II COUNSELLING PROCESS: Theories and Techniques of Counseling. Psychodynamic Approach, Freudian, Neo Freudian, Modern. Humanistic Approach: Existential client centered.
SEPTEMBER/24	UNIT –III Cognitive Approach: rational emotive, Transaction analysis. Behavioral Approach: Operant conditioning. Behavior Modification. Indian contribution Yoga and Meditation.
OCTOBER/18	UNIT –IV COUNSELLING APPLICATION - 1 Counseling in schools, Career Counseling, Alcohol and Drug Abuse, Group counseling, Crises Intervention, Counseling Case Studies for each of the above types Of counseling applications, counseling interview.
NOVEMBER/25	UNIT –V COUNSELING APPLICATION – 11 Management of- Shyness, Smoking, Depression, Stress, Marital Maladjustment ,Old age problems, Euresis, Phobias, Fear Of interview, Fear of stage performance, Problems in decision making.
DECEMBER/20	Internship
JANUARY/27	Internship
FREBRUARY/25	Lab work &Project work
MARCH	Seminars &Practical Exam

**TEACHING PLAN**  
**M.A. SEMESTER – I**  
**PAPER – I**  
**CLASSICAL SOCIOLOGICAL TRADITION**  
**SESSION 2019-20**

<b>MONTH</b>	<b>PLAN</b>
JULY	<b>Unit-I: Historical Development of the Emergence of Sociology</b> – Historical development of social thought; Tradition feudal economic and social structure.
AUGUST	<b>Unit-I: Historical Development of the Emergence of Sociology</b> – Impact of Industrial Revolution and New Mode of production on society and Economy; Emergence of Capitalist mode of production: Nature and Feature of Capitalism; Enlightenment and it's impact on thinking and reasoning.
SEPTEMBER	<b>Unit-II: August Comte</b> – Social Static's and Dynamics; Law of three stages; Hierarchy of Sciences; Positivism; Scheme of Social Reconstruction.
OCTOBER	<b>Unit-III: Emile Durkheim</b> – Social Facts; Mechanical and Organic Solidarity; Division of Labour; Theory of Suicide; Collective Representation.
NOVEMBER	<b>Unit-IV: Velfredo Pareto</b> – Theory of Social Change; Contribution of Methodology; Theory of the Circulation of Elite; Theory of Logical and Non-Logical Action.
DECEMBER	<b>Seminars and Projects Semester Exam</b>

**TEACHING PLAN**  
**SEMESTER - I SOCIOLOGY**  
**PAPER - II**  
**PHYLOSOPHICAL AND CONCEPTUAL FOUNDATION OF**  
**RESEARCH METHODOLOGY**  
**2019-20**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>
1	July	Unit-I	Philosophical Roots Of Social Research: Issues In The Theories Of Epistemology Forms And Types Of Knowledge
2	August	Unit-I	Validation Of Knowledge, Positivism And Its Critique Research Design, Steps And Process
3	September	Unit-II	Objectivity In Social Science: Scientific Methods In Social Science, Objectivity, Problems Of Objectivity Problems Of Concept And Theory, Hypothesis
4	October	Unit-III	Qualitative Methods In Social Research: Techniques And Methods Of Qualitative Research: Observation And Interview Guide, Case Study, Content Analysis, Experiences In Field Work
5	November	Unit-IV	Issues In Social Research: Issues In Qualitative Research, Theoretical Vs. Applied Research, Interdisciplinary Research
6	December		Semester Exam & Project Work



**TEACHING PLAN**  
**SEMESTER - I SOCIOLOGY**  
**PAPER - III**  
**SOCIAL CHANGE IN INDIA**  
**2019-20**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>
1	July	Unit-I	<b>Conceptual &amp; Theoretical Frame Work :</b> <ul style="list-style-type: none"> <li>a. Social change concepts, Characteristics &amp; Forms</li> <li>b. Linear Theory &amp; Cyclical Theory, Evolution &amp; Progress</li> </ul>
2	August	Unit-I	<ul style="list-style-type: none"> <li>c. Economic Factors &amp; Biotech Factors of Social Change</li> <li>d. Culture &amp; Development</li> </ul>
3	September	Unit-II	<b>Trends &amp; Processes of change in Modern India :</b> <ul style="list-style-type: none"> <li>a. Sanskritization</li> <li>b. Westernization</li> <li>c. Globalization</li> <li>d. Mass Media</li> </ul>
4	October	Unit-III	<b>Changes in Tribal &amp; Rural India :</b> <ul style="list-style-type: none"> <li>a. Changes in Tribal Society</li> <li>b. Changes in Rural Society</li> <li>c. Rural economy</li> <li>d. Tradition &amp; Modernity</li> </ul>
5	November	Unit-IV	<b>Changes in Urban &amp; Industrial India :</b> <ul style="list-style-type: none"> <li>a. Migration</li> <li>b. Development of Slums</li> <li>c. Development of Criminal Activities</li> <li>d. Welfare Measures &amp; Consequent changes</li> </ul>
6	December		Project Work & Semester Exam

**TEACHING PLAN**  
**SEMESTER - I SOCIOLOGY**  
**PAPER - IV**  
**RURAL SOCIOLOGY**  
**2019-20**

No.	MONTH		TEACHING PLAN
1	July	Unit-I	Characteristics & Approaches a. Rural Social Structure b. Characteristics of rural Society
2	August	Unit-I	c. Subltern Approaches d. Land Ownership and its types
3	September	Unit-II	Planned Change a. Panchayati raj b. Five Years Plan in India c. Changing Scenario of Indian Village d. Rural Leadership & Functionalism
4	October	Unit-III	<b>Rural Development &amp; Change</b> a. Agrarian Legislation & Land Reform b. Green Revolution c. Globalization & its impacts on Agriculture d. Power Structure in Rural India
5	November	Unit-IV	Welfare Measures & Consequents changes a. Community Development Projects b. Self Help Group c. MANREGA(Mahatma Gandhi Rural Employment Guarantee Act) d. Diversification of Occupation e. SSA (Sarv Siksha Abhiyan)
6	December		Project Work & Semester Exam

**M.A. SEMESTER – II**  
**PAPER – I**  
**CLASSICAL SOCIOLOGICAL THINKERS**  
**2019-20**

<b>MONTH</b>	<b>PLAN</b>
JANUARY	<b>Unit-I: Karl Marx</b> – Materialistic Interpretation of History; Class and Class Struggle; Alienation; Theory of Ideology; Theory of Surplus Value.
FEBRUARY	<b>Unit-II: Max Weber</b> – Theory of Social Action; Concept of Status, Class and Power; Sociology of Religion and Economic Development; Contribution to Methodology; Bureaucracy.
MARCH	<b>Unit-III: Talcott Parsons</b> – Social Action; Pattern Variables; Social Stratifications-Class, Gender & Race; Social System.
APRIL	<b>Unit-IV: Robert K. Merton</b> – Reference Group; Social Conformity and Anomie; Middle Range Theory; Functional Paradigm.
MAY	<b>Seminars and Projects, Semester Exam</b>

**TEACHING PLAN**  
**SEMESTER - II SOCIOLOGY**  
**PAPER - II**  
**QUANTITATIVE RESEARCH TECHNIQUES IN SOCIOLOGY**  
**2019-20**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>
1	Jan	Unit-I	Tools And Techniques Of Social Research: Techniques Of Survey Research, Interview, Preparations Of Questionnaire And Interview Schedule, Sampling Design, Sampling Error
2	Feb	Unit-II	Measurement And Scaling Techniques: Levels Of Measurement, Types Of Scales: Nominal And Ordinal Reliability And Validity Of Scaling, Measures Of Social Distance: Thurston, Lickert, And Bogardus Scale
3	March	Unit-III	Statistics In Social Research: Measures Of Central Tendency: Mean Median And Mode, Measures Of Dispersion: Stander
4	April	Unit-IV	Commuter Application And Social Research: Application Of Computer In Social Research, MS Office, Ethical Issues In Social Research: Use Of Computer In Data Processing, Processing Of Data: Classification, Tabulation, And Interpretation,
5	May		Project Work & Semester Exam

**TEACHING PLAN**  
**SEMESTER - II SOCIOLOGY**  
**PAPER – III**  
**SOCIOLOGY OF DEVELOPMENT**  
**2019-20**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>
1	Jan	Unit-I	Perspective on development a. Modernization b. Social Transformation c. Change in Social Structure in Contemporary India d. Economic Aspects of Human Development & Social Development
2	Feb	Unit-II	Indian Experiences on Development a. Sociological Appraisal of Five Year Plan b. Social Consequences of Economic Reforms c. Socio Culture Impact of Globalization d. Social Implication of Info Tech & Biotech Revolution
3	March	Unit-III	Consequences of Development : a. Indicators of Social Development b. Development & Socio Economic Disparities c. Ecological Perspectives of Development d. Development & Migration
4	April	Unit-IV	Issues & Development in Contemporary India a. Gender Discrimination b. Privatization c. Sustainable Development d. Issues of Community Development in India
5	May		Project Work & Semester Exam

**TEACHING PLAN**  
**SEMESTER - II SOCIOLOGY**  
**PAPER - IV**  
**INDIAN RURAL SOCIETY**  
**2019-20**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>
1	Jan	Unit-I	Tribal Society as Agrarian Society a. Structure & Characteristics of Tribal Society b. Tribe Cast & changing problems of Tribal's c. Agriculture & Landless Labor
2	Feb	Unit-II	Social Issues a. Migration b. Land Alienation c. Inequalities d. Rural Poverty
3	March	Unit-III	Contemporary Issues a. Health & Education b. Depeasantisation c. Changing Status of Rural Women d. Rural & Urban Community
4	April	Unit-IV	Peasant Women e. Cause & Types f. Tebhaga, Telangana, Naxalwadi g. Naxalite Movement in Contemporary India its origin & Causes h. Present Status Government Measures & People Response.
5	May		Project Work & Semester Exam

**M.A. SEMESTER – III**  
**PAPER – I**  
**CLASSICAL SOCIOLOGICAL THEORIES**  
**2019-20**

<b>MONTH</b>	<b>PLAN</b>
JULY	<b>Unit-I: Positivism</b> – Origin and basic postulates; Contribution of Comte; Contribution of Durkheim.
AUGUST	<b>Unit-I: Positivism</b> -Contribution of Max Weber; Criticism and present status.
SEPTEMBER	<b>Unit-II: Conflict Theory</b> – Origin and basic Postulates; Contribution of Karl Marx; Contribution of Dahrendorf; Contribution of Coser; Criticism and Present Status.
OCTOBER	<b>Unit-III: Structuralism</b> – Origin and basic Postulates; Contribution of Levistrauss; Contribution of Goldiner; Contribution of M. Foucault; Criticism and Present status.
NOVEMBER	<b>Unit-IV: Social Exchange Theory</b> – Intellectual Roots; Contribution of Levi-Strauss; Contribution of George C. Homans; Contribution of Peter M. Blau; Criticism and Present status.
DECEMBER	<b>Seminars and Projects, Semester Exam</b>

**TEACHING PLAN**  
**SEMESTER-III**  
**PAPER-II**  
**PERSPECTIVES OF STUDY TO INDIAN SOCIETY**  
**2019-20**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>	<b>PLAN</b>
1	July	Unit-1	<b>Distinctive Characteristics of Indian Society :</b>	
2	August	Unit-I	a. Configuration of Indian Society b. Consequences of Increasing Linkages & Network in Indian Society c. Village in Relation to the Wider World	
3	September	Unit-II	<b>Textual &amp; Structural Functionalism Perspective :</b> a. G.S. Ghurye b. S.C. Dubey c. M.N. Srinivas	
4	October	Unit-III	<b>Marxism :</b> a. D.P. Mukherjee b. A.R. Desai c. Criticism & Present Status	
5	November	Unit-IV	<b>Subaltern Perspective &amp; Civilization Perspective:</b> a. B.R. Ambedkar b. David Hardiman c. N.K. Bose d. Surjeet Sinha e. Criticism & Present Status	
6	December		Project Work & Semester Exam	



**TEACHING PLAN**  
**SEMESTER-III**  
**PAPER-III**  
**INDUSTRY AND SOCIETY IN INDIA**  
**2019-20**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>	<b>PLAN</b>
1	July	Unit-I	Industrial Sociology And Classical Sociological Tradition	
2	August	Unit-I	A-Development Of Industrial Sociology, Industry, Industrialization B-Division Of Labour C- Bureaucracy And Rationality D-Production Relation And Alienation	
3	September	Unit-II	Industrial Organization: A-Industrial Organization :Formal, Informal B-Industrial Management C-Scientific Management D-Sociology Of Work: Work Innovation ,Motivation Culture, Work, Satisfaction, Incentives And Its Effects	
4	October	Unit-III	Concept Of Industrialization And Social Problems Of Industrialization A-Migration B-Habitat And Settlement C-Environment D- Indebtedness of Industrial Workers	
5	November	Unit-IV	Technology Change And Automation A-Technology And Social Structure In Industry B-Socio Technological System C-Organisational change And Technological Change D-Automation And Its Consequences	
6	December		Project Work & Semester Exam	

**TEACHING PLAN**  
**SEMESTER - III**  
**PAPER - IV**  
**CRIMINOLOGY**

**2019-20**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>	<b>PLAN</b>
1	July	Unit-1	<b>Conceptual &amp; Theoretical Approaches :</b> a. Conceptual Approaches to Crime b. Legal & Sociological Approach	
2	August	Unit-I	c. Crime Deviance : Causes, Prevention & Control d. Theories on Crime Causation : Classical & Positivist	
3	September	Unit-II	<b>Types of Criminal &amp; Crime :</b> a. Types of Crime b. Juvenile Delinquency c. Women & Crime d. White Collar Crime	
4	October	Unit-III	<b>Changing Profile of Crime &amp; Criminals :</b> a. Corruption : Types, Causes & Consequences b. Cyber Crime : Causes, Prevention & Control c. Crime against Women : Causes, Prevention & Control d. Terrorism in India : Its Origin & Causes	
5	November	Unit-IV	<b>Theories of Punishment :</b> a. Retributive, Deterrent : Theories & Criticism b. Reformatory Theory : Probation & Parole c. Open Prison : Its Success & Failure d. Futility & Cost of Punishment	
6	December		Project Work & Semester Exam	

**M.A. SEMESTER – IV**  
**PAPER – I**  
**MODERN SOCIOLOGICAL THEORIES**  
**2019-20**

<b>MONTH</b>	<b>PLAN</b>
JANUARY	<b>Unit-I: Symbolic Interactionism</b> – Origin and Basic Postulates; Contribution of G.H. Mead; Contribution of H. Blumer; Contribution of E. Goffman; Criticism and Present status.
FEBRUARY	<b>Unit-II: Phenomenology</b> – Origin, Basic postulates of phenomenology; Contribution of Schutz; Contribution of Berger; Contribution of E. Husserl; Criticism and Present status.
MARCH	<b>Unit-III: Ethnomethodology</b> – Origin Basic postulates of Ethnomethodology; Contribution of Garfinkel; Contribution of Goffman; Contribution of Ckorel; Criticism and present status.
APRIL	<b>Unit-IV: Post Modernism</b> – Origin and Development; Contribution of Foucault; Contribution of Derrida; Contribution of Baudrillard; Criticism and present status.
MAY	<b>Seminars and Projects, Semester Exam</b>

**TEACHING PLAN**  
**SEMESTER - IV**  
**PAPER - II**  
**COMPARATIVE SOCIOLOGY**  
**2019-20**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>	<b>PLAN</b>
1	JANUARY	JANUARY	<b>Historical &amp; Social Context of Emergence of Sociology in the West :</b> a. <b>Emergence of Growth of Sociology in India</b> b. <b>Western Sociological Tradition</b> c. <b>Americanization of Sociology</b>	
2	FEBRUARY	FEBRUARY	<b>Central Themes in Comparative Sociology:</b> a. Modernity & Development b. Diversity & Multiculturalism c. Environment d. Globalization	
3	MARCH	MARCH	<b>Theoretical Concern in Comparative Sociology :</b> a. Problems of Theoring in Sociology b. Theoretical & Methodological Approaches in Sociology c. Sociology in India d. Trends of Sociology in India	
4	APRIL	APRIL	<b>Current Debates :</b> a. Contextualization b. Indigenization c. Use of Native Categories in The Analysis of Indian Society d. Text & Context	
5	MAY	MAY	Project Work & Semester Exam	

**SEMESTER - IV**  
**PAPER - III**  
**INDUSTRY AND SOCIETY IN INDIA**  
**2019-20**

No.	MONTH		TEACHING PLAN	PLAN
1	JAN	UNIT-I	Industrial Relation: A-Importance Of Human Relation At Work B-Conflict: Causes And Types, Resolution Of Conflict C-Collective Bargaining D-Worker Participation In Management E-Education Training And Development Of Manpower F-Labour Welfare In India	
2	FEB	UNIT-II	Contemporary Issues: A-Industrialization And Women Labour B-Industrialization And Child Labour C-Industrialization And Environment D-Problems Of Industrialization In Developing Countries	
3	MAR	UNIT-III	A-History Of Trade Unionism In India B-Objectives And functions Of Trade Union C-ILO D-Trade Unionism And Globalization	
4	APR	UNIT-IV	A-MNCS And Third World B-FDI And Third World C-International Agencies: World Bank And Third World Countries D-Status Of Industries In Third World Countries	
5	MAY		Project Work & Semester Exam	

**SEMESTER - IV**  
**PAPER - IV**  
**CRIMINOLOGY**  
**2019-20**

No.	MONTH		TEACHING PLAN	PLAN
1	JAN.	UNIT-I	<b>Roots of Correction to Prevent Crime:</b> <ul style="list-style-type: none"> <li>a. Socialization, Role of Family Values &amp; Education</li> <li>b. Correctional Programs in Prison : history of Prison, Reform in India</li> <li>c. Correctional Program : Meditational &amp; Recreation</li> <li>d. After Care &amp; Rehabilitation Program</li> </ul>	
2	FEB	UNIT-II	<b>Problems of Correctional Administration :</b> <ul style="list-style-type: none"> <li>a. Antiquated Jail manual &amp; Prison Act</li> <li>b. Over Crowding Lack of Inter Agency Coordination among Police Prosecution Judiciary &amp; Prison</li> <li>c. Prison Offenses</li> <li>d. Problem of Criminal Justice Administration</li> </ul>	
3	MAR	UNIT-III	<b>Victimological Perspectives :</b> <ul style="list-style-type: none"> <li>a. Historical Background of Victimology</li> <li>b. Victims Responsibility in Crime</li> <li>c. Compensation to Victims</li> <li>d. Violation of Prisoners Human Rights</li> </ul>	
4	APR	UNIT-IV	<b>Community Policing:</b> <ul style="list-style-type: none"> <li>a. Concept of Police</li> <li>b. Role of Police</li> <li>c. Concept of Judiciary</li> <li>d. Role of Judiciary</li> </ul>	
5	MAY		Project Work & Semester Exam	

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**PROPOSED TEACHING PLAN FOR THE SESSION 2019-20**

**DEPARTMENT OF BOTANY**

**SEMESTER 1, PAPER 1 -CELL BIOLOGY M.M. 80**

MONTH	CELL BIOLOGY
JULY Unit-I	<b>The dynamic cell:</b> Structural Organization of the plant cell, specialized plant cell type, chemical foundation, and biochemical energetic. <b>Cell wall</b> – Structure and functions, biogenesis growth.
AUGUST Unit-I & Unit II	<b>Plasma membrane:</b> Structure, models and functions, site for ATPases, ion carries, channels and pumps, receptors. <b>Chloroplast:</b> Structure, Genome organization, Gene expression, RNA editing
September Unit II & Unit III	<b>Mitochondria:</b> Structure, Genome organization, Biogenesis. <b>Plant Vacuole:</b> Tonoplast membrane, ATPases, transporters as a storage organelle. <b>Nucleus:</b> Structure, Nuclear Pore.
October Unit III	<b>Ribosome:</b> Structure and functional significance <b>Cell cycle and Apoptosis:</b> Control mechanisms, Role of cyclins dependent kinases Retinoblastoma and E2F proteins, cytokinesis and cell plate formation, mechanism of programmed cell death.
November Unit IV	<b>Other cell organelles:</b> Structure and functions of microtubules, Microfilaments, Golgi apparatus, Lysosome, Endoplasmic Reticulum. <b>Techniques in cell biology:</b> Immuno-techniques, in situ hybridization to locate transcripts in cell types FISH, GISH, Confocal microscopy, Flow Cytometry.
DECEMBER	<b>Revision,</b> Practicals done every month as per schedule

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Proposed Teaching Plan ( Session-2019-20)

**DEPARTMENT OF BOTANY**

**SEMESTER-I, PAPER- II –Genetics**

<b>MONTH</b>	<b>PAPER-II, GENETICS</b>
<b>JULY</b> <b>UNIT-I</b>	❖ <b>Chromatic Organization:</b> Chromosome structure and packaging of DNA, Nucleosome organization, molecular organization of centromere and telomere, nucleolus and ribosomal RNA genes, Euchromatin and heterochromatin, karyotype, banding pattern.
<b>AUGUST</b> <b>UNIT-I</b>	❖ <b>Chromatic Organization:</b> Specialized type of chromosomes, polytene, lamp brush, B chromosomes and sex chromosomes Molecular basis of chromosome pairing, chromosomal aberration and polyploidy.
<b>SEPTEMBER</b> <b>UNIT-II</b>	❖ <b>Mapping of Bacteriophage genome,</b> Phage phenotype, and recombination in phage, genetic transformation and transduction in bacteria.
<b>OCTOBER</b> <b>UNIT-III</b>	❖ <b>Genetic recombination &amp; genetic mapping:</b> Mechanism of crossing over, molecular mechanism of recombination, role of Rec-A and Rec-B, C, D enzyme, site specific recombination, linkage group, genetic marker
<b>NOVEMBER</b> <b>UNIT-IV</b>	❖ <b>Alien gene transfer through chromosome manipulation:</b> Transfer of whole genome, examples from Wheat, Arachis & Brassica. Transfer of individual chromosomes & chromosome segment, methods for detecting Alien chromatin production.  ❖ Characterization and utility of Alien addition & substitution lines, genetic basis of breeding and heterosis, exploitation of hybrid vigour.



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**PROPOSED TEACHING PLAN FOR THE SESSION 2019-20**

**DEPARTMENT OF BOTANY**

**SEMESTER I PAPER- III – Microbiology, Phycology and Mycology**

**Max.Marks 80**

Month	<b>Microbiology, Phycology and Mycology</b>
JULY Unit-I	<b>Archaeobacteria and Eubacteria:</b> General account, ultra structure nutrition and reproduction, biology and economic importance. <b>Cyanobacteria:</b> Salient feature and biological importance.
AUGUST Unit-I & II	<b>Viruses:</b> Characteristics and ultra structure of virus, isolation and purification of viruses, chemical nature, replication, transmission of viruses, economic importance. <b>Phytoplasma:</b> General characteristic and role in causing plant diseases.
SEPTEMBER Unit – III	<b>Phycology:</b> Algae in diversified habitats (terrestrial, freshwater, marine), thallus organization, cell ultra structure, reproduction (vegetative, asexual, sexual)  General account of Chlorophyta, Xanthophyta, Bacillariophyta, Phaeophyta and Rhodophyta.  Economic importance of algae.
OCTOBER Unit-IV	<b>Mycology:</b> General character of fungi, substrate relationship in fungi, cell structure, unicellular and multicellular, organization, cell wall composition, nutrition (saprobic, biotrophic, symbiotic)
NOVEMBER Unit -IV	<b>Mycology:</b> Reproduction, vegetative, asexual, sexual) heterothallism, heterokaryosis, Parasexuality, recent account of Mastigomycotina, Zygomycotina, Ascomycotina, Basidiomycotina, Deuteromycotina, Mycorrhiza, Fungi as biocontrol agent.

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**PROPOSED TEACHING PLAN FOR THE SESSION 2019-20**

**DEPARTMENT OF BOTANY**

**SEMESTER I PAPER- IV – Bryophyta, Pteridophyta and Gymnosperm**

**Max.Marks 80**

Month	<b>Bryophyta, Pteridophyta and Gymnosperm</b>
JULY  Unit-I	<b>Bryophyta:</b> General characters, distribution and classification.  General account of following orders: - Marchantiales, Jungernanniales
AUGUST  Unit-I & II	Anthocerotales, Sphagnales, Funariales & Polytrichales. <b>II</b> <b>Pteridophyta:</b> General characters and classification. Evolution of stele in Pteridophytes. General account of – Psilopsida, Lycopsida, Sphenopsida and Pteropsida
SEPTEMBER  Unit – II & III	Sphenopsida and Pteropsida <b>Gymnosperms:</b> General characters and classification.  Resemblances and difference between Gymnosperms, Pteridophyta and Angiosperms.  Distribution of Gymnosperms in India and their economic importance.
OCTOBER  Unit-III	Brief account of following families: Lygenopteridaceae, Medullosaceae, Glossopteridaceae, Caytoniaceae General account of order Pentoxylales.
NOVEMBER  Unit -IV	General account of following orders:  Cycadales, Ginkgoales, Coniferales, Ephedrales, Gnetales, Welwitchchiales.  Note : Life cycle of individual genera is not expected

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**PROPOSED TEACHING PLAN FOR THE SESSION 2019-20**

**DEPARTMENT OF BOTANY**

**M.Sc.BOTANY, SEMESTER -III, PAPER- I**

**Plant Development and Resource Utilization**

<b>MONTH</b>	<b>Course</b>
<b>JULY</b>  <b>UNIT I</b>	Introduction: Unique features of plant development  Seed germination and seedling growth, Metabolism of nucleic acids, proteins and Fat
<b>AUGUST</b>  <b>UNIT I ,UNIT II</b>	Mobilization of food reserves; tropisms; hormonal control of seedling growth; gene expression; use of mutants in understanding seedling growth  Leaf growth and differentiation: Determination, Phyllotaxy; control of leaf form; differentiation of epidermis (with special reference to stomata and trichomes) and mesophyll.
<b>SEPTEMBER</b>  <b>UNIT II UNIT III</b>	Root development, Organization of the Root Apical Meristem (RAM); lateral roots; root hairs; root-microbe interactions.  Shoot development, Organization of the Shoot Apical Meristem (SAM); cytological and molecular analysis of SAM; control of cell division and cell to cell communication; control of tissue differentiation, especially xylem and phloem.
<b>OCTOBER</b>  <b>UNIT III &amp; IV</b>	Secretory ducts and laticifers; wood development in relation to environmental factors.  Origin of Agriculture, Origin, evolution, botany, cultivation and uses of (i) Food, Forage and Fodder crops, (ii) Fiber crops, (iii) Medicinal and Aromatic Plants &
<b>NOVEMBER</b>  <b>UNIT IV</b>	(iv) Vegetable oil-yielding crops. Important fire-wood and timber-yielding plants and Non-wood Forest Products (NFPs) such as bamboos, rattans, raw materials for paper-making, gums, tannins, dyes, resins and fruits.  Practicals done every month as per schedule

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**PROPOSED TEACHING PLAN FOR THE SESSION 2019-20**

**DEPARTMENT OF BOTANY**

**M.Sc. BOTANY, SEMESTER- III, PAPER- II**

MONTH	Course
<b>JULY</b>  <b>UNIT- I</b>	<b>Ecosystem Organization:</b> Structure and functions; primary production (methods of measurement, global pattern, controlling factors); energy dynamics (trophic organization energy flow pathways, ecological efficiencies);
<b>AUGUST</b>  <b>UNIT -I</b>  <b>UNIT- II</b>	<b>Ecosystem Organization:</b> Litter fall and decomposition (mechanism, substrate quality and climatic factors) global biogeochemical cycles of C, N, P and S; mineral cycles (pathways, processes, budgets) in terrestrial and aquatic ecosystems.  <b>Vegetation organization:</b> Concepts of community and continuum; analysis of communities (analytical and synthetic characters); community coefficients, inter-specific association ordination, concept of ecological niche.
<b>SEPTEMBER</b>   <b>UNIT- II</b>  <b>UNIT- III</b>	<b>Vegetation development:</b> Temporal changes (cyclic and non-cyclic); mechanism of ecological succession (relay floristic and initial floristic composition; facilitation, tolerance and inhibition models); changes in ecosystem properties during succession.  <b>Biological diversity:</b> Concept and levels; role of biodiversity in ecosystem functions and stability; speciation and extinction; IUCN categories of threat; distribution and global patterns; terrestrial biodiversity hot spots; inventory.
<b>OCTOBER</b>  <b>UNIT -III</b>  <b>UNIT-IV</b>	<b>World centers of primary diversity of domesticated plants:</b> The Indo-Bumese center, plant introductions and secondary centers.  <b>Climate, Soil and Vegetation patterns of the world:</b> Life zones, major biomes and major vegetation and soil types of the world.
<b>NOVEMBER</b>  <b>UNIT- IV</b>	<b>Climate, Soil and Vegetation patterns of India:</b> Life zones, major biomes and major vegetation and soil types of India.

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**PROPOSED TEACHING PLAN FOR THE SESSION 2019-20**

**DEPARTMENT OF BOTANY**

**SEMESTER III, PAPER III Biotechnology I- Genetic Engineering of Plants and Microbes**

MONTH	Biotechnology I- Genetic Engineering of Plants and Microbes
<b>JANUARY</b>  <b>UNIT I</b>	<b>Biotechnology:</b> Basic concepts, Principles and scope.  <b>Recombinant DNA technology:</b> Gene cloning, Principles and Techniques.  Construction of Genomics/ cDNA libraries, choice of vectors, DNA synthesis and sequencing.
<b>FEBRUARY</b>  <b>UNIT II</b>	Polymerase chain reaction, DNA fingerprinting, Basic concepts of Bioinformatics, Functional Genomic, Micro array, Protein profiling and its significance.
<b>MARCH</b>  <b>UNIT III</b>	<b>Genetics Engineering of plants:</b> Aims, strategies for development of transgenics (with suitable examples).  <b>Agro Bacterium:</b> The Natural Genetic Engineer,  T-DNA and Transposon mediated gene tagging,  Chloroplast transformation and its utility, Intellectual Property Rights (IPR)
<b>APRIL</b>  <b>UNIT III &amp; IV</b>	<b>Microbial Genetic Manipulation:</b> Bacterial transformation, selection of recombinant and transformation, genetic improvement of industrial microbes and nitrogen fixers type and design of fermenters, immobilization of enzymes.
<b>MAY</b>	Revision    Practicals done every month as per schedule

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**PROPOSED TEACHING PLAN FOR THE SESSION 2019-20**

**DEPARTMENT OF BOTANY**

**M.Sc.-BOTANY SEMESTER III, PAPER IV - Ethnobotany**

<b>MONTH</b>	<b>Topic</b>
<b>JULY</b>  <b>UNIT I</b>	<b>Ethnobotany</b> : History, general account and its sub disciplines. Interdisciplinary approaches & aim of ethno botany. Main world centers of Ethnobotanical studies, workers & literature of Ethno botany Ethnobotany with special reference to Chhattisgarh.
<b>AUGUST</b>  <b>UNIT I ,UNIT II</b>	Ethnobotany in relation to national priorities and health care programme. Ethnobotanical Research done in India: Ethnobotany in relation to national priorities and health care programme. Practical application of ethnobotany for tribal development programme. Methods and techniques in ethnobotany. General account of major and minor tribes of Chhattisgarh with special reference to Gond ,Kamar ,Baiga , Abujhmara.
<b>SEPTEMBER</b>  <b>UNIT II UNIT III</b>	Ethnobotanical aspect of Art & literature. Abstract ethnobotany with special reference to folklore, Taboos, Majico-religious beliefs. Ethnobotanical importance of Bacteria, Algae, Fungi, Bryophyta, Pteridophyta and Gymnosperm.
<b>OCTOBER</b>  <b>UNIT III</b>	Ethnoveterinary medicines from plants. Major & Minor Forest Products (NWFPs) of Chhattisgarh. Ethnobotany in relation to livelihood security reference to tribes.
<b>NOVEMBER</b>  <b>UNIT IV</b>	Ethnobotanical study of following plants with special reference to their medicinal importance 1. <i>Azadirachta indica</i> (Neem) 2. <i>Emblica officinalis</i> (Amla) 3. <i>Ricinus communis</i> (Andi) 4. <i>Madhuca indica</i> (Mahuaa) 5. <i>Cassia fistula</i> (Amaltash) 6. <i>Ficus religiosa</i> (Pipal) 7. <i>Oscimum sanctum</i> (Tulsi) 8. <i>Asparagus racemosus</i> (Satavar) 9. <i>Aloe vera</i> (Ghrit kumari) 10. <i>Andographis paniculata</i> (Bhui neem). Practicals done every month as per schedule

## TEACHING PLAN

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Proposed Teaching Plan ( Session-2019-20)

### DEPARTMENT OF BOTANY

#### SEMESTER-III PAPER- IV Elective Course- ( Microbial Ecology)

MONTH	PAPER- IV ( Microbial Ecology)
<b>JULY</b> <b>UNIT-I</b>	<b>Ecological Groups:</b> ❖ Ecological groups of microorganism. Microbial growth. Effect of the environment on microbial growth.
<b>AUGUST</b> <b>UNIT-I&amp;II</b>	❖ Gram positive and Gram negative bacteria, Cyanobacteria, sulphur and iron oxidizing bacteria, Methanotrophs, Mycobacterium, Spore forming bacteria Unit  <b>❖ Microbial interaction and industrial Microbiology:</b> A. Plant-microbe (Phyllosphere and phylloplane
<b>SEPTEMBER</b> <b>UNIT-II</b>	<b>❖ Microbial interaction and industrial Microbiology:</b> B. Microbe-microbe.  <b>❖ Animal microbe interaction. ❖ Microbes in Industry:</b> • Acid production • Alcohol production • Antibiotic production
<b>OCTOBER</b> <b>UNIT-III</b>	<b>❖ Soil Microbiology:</b> Soil as a habitat for micro-organisms  ❖ Rhizosphere and Rhizoplane microorganisms.  ❖ Organic matter decomposition.  ❖ Role of micro-organisms in Biogeochemical Cycles, Nitrogen fixation by microorganisms
<b>NOVEMBER</b> <b>UNIT-IV</b>	<b>❖ Water Microbiology:</b> Types of water and water micro-organisms  ❖ Microbial Water Pollution, Water Treatment, Bacteriological analysis of water.  ❖ Air Microbiology: Distribution of microbes in air.  ❖ Indoor aero microbiology, Aeroallergens and allergic disorders by air microflora.  ❖ Collection and enumeration of aeroallergen.

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**PROPOSED TEACHING PLAN FOR THE SESSION 2019-20**

**DEPARTMENT OF BOTANY**

**M.Sc.-SEMESTER - II, PAPER 1 – Taxonomy and Diversity of Angiosperms**

<b>MONTH</b>	<b>Course</b>
JANUARY  Unit-I	Origin of Intrapopulation Variations: population and the environment, ecades and ecotypes; Taxonomic hierachy major and minor categories; the species concept. Plant Nomenclature- Salient features of international code of Botanical Nomenclature, Binomial Nomenclature.
FEBRRUARY  Unit II	Taxonomic evidence: Morphology, Anatomy, Palynology, Embryology, Cytology, Photochemistry, Genome analysis and Nucleic acid hybridization.  Taxonomic tools- Herbarium, Flora, Taxonomic Literature  GIS (Geographical information system).
MARCH  Unit III & UNIT-IV	Fossil Angiosperms, Sustainable utilization of Bio- rurces. Systems of Angiosperm classification- Bentham and Hooker, Hutchinson, Takhatjan & Cronquist. Study of following families with particular reference to systematic position, phylogeny, Evolutionary trends and economic importance. Dicot families: Ranunculaceae, Magnoliaceae, Nymphaeaceae, Capparidaceae, Meliaceae, Tiliaceae, Cucurbitaceae, Leguminosae (Fabaceae) (Caesalpinoideae, Mimosoideae, Papileonoideae)
APRIL  Unit IV	,Umbelliferae (Apiaceae), Lythraceae, Mytraceae, Rubiaceae, Apocynaceae, Asclepiadaceae, Solanaceae, Labiateae (Lamiaceae), Verbinaceae, Euphorbiaceae; Compositeae. Monocot families- Orchidaceae, Zingiberaceae, Liliaceae, Cyperaceae, Gramineae (Poaceae).
MAY	Revision & Practical Exam
	Practicals done every month as per schedule



## TEACHING PLAN

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Proposed Teaching Plan ( Session-2019-20)

### DEPARTMENT OF BOTANY

#### SEMESTER-II, PAPER- II - Molecular Biology

MONTH	PAPER-II Molecular Biology
<b>JANUARY</b> <b>UNIT-I</b>	RNA and DNA structure A, B and Z Forms, replication, Transcription, Translation, DNA damage and repair mechanism, Inherited human diseases –causes.
<b>FEBRUARY</b> <b>UNIT-II</b>	Molecular cytogenetics : Nuclear DNA concept, C-value paradox, Cot curve and its significance, restriction mapping – concept and techniques, multi-gene families and their evolution, in situ hybridization and techniques, chromosome, microdissection and microcloning.
<b>MARCH</b> <b>UNIT-III</b>	<b>Gene structure and expression:</b> Fine structure of gene, cis-trans test, fine structure analysis of eukaryotes introns and their significance, RNA splicing, regulation of gene expression in prokaryotes and eukaryotes.  ❖ <b>Protein sorting:</b> Targeting of proteins to organelles.
<b>APRIL</b> <b>UNIT-IV</b>	<b>Mutation:</b> Spontaneous and induced mutation, physical and chemical mutagens, molecular basis of gene, transposable elements in prokaryotes and eukaryotes, mutation induced by transposones, site-directed mutagenesis, translocation tester sets, Robertsonian translocation, B-A translocation.

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**DEPARTMENT OF BOTANY**

**SEMESTER- II , PAPER- III –Plant Physiology**

**Max.Marks 80**

MONTH	Course- Plant Physiology
<b>July</b> <b>Unit-I</b>	<b>Membrane transport and translocation of water and solutes:</b> Plant-water relation, mechanism of water transport through xylem, root microbe interactions in facilitating nutrient uptake,
<b>August</b> <b>Unit I &amp; II</b>	comparison of xylem and phloem transport, phloem loading and unloading, passive active active solute transport, membrane transport.  Structure and Mechanism of opening & closing of stomata, factors affecting transpiration. <b>Signal transduction:</b> Overview, receptors and G proteins, Phospholipids signaling, role of cyclic nucleotides, calcium
<b>September</b> <b>Unit-II &amp; III</b>	calcium-calmodulin cascade, diversity in protein kinases and phosphatases, specific signaling mechanism, two component sensor regulator system in  <b>Stress Physiology:</b> Plant responses to biotic and a-biotic stress, mechanisms of biotic and abiotic stress tolerance, HR fundamental and SAR, water deficit and drought resistance, salinity stress, metal toxicity, freezing and heat stress
<b>October</b> <b>Unit -III</b>	<b>Fundamentals of enzymology:</b> General aspect, allosteric mechanism regulatory and active sites, isozymes, kinetics of enzymatic catalysis, Michaelis-Menton equation and its significance.
<b>November</b> <b>Unit -IV</b>	<b>Sensory Photobiology:</b> History of discovery of phytochromes and cryptochrome  light induced responses, cellular localization, and molecular mechanism of action of photomorphogenic receptors.

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**PROPOSED TEACHING PLAN FOR THE SESSION 2019-20**

**DEPARTMENT OF BOTANY**

**SEMESTER II, PAPER IV -**

**PLANT METABOLISM**

Month	Course
JAN Unit-I	<b>Photosynthesis:</b> General concepts and historical background, evolution of photosynthetic apparatus, photosynthetic pigments and light harvesting complexes, photo-oxidation of water mechanism of electron and proton transport, carbon assimilation – The Calvin cycle, photorespiration and its significance, the C <sub>4</sub> cycle, the CAM pathway, biosynthesis of starch and sucrose, physiological and ecological considerations.
FEB Unit II	<b>Respiration and Lipid Metabolism:</b> Overview of plant respiration, glycolysis, the TCA cycle, electron transport and ATP synthesis, Pentose phosphate pathway, glyoxylate cycle, alternative oxidase system, structure and function of lipids, fatty acid biosynthesis, synthesis of membrane lipid and storage lipids and their catabolism.
MAR UNIT III	<b>Nitrogen and Sulphur Metabolism:</b> Overview, biological nitrogen fixation, nodule formation and nod factors, mechanism of nitrate uptake and reduction, ammonium assimilation, sulphur uptake, transport and assimilation.
APRIL Unit IV	<b>Plant growth regulator and elicitors:</b> Physiological effect and mechanism of action of auxins, gibberellins cytokinins, ethylenes, abscissic acid, brassinosteroids, polyamines, jasmonic acid and hormone receptors.  <b>The Flowering Process:</b> Photoperiodism and its significance, endogenous clock and its regulation, floral induction and development – Genetic molecular analysis, role of vernalization.
MAY	Practicals done every month as per schedule.  Theory and practical exams.

**PROPOSED TEACHING PLAN FOR THE SESSION 2019-20**

**DEPARTMENT OF BOTANY**

**M.Sc.BOTANY SEMESTER IV, PAPER I**

**Plant Reproduction**

MONTH	Topic
JANUARY UNIT I	Reproduction: Vegetative options and sexual reproduction; flower development; genetics of floral organ differentiation; homeotic mutant in <i>Arabidopsis</i> and <i>Antirrhinum</i> ; sex determination.
FEBRUARY UNIT I ,UNIT II	Male Gametophyte: Structure of anthers; microsporogenesis, role of Tapetum; Pollen development and Gene expression; Male sterility; Sperm dimorphism pollen germination, Pollen storage; Pollen allergy Female Gametophyte: Ovule development; megasporogenesis; organization of the embryo sac, structure of the embryo sac cells.
MARCH UNIT II UNIT III	Pollen-pistil interaction and Fertilization: Global Characteristics, Pollination mechanisms ; breeding systems; commercial considerations; structure of the pistil; Pollen-stigma interactions, Sporophytic and Gametophytic self compatibility (cytological, biochemical and molecular aspects); double fertilization, in-vitro fertilization.
APRIL UNIT III	Seed development and Fruit growth: Endosperm development during early, maturation and desiccation stages; embryogenesis, ultra structure and nuclear cytology; cell lineages during late embryo development; storage proteins of endosperm and embryo; Polyembryony; Apomixis; Embryo culture; Dynamics of fruit growth; Biochemistry and Molecular biology of fruit maturation. Latent life-dormancy: Importance and types of dormancy; Seed dormancy; overcoming seed dormancy; Bud dormancy;
MAY UNIT IV	Senescence and programmed Cell death (PCD): Basic concepts, types of cell death, PCD in the life cycle of plants, metabolic changes associated with senescence and its regulation; influence of hormones and environmental factors on Senescence. Practicals done every month as per schedule

**PROPOSED TEACHING PLAN FOR THE SESSION 2019-20**

**DEPARTMENT OF BOTANY**

**M.Sc.BOTANY SEMESTER IV, PAPER- II**

**Plant Ecology & Conservation**

<b>MONTH</b>	<b>Topic</b>
<b>JANUARY</b>  <b>UNIT- I</b>	<b>Air Pollution:</b> Kinds, sources, quality parameters; Effects on plants and ecosystems. Climate change, Green house gases (CO <sub>2</sub> , CH <sub>4</sub> , NO <sub>2</sub> , CFCs: sources, trends and role) Ozone layer and Ozone hole, consequences of climate change (CO <sub>2</sub> fertilization, Global Warming, Sea level rise, UV radiation).
<b>FEBRUARY</b>  <b>UNIT- II</b>	<b>Water Pollution &amp; Soil Pollution:</b> Kinds, source, quality parameters, effects on plants and ecosystems. Radioactive pollution. Noise Pollution.
<b>MARCH</b>  <b>UNIT- III</b>	<p>Plant used in Social forestry, Agro forestry and in pollution control, Extinction, Environmental status of plants based on International Union for Conservation of Nature (IUCN), Air conditioning by plants.</p> <p><b>Ecosystem Stability:</b> Concept (resistance and resilience), Ecological perturbances (natural and anthropogenic) and their impact on plants and ecosystems, Plant invasion, Environmental impact assessment, Ecosystem restoration.</p>
<b>APRIL</b>  <b>UNIT- IV</b>	<p><b>Ecological Management:</b> Concepts, Conservation and management of natural resources, Principles of Conservation Sustainable development &amp; Sustainability Bio-indicators</p> <p><b>Strategies for conservation, <i>in-situ conservation</i></b> :International efforts and India initiatives; protected areas in India-sanctuaries, national parks, biosphere reserves, wetlands, mangroves and coral reefs for conservation of wild biodiversity.</p> <p><b>Strategies for conservation, <i>Ex-situ conservation</i></b>: Principles and practices, botanical garden, field gene banks, seed banks, in vitro repositories, cryobanks and general account of the activities of botanical survey of India {BSI} National bureau of plant genetic resources {NBPGR} Indian council of agriculture research {ICAR} Council of scientific and industrial research {CSIR} and the department of biotechnology {DBT} for conservation, non formal conservation efforts.</p>

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**DEPARTMENT OF BOTANY**

**SEMESTER IV, PAPER III, Plant Cell, Tissue and Organ Culture**

<b>MONTH</b>	<b>Plant Cell, Tissue and Organ Culture</b>
<b>JANUARY</b>  <b>Unit – I</b>	<b>PLANTS CELL AND TISSUE CULTURE:</b> General introduction, history, scope, concept of cellular differentiation totipotency.  <b>TISSUE CULTURE MEDIA:</b> Media constituents, Media selection, Media preparation.  <b>CELL CULTURE:</b> Isolation of single cells, Suspension cultures, Culture of Single cell, Plant cell reactors, application of cell culture.  <b>CLONAL PROPAGATION-</b> Auxillary bud proliferation, Meristem and shoot tip culture, bud culture.
<b>FEBRUARY</b>  <b>UNIT I &amp; II</b>	<b>ORGANOGENESIS AND ADVENTIVE EMBRYOGENESIS:</b> Fundamental aspects of morphogenesis via callus formation, direct adventitive organ formation.  <b>SOMATIC EMBRYOGENESIS AND ANDROGENESIS:</b> Mechanism, techniques and utility.  <b>SOMATIC HYBRIDIZATION:</b> Methods of Protoplast isolation, Spontaneous and induced methods of protoplasm fusion, identification and selection of hybrid cells, Regeneration of hybrid plants, Vertification and Characterization of somatic hybrids, Cybrids, Possibilities achievements and limitation of protoplast research.
<b>MARCH</b>  <b>UNIT – III</b>	<b>CRYOPRESERVATION AND GERMPLASM STORAGE:</b> Raising sterile tissue cultures, Addition of cryoprotectants and pre-treatment, freezing, storage, thawing, determination of survival viability. Plant growth and generation, vertification, encapsulation and dehydration, slow growth method.
<b>APRIL</b>  <b>UNIT IV</b>	<b>APPLICATION OF PLANT TISSUE CULTURE:</b> artificial seeds, Production of hybrids and somaclones.  <b>PRODUCTION OF SECONDARY METABOLITES/ NATURAL PRODUCTS:</b> Morphological and chemical differentiation, medium composition for secondary product formation, Growth production patterns, Environmental factors, Selection of cell lines producing high amounts of a useful metabolite, Problems associated with secondary metabolite production, Immobilized cell system.  <b>TRANSGENICS IN CROP IMPROVEMENT:</b> Transgenic for Resistance of biotic and abiotic stresses, Transgenic for quality modification, Terminator seed technology.
<b>MAY</b>	Revision, Practicals done every month as per schedule

**PROPOSED TEACHING PLAN FOR THE SESSION 2019-20**

**DEPARTMENT OF BOTANY**

**M.Sc.BOTANY SEMESTER IV, PAPER IV**

**Elective Course – Ethnobotany**

MONTH	Topic
<b>JANUARY</b>  <b>UNIT I</b>	Plant Conservation by Tribes & role of Joint Forest Management Programme in Plant Conservation specially People's Protected Area  Ethnobotany and its role in domestication and conservation of native plant and genetic resources.
<b>FEBRUARY</b>  <b>UNIT I ,UNIT II</b>	The protection of plant varieties and Intellectual Properties Rights. General account of conservation of medicinal plants. General role of Aromatic plants. General ideas of various system of medicine using plants. Basic knowledge of Ayurvedic, Homeopathic, Allopathic system of medicine.
<b>MARCH</b>  <b>UNIT II UNIT III</b>	General idea of active principles of Plants. Herbal Cosmetics. General account of toxic plants and Harmful effect of plants on human society with special reference to allergic plants of Chhattisgarh. Endemic plants of Chhattisgarh. Endangered plants of Chhattisgarh
<b>APRIL</b>  <b>UNIT III</b>	Techniques of cultivation and marketing of Aromatic plants –Podina, Lemon grass Kasturibhindi, Palmarosa. Techniques of cultivation ,marketing and importance of mushroom Techniques of cultivation, extraction of juice and importance of wheat grass. Ethnobotanical study of the following plants with special reference to their medicinal importance- 1. <i>Allium sativum</i> (Lahsun) 2. <i>Aegle marmelos</i> (Bel) 3. <i>Terminallia arjuna</i> (Arjun)
<b>MAY</b>  <b>UNIT IV</b>	4 <i>T. bellerica</i> (Bahera) 5. <i>T chebula</i> (Harra) 6. <i>Calendula officianallis</i> (Calendula) 7. <i>Thuja occidentalis</i> (Vidhya) 8 <i>Dhatura alba</i> (Dhatura) 9. <i>Argemone maxicana</i> (Pili kateli) 10. <i>Ephedra</i> sps. ( Ephedra).  Practical's done every month as per schedule

**Govt. D.B.Girls P.G.College Raipur (C.G.)**

[www.dbgirls.org](http://www.dbgirls.org) email [dggirls@yahoo.co.in](mailto:dggirls@yahoo.co.in), phone/ fax 0771-2229248

**PROPOSED TEACHING PLAN FOR THE SESSION 2019-20**

**DEPARTMENT OF BOTANY**

**SEMESTER IV, PAPER IV -**

**ELECTIVE COURSE MICROBIAL ECOLOGY**

Month	Topic
JAN Unit-I	<b>Environmental Microbiology:</b> Waste as a resource, Biogas production. Sewage Treatment. Heavy metal tolerance in microbes & mechanism of heavy metal resistance Biodegradation. Biodeterioration, Bioremediation, Biofertilizers , Biopesticides
FEB Unit II	<b>Diseases:</b> symptoms and types of bacterial disease- citrus canker, bacterial blight of rice, scab of potato, angular leaf spot of cotton, leaf spot of mango. <b>Etiology of Nematodal diseases</b> -ear cockle of wheat, molyar disease of barley, root knot of vegetable crops. <b>Etiology transmission of viral diseases</b> -Leaf curl of papaya, mosaic of bhindi, yellow mosaic of legumes, bunchy top of banana. <b>Etiology mycoplasmal diseases</b> -grassy shoot of sugarcane, mycoplasmal disease of potato, citrus greening, little leaf of brinjal. <b>Etiology of fungal diseases</b> - Downey mildews, powdery mildews, rusts, smuts & wilt.
MAR UNIT III	<b>Medical Microbiology:</b> <b>Protozoan Disease:</b> Name of diseases-Malaria, Giardiasis, Trypanosomiasis, Amoebiasis. <b>Fungal Disease:</b> Phycomycosis, Candidiasis, Actinomycosis, Dermatophytosis, Aspergillosis, Penicilliosis. <b>Bacterial Disease:</b> Tuberculosis, Diphtheria, Cholera, Shigellosis, Typhoid, and Tetanus. <b>Viral Disease:</b> Influenza, Polio
APRIL Unit IV	<b>Instrumentation &amp; Techniques</b> <b>Microscopy:</b> Light microscope, Electron Microscope (Transmission & Scanning), Colorimeter, Spectrophotometry, Chromatography, Electrophoresis, Laminar air flow, Collection sampling and identification of indoor microflora special reference to Library and Class rooms.
MAY	Practicals done every month as per schedule. Theory and practical exams.



PROPOSED TEACHING PLAN FOR THE SESSION 2019-20

SEMESTER-I

Month	Paper-I	Paper-II
July UNIT-I	<b>SYMMETRY AND GROUP THEORY IN CHEMISTRY:</b> Symmetry elements and symmetry operation, definitions of group, subgroup, relation between orders of a finite group and its subgroup. Conjugacy relation and classes. Point symmetry group. Schoenflies symbols, representations of groups by matrices (representation for the $C_n$ , $C_{nv}$ , $C_{nh}$ , $D_{nh}$ , etc. Groups to be worked out explicitly). Character of a representation. The great orthogonality theorem (without proof) and its importance. Character tables and their use; spectroscopy.	A. <b>NATURE OF BONDING IN ORGANIC MOLECULES:</b> Delocalized chemical bonding, conjugation, cross-conjugation bonding in fullerenes. Bonds weaker than covalent, alternant and non-alternant hydrocarbons, Crown ether complexes and cryptands. B. <b>AROMATICITY:</b> Aromaticity in benzenoid and non-benzenoid compounds. Huckel's rule, annulenes, anti-aromaticity, home-aromaticity. PMO approach for Aromaticity, Annulenes.
August UNIT-II	A. <b>METAL-LIGAND BONDING:</b> Limitation of crystal field theory, molecular orbital theory, octahedral, tetrahedral and square planar complexes, bonding and molecular orbital theory. B. <b>METAL <math>\pi</math> COMPLEXES:</b> Metal carbonyls, structure and bonding, vibrational spectra of metal carbonyls for bonding and structural elucidation, important reactions of metal carbonyls; preparation, bonding, structure and important reactions of transition metal nitrosyl, di-nitrogen and di-oxygen complexes; tertiary phosphine as ligand.	A. <b>CONFORMATIONAL ANALYSIS:</b> Conformational analysis of cycloalkanes, decalins, effect of conformation on reactivity, conformation of sugars, steric strain due to unavoidable crowding. B. <b>STEREOCHEMISTRY:</b> Elements of symmetry, chirality, molecules with more than one chiral center, methods of resolution, optical purity, stereospecific and stereoselective synthesis. Asymmetric synthesis. Optical activity in the absence of chiral carbon (Biphenyls, allenes and spiranes), chirality due to helical shape.
September UNIT-III	A. <b>METAL-LIGAND EQUILIBRA IN SOLUTION:</b> stepwise and overall formation constants and their interaction, trends in stepwise constants, factors affecting the stability of metal complexes with reference to the nature of metal ion and ligand, chelate effect and its	A. <b>REACTION INTERMEDIATES:</b> Generation, structure, stability and reactivity of carbocations, carbanions, free radicals, carbenes and nitrenes. Sandmeyer reaction, Free radical rearrangement and Hunsdiecker reaction.

	thermodynamic origin, determination of binary formation constants by pH-metry and spectrophotometry. B. <b>ISOPOLY ACID AND HETEROPOLY ACID:</b> Isopoly and heteropoly acids of Mo and W. Preparation, properties and structure. Classification, preparation, properties and structures of Borides, Carbides, Nitrides and Silicides, Silicates-classification and structure, Silicones-preparation, properties and application.	B. <b>ELIMINATION REACTIONS:</b> THE $E_2$ , $E_1$ and $E_{1cB}$ mechanism. Orientation of the double bond. Reactivity, effects of substrate structures, attacking base, the leaving group and the medium.
October  UNIT-IV	A. <b>METAL CLUSTERS:</b> Higher boranes, carboranes, metalloboranes and metallocarboranes, metal carbonyl and halide cluster, compounds with metal-metal multiple bonds. B. <b>CHAINS:</b> Catenation, Heterocatenation, Interactenation. C. <b>RINGS:</b> Borazines, Phosphazines.	<b>PERICYCLIC REACTIONS:</b> Classification of pericyclic reactions. Woodward-Hoffmann correlation diagrams. FMO and PMO approach. Electrocyclic reactions conrotatory and disrotatory motions, $4n$ , $4n+2$ and allyl systems. Cycloadditions – antarafacial and suprafacial additions, $4n$ and $4n+2$ system, $2+2$ addition of ketenes, 1, 3 dipolar cycloadditions and cheletropic reactions. Sigmatropic rearrangements – suprafacial and antarafacial shifts of H, sigmatrophic shifts involving carbon moieties, 3, 3- and 5, 5-sigmatrophic rearrangements. Claisen, Cope and Aza-Cope rearrangements. Ene reaction.
November	Revision	
Remark	Practicals done every month as per schedule	

Month	Paper-III	Paper-IV
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July  UNIT-I	<p><b>A. MATHEMATICAL CONCEPT IN QUANTUM CHEMISTRY:</b> Vector, Dot Cross and triple products. Complex numbers and co-ordinate transformations (Cartesian to Spherical Polar in Quantum Chemistry). Differential and Integral Calculus, Basis rules of differentiation and Integration Applications.</p> <p><b>B. QUANTUM MECHANICS:</b> The Schrodinger equation and the postulates of quantum mechanics. Discussion of solutions of the Schrodinger equation to some model systems viz., particle in a box, the harmonic oscillator, the rigid rotor, the hydrogen atom.</p>	<b>UNIFYING PRINCIPLES:</b> Electromagnetic radiation, interaction of electromagnetic radiation with matter-absorption, emission, transmission, reflection, refraction, dispersion, polarization and scattering. Uncertainty relation and natural line width and natural line broadening, transition probability, transition moment, selection rules, intensity of spectral lines, Born-Oppenheimer approximation, rotational, vibrational and electronic energy levels. Regions of spectrum, representation of spectra, F.T. spectroscopy, computer averaging, lasers.
August  UNIT-II	<b>BASICS OF THERMODYNAMICS:</b> Maxwell's thermodynamic relations and its applications. Reaction isotherm, Vant Hoff hypothesis. Partial molar properties; partial molar free energy, partial molar volume and partial molar heat content. Chemical potential, Gibbs Duhem equation, variation of chemical potential with temperature and pressure. Chemical potential of ideal gases, pure solids, liquids and mixture of ideal gases.	<b>MICROWAVE SPECTROSCOPY:</b> Classification of molecules in term of their internal rotation mechanism, determination of rotation energy of diatomic and polyatomic molecules, intensities of rotational spectral lined, effect of isotopic substitution on diatomic and polyatomic molecules, intensities of rotational spectral lines and parameters of rotational energy of linear and the transition frequencies, non-rigid rotators, spectral lines and parameters of rotational energy of linear and symmetric top polyatomic molecules. Application in determination of bond length.
September  UNIT-III	<b>ELECTROCHEMISTRY:</b> Electrochemistry of solution, Debye-Huckel Onsager treatment and its extension, ion solvent interactions. Debye-Huckel-Limiting Law. Debye-Huckel theory for activity coefficient of electrolytic solutions. Determination of activity and activity coefficient, ionic strength, Thermodynamics of electrified interface equations. Derivation of electrocapillarity, Lippmann equation (surface excess), methods of determination.	<b>SCATTERING SPECTROSCOPY:</b> Principle, instrumentations and application of Auger spectroscopy and Scanning Electron Microscopy for chemical characterization, electron diffraction of gases and vapours, The Wierl equation and co-related method, application of electron diffraction. Theory, instrumentation and application of turbidimetry, nephelometry and fluorometry. Fluorescence and phosphorescence and factors affecting them.
October  UNIT-IV	<b>CHEMICAL DYNAMICS:</b> Methods of determining rate laws, collision theory of reaction rates, steric factor, Activated complex theory, kinetic salt effects, steady state kinetics, and thermodynamic and Kinetic control	<b>RAMAN SPECTROSCOPY:</b> Classical and quantum theories of Raman effect, pure rotational, vibrational and vibrational rotational Raman spectra, selection rules mutual exclusion principle, Resonance Raman spectroscopy, Coherent anti Stokes Raman

	of reactions. Dynamic chain (Hydrogen-Bromine and Hydrogen-chlorine reactions) and Oscillatory reactions (Belousov-Zabolonsky reaction).	spectroscopy (CARS), Instrumentation, Application of Raman effect in molecular structures, Raman activity of molecular vibration, structure of CO <sub>2</sub> , N <sub>2</sub> O, SO <sub>2</sub> , NO <sub>3</sub> <sup>-</sup> , ClF <sub>3</sub> <b>B. MOSSBAUER SPECTROSCOPY:</b> Basic principles, spectral parameters and spectrum display. Application of the technique to the studies of (1) bonding and structures of Fe <sup>+2</sup> , and Fe <sup>+3</sup> compounds including those of intermediate spin, (2), Sn <sup>+2</sup> and Sn <sup>+4</sup> compounds.
November	Revision	
December	Practicals done every month as per schedule	

## SEMESTER-II

Month	Paper-I	Paper-II
January  UNIT-I	<b>REACTION MECHANISM OF TRANSITION METAL COMPLEXES:</b> Energy profile of a reaction, reactivity of metal complexes inert and labile complexes, kinetic application of valence bond and crystal field theories, kinetics of octahedral substitution, anation reactions, without metal ligand bond cleavage. Substitution reactions in square planar complexes, the trans effect. Redox reactions, electron transfer reactions, mechanism of one electron transfer reactions, outer sphere type reactions, cross reactions and Marcus-hush theory, inner sphere type reactions.	<b>A. ALIPHATIC NUCLEOPHILIC SUBSTITUTION:</b> The SN 2, SN 1 mechanisms. The neighbouring group mechanism, neighbouring group participation by and bond, anchimeric assistance. Reactivity effects of substrate structure, attacking nucleophile, leaving group and reaction medium, phase transfer catalysis, ambident nucleophile and regioselectivity.  <b>B. AROMATIC NUCLEOPHILIC SUBSTITUTION:</b> The S <sub>N</sub> Ar, SN 1 and benzyne mechanisms. Reactivity – effect of substrate structure, leaving group and attacking nucleophile. The von Richter, Sommelet-Hauser, and Smiles rearrangements.
February  UNIT-II	<b>ELECTRONIC SPECTRA AND MAGNETIC PROPERTIES OF TRANSITION METAL COMPLEXES:</b> Spectroscopic ground states, Correlation, Orgel and Tanabe-Sugano diagrams for transition metal complexes (d1-d9 states), Selection rules, mechanism for breakdown of the selection rules. Intensity of absorption, band width, spectra of d-d metal complexes of the type [M (H <sub>2</sub> O)] <sup>n+</sup> spin free and spin paired ML <sub>6</sub> complexes of other geometries, Calculations of Dq, B and parameters, spin forbidden transitions, effect of spin-orbit coupling, Spectrochemical and Nephelouxetic series. Magnetic properties of complexes of various geometries based on crystal field model, spin free-spin paired equilibria in octahedral stereochemistry.	<b>A. ALIPHATIC ELECTROPHILIC SUBSTITUTION:</b> Mechanisms of SE <sub>2</sub> , SE <sub>1</sub> , electrophilic substitution accompanied by double bond shifts. Effect of substrates, leaving group and the solvent polarity on the reactivity.  <b>B. AROMATIC ELECTROPHILIC SUBSTITUTION:</b> The arenium ion mechanism, orientation and reactivity. The ortho/para ratio, ipso attack, orientation in other ring systems. Vilsmeier reaction and Gattermann-Koch reaction
March	<b>A. TRANSITION METAL COMPLEXES:</b> Transition metal complexes with unsaturated organic molecules, alkanes, allyl, diene dienyl, arene and trienyl complex, preparations, properties, nature of bonding and	<b>ADDITION TO CARBON-CARBON MULTIPLE BONDS:</b> Mechanistic and stereochemical aspects of addition reactions involving electrophiles, nucleophiles and free radicals, regio-and

UNIT-III	<p>structure features, important reaction relating to nucleophilic and electrophilic attack on ligands and organic synthesis.</p> <p><b>B. TRANSITION METALS COMPOUND WITH BOND TO HYDROGEN:</b> Transition Metals Compounds with Bond to Hydrogen.</p>	chemoselectivity. Addition to cyclopropane ring. Hydrogenation of double and triple bonds, hydrogenation of aromatic rings Hydroboration, Michael reaction, Sharpless asymmetric epoxidation.
April UNIT-IV	<p><b>A. ALKYL AND ARYL OF TRANSITION METALS:</b> Types, routes of synthesis, stability and decomposition pathways, organocopper in organic synthesis.</p> <p><b>B. COMPOUNDS OF TRANSITION METAL – CARBON MULTIPLE BONDS:</b> Alkylidenes, low valent carbenes nature of bond and Structural characteristics.</p> <p><b>C. FLUXIONAL ORGANOMETALLIC COMPOUNDS:</b> Fluxionality and dynamic equilibria in compounds such as olefin, <math>\pi</math>-allyl and dienyl complexes.</p>	<b>ADDITION TO CARBON-HETERO MULTIPLE BONDS:</b> Mechanism of metal hydride reduction of saturated and unsaturated carbonyl compounds, acids, esters, nitriles. Addition of Grignard Reagent, Organo-Zn, Organo-Li reagent to carbonyls and unsaturated carbonyl compounds, Wittig reaction. Mechanism of condensation reactions involving enolates – Aldol, Knoevenagel and Stobbe reactions. Hydrolysis of esters and amides, ammonolysis of esters.
Remark	Practicals done every month as per schedule	

Month	Paper-III	Paper-IV
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January  UNIT-I	<p><b>A. APPLICATION OF MATRICES IN QUANTUM CHEMISTRY:</b> Addition and multiplication, inverse and transpose of matrices. Determinants, in quantum chemistry.</p> <p><b>B. ANGULAR MOMENTUM IN QUANTUM CHEMISTRY:</b> Angular Momentum, Ordinary Angular Momentum, Generalized Angular Momentum, Eigen-functions for Angular Momentum, Eigen values of Angular Momentum, Operators.</p> <p><b>C. APPROXIMATE METHOD:</b> The variation theorem, linear variation principle. Perturbation theory (first order and nondegenerate). Applications of variation method and perturbation theory to the Helium atom.</p>	<p><b>ULTRAVIOLET AND VISIBLE SPECTROSCOPY:</b> Various electronic transitions (185-800 nm), Beer – Lambert law, effect of solvent on electronic transitions, ultraviolet bands for carbonyl compounds, unsaturated carbonyl compounds, dyes, conjugated polyenes. Fieser-Woodward rules for conjugated dienes and carbonyl compounds, ultraviolet spectra of aromatic and heterocyclic compounds. Steric effect in biphenyls. Intensity of vibrational-electronic spectra and Frank-Condon principle for dissociation energy, rotational fine structure of electronic-vibrational spectra, Shape of some molecular orbitals viz., H<sub>2</sub>, He<sub>2</sub>, N<sub>2</sub>, O<sub>2</sub>. Electronic spectra of organic molecules, chromophores, application of electronic spectroscopy: spectrophotometric studies of complex ions, determination of ligand/metal ratio in a complex, identification of compounds, determination stability constants. Instrumentation.</p>
February  UNIT-II	<p><b>A. THERMODYNAMICS OF NON-IDEAL GASES:</b> Activity and Fugacity, Determination of Fugacity, Variation of Fugacity with Temperature and Pressure.</p> <p><b>B. NON-EQUILIBRIUM THERMODYNAMICS:</b> Fundamental concepts, forces and fluxes, Entropy production, Phenomenological Laws and Onsager's reciprocity relations.</p>	<p><b>A. INFRARED SPECTROSCOPY:</b> Introduction, simple and anharmonic oscillators in vibrational spectroscopy, diatomic-vibrating rotator, Modes of vibration in polyatomic molecules, vibration-coupling, Fourier Transform IR spectroscopy: instrumentation, interferometric spectrophotometer, sample handling, Factors influencing vibrational frequencies, Application of IR spectroscopy: Interpretation of IR spectra of normal alkanes, aromatic hydrocarbons, alcohols and phenols aldehydes and ketones, ethers, esters, carboxylic acids and amines and amides.</p> <p><b>B. FOURIER TRANSFORM INFRARED SPECTROSCOPY:</b> Introduction, instrumentation, Michelson interferometer, slow scan, stepped scan and rapid scan interferometers, sources and detectors, resolution and wave number measurements, sources of error, computation and recording advantages.</p>

March UNIT-III	<b>ELECTROCHEMISTRY – II:</b> Structure of electrified interfaces. Gouy-Chapman, Stern, Over potentials and exchange current density, Derivation of Butler – Volmer equation, Tafel plot. Semiconductor interfaces, Theory of double layer at semiconductor, electrolyte solution interfaces, structure of double layer interfaces. Effect of light at semiconductor solution interfaces. Electro catalysis influence of various parameters. Hydrogen electrode.	<b>MASS SPECTROMETRY:</b> Introduction, basic principles, separation of the ions in the analyzer, resolution, molecular ion peak, mass spectral fragmentation of organic compounds, factors affecting fragmentation, McLafferty rearrangement. Instrumentation, Characteristics of mass spectra of Alkanes, Alkenes, Aromatic hydrocarbons, Alcohols, Amines. Nitrogen rule, ring rule, Molecular weight and formula determination, Gas chromatography-Mass spectrophotometry: Introduction.
April UNIT-IV	<b>CHEMICAL DYNAMICS - II:</b> General features of fast reactions by flow method, relaxation method, flash photolysis and the nuclear magnetic resonance method. Dynamics of molecular motions, probing the transition state, dynamics of barrier less chemical reactions in solutions, dynamics of unimolecular reaction. [Lindemann – Hinshelwood and Rice-Ramsperger-Kassel-Marcus {RRKM}] theories of unimolecular reactions.	<b>A. NUCLEAR MAGNETIC RESONANCE SPECTROSCOPY:</b> Chemical shift values & correlation for protons bonded to carbon (aliphatic, olefinic & aromatic) & other nuclei (Alcohols, Phenol ends Carbonylic acids amines, amides and mercapto) chemical exchange effect of deuteration. Nuclear magnetic double resonance, contact shift reagents, solvent effects. Fourier transform techniques. <b>B. CARBON – 13 NMR SPECTROSCOPY:</b> General considerations, chemical shift (aliphatic, olefinic, alkyne, aromatic, heteroaromatic, and carbonyl carbon) coupling constants.
Remark	Practicals done every month as per schedule	

## SEMESTER-III



Month	Paper-I	Paper-II
July  UNIT-I	<p><b>A. ELECTRON SPIN RESONANCE SPECTROSCOPY:</b> Hyperfine coupling, polarization for atoms and transition metal ions, spin-orbit coupling and significance of g-tensors, application to transition metal complexes (having one unpaired electron)</p> <p><b>B. NUCLEAR QUADRUPOLE RESONANCE SPECTROSCOPY:</b> Quadrupole nuclei, quadrupole moments, electric field gradient, coupling constant, splittings, applications.</p>	<p>A. <b>BIOENERGETICS:</b> Standard free energy changes in biochemical reactions, exergonic, endergonic, Hydrolysis of ATP, synthesis of ATP from ADP.</p> <p>B. <b>ELECTRON TRANSFER IN BIOLOGY:</b> Structure and function of metalloproteins in electron transport processes – cytochromes and iron-sulphur proteins, synthetic models.</p> <p>C. <b>TRANSPORT &amp; STORAGE OF DIOXYGEN:</b> Heme proteins and oxygen uptake, structure and function of haemoglobin, myoglobin, haemocyanins and haemerythrin, model synthetic complexes of iron, cobalt and copper.</p>
August  UNIT-II	<p>A. <b>PHOTOELECTRON SPECTROSCOPY:</b> Basic principle both for atoms and molecules; Photo-electric effect, ionization process, Koopman's theorem, photoelectron spectra of simple molecules, Debye and Clausius-Mossotti equation, Auger electron spectroscopy, Determination of Dipole moment.</p> <p>B. <b>PHOTOACOUSTIC SPECTROSCOPY:</b> Basic Principle of Photo acoustic Spectroscopy(PAS), PAS – gases and condensed system Chemical and Surface application.</p>	<p>A. <b>METALLOENZYMES:</b> Zinc enzymes – carboxypeptidase and carbonic anhydrase. Iron enzymes – catalase, peroxidase and cytochrome P-450. Copper enzymes – superoxide dismutase. Molybdenum oxotransferase enzymes-xanthine oxidase.</p> <p>B. <b>ENZYME MODELS:</b> Host-guest chemistry, chiral recognition and catalysis, molecular recognition, molecular asymmetry and prochirality. Biomimetic chemistry, Cyclodextrin-based enzyme models, calixarenes, ionophores, synthetic enzymes of synzymes.</p>
September  UNIT-III	<p>A. <b>PHOTOCHEMICAL REACTION:</b> Interaction of electromagnetic radiation with matter, types of excitations, fate of excited molecule, quantum yield, transfer of excitation energy, Actinometry.</p> <p>B. <b>DETERMINATION OF REACTION MECHANISM:</b> Classification, rate constants and life times of reactive energy states – determination of rate constants of reactions. Effect of light intensity on the rate of photochemical reactions.</p>	<p>A. <b>ENZYMES:</b> Nomenclature and classification of Enzyme. Fischer's lock and key and Koshland's induced fit hypothesis, concept and identification of active site by the use of inhibitors.</p> <p>B. <b>CO-ENZYME CHEMISTRY:</b> Structure and biological functions of coenzyme A, Thiamine pyrophosphate, pyridoxal phosphate, NAD<sup>+</sup>, NADP<sup>+</sup>, FMN, FAD, lipoic acid, vitamin B<sub>12</sub>.</p>

	C. <b>MISCELLANEOUS PHOTOCHEMICAL REACTIONS:</b> Photo-Fries reactions of anillides, Photo-Fries rearrangement. Barton reaction. Singlet molecular oxygen reactions. Photochemical formation of smog. Photodegradation of polymers, Photochemistry of vision.	C. <b>BIOTECHNOLOGICAL APPLICATION OF ENZYMES:</b> Techniques and methods of immobilization of enzymes, effect of immobilization on enzyme activity, application of immobilization enzymes in medicine and industry. Enzymes and Recombinant DNA Technology.
October  UNIT-IV	<p>A. <b>PHOTOCHEMISTRY OF ALKENES:</b> Intramolecular reaction of the olefinic bond – geometrical isomerism, cyclisation reactions, rearrangement of 1, 4 &amp; 1, 5 dienes.</p> <p>B. <b>PHOTOCHEMISTRY OF CARBONYL COMPOUNDS:</b> Intramolecular reactions of carbonyl compounds, Cyclohexadienones. Intermolecular Cyloaddition reactions – dimerisations and oxetane formation.</p> <p>C. <b>PHOTOCHEMISTRY OF AROMATIC COMPOUNDS:</b> Isomerisations, additions and substitutions.</p>	<p>A. <b>BIOPOLYMER INTERACTIONS:</b> Forces involved in biopolymer interaction. Electrostatic charges and molecular expansion, hydrophobic forces, dispersion force interactions. Multiple equilibria and various types of binding processes in biological systems. Hydrogen ion titration curves.</p> <p>B. <b>THERMODYNAMICS OF BIOPOLYMER SOLUTIONS:</b> Thermodynamics of biopolymer solution, osmotic pressure, membrane equilibrium, muscular contraction and energy generation in mechanochemical system.</p> <p>C. <b>CELL MEMBRANE AND TRANSPORT OF IONS:</b> Structure and functions of cell membrane, ion transport through cell membrane, irreversible thermodynamic treatment of membrane transport and nerve conduction.</p>
November	Revision	
Remark	Practicals done every month as per schedule	

Month	Paper-III	Paper-IV
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July  UNIT-I	<b>STATISTICAL THERMODYNAMICS:</b> Concepts of probability, Maxwell Boltzmann distribution. Different ensembles and Partition functions. Thermodynamic function using appropriate partition function. Fermi-Diraic and Bose-Einstein Statistics and statistical basis of entropy. Heat capacity of Solids Debye and Einstein Models.	<b>SAMPLE PREPARATION, DIGESTION AND STATISTICAL ANALYSIS</b> A. Sampling - Collection, Preservation and preparation of sample, Techniques of sampling solids, liquids and gases, Operation of drying and preparing a solution of the analyte. Principle, methodology and application of different types of digestions such as acid digestion, base digestion, enzymatic and microwave digestion for liquid and solid materials. B. Evolution and proccession of Analytical Data, Precision and Accuracy, Types of Errors, Propagation of errors, Normal Distribution Curve, Standard deviation, Confidence limit, Graphical presentation of result-method of average, Method of Linear least square, Significant figures, Statistical aid to hypothesis testing-t-test, F-test, Correlation coefficient, Rejection of data.
August  UNIT-II	<b>POLYMER CHEMISTRY:</b> A. Importance of basics polymers, Basic concept monomers, Degree of polymerization linear branched and network polymers, classification of polymers polymerization, Condensation, addition, radical chain-ionic and co-ordination & copolymerization polymerization conditions and polymer reactions polymerization in homogenous and heterogenous system. B. Polymer structure and physical properties-crystalline melting point, T <sub>m</sub> -melting points of homogenous series, effect of chain flexibility and other steric factors, entropy and heat of fusion. The glass transition temperature T <sub>g</sub> relationship between T <sub>m</sub> & T <sub>g</sub> effect of molecular weight, diluents, chemical structure chain topology, branching & cross-linking property requirements and polymer utilization.	<b>SEPARATION TECHNIQUES</b> A. Efficiency of extraction, Selectivity of extraction, Extraction system, Method of Extraction, applications. B. Principle, classification of chromatographic techniques, Technique and applications of paper chromatographic, Thin-layer chromatographic, HPTLC, Column chromatography.
September	<b>A. SOLID STATE CHEMISTRY:</b> Crystal defects and Non-stoichiometry-Perfect and imperfect crystals, intrinsic and extrinsic defects – point defect, line and plane defects,	<b>THERMAL AND AUTOMATED METHODS</b> A. Principle, Instrumentation, Application of TGA, DTA and DSC methods.

UNIT-III	<p>vacancies – Schottky defects and Frankel defects. Thermodynamics of Schottky and Frenkel defect, formation of color centers, non-stoichiometry and defects.</p> <p><b>B. ELECTRONIC PROPERTIES &amp; BAND THEORY:</b> Metal insulators and semiconductors, electronic structure of solids band theory, band structure metals, insulators and semiconductors intrinsic and extrinsic semiconductors, doping semiconductors P-n junction, super conductors.</p>	B. Automated methods, Principle, instrumentation and application of flow injection analysis.
October UNIT-IV	<p><b>MICELLES AND ADSORPTION:</b> Micelles: Classification of surface-active agents, micellization, hydrophobic interaction, critical micellar concentration (CMC), factors affecting the CMC of Surfactants. Thermodynamics of micellization - phase separation and mass action models. Reverse micells, micro-emulsion. Micellar Catalysis, Surface tension capillary action, pressure difference across curved surface (Laplace equation), vapor pressure of droplets (Kelvin equation), adsorption isotherm.</p>	<p><b>ELECTRO ANALYTICAL TECHNIQUES</b> A. Principles and instrumentation of pH potentiometry, coulometry and conductometry. B. Basic principles, Diffusion current, polarized electrode, Micro electrode, Dropping Mercury Electrode Ilkovic equation, Polarographic wave, Qualitative analysis Stripping methods, Cyclic Voltammetry, Amperometric titration: curves, Differential pulse polarography and Square wave polarography.</p>
November	Revision	
Remark	Practicals done every month as per schedule	

## SEMESTER-IV

Month	Paper-I	Paper-II
January  UNIT-I	<p>A. <b>TERPENOIDS AND CAROTENOIDS:</b> Occurrence, isolation classification, nomenclature, general methods of structure determination of and synthesis Citral, Geraniol, Terpeneol, Menthol, Farnesol, Zingiberene, Santonin, Phytol, Abietic acid and Carotene.</p> <p>B. <b>ALKALOIDS:</b> Occurrence, isolation nomenclature and physiological action stereochemistry of steroids general methods of structure elucidation, degradation, classification, synthesis of the following alkaloids: Ephedrine, (++) Conine, Nicotine, Atropine, Quinine and Morphine</p>	<p><b>ACID BASES, ELECTROPHILES, NUCLEOPHILES AND CATALYSIS:</b> Acid-base dissociation, Electronic and structural effects, acidity and basicity. Acidity functions and their applications. Hard and soft acids and bases. Nucleophilicity scales. Nucleofugacity. The <math>\alpha</math>-effect. Ambivalent nucleophiles. Acid-base catalysis – specific and general catalysis. Bronsted catalysis, Enzyme Catalysis.</p>
February  UNIT-II	<p>A. <b>STERIODS:</b> Introduction, structural features, structure determination, stereochemistry and synthesis of Cholestrol, Biosynthesis of cholesterol, Bile acids, Androsterone, Testosterone, Estrone, Progesterone, Aldosterone.</p> <p>B. <b>PLANT PIGMENTS:</b> Occurrence, nomenclature and general method of structure determination. Synthesis of Quercetin, Myricetin, Diadzin, Cyanidin, Hisutin.</p>	<p><b>MATERIAL CHEMISTRY:</b> Preparation and Properties of Nanoparticles, Materials-Metals, Semiconductors, Ceramics (Oxide, carbides, sulphides, nitrides). Physical and Chemical methods. Reduction method, size and shape-controlled synthesis, Sol-gel methods, Optical properties, Electrical and Magnetic properties, Application of Nanoparticles.</p>
March  UNIT-III	<p>A. <b>DRUG DESIGN:</b> Development of new drugs, procedures followed in drug design, concept of lead compound and lead modifications, concept of prodrug and soft drug, structure activity relationship (SAR), factors affecting bioactivity, resonance, inductive effect. Theories of Drug Activity – Occupancy theory, rate theory and induced fit theory.</p> <p>B. <b>PHARMACOKINETICS AND PHARMACODYNAMICS:</b> Definition and general introduction.</p>	<p><b>NUCLEAR THEORY:</b> Nuclear cross section and nuclear radii, nuclear shells and magic numbers, theory of nuclear shell model, nuclear potentials, square well and simple harmonic oscillator potentials, application, liquid drop model. Semi-empirical mass equation, application and limitations.</p> <p><b>NUCLEAR FISSION:</b> Mass, energy and charge distribution of fission products, decay chains, prompt and delayed neutrons, liquid drop model of nuclear fission.</p> <p><b>NUCLEAR ENERGY:</b> Nuclear fission, chain reaction, multiplication factor, nuclear reactors.</p>

April  UNIT-IV	<p>A. <b>ANTIBIOTICS:</b> Constitution and synthesis of Penicillins, chloramphenicol, tetracycline and streptomycin, cephalosporin.</p> <p>B. <b>ANTI MALARIALS:</b> Synthesis and properties of the following Antimalarial: 8-amino quinoline derivatives – Pamaquine, Primaquine, Pentaquine, Isopentaquine, 4-amino quinoline derivatives – Santoquine, camaquine, Acridine derivatives – Mepacrine, Azacrin, Pyrimidine and Biguanid derivatives – Paludrine, Pyremethamine.</p>	<p><b>APPLIED RADIOCHEMISTRY:</b> Radioactive isotopes, purity and strength of radioisotopes. Radiochemical principle in the use of tracers, application of tracers in chemical investigations, Physico-chemical methods, Analytical applications, Age determinations, Medical applications, Agricultural application.</p> <p><b>DETECTION OF NUCLEAR RADIATIONS:</b> Techniques, Equipments, G.M&gt; counter, proportional counter, Scintillation counter, Counting Statistics.</p>
Remark	Practicals done every month as per schedule	

Month	Paper-III	Paper-IV
January  UNIT-I	<p><b>ADVANCED CHROMATOGRAPHY:</b></p> <p>A. Ion chromatography: Ion exchange equilibrium, Ion-exchange packing and Inorganic Applications.</p> <p>B. Size exclusion chromatography: Column packing, Theory of size of exclusion chromatography and applications.</p> <p>C. Supercritical fluid chromatography: Properties of supercritical fluid SFC-Instrumentation and operating variables, comparison with other types of chromatography, applications.</p> <p>D. Capillary Electrophoresis and capillary electro chromatography: overviews and applications</p>	<p><b>AIR POLLUTION MONITORING AND ANALYSIS</b></p> <p>Classification of air pollution monitoring levels, air quality, standards and index, monitoring and analysis of selected air borne pollutants: SO<sub>2</sub>, NO<sub>x</sub>, SPM, VOC's, Pb, CO<sub>2</sub>, POP's, Hg, carbon and ozone air pollution control devices Viz ESP, scrubber technique, baghouse filters etc. Atmospheric chemistry of acid rains, photochemical smog, greenhouse effect, global warming, ozone hole.</p>
February  UNIT-II	<p><b>X-RAY AND PROTON INDUCED SPECTROSCOPY</b></p> <p>A. X-Ray fluorescent method: Principles-Characteristics x-ray emission. Instrumentation x-ray tube, Radioactive sources. Wavelength dispersive instruments. Energy dispersive instruments. Analytical Applications-Qualitative Analysis.</p>	<p><b>SOIL AND WATER POLLUTION</b></p> <p>Soil and water quality standards, monitoring and analysis of selected soil water contaminants: COD, pesticides, heavy metals, POP's, fluoride, cyanide, nitrate, phosphate, oil &amp; grease, Geobiochemical</p>

	B. Proton Induced X-Ray Spectroscopy: Theory, instrumentation and application.	impact of municipal solid waste, steel plants effluent, domestic sewage. Control devices of water pollutants.
March  UNIT-III	<b>ATOMIC EMISSION SPECTROSCOPY</b> A. Selectivity, sensitivity and interferences of atomic spectroscopy. B. Theory, instrumentation and application of flame photometer, AES, ICP-AES and AFS.	<b>FOOD ANALYSIS</b> Moisture ash, crude protein, fat, crude fibre, carbohydrate, calcium, potassium, sodium and phosphate. Food adulteration: common adulterants in food, contamination of foodstuffs, microscopic examination of foods for adulterants, pesticides analysis in food products, HPLC, Gas chromatographic technique for analysis of organic phosphates in food products, TLC technique for identification of pesticides in food products.
April  UNIT-IV	<b>ATOMIC ABSORPTION SPECTROSCOPY AND HYPHENATED TECHNIQUES</b> A. Theory instrumentation and application of flame and graphite furnace AAS, cold-vapor and hydride generation AAS. B. Theory, instrumentation and application of hyphenated techniques i.e. GC/HPLC/-MS, GC/IC/HPLC-ICP-MS.	<b>A. DRUG ANALYSIS:</b> Narcotics and dangerous drugs, classification of drugs, Mode of action of narcotics, Sedatives, Hypnotics and tranquilizers, Screening by gas and thin layer chromatography, spectrophotometric measurements. <b>B. CLINICAL ANALYSIS:</b> Concepts and principles of analytic methods commonly used in the clinical species: i.e. ammonia, blood urea Nitrogen, Ca, Cl, Co <sub>2</sub> , Fe, K, Li, Mg, Na, P, urea, glucose. Method for analysis of proteins (i.e. albumin, bilirubin, creatinine, cholesterol, HDL-cholesterol, triglycerides, creatinine) <b>C. FUEL ANALYSIS:</b> Solid, liquid and gas fuels, ultimate and proximate analysis, heating values, grading of coal, liquid fuels, flash and fire point, octane number and carbon residue, gaseous fuels, producer gas and water gas, calorific value.
Remark	Practicals done every month as per schedule	

**M.Sc. I<sup>st</sup> Semester  
Mathematics  
PAPER-I**

**Advanced Abstract Algebra (I)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JULY	<b>Unit-I</b> Groups - Normal and Subnormal series. Composition series
AUGUST	<b>Unit I .</b> Jordan-Holder theorem. Solvable groups. Nilpotent groups. <b>Unit-II</b> Field theory- Extension fields. Algebraic and transcendental extensions. Separable and inseparable extensions. Normal extensions.
SEPTEMBER	<b>Unit-III</b> Perfect fields. Finite fields. Primitive elements. Algebraically closed fields. <b>Internal Test 1</b>
OCTOBER	<b>Unit-IV</b> Automorphisms of extensions. Galois extensions. Fundamental theorem of Galois theory. <b>Internal Test 2</b>
NOVEMBER	<b>Unit-IV</b> Solution of polynomial equations by radicals. Insolvability of the general equation of degree 5 by radicals. <b>Seminar</b>



**M.Sc. I<sup>st</sup> Semester**  
**Mathematics**  
**PAPER-II**  
**Real Analysis (I)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JULY	<b>Unit-I</b> Sequences and series of functions, pointwise and uniform convergence, Cauchy criterion for uniform convergence, Weierstrass M-test, Abel's and Dirichlet's tests for uniform convergence, uniform convergence and continuity,
AUGUST	<b>Unit I</b> definition and simple properties of Riemann-Stieltjes integral, uniform convergence and Riemann-Stieltjes integration, uniform convergence and differentiation, Weierstrass approximation theorem. <b>Unit-II</b> Power series, uniqueness theorem for power series, Abel's and Tauber's theorems. Rearrangements of terms of a series, Riemann's theorem.
SEPTEMBER	<b>Unit-III</b> Functions of several variables, linear transformations, Derivatives in an open subset of $\mathbb{R}^n$ , Chain rule, Partial derivatives, interchange of the order of differentiation, Derivatives of higher orders, Taylor's theorem, Inverse function theorem, Implicit function theorem.  <b>Internal Test 1</b>
OCTOBER	<b>Unit-IV</b> Jacobians, extremum problems with constraints, Lagrange's multiplier method, Differentiation of integrals.  <b>Internal Test 2</b>
NOVEMBER	<b>Unit-IV</b> Partitions of unity, Differential forms, Stoke's theorem.  <b>Seminar</b>

**M.Sc. I<sup>st</sup> Semester**  
**Mathematics**  
**PAPER-III**  
**Topology**

MONTH	PROPOSED PLAN
JULY	<b>Unit-I</b> Countable and uncountable sets. Infinite sets and the Axiom of Choice. Cardinal numbers and its arithmetic. Schroeder-Bernstein theorem. Cantor's theorem and the continuum hypothesis. Zorn's lemma, well-ordering theorem. Definition and examples of topological spaces.
AUGUST	<b>Unit I</b> Closed sets. Closure. Dense subsets. Neighbourhoods. Interior, exterior and boundary. Accumulation points and derived sets. Bases and sub-bases. Subspaces and relative topology. <b>Unit-II</b> Alternate methods of defining a topology in terms of Kuratowski Closure Operator and Neighbourhood Systems. Continuous functions and homeomorphism. First and Second Countable spaces. Lindelof's theorems. Separable spaces. Second countability and reparability.
SEPTEMBER	<b>Unit-III</b> Separation axioms; their Characterizations and basic properties. Urysohn's lemma, Tietze extension theorem. <b>Internal Test 1</b>
OCTOBER	<b>Unit-IV</b> Compactness. Continuous functions and compact sets. Basic properties of Compactness. Compactness and finite intersection property. Sequentially and countably compact sets. Lococompactness and one point compactification. Stone-Cech compactification. <b>Internal Test 2</b>
NOVEMBER	<b>Unit-IV</b> Compactness in metric spaces. Equivalence of compactness, countable compactness and sequential compactness in metric space. Connected spaces. Connectedness on the real line. Components. Locally connected spaces. <b>Seminar</b>

**M.Sc. I<sup>st</sup> Semester  
Mathematics  
PAPER-IV**

**Complex Analysis (I)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JULY	<b>Unit-I</b> Complex integration, Cauchy-Goursat. Theorem. Cauchy's integral formula. Higher order derivatives. Morera's Theorem. Cauchy's inequality and Liouville's theorem..
AUGUST	<b>Unit I</b> The fundamental theorem of algebra. Taylor's theorem. Laurent's series. Isolated singularities. Meromorphic functions <b>Unit-II</b> Maximum modulus principle. Schwarz lemma. The argument principle. Rouché's theorem Inverse function theorem
SEPTEMBER	<b>Unit-III</b> Residues. Cauchy's residue theorem. Evaluation of integrals. Branches of many valued functions with special reference to $\arg z$ , $\log z$ and $z^a$ . <b>Internal Test 1</b>
OCTOBER	<b>Unit-IV</b> Bilinear transformations, their properties and classifications. Definitions and examples of Conformal mappings. <b>Internal Test 2</b>
NOVEMBER	<b>Unit-IV</b> Spaces of analytic functions. Hurwitz's theorem. Montel's theorem Riemann mapping theorem.  <b>Seminar</b>

**M.Sc. I<sup>st</sup> Semester**  
**Mathematics**  
**PAPER-V**

**Advanced Discrete Mathematics (I)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JULY	<b>Unit-I</b> Formal Logic-Statements. Symbolic Representation and Tautologies. Quantifiers, Predicates and Validity. Propositional Logic.
AUGUST	<b>Unit I</b> Semigroups & Monoids-Definitions and Examples of Semigroups and monoids (including those pertaining to concatenation operation). <b>Unit-II</b> Homomorphism of semigroups and monoids. Congruence relation and Quotient Semigroups. Subsemigroup and submonoids. Direct Products. Basic Homomorphism Theorem.
SEPTEMBER	<b>Unit-III</b> Lattices-Lattices as partially ordered sets. Their properties. Lattices as Algebraic Systems. Sublattices, Direct products, and Homomorphisms. Some Special Lattices e.g., Complete, Complemented and Distributive Lattices. Boolean Algebras-Boolean Algebras as Lattices. Various Boolean Identities. The Switching Algebra example. Subalgebras, <b>Internal Test 1</b>
OCTOBER	<b>Unit-IV</b> Direct Products and Homomorphisms. Join-Irreducible elements, Atoms and Minterms. Boolean Forms and Their Equivalence. Minterm Boolean Forms, Sum of Products Canonical Forms. Minimization of Boolean Functions. Applications of Boolean Algebra to Switching Theory (using AND,OR & NOT gates). The Karnaugh Map Method. <b>Internal Test 2</b>
NOVEMBER	<b>Unit-IV</b> Grammars and Languages-Phrase-Structure Grammars. Rewriting Rules. Derivations. Sentential Forms. Language generated by a Grammar. Regular, Context-Free, and Context Sensitive Grammars and Languages. Regular sets, Regular Expressions and the Pumping Lemma. Kleene's Theorem. Notions of Syntax Analysis, Polish Notations. Conversion of Infix Expressions to Polish Notations. The Reverse Polish Notation. <b>Seminar</b>

**M.Sc. II<sup>nd</sup> Semester**  
**Mathematics**  
**PAPER-I**

**Advanced Abstract Algebra (II)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JANUARY	<b>Unit-I</b> Modules - Cyclic modules. Simple modules. Semi-simple modules. Schuler's Lemma. Free modules. Noetherian and artinian modules and rings-Hilbert basis theorem. Wedderburn Artin theorem. Uniform modules, primary modules, and Noether-Lasker theorem.
FEBRUARY	<b>Unit-II</b> Linear Transformations - Algebra of linear transformation, characteristic roots, matrices and linear transformations. <b>Internal Test 1</b>
MARCH	<b>Unit III</b> Canonical Forms - Similarity of linear transformations. Invariant subspaces. Reduction to triangular forms. Nilpotent transformations. Index of nilpotency. Invariants of a nilpotent transformation. The primary decomposition theorem. Jordan blocks and Jordan forms. <b>Unit-IV</b> Smith normal form over a principal ideal domain and rank. <b>Internal Test 2</b>
APRIL	<b>Unit IV</b> Fundamental structure theorem for finitely generated modules over a Principal ideal domain and its applications to finitely generated abelian groups. Rational canonical form. Generalized Jordan form over any field. <b>Seminar</b>

**M.Sc. II<sup>nd</sup> Semester**  
**Mathematics**  
**PAPER-II**  
**Real Analysis (II)**

MONTH	PROPOSED PLAN
JANUARY	<b>Unit-I</b> Definition and existence of Riemann-Stieltjes integral, Properties of the Integral, integration and differentiation, the fundamental theorem of Calculus, integration of vector-valued functions, Rectifiable curves. <b>Unit-II</b> Lebesgue outer measure. Measurable sets. Regularity.
FEBRUARY	<b>Unit II</b> Measurable functions. Borel and Lebesgue measurability. Non-measurable sets. Integration of Non-negative functions. The General integral. Integration of Series. <b>Unit-III</b> Measures and outer measures, Extension of a measure. <b>Internal Test 1</b>
MARCH	<b>Unit III</b> Uniqueness of Extension. Completion of a measure. Measure spaces. Integration with respect to a measure. Riemann and Lebesgue Integrals.  <b>Unit-IV</b> The Four derivatives. Lebesgue Differentiation Theorem. <b>Internal Test 2</b>
APRIL	<b>Unit IV</b> Differentiation and Integration. Functions of Bounded variation. The $L^p$ -spaces. Convex functions. Jensen's inequality. Holder and Minkowski inequalities. Completeness of $L^p$ , Convergence in Measure, Almost uniform convergence. <b>Seminar</b>

**M.Sc. II<sup>nd</sup> Semester  
Mathematics  
PAPER-III**

**General and Algebraic Topology**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JANUARY	<p><b>Unit-I</b> Tychonoff product topology in terms of standard sub-base and its characterizations. Projection maps. Separation axioms.</p> <p><b>Unit-II</b> Product spaces. Connectedness and product spaces.</p>
FEBRUARY	<p><b>Unit II</b> Compactness and product spaces (Tychonoff's theorem). Countability and product spaces.</p> <p><b>Unit-III</b> Embedding and metrization. Embedding lemma and Tychonoff embedding. The Urysohn metrization theorem. Metrization theorems and Paracompactness-Local finiteness.</p> <p><b>Internal Test 1</b></p>
MARCH	<p><b>Unit III</b> The Nagata-Smirnov metrization theorem. Paracompactness. The Smirnov metrization theorem.</p> <p><b>Unit-IV</b> Nets and filter. Topology and convergence of nets. Hausdorffness and nets. Compactness and nets. Filters and their convergence.</p> <p><b>Internal Test 2</b></p>
APRIL	<p><b>Unit IV</b> Canonical way of converting nets to filters and vice-versa. Ultra-filters and Compactness. The fundamental group and covering spaces-Homotopy of paths. The fundamental group. Covering spaces. The fundamental group of the circle and the fundamental theorem of algebra</p> <p><b>Seminar</b></p>

**M.Sc. II<sup>nd</sup> Semester  
Mathematics  
PAPER-IV**

**Advanced Complex Analysis (II)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<p><b>Unit-I</b> Weierstrass' factorisation theorem. Gamma function and its properties. Riemann Zeta function. Riemann's functional equation. Runge's theorem. Mittag-Leffler's theorem.</p> <p><b>Unit-II</b> Analytic Continuation. Uniqueness of direct analytic continuation.</p>
<b>FEBRUARY</b>	<p><b>Unit II</b> Uniqueness of analytic continuation along a curve. Power series method of analytic continuation Schwarz Reflection Principle. Monodromy theorem and its consequences.</p> <p><b>Unit-III</b> Harmonic functions on a disk. Harnack's inequality and theorem.</p> <p><b>Internal Test 1</b></p>
<b>MARCH</b>	<p><b>Unit III</b> Dirichlet Problem. Green's function.</p> <p><b>Unit-IV</b> Canonical products. Jensen's formula. Poisson-Jensen formula. Hadamard's three circles theorem. Order of an entire function. Exponent of Convergence. Borel's theorem. Hadamard's factorization theorem.</p> <p><b>Internal Test 2</b></p>
<b>APRIL</b>	<p><b>Unit-IV</b> The range of an analytic function. Bloch's theorem. The Little Picard theorem. Schottky's theorem. Montel Caratheodory and the Great picard theorem. Univalent functions. Bieberbach's conjecture (Statement only) and the "1/4-theorem.</p> <p><b>Seminar</b></p>



**M.Sc. II<sup>nd</sup> Semester  
Mathematics  
PAPER-V**

**Advanced Discrete Mathematics (II)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JANUARY	<b>Unit-I</b> Graph Theory-Definition of (Undirected) Graphs, Paths, Circuits, Cycles, & Subgraphs. Induced Subgraphs. Degree of a vertex. Connectivity. Planar Graphs and their properties. Trees. Euler's Formula for connected planar Graphs. Complete & Complete Bipartite Graphs. Kuratowski's Theorem (statement only) and its use.
FEBRUARY	<b>Unit-II</b> Spanning Trees, Cut-sets, Fundamental Cut -sets, and Cycle. Minimal Spanning Trees and Kruskal's Algorithm. Matrix Representations of Graphs. Euler's Theorem on the Existence of Eulerian Paths and Circuits. <b>Unit-III</b> Directed Graphs. In degree and Out degree of a Vertex. Weighted undirected Graphs. <b>Internal Test 1</b>
MARCH	<b>Unit III</b> Dijkstra's Algorithm.. strong Connectivity & Warshall's Algorithm. Directed Trees. Search Trees. Tree Traversals. <b>Unit-IV</b> Introductory Computability Theory-Finite State Machines and their Transition Table Diagrams. Equivalence of finite State Machines <b>Internal Test 2</b>
APRIL	<b>Unit IV</b> Reduced Machines. Homomorphism. Finite Automata. Acceptors. Non-deterministic Finite Automata and equivalence of its power to that of Deterministic Finite Automata. Moore and mealy Machines. Turing Machine and Partial Recursive Functions. <b>Seminar</b>

**M.Sc. III<sup>rd</sup> Semester**  
**Mathematics**  
**PAPER-I**

**Integration Theory and Functional Analysis (I)**

MONTH	PROPOSED PLAN
JULY	<b>UNIT I</b> Signed measure. Hahn decomposition theorem, mutually singular measures. Radon-Nikodym theorem.
AUGUST	<b>UNIT I</b> Labesgue decomposition. Riesz representation theorem. Extension theorem (Caratheodory). <b>UNIT II</b> Lebesgue-Stieltjes integral, product measures, Fubini's theorem. Differentiation and Integration. Decomposition into absolutely continuous and singular parts.
SEPTEMBER	<b>UNIT III</b> Baire sets. Baire measure, continuous functions with compact support. Regularity of measures on locally compact spaces. Integration of continuous functions with compact support, Riesz-Markoff theorem. <b>Internal Test 1</b>
OCTOBER	<b>UNIT IV</b> Normed linear spaces. Banach spaces and examples. Quotient space of normed linear spaces and its completeness, equivalent norms. Riesz Lemma, basic properties of finite dimensional normed linear spaces and compactness.
NOVEMBER	<b>UNIT IV</b> Convergence and bounded linear transformations, normed linear spaces of bounded linear transformations, dual spaces with examples. <b>Seminar</b>

## M.SC.III<sup>rd</sup> SEMESTER

### Mathematics PAPER-II

#### Partial Differential Equations and Mechanics (I)

MONTH	PROPOSED PLAN
JULY	<b>Unit-I</b> Examples of PDE. Classification. Transport Equation-Initial value Problem. Non-homogeneous Equation. Laplace's Equation-Fundamental Solution
AUGUST	<b>UNIT I</b> Mean Value Formulas, Properties of Harmonic Functions, Green's Function, Energy Methods. Heat Equation-Fundamental Solution, Mean Value Formula, Properties of Solutions, Energy Methods. Wave Equation-Solution by Spherical Means, Non-homogeneous Equations, Energy Methods.
SEPTEMBER	<b>Unit-II</b> Generalized coordinates. Holonomic and Non-holonomic systems. Scleronomic and Rheonomic systems. Generalized potential. Lagrange's equations of first kind. Lagrange's equations of second kind. Uniqueness of solution. Energy equation for conservative fields. Hamilton's variables. Donkin's theorem. Hamilton canonical equations. Cyclic coordinates. Routh's equations. <b>Internal Test 1</b>
OCTOBER	<b>Unit-III</b> Poisson's Bracket. Poisson's Identity. Jacobi-Poisson Theorem. Motivating problems of calculus of variations, Shortest distance. Minimum surface of revolution. Brachistochrone problem. Isoperimetric problem. Geodesic. Fundamental lemma of calculus of variations. Euler's equation for one dependent function and its generalization to (i) 'n' dependent functions, (ii) higher order derivatives. Conditional extremum under geometric constraints and under integral constraints. <b>Internal Test 2</b>
NOVEMBER	<b>Unit-IV</b> Attraction and potential of rod, disc, spherical shells and sphere. Surface integral of normal attraction (application & Gauss' theorem). Laplace and Poisson equations. Work done by selfattracting systems. Distributions for a given potential. Equipotential surfaces. Surface and solid harmonics. Surface density in terms of surface harmonics. <b>Seminar</b>

## M.SC.III<sup>rd</sup> SEMESTER

### Mathematics PAPER-III

#### Fundamentals of Computer Science-Theory and Practical (Object Oriented Programming and Data Structure)

MONTH	PROPOSED PLAN
JULY	<b>Unit-I</b> Object Oriented Programming-Classes and Scope, nested classes, pointer class members; Class initialization, assignment and destruction. <b>Practical:-</b> Practical based on class and constructor
AUGUST	<b>Unit-II</b> Overloaded functions and operators; Templates including class templates; class inheritance and virtual functions. <b>Practical :-</b> Practical based on function and operator overloading Inheritance, virtual function
SEPTEMBER	<b>Unit-III</b> Data Structures-Analysis of algorithms, q, W, O, o, w notations ; Sequential and linked representations, Lists, <b>Practical :-</b> Practical based on array
OCTOBER	<b>UNIT III</b> Stacks, and queues; <b>Unit-IV</b> Trees: Binary tree- search tree implementation, B-tree (concept only); <b>Practical :-</b> Practical based on stack ,queue and tree
NOVEMBER	<b>Unit-IV</b>  Sorting: Insertion sort, shell sort, quick-sort, heap sort  and their analysis; Hashing-open and closed.  <b>Practical :-</b> practical based on searching and sorting .

## M.SC.III<sup>rd</sup> SEMESTER

### Mathematics PAPER-IV

#### Operations Research (I)

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>Unit-I</b> Operations Research and its Scope. Necessity of Operations Research in Industry. Linear Programming-Simplex Method. Theory of the Simplex Method. Duality and Sensitivity Analysis.
<b>AUGUST</b>	<b>Unit-II</b> Other Algorithms for Linear Programming-Dual Simplex Method.
<b>SEPTEMBER</b>	<b>Unit-II</b> Parametric Linear Programming. Upper Bound Technique. Interior Point Algorithm. Linear Goal Programming. <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>Unit-IV</b>  Transportation and Assignment Problems.  <b>Internal Test 2</b>
<b>NOVEMBER</b>	<b>Unit-IV</b> Network Analysis-Shortest Path Problem. Minimum Spanning Tree Problem. Maximum Flow I Problem. Minimum Cost Flow Problem. Network Simplex Method. Project Planning and Control I with PERT-CPM. <b>Seminar</b>

## M.SC.III<sup>rd</sup> SEMESTER

### Mathematics PAPER-V

#### Programming in C (with ANSI features) Theory and Practical

MONTH	PROPOSED PLAN
JULY	<b>Unit-I</b> An overview of programming. Programming language, Classification .C Essentials-Program Development. Functions. Anatomy of a C Function. Variables and Constants. Expressions. Assignment Statements. Formatting Source Files. Continuation Character. The Preprocessor. <b>Practical:-</b> Practical based on Arithmetic operator
AUGUST	<b>Unit-II</b> Scalar Data Types-Declarations, Different Types of Integers. Different kinds of Integer Constants. Floating-Point Types. Initialization. Mixing Types. Explicit Conversions-Casts. Enumeration Types. The Void Data Type. Typedefs. Finding the Address of an object. Pointers. <b>Practical :-</b> Practical based on working of different datatypes
SEPTEMBER	<b>Unit-III</b> Operators and Expressions-Precedence and Associativity. Unary Plus and Minus operators. Binary Arithmetic Operators. Arithmetic Assignment Operators. Increment and Decrement Operators. Comma Operator. Relational Operators. Logical Operators. Bit - Manipulation Operators. Bitwise Assignment Operators. Cast Operator. Size of
OCTOBER	<b>Unit-III</b> Control Flow-Conditional Branching. The Switch Statement. Looping. Nested Loops. The break and continue Statements. The goto statement. Infinite Loops. <b>Practical :-</b> Practical based control statement
NOVEMBER	<b>Unit-IV</b> Arrays -Declaring an Array. Arrays and Memory. Initializing Arrays. Encryption and Decryption. <b>Practical :-</b> practical based on Array .

**M.Sc. IV<sup>th</sup> Semester**  
**Mathematics**  
**PAPER-I**

**Functional Analysis (II)**

MONTH	PROPOSED PLAN
JANUARY	<p><b>Unit-I</b>  Uniform boundedness theorem and some of its consequences. Open mapping and closed graph theorems.  Hahn-Banach theorem for real linear spaces, complex linear spaces and normed linear spaces. Reflexive spaces. Weak Sequential Compactness. Compact Operators.</p>
FEBRUARY	<p><b>Unit I</b>  Solvability of linear equations in Banach spaces. The closed Range Theorem.  <b>Unit-II</b>  Inner product spaces. Hilbert spaces. Orthonormal Sets. Bessel's inequality. Complete orthonormal sets and Parseval's identity.</p> <p><b>Internal Test 1</b></p>
MARCH	<p><b>Unit-III</b>  Structure of Hilbert spaces. Projection theorem. Riesz representation theorem. Adjoint of an operator on a Hilbert space. Reflexivity of Hilbert spaces.  <b>Internal Test 1</b></p>
APRIL	<p><b>Unit-IV</b>  Self-adjoint operators, Positive, projection, normal and unitary operators. Abstract variational boundary-value problem. The generalized Lax-Milgram theorem.  <b>Seminar</b></p>

**M.Sc. IV<sup>th</sup> Semester**  
**Mathematics**  
**PAPER-II**  
**Partial Differential Equations and Mechanics (II)**

MONTH	PROPOSED PLAN
JANUARY	<b>Unit-I</b> Nonlinear First Order PDE-Complete Integrals, Envelopes, Characteristics, HamiltonJacobi Equations (Calculus of Variations, Hamilton's ODE, Legendre Transform, Hopf-Lax Formula, Weak Solutions, Uniqueness), Conservation Laws (Shocks, Entropy Condition, LaxOleinik formula, Weak Solutions, Uniqueness, Riemann's Problem, Long Time Behaviour)
FEBRUARY	<b>Unit-II</b> Representation of Solutions-Separation of Variables, Similarity Solutions (Plane and Travelling Waves, Solitons, Similarity under Scaling), Fourier and Laplace Transform, Hopf-Cole Transform, Hodograph and Legendre Transforms, Potential Functions. Asymptotics (Singular Perturbations, Laplace's Method, Geometric Optics, Stationary Phase, Homogenization), <b>Internal Test 1</b>
MARCH	<b>Unit-II</b> Power Series (Non-characteristic Surfaces, Real Analytic Functions, Cauchy-Kovalevskaya Theorem) <b>Unit-III</b> Hamilton's Principle. Principle of least action. Poincare Cartan Integral invariant. Whittaker's equations. Jacobi's equations. Lee Hwa Chung's theorem, canonical transformations and properties of generating functions. <b>Internal Test 2</b>
APRIL	<b>Unit-IV</b> Hamilton-Jacobi equation. Jacobi theorem. Method of separation of variables. Lagrange Brackets. Condition of canonical character of a transformation in terms of Lagrange brackets and Poisson brackets, invariance of Lagrange brackets and Poisson brackets under canonical transformations. <b>Seminar</b>



**M.Sc. IV<sup>th</sup> Semester**  
**Mathematics**  
**PAPER-III**  
**Operating System and Database Management System**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<b>Unit-I</b> Database Systems-Role of database systems, database system architecture and data modeling. Introduction to relational algebra and relational calculus.
<b>FEBRUARY</b>	<b>Unit-II</b> Introduction to SQL: Basic features including views; Integrity constraints; Database design-normalization up to BCNF. <b>Practical :-Practical based on SQL</b>
<b>MARCH</b>	<b>Unit-III</b> Operating Systems- Overview of operating system, user interface, processor management, memory management.
<b>APRIL</b>	<b>Unit-IV</b> I/O management, concurrency and Security, network and distributed systems.

**M.Sc. IV<sup>th</sup> Semester**  
**Mathematics**  
**PAPER-IV**

**Operations Research (II)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JANUARY	<b>Unit-I</b> Dynamic Programming-Deterministic and Probabilistic Dynamic programming.
FEBRUARY	<b>Unit-II</b> Game Theory-Two-Person, Zero-Sum Games. Games with Mixed Strategies.Graphical . Solution. Solution by Linear Programming. <b>Internal Test 1</b>
MARCH	<b>Unit-III</b> Integer Programming-Branch and Bound Technique. <b>Internal Test 2</b>
APRIL	<b>Unit-IV</b> Nonlinear Programming-One/and Multi-Variable Unconstrained Optimization. Kuhn-Tucker Conditions for Constrained Optimization. Quadratic Programming. Separable Programming. I Convex Programming. Non-convex Programming. <b>Seminar</b>

**M.Sc. IV<sup>th</sup> Semester**  
**Mathematics**  
**PAPER-V**

**Programming in C (with ANSI features) (II)**

MONTH	PROPOSED PLAN
JANUARY	<p><b>Unit-I</b>  Storage Classes-Fixed vs. Automatic Duration. Scope. Global variables. The register Specifier. ANSI rules for the syntax and Semantics of the storage-class keywords.</p> <p><b>Unit-II</b>  Pointers Pointer Arithmetic. Passing Pointers as Function Arguments.</p> <p><b>Practical :-</b> practical based on storage classes and pointer</p>
FEBRUARY	<p><b>Unit II</b>  Accessing Array Elements through Pointers. Passing Arrays as Function Arguments. Sorting Algorithms. Strings. Multidimensional Arrays. Arrays of Pointers. Pointers to Pointers.</p> <p><b>Unit-III</b>  Functions-Passing Arguments. Declarations and Calls. Pointers to Functions. Recursion. The main Function. Complex Declarations.</p> <p><b>Practical :-</b> practical based on Array and Function</p>
MARCH	<p><b>Unit III</b>  The C Preprocessor-Macro Substitution. Conditional Compilation. Include Facility. Line Control.</p> <p><b>Unit-IV</b>  Structures and Unions-Structures. Dynamic Memory Allocation. Linked Lists. Unions, enum Declarations.</p> <p><b>Practical :-</b> practical based on Macro, Structure and Union</p>
APRIL	<p><b>Unit-IV</b>  Input and Output-Streams, Buffering. The &lt;Stdio.h&gt; Header File. Error Handling. Opening and Closing a File. Reading and Writing Data. Selecting an I/O Method. Unbuffered I/O Random Access. The standard library for Input/Output.</p> <p><b>Practical :-</b> practical based on File handling</p>

**GOVT. D. B. GIRL'S P.G. (AUTONOMOUS) COLLEGE, RAIPUR CHHATTISGARH**

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**PROPOSED TEACHING PLAN FOR THE SESSION 2019 - 20**

**Name of the Department: PHYSICS**

**CLASS M. Sc. I Semester**

<b>Month/ Days</b>	<b>Paper I</b>	<b>Paper II</b>	<b>Paper III</b>	<b>Paper IV</b>
<b>July</b>	<b>Anmission</b>	<b>Anmission</b>	<b>Anmission</b>	<b>Anmission</b>
<b>August</b>	<b>Admission</b> <b>UNIT-I</b> Variational method, expectation value of energy, application to excited states, ground state of He-atom, Zero point energy of one dimensional harmonic oscillator, Vander-waals interaction, the W.K.B. approximation, approximate solutions, .	<b>Admission</b> <b>UNIT-I</b> Foundation of statistical mechanics : macroscopic and microscopic states, contact between statistics and thermodynamics, physical significance of $\Omega(N, V, E)$ , the classical gas, entropy of mixing and Gibb's paradox,	<b>Admission</b> <b>Unit- I</b> Electrons in Solids and Electronic Properties Energy bands: nearly free electron model, origin of energy gap and its magnitude, Bloch function, Kronig-Penny model, Wave equation of electron in periodic potential, restatement of Bloch theorem, crystal moment of an electron, solution of Central equation,	<b>Admission</b> <b>UNIT - I</b> Number system : Decimal, Binary, Octal and Hexadecimal Number System with mutual conversion, BCD addition and subtraction, 1's and 2's compliments, multiplication & division BCD code (8421), Excess -3 code, gray code, binary to gray code and gray code to binary code conversion. Logic gates: Positive and negative logic , Basic gates,

September	<p>Diagonalization, Complete orthonormal sets of functions</p> <p>UNIT-II</p> <p>Complex Variables: Cauchy- Riemann condition, analytic functions, Cauchy's theorem, Cauchy integral formula, Laurent series, singularities, residue theorem, contour integration, evaluation of definite integrals, problems.</p> <p><b>UNIT – III</b></p> <p>Differential equations, first order differential equation,</p>	<p>(iii) spherical pendulum (iv) Isotropic oscillator (v) Atwood's Machine, conservation of linear momentum angular momentum and energy in Lagrangian formulation Lagrange's equation for nonholonomic system procedure to eliminate consideration of Ignorable coordinates the Routhian function.</p> <p><b>UNIT-II</b></p> <p>Variational Principle, calculus of variation, some techniques of calculus of variables, Euler Lagrange differential equation. Hamilton variational principle Deduction of Hamilton's Principle from D'Alembert's principle. Deduction of Newton's second law of motion from Hamilton's Principle. Deduction of Lagrange's equations of motion from Hamilton's Principle for conservation and for non conservative systems Non conservative forces. Dissipative system, Rayleigh's Dissipation function, Lagrangian for a charged particle in an electromagnetic field.</p>	<p>library functions. Identifiers, qualifiers, define statements, value Initialized variables, operators, and expressions. Operator precedence and associativity. scanf with specifier, search set arrangements and suppression Character, format specifier for scanf.</p> <p><b>UNIT - II</b></p> <p>Control structure, If statement, if else statement, multiway decision, compound statement. Loops: for loop, while loop, do while loop, break statement, compound statement continue statement, go to statement Function: function main, function accepting more than one parameter, user defined and library function concept associatively with functions, function parameter, return value, recursion comparison. Arrays, strings, multidimensional array, array of strings function in string.</p> <p><b>UNIT - III</b></p> <p>(Without Programming) Method for determination of zeroes of linear, non linear,</p>	<p>Coefficient of FET, and relation between different coefficient. Metal Oxide Field Effect Transistor (MOSFET) – DE MOSFET and E- MOSFET construction and working principle, static and dynamic characteristics. Uni-junction transistor (UJT) – basics structure, working principle, Voltage – Current characteristics and important parameters</p> <p><b>UNIT – II</b></p> <p>MIS Diode : Introduction, Energy band diagram, accumulation, depletion and inversion condition concept of surface space charge, surface potential, surface capacitance, Ideal MIS curves. MOS diode: structure, Ideal MOS, surface depletion region, Ideal MOS curves, Si-SiO<sub>2</sub> MOS diode-(real case) interface trapped charge, oxide charges. Charged Couple Device (CCD) : Basic structure, working principle, charge transfer with clock voltage.</p>
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October	<p>second order differential equation with constant coefficients, second order linear ODEs with variable coefficients, Solution by series expansion, nonhomogenous differential equations and solution by the method of Green's functions</p> <p><b>UNIT-IV</b> Special functions, Legendre, Bessel, Hermite and Laguerre functions with their physical applications, generating functions, orthogonality conditions,</p>	<p>UNIT – III Hamiltonian formulation of mechanics: Phase space and the motion of the system, Hamiltonian function, Hamilton's canonical equation of motion. Physical significance of HDeduction of Canonical equation from variational principle. Hamilton's canonical equations of motion in different coordinate systems. Application of Hamilton equation of motion (i) Simple pendulum (ii) compound pendulum (iii) Two dimensional Isotropic Harmonic oscillator (iv) Linear Harmonic(v) Particle in central field of force. Hamiltonian for a charged particle in an electromagnetic field. Principle of least action statement and its proof.</p> <p><b>UNIT – IV</b> Canonical or constant transformation, its advantage example of canonical transformation, necessary and sufficient condition for a transformation to be canonical, Infinitesimal contact transformations. Hamilton-Jacobi partial differential equation for Hamilton's Principle function. Solution of Harmonic oscillator problem by Hamilton-Jacobi method. Hamilton-Jacobi theory. Poisson Bracket: Definition and properties. Invariance of Poisson-Brackets with respect to canonical transformation,</p>	<p>algebraic equations. And transcendental equations and their convergence. Solution of simultaneous linear equations Gaussian elimination pivoting, iterative method matrix inversion. Eigen values and Eigen vectors of matrices. Power and Jacobi method, curve fitting polynomial least squares.</p> <p><b>UNIT - IV</b> (Without Programming) Finite difference interpolation with equally spaced and unequally spaced</p>	<p>UNIT – III Microwave devices: Tunnel Diode – Introduction, Definition, Tunneling Phenomenon, Energy band Structure, Volt-Ampere Characteristics, Negative Resistance of tunnel diode (Characteristics of tunnel diode) Transfer Electron Devices: Transfer Electron Effect, Gun Diode- Introduction and characteristics. Backward Diode: Introduction and Characteristics. IMPATT Diode : Introduction, Structure, Principle of operation, Static and Dynamic Characteristics.</p> <p><b>UNIT – IV</b> Modulation : Definition, Types of Modulation, Mathematical expression of modulation, Percentage of modulation, Amplitude modulation, Generation of Amplitude modulation,</p>
November	<p>recursion relations, Integral transforms, Fourier integral and transforms, inversion theorem, Fourier transform of derivatives, convolution theorem.</p> <p><b>Preparation leave[Exams]</b></p>	<p>Equations of motion in Poisson bracket form Jacoby identity. Infinitesimal contact transformations interpretation in terms of Poisson Brackets. The angular momentum and Poisson Bracket Lagrange's Brackets: definition &amp; Properties, Relation with Poisson Brackets.</p> <p><b>Preparation leave[Exams]</b></p>	<p>points, Numerical differentiation and Integration, Newton's formula, Monte Carlo's evaluation of Integral Numerical solution of ordinary differential equation. Euler and Runge Kutta methods. Predictor corrector method.</p> <p><b>Preparation leave[Exams]</b></p>	<p>Demodulation, Demodulation of Amplitude modulated wave, side bands, band width, DSBSC modulation, Generation of DSBSC waves. SSB modulation, Generation and Detection of SSB waves, Multiplexing: Frequency division multiplexing (FDM).</p> <p><b>Preparation leave[Exams]</b></p>

December	Exam	Exam	Exam	Exam
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**CLASS M. Sc. II Semester**

Month/ Days	Paper I	Paper II	Paper III	Paper IV
January	<b>Vacations</b> <b>UNIT - I</b> Inadequacy of classical mechanics, Plank quantum hypothesis and radiation law, Photoelectric effect, de-broglie's theory. Schrödinger equation, continuity equation, Ehrenfest theorem, admissible wave functions, stationary states, one-dimensional problems; walls and barriers,	<b>Vacations</b> <b>Unit-I</b> Laser Characteristics – Spontaneous and stimulated emission, Einstein's quantum theory of radiation, theory of some optical processes, coherence and monochromaticity, kinetics of optical absorption, line broadening mechanism, Basic principle of lasers, population inversion,	<b>Vacations</b> <b>UNIT – I</b> Equation of continuity, Maxwell's equations (SI unit) and its derivation, Integral form of equation, Maxwell's equations in some particular cases , Electromagnetic energy: Poynting Theorem. The wave equation. Plane electromagnetic waves in free space. Plane electromagnetic waves in a non-conducting isotropic medium (i.e. Isotropic dielectrics) .	<b>Vacations</b> <b>UNIT – I</b> Radiative and non-radiative transistors , Optical Absorption, bulk and thin film, photoconductive devices (LDR) , Emission spectra , Luminescent efficiency , method of excitation. Light emitting diode (LED) : high frequency limit, effect of surface and indirect combination current , operation of LED, Visible LEDs and Infrared LEDs.

## February

Schrödinger equation for harmonic oscillator and its solution, uncertainty relations, states with minimum uncertainty product.

### UNIT –II

Superposition principle, general formalism of wave mechanics, representation of states and dynamical variables, commutation relationship, completeness and normalization of eigen functions, Dirac-delta function, Bra & Ket notation, matrix representation of an operator, harmonic oscillator and its solution by matrix method, Heisenberg equation of motion.

### UNIT -III

Angular momentum in quantum mechanics, commutation relationships,

laser pumping, two & three level laser systems, resonator, Q-factor, losses in cavity, threshold condition, quantum yield.

### UNIT – II

Laser Systems

Solid state lasers- the ruby laser, Nd:YAG laser, ND: Glass laser, semiconductor lasers – features of semiconductor lasers, intrinsic semiconductor lasers, Gas laser - neutral atom gas laser, He-Ne laser, molecular gas lasers, CO<sub>2</sub> laser, Liquid lasers, dye lasers and chemical laser.

### UNIT-III

Advances in laser Physics

Production of giant pulse -Q-switching, giant pulse dynamics,

Plane electromagnetic waves in Anisotropic Non-conducting medium (Anisotropic dielectric ), Plane electromagnetic waves in conducting medium. A simple model for dynamic conductivity. Propagation of electromagnetic waves in ionized gases.

### UNIT – II

Boundary conditions at the interface of two media, Reflection and Refraction of electromagnetic waves at the interface of Non-conducting media, Fresnel's equations experimental verification of fresnel's equations. Reflection and transmission coefficients at the interface between two non conducting media, Brewster's law and degree of polarisation , Total internal reflection , Group velocity Propagation of Electromagnetic waves between parallel conducting planes. Wave guides. TM modes and TE modes, Rectangular wave guides.

Diode Laser (Condition for population inversion in active region, light confinement factor , optical gain and threshold current for lasing, Fabry-Perrot Cavity Length for lasing and the separation.

### UNIT – II

Photo detectors: Photoconductor, equivalent circuit of photoconductor. Phototransistor.

Bipolar phototransistor, photo – Darlington transistor, V-I characteristic of bilateral hetero structure phototransistor, Solar cells, Solar radiation, solar spectrum, ideal conversion efficiency, Energy band diagram of solar cell, IV characteristics of solar cell, PN junction solar cells, Hetero junction, Interface thin film solar cells.

### UNIT – III

Basic Op-amp. Differential amplifier – circuit configurations, dual input, balanced output, differential amplifier –DC analysis,



<b>March</b>	<p>eigen values, Spin angular momentum, Pauli's matrices, addition of angular momentum, Clebsch-Gordon coefficients. Central force problem, spherically symmetric potentials in three dimensions, separation of wave equation, parity, three-dimensional square-well potential and energy levels</p> <p><b>UNIT – IV</b> Hydrogen atom; solution of the radial equation, energy levels and stationary state wave functions, discussion of bound states, degeneracy. Time-independent perturbation theory, non-degenerate case, first order and second perturbations with the example of an oscillator,</p>	<p>laser amplifiers, mode locking and pulling, Non-linear optics, Harmonic generation, second harmonic generation, Phase matching, third harmonic generation, optical mixing, parametric generation and self-focusing of light.</p> <p><b>UNIT – IV</b> Multi-photon processes; multi-quantum photoelectric effect, Theory of two-photon process, three-photon process, second harmonic generation, parametric generation of light, Laser spectroscopy : Rayleigh and Raman scattering, Stimulated Raman effect,</p>	<p><b>UNIT – III</b> Postulates of Einstein's special theory of relativity, Galilean transformations. Lorentz's transformations and its consequence, Transformation of differential operator, Invariance of D'Alembertian operator, Invariance of charge, Transformation of charge density, Electric field measured in different frames of reference, Minkowski space, concept of four vector, Lorentz transformation of space and time in four vector form, Transformation for charge and current density, Transformation of electromagnetic potential A and <math>\phi</math>. Lorentz condition in covariant form, Covariance or Maxwell field equation in terms of four vector.</p> <p><b>UNIT – IV</b> Electromagnetic vector and scalar potential, Lorentz Gauge, Lienard Wiechart potentials, the electromagnetic field of a uniformly moving point charge, Radiation from an accelerated charge at low velocity – Larmor's formula,</p>	<p>Ac analysis, inverting and non-inverting inputs, CMRR, Constant current bias level transistor. Block diagram of a typical Op-amp. Analysis, open loop configuration, inverting and non-inverting amplifier, Op-amp. With negative feedback, Voltage series feedback, effect of feedback on closed loop gain input persistence output, resistance bandwidth and output offset voltage, voltage follower.</p> <p><b>UNIT – IV</b> Practical Op-amp. Input offset voltage, Input offset current, total output offset voltage, CMRR frequency response, DC and AC amplifier summing scaling and averaging amplifiers instrumentation amplifier, integrator and differentiator Oscillators</p>
<b>April</b>	<p>degenerate cases, removal of degeneracy in second order, Zeeman effect without electron spin, first-order Stark effect in hydrogen, perturbed energy levels, correct eigen function, occurrence of permanent electric dipole moments.</p> <p><b>Preparation leave[exams]</b></p>	<p>Hyper-Raman effect, Coherent anti-stokes Raman Scattering, Photo-acoustic Raman spectroscopy. Laser Applications – ether drift and absolute rotation of the Earth, isotope separation, plasma, thermonuclear fusion, laser applications in chemistry, biology, astronomy, engineering and medicine.</p> <p><b>Preparation leave[exams]</b></p>	<p>Relativistic generalization of Larmor's formula, Angular distribution of radiation emitted by an accelerated charge, Radiation damping, The Abraham Lorentz formula, Cherenkov radiation, Radiation due to an oscillating electric dipole, electric quadrupole radiation, Radiation due to small current element, Radiation from linear antenna, Half wave antenna, Antenna array.</p> <p><b>Preparation leave[exams]</b></p>	<p>principles, oscillator types, frequency stability response, The phase shift oscillator. Wein bridge oscillator, Multivibrators, Monostable and Astable, Comparators, square wave and triangle wave generators.</p> <p><b>Preparation leave[exams]</b></p>
<b>May</b>	<b>Practical and Theory Exam</b>	<b>Practical and Theory Exam</b>	<b>Practical and Theory Exam</b>	<b>Practical and Theory Exam</b>

**CLASS M. Sc. III Semester**

<b>Month/ Days</b>	<b>Paper I</b>	<b>Paper II</b>	<b>Paper III</b>	<b>Paper IV</b>
<b>July</b>	<b>Admission</b>	<b>Admission</b>	<b>Admission</b>	<b>Admission</b>
<b>August</b>	<b>Admission</b> <b>UNIT-I</b> Variational method, expectation value of energy, application to excited states, ground state of He-atom, Zero point energy of one dimensional harmonic oscillator, Vander-waals interaction, the W.K.B. approximation, approximate solutions, .	<b>Admission</b> <b>UNIT-I</b> Foundation of statistical mechanics : macroscopic and microscopic states, contact between statistics and thermodynamics, physical significance of $\Omega(N, V, E)$ , the classical gas, entropy of mixing and Gibb's paradox,	<b>Admission</b> <b>Unit- I</b> Electrons in Solids and Electronic Properties Energy bands: nearly free electron model, origin of energy gap and its magnitude, Bloch function, Kronig-Penny model, Wave equation of electron in periodic potential, restatement of Bloch theorem, crystal moment of an electron, solution of Central equation,	<b>Admission</b> <b>UNIT - I</b> Number system : Decimal, Binary, Octal and Hexadecimal Number System with mutual conversion, BCD addition and subtraction, 1's and 2's compliments, multiplication & division BCD code (8421), Excess -3 code, gray code, binary to gray code and gray code to binary code conversion. Logic gates: Positive and negative logic , Basic gates,

<p><b>September</b></p>	<p>asymptotic nature of the solution, solution near turning point, connection formulae, energy levels of a potential well and quantization rule <b>UNIT -II</b> Theory of scattering: differential and total scattering cross section, wave mechanical picture of scattering &amp; the scattering amplitude, Green's functions and formal expression for scattering amplitude, The Born approximation and its validity, Partial wave analysis, asymptomatic behavior of partial waves and phase shifts, optical theorem, scattering by a square well potential, scattering by a hard sphere, scattering by a Coulomb potential.. <b>UNIT- III</b> Time-dependent perturbation theory, first order perturbation,</p>	<p>phase space of classical system, Liouville's theorem and its consequences, quantum states and phase space. <b>UNIT- II</b> Elements of ensemble theory – A system in microcanonical, canonical, and grand canonical ensembles, partition functions, physical significance of statistical quantities, example of classical system, energy and energy-density fluctuations and mutual correspondence of various ensembles. <b>UNIT-III</b> Formulation of quantum statistics – Quantum mechanical ensemble theory,</p>	<p>Kronig-Penny model in reciprocal space, empty lattice Approximation, approximate solution near zone boundary, Number of orbitals in a band, metals and insulators. <b>Unit -II</b> Fermi surfaces and metals Effect of temperature on F-D distribution, free electron gas in three dimension. Different zone schemes, reduced and periodic zones, construction of Fermi surfaces, nearly free electrons, electron, hole, open orbits, Calculation of energy bands, Tight binding, Wigner-Seitz, cohesive energy, pseudo potential methods. Experimental methods in Fermi surface studies, quantization of orbits in a magnetic field, de Haas van Alphen Effect, External orbits, Fermi surface of copper.</p>	<p>Universal building block. Basic laws of Boolean Algebra, De-Morgan's Theorem, two, three and four variable K-Map, mapping and minimization of SOP and POS expressions, pairs, quads, octet, overlapping, Rolling, concepts of Don't care condition. <b>UNIT – II</b> Ex-OR gate, Ex-NOR gate circuitry, Half adder, Full adder, binary parallel adder, Serial adder, Half Subtractor, Full Subtractor, 1's complements Subtractor circuit and 2's complements Subtractor circuit. Digital logic Families : Introduction, Basic concepts of RTL, DTL, TTL, ECL and CMOS logic. Decoder : 2 line to 4 line decoder, 1 of 16 decoder, BCD to decimal decoder, BCD to seven segment decoder, Encoder : decimal to BCD encoder. Multiplexer : 2-input, 4-input, 16 input Multiplexer, DeMultiplexer : 1 line to 2 line, 1 line to 4 line and 1 line to 16 line DeMultiplexer. <b>UNIT – III</b> Flip-flop and timing diagram, RS flip-flop using NOR gate,</p>
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<b>October</b>	<p>Harmonic perturbation, Fermi's Golden rule, Ionization of a H-atom, absorption and induced emission, Selection rules. Identical particles, symmetric and anti symmetric wave functions</p> <p><b>UNIT –IV</b> Relativistic quantum mechanics, formulation of relativistic quantum theory, the Klein-Gordon equation;</p>	<p>density matrix, statistics of various quantum mechanical ensembles, system composed of indistinguishable particles.</p> <p>Theory of simple gases –Ideal gas in various quantum mechanical ensemble, Maxwell-Boltzmann, Bose-Einstein, Fermi-Dirac distributions, statistics of occupation number.</p> <p><b>UNIT - IV</b> Ideal Bose and Fermi gases - Thermodynamic behavior of an ideal Bose gas, Bose-Einstein condensation and, elementary excitations in liquid helium II,</p>	<p>Unit- III Crystal vibration and thermal properties Lattice dynamics in monoatomic and diatomic lattice: two atoms per primitive basis, optical and acoustic modes, quantization of elastic waves, phonon momentum, inelastic neutron scattering by phonons, Anharmonic crystal interactions-thermal expansion, thermal conductivity, thermal resistivity of phonon gas, umklapp processes, imperfections.</p> <p><b>Unit–IV</b> Electron-Phonon interaction- superconductivity Experimental survey: occurrence of superconductivity, Destruction of superconductivity by magnetic field, Meissner effect,</p>	<p>RS flip-flop using NAND gate, Clocked RS flip-flop, D- latch flip-flop, Preset and Clear, JK flip-flop, Positive and negative edge triggered flop-flops., JK Master Slave flip-flop. Counters : Binary ripple counter , up counter , down counter, decade counter and Ring counter and time diagram Registers : Parallel and shift Register, Scaling, PIPO, SIPO, PISO, SOSI Bi-directional shift Register, Application of shift register.</p> <p><b>UNIT – IV</b> Digital to analog converter and Analog to Digital converters : D/A converters using binary weighted resistor network and R-2R ladder Network; Counter type A/D converter,</p>
<b>November</b>	<p>plane wave solutions, charge and current densities, The Dirac equation for a free particle, matrices alpha and beta, Lorentz covariance of the Dirac equation, free particle solutions and the energy spectrum, charge and current densities.</p> <p><b>Preparation leave[exams]</b></p>	<p>Thermodynamic behavior of an ideal Fermi gas, the electron gas, nonrelativistic and relativistic degenerate electron gas, theory of white dwarf stars.Statistical Mechanics of interacting systems – the method of cluster expansion for a classical gas, Virial expansion of the equation of state.</p> <p><b>Preparation leave[exams]</b></p>	<p>heat capacity, energy gap, MW, and IR properties, isotope effect. London equation, Coherence length, Cooper pairing due to phonons, BCS theory of superconductivity, BCS ground state, flux quantization of superconducting ring, duration of persistent currents, Type II superconductors, Vortex states, Josephson superconductor tunneling, DC/AC Josephson effect,.</p> <p><b>Preparation leave[exams]</b></p>	<p>Successive approximation A/D converter and dual slope converters , applications of DACs and ADCs.</p> <p>Intergraded Circuit : Introduction, Technology, Advantages and disadvantages, Basic technology of monolithic IC, Basic processes used in monolithic technology, Fabrication of components on monolithic IC, IC packing, symbol and scale of Integration.</p> <p><b>Preparation leave[exams]</b></p>
<b>December</b>	<b>Exam</b>	<b>Exam</b>	<b>Exam</b>	<b>Exam</b>

#### CLASS M. Sc. IV Semester

Month/ Days	Paper I	Paper II	Paper III	Paper IV
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<b>January</b>	<b>Vacations</b> <b>UNIT- I</b> Plasmons, Polaritons Dielectric function of the electron gas, Plasma optics, Dispersion relation for EM wave, Transverse optical modes in Plasma, Transparency of Alkali metals in the ultraviolet, Longitudinal Plasma oscillations, Plasmon,	<b>Vacations</b> <b>UNIT-I</b> Nuclear Interactions : Nucleon-nucleon interaction, Two-nucleon system, The ground state of the deuteron, Tensor forces, Nucleon-nucleon scattering at low energy, Scattering length, Effective range theory, Spin dependence of nuclear forces,	<b>Vacations</b> <b>UNIT – I</b> Bohr theory of spectra of hydrogen and hydrogen like atoms, reduced mass of electron, variation of Rydberg constant. Sommerfeld’s elliptical orbit. Space quantization, Pauli’s vector atom model, four quantum numbers. Spectra of alkali atoms, Fine structure in alkali spectra, selection and intensity rules Spectral terms arising from l-s coupling,	<b>Vacations</b> <b>UNIT – I</b> Microprocessor & Micro Computers : Evolution of Microprocessor, Internal Microprocessor, Architecture, Architecture of digital Computer Memory : - Semiconductor memories (RAM, ROM, PROM, EPROM, Shift register). Magnetic Memory: - Floppy disks, Hard disks,
<b>February</b>	electrostatic screening and screened Coulomb potential, Mott metal-insulator transition, screening and phonons in metals, Polaritons, LST relation . <b>UNIT –II</b> Dielectric and ferroelectrics Maxwell’s equations, polarization, macroscopic electric field, depolarization field, E <sub>1</sub> ; local electric field at an atom, Lorentz field E <sub>2</sub> , fields of dipoles inside cavity E <sub>3</sub> ; dielectric constant and polarizability, electronic polarizability; structural phase transition; ferro-electric crystals, classification; displacive transition, soft optical phonons, Landau theory of phase transitions, first and second order transition, antiferro-electricity, ferro-electric domain, piezoelectricity, ferro-elasticity, optical ceramics. <b>UNIT –III</b> Magnetism General ideas of dia- and paramagnetisms, quantum theory of paramagnetism, rare earth ions,	Charge independence and charge symmetry of nuclear forces, Iso- spin formalism, Exchange forces, Meson theory of nuclear forces and the Yukawa interaction. <b>UNIT-II</b> Nuclear Decay : Beta decay, Fermi’s theory of beta decay, Shape of the beta spectrum, Total decay rate, Angular momentum and parity selection rules, Comparative half-lives, Allowed and forbidden transitions, Selection rules, Parity violation, Two component theory of neutrino decay, Detection and properties of neutrino Gamma decay, Multiple transitions in nuclei, Angular momentum and Parity selection rules, Internal conversion, Nuclear isomerism.	spin orbit interaction, screening constants for alkali spectra Spectra of Alkaline earth atoms, singlet-triplet series, LS and JJ coupling, interaction energy, selection and intensity rules. <b>UNIT – II</b> Effect of magnetic field on energy levels (mono valent atoms) Gyromagnetic ratio for orbital and spin motion, vector model, Lande’s g-factor, normal and anomalous Zeeman effect, Paschen Back effect. Stark effect Line broadening mechanism. Electron spin resonance, Nuclear magnetic resonance <b>UNIT – III</b> Optical Fibers: Introduction, Structure, Classification, Refraction and Snell’s law, Total internal refraction, Light propagation through and optical fiber,	Optical Disks, Magnetic Bubble Memory. Networking : Local Area Networking (LAN) , LAN topology (Bus, Star, Ring ) . <b>UNIT – II</b> Intel 8085 : ALU, Timing and Control Unit, Registers, Data and Address Bus, Pin Configuration. Instruction Cycle : Op-code and Operands, Fetch Operation, Execute Operation, Machine Cycle, Instruction and Data flow. Time Diagram : Opcode Fetch Cycle, Memory read, I/O Read, Memory write, I/O Write.

<b>March</b>	<p>Hund rule, iron group ions, crystal field splitting, quenching of orbital angular momentum, spectroscopic splitting factor, van vleck temperature dependent paramagnetism, Cooling by isentropic demagnetization, nuclear demagnetization, paramagnetic Susceptibility of conduction electrons.</p> <p><b>UNIT-IV</b> Ferromagnetism and anti ferromagnetism Ferromagnetic order, Curie point and exchange integral, temp dependence of saturation magnetization, saturation magnetization at absolute zero;</p>	<p><b>UNIT-III</b> Nuclear models : Liquid drop model, Bohr-Wheeler theory of fission, Shell Model, Experimental evidence for shell effects, Single particle shell model, Spinorbit interaction and magic numbers, Analysis of shell model predictions, Magnetic moments and Schmidt lines, Collective model of Bohr and Mottelson.</p> <p><b>UNIT-IV</b> Elementary particle Physics: The fundamental interactions, Classification of elementary particles, Leptons and Hadrons, Symmetries, groups and conservation laws,</p>	<p>energy levels and spectra. Rotational energy and spectra of diatomic molecules as rigid rotor and non rigid rotor, inter nuclear distance and isotope effect. Vibrational energy levels and spectra of diatomic molecules as harmonic oscillator- Anharmonicity of molecular vibrations, energy levels and spectrum, Morse potential energy curve, isotope effects and force constants</p> <p><b>UNIT – IV</b> Molecule as vibrating rotor-rotator vibrational spectrum of diatomic molecules-PQR branches</p>	<p><b>UNIT – III</b> Addressing Modes : Direct Addressing, Register addressing, Register Indirect Addressing, Immediate Addressing, Implicit Addressing. Instruction set of 8085 : Data transfer group, Arithmetic group, Logical group. Assembly Language Programs: Addition of Two 8-bit number, Sum 8-bit , Addition of Two 8-bit number, sum 16-bit, 8-bit subtraction, Find the largest number in a data array, To arrange a series of numbers in Descending order, Find the smallest number in a data array, To arrange a data array in ascending order, Shift of 8-bit number of left by one bit and two bit , Shift of 16-bit number left by one and two bit.</p> <p><b>UNIT – IV</b> Optical Fibers: Introduction, Structure, Classification, Refraction and Snell's law, Total internal refraction, Light propagation through and optical fiber,</p>
<b>April</b>	<p>magnons, quantization of spin waves, thermal excitation of magnons; neutron magnetic scattering, Ferrimagnetic order, Curie temp and susceptibility of ferrimagnets, iron garnets. Antiferromagnetic order, susceptibility below neel temp, antiferromagnetic magnons, ferromagnetic domains. <b>Preparation leave[Exams]</b></p>	<p>SU(2) and SU(3) multiplets and their properties, Quark model, Properties of Quarks, the standard model. Q-equation and threshold energies, Reactions cross sections, Resonance: Breit-Wigner single-level formula, Direct and compound nuclear reactions, Formal reaction theory: Partial wave approach and phase shifts, Scattering matrix, Reciprocity theorem. <b>Preparation leave[Exams]</b></p>	<p>Electronic spectra of diatomic molecules- Born Oppenheimer approximation vibrational coarse structure of electronic bands- progression and sequences-Intensity of electronic bands-Franck Condon principle-Rotational fine structure of electronic bands. <b>Preparation leave[Exams]</b></p>	<p>Acceptance angle for incident ray, Numerical Aperture, number of modes and cut-off parameter, single mode propagation, comparison of step and graded index fiber. Types of Optical Fiber : HPSUU, HPSIR, Halide fiber Optical fiber cables : Multifibre cable, Splicing and connectors. Advantage and Disadvantage of optical fiber. <b>Preparation leave[Exams]</b></p>
<b>May</b>	<b>Practical and Theory Exam</b>	<b>Practical and Theory Exam</b>	<b>Practical and Theory Exam</b>	<b>Practical and Theory Exam</b>

**M. Sc. I Semester**  
**Zoology**  
**Paper I**  
**BIOSYSTEMATICS, TAXONOMY AND BIODIVERSITY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>Unit-I</b> Definition and basic concepts of biosystematics and taxonomy. Historical resume of systematics. Importance and applications of biosystematics in biology
<b>AUGUST</b>	<b>Unit I</b> Trends in biosystematics concepts of different conventional and newer aspects, Chemotaxonomy, Cyto taxonomy, Molecular taxonomy  <b>Unit-II</b> Dimensions of speciation and taxonomic characters, Mechanisms of speciation in panmictic and apomictic species, Species concepts and species category, Theories of biological classification, Taxonomic characters and different kinds.
<b>SEPTEMBER</b>	<b>Unit-III</b> Procedure keys in taxonomy, Taxonomic procedures-taxonomic collections, preservation, curation, Taxonomic keys-different kinds of taxonomic keys, their merits and demerits, Process of typification and different Zoological types, International code of Zoological Nomenclature (ICZN) <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>Unit-IV</b> Procedure keys in taxonomy, Taxonomic procedures-taxonomic collections, preservation, curation, Taxonomic keys-different kinds of taxonomic keys, their merits and demerits. <b>Internal Test 2</b>
<b>NOVEMBER</b>	<b>Unit-IV</b> Process of typification and different Zoological types, International code of Zoological Nomenclature (ICZN) <b>Seminar</b>

**M. Sc. I Semester**  
**Zoology**  
**Paper II**  
**GENERAL PHYSIOLOGY AND ENDOCRINOLOGY**

MONTH	PROPOSED PLAN
JULY	<b>Unit-I 1.Digestion</b> 1.1Nutrition 1.2 Histology and function of digestive tract 1.3Digestive juices [i Saliva ii Gastric juice iii Pancreatic juice iv Bile juice v Succus entericus] Composition, function and mechanism of various digestive juice 1.4 Mechanism and physiology of digestion 1.5 Mechanism of absorption 2. Circulation of body fluid and its regulation 2.1Structure of heart and properties of cardiac muscle 2.2 Structure, function, synthesis and composition of blood 2.3Blood group, cardiac cycle and blood fibrinization and defibrinization
AUGUST	<b>Unit I 3. Gas exchange and physiology of respiratory tract</b> 3.1 Structure of respiratory tract 3.2 Breathing physiology and aerodynamic pulmonary volume 3.3 Transport of gases [Oxygen and carbon dioxide]  <b>Unit-II Nervous System</b> 3.1Histological structure of neurons and neuroglia and physiological properties of nerve fibre 3.2 Neurotrophins, cerebrospinal fluid and its function 3.3Mechanism of conduction of nerve impulses in non medullated and medullated nerve fibres 3.4 Synapse- structure, properties and its re uptake mechanism 3.5 Neurotransmitters- classification, receptors function and metabolism 4. Muscle function and movements 4.1 Anatomy, structure and properties of muscle 4.2 Theories and physiology of muscle contraction mechanism 4.3 Changes during muscle contraction 1. Mechanical 2. Chemical 3. Thermal 4. Electrical 4.4 Enzyme uses in muscle contraction mechanism 5. Sensory transduction 5.1 Auditory receptors 5.2 Chemoreceptors, taste and smell 5.3 Vision and photo receptors



SEPTEMBER	<b>Unit-III</b> Patterns of nitrogen excretion and its physiology 6.1 Excretory substance and physiology of liver for excretion 6.2 Excretory physiology of kidney and micturition 6.3 Regulation of acid-base balance [ Acidemia and alkalaemia] 6.4 Detoxication 7. Thermoregulation and Cold Tolerance 7.1 Heat balance and exchange 7.2 Endotherms Vs Ectotherms 7.3 Torpor, hibernation and aestivation 7.4 Pyexia and hypothermia 8. Aims and scope of endocrinology 8.1 Discovery of hormones 8.2 Experimental methods of hormone research 8.3 Classification of endocrine glands and hormones  <b>Internal Test 1</b>
OCTOBER	<b>Unit-IV</b> 9.1 Structure and functions of endocrine glands (Pituitary, pineal, pancreas, adrenal, thyroid etc.) 9.2 Biosynthesis of hormones (adrenal, thyroid and gonadal) 9.3 Releasing mechanism, transport mechanism and metabolism of Hormones  <b>Internal Test 2</b>
NOVEMBER	<b>Unit-IV</b> 9.4 Receptors and action mechanism of hormones 9.5 Neurohormone [releasing stimulating factor of hypothalamus and endorphin]  <b>Seminar</b>

**M. Sc. I Semester**  
**Zoology**  
**Paper III**  
**STRUCTURE AND FUNCTION OF INVERTEBRATES**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JULY	<b>Unit-I</b> 1. Organization of coelom 1.1 Acoelomates and Pseudo coelomates 1.2 Coelomates: Protostomia and Deuterostomia. 2. Locomotion 2.1 Flagellar and ciliary movement in Protozoa.
AUGUST	<b>Unit I</b> 2.2 Hydrostatic movement in Coelenterata, Annelida and Echinodermata <b>Unit-II</b> 3. Nutrition and Digestion 3.1 Patterns of feeding and digestion in Protozoa 3.2 Filter feeding in polychaeta. 4. Respiration 4.1 Organs of respiration Gills, lungs and trachea. 4.2 Respiratory pigments.
SEPTEMBER	<b>Unit-III</b> 5. Excretion 5.1 Organs of excretion. 5.2 Excretion and osmoregulation 6. Nervous System 6.1 Primitive nervous system: Coelenterata and Echinodermata. 6.2 Advanced Nervous system: Annelida, Arthropoda (Crustacea and insecta) and Mollusca (Cephalopoda) <b>Internal Test 1</b>
OCTOBER	<b>Unit-IV</b> 7. Invertebrate larvae 7.1 Larval forms of free-living and parasitic invertebrates  <b>Internal Test 2</b>
NOVEMBER	<b>Unit-IV</b> 8. Minor Phyla 8.1 Organization and general characters of (Ctenophore, Rotifera, Ectoprocta, Endoprocta)  <b>Seminar</b>

**M. Sc. I Semester**  
**Zoology**  
**Paper IV**  
**MOLECULAR BIOLOGY AND BIOTECHNOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JULY	<b>Unit-I</b> Biomembranes Molecular composition and arrangement Transport across membrane 2. Structure and function Mitochondria Golgi complex
AUGUST	<b>Unit I</b> Lysosome Ribosome <b>Unit-II</b> 3. DNA replication 4. Transcription 5. Translation 5.1 Genetic code 5.2 Mechanisms of initiation, elongation and termination 5.3 Regulation of translation
SEPTEMBER	<b>Unit-III</b> 6. Genome organization 6.1 Chromosomal organization: morphological and structural types. 7. Molecular mapping of genome 7.1 Genetic and physical maps 7.2 Polymerase Chain Reaction (PCR) and blotting techniques 7.3 Introduction to Human Genome. <b>Internal Test 1</b>
OCTOBER	<b>Unit-IV</b> 8. Transgenic animals and knock-outs 8.1 Production and applications 8.2 Embryonic stem cells <b>Internal Test 2</b>
NOVEMBER	<b>Unit-IV</b> 9. Application of genetic engineering 9.1 Medicine 9.2 Agriculture 9.3 Industry <b>Seminar</b>

**M. Sc. II Semester**  
**Zoology**  
**Paper-I**  
**QUANTITATIVE BIOLOGY AND COMPUTER APPLICATION**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<b>Unit-I</b> 1. Introduction to digital computer and application 1.1 Basic knowledge of hardware and software 1.2 CPU (Central Processing Unit) 1.3 Input and Output devices 1.4 Auxiliary storage system 1.5 Operating system and Binary number system
<b>FEBRUARY</b>	<b>Unit-II</b> 2. Computer application 2.1 Introduction to MS office 2.1.1 Word 2.1.2 Excel 2.1.3 Power point 3. Computer application in biostatistics 4. Simple computation and elementary knowledge of flow chart <b>Internal Test 1</b>
<b>MARCH</b>	<b>Unit III</b> 5. Types of biological data 6. Representation of data 7. Sample and sampling 8. Measures of central tendency 9. Measures of dispersion 10. Hypothesis testing: Null and alternate hypothesis <b>Unit-IV</b> 11. Tests of significance 11.1 Chi-square test 11.2. Student's t-test 12. Analysis of Variance <b>Internal Test 2</b>
<b>APRIL</b>	<b>Unit IV</b> 13. Simple linear regression 14. Correlation 15. Probability distribution: normal and binomial <b>Seminar</b>

**M. Sc. II Semester**  
**Zoology**  
**Paper-II**  
**GAMETE BIOLOGY AND DEVELOPMENT BIOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<b>Unit-I</b> 1. Sex differentiation and development 1.1 Chromosomal (genetic) basis of sex determination 1.2 Gonadal differential 1.3 Phenotype (internal) 1.4 Brain sex differentiation 2. Spermatogenesis 2.1 Spermatogenesis and development of spermatozoa 2.2 ultra structure of sperm 2.3 Capacitation 3. Oogenesis 3.1 Differentiation and growth of oocytes. 3.2 Organization of egg cytoplasm and egg cortex. 3.3 Vitellogenesis <b>Unit-II</b> 4. Fertilization 4.1 Biological role of fertilization. 4.2 Basic requirements of fertilization. 4.3 Mechanism of fertilization
<b>FEBRUARY</b>	<b>Unit II</b> 4.4 Biochemistry of fertilization 4.5 Post fertilization event 5. Parturition, lactation and hormonal contraception 6. Cleavage -Characteristics and mechanisms of cleavages <b>Unit-III</b> 7. Formative movements 8. Fate maps <b>Internal Test 1</b>
<b>MARCH</b>	<b>Unit III</b> 8.1 Utility and comparative topographical relationship of the Presumptive areas in early embryos of 8.1.1 Amphioxus 8.1.2 Fishes 8.1.3 Amphibian 8.1.4 Birds 9. Differentiation <b>Unit-IV</b> 10. Cell and tissue interactions in development 10.1 Primary embryonic induction 10.2 Competence <b>Internal Test 2</b>
<b>APRIL</b>	<b>Unit IV</b> 10.3 Concept of organizer 11. Metamorphosis 12. Teratology <b>Seminar</b>

**M. Sc. II Semester**  
**Zoology**  
**Paper-III**  
**POPULATION GENETICS AND EVOLUTION**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JANUARY	<b>Unit-I</b> 1. Concepts of evolution and theories of organic evolution: Lamarckism, Darwinism and Synthetic theory of evolution 2. Evidences of evolution: anatomical, embryological, palaentological, physiological and Bio-chemical <b>Unit-II</b> 3. Hardy-Weinberg law of genetic equilibrium 4. Detailed account of destabilizing forces. 4.1 Natural selection
FEBRUARY	<b>Unit II</b> 4.2 Mutation 4.3 Genetic drift 4.4 Meiotic drive 5. Phenotypic variation  <b>Unit-III</b> 6. Patterns and mechanisms of reproductive isolation 7. Phylogenetic and biological concepts of species <b>Internal Test 1</b>
MARCH	<b>Unit III</b> 8. Gene Evolution, Evolution of gene families 9. Factors affecting human disease frequency  <b>Unit-IV</b> 10. Origin of higher categories 11. Micro-and Macro-evolution <b>Internal Test 2</b>
APRIL	<b>Unit IV</b> 12. Evolution of horse, elephant, camel, man  <b>Seminar</b>

**M. Sc. II Semester**  
**Zoology**  
**Paper-IV**  
**TOOLS AND TECHNIQUES IN BIOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JANUARY	<b>Unit-I</b> 1.Principles and application of 1.1 Ultracentrifugation 1.2 Electrophoresis 1.3 Chromatography (various types) 1.4 Lambert-Beers Law and colorimetry and spectrophotometry 1.5 Flow cytometry. <b>Unit-II</b> 2. Principles and Application of 2.1 Light Microscopy and micrometry 2.2 Phase Contrast microscopy 2.3 Interference microscopy
FEBRUARY	<b>Unit II</b> 2.4 Fluorescence microscopy 2.5 Transmission Electron microscopy. 2.6 Scanning Electron microscopy.  <b>Unit-III</b> 3. Assay 3.1 Chemical assays 3.2 Biological assays-in vivo and in vitro 4. Principles of cytological and cytochemical techniques <b>Internal Test 1</b>
MARCH	<b>Unit III</b> 4.1 Fixation: chemical basis of fixation by formaldehyde, gluteraldehyde, chromium salts, mercury salts, osmium salts, alcohol and acetone 4.2 Chemical basis of staining of carbohydrate, protein lipids and nucleic acids.  <b>Unit-IV</b> 5. Principle and techniques of 5.1 Nucleic acid hybridization and cot curve 5.2 Sequencing of proteins and nucleic acids  <b>Internal Test 2</b>
APRIL	<b>Unit-IV</b> 6. Freeze techniques 7. Media preparation and sterilization 8. Inoculation and growth monitoring  <b>Seminar</b>

**M. Sc. III Semester**  
**Zoology**  
**Paper-I**  
**COMPARATIVE ANATOMY OF VERTEBRATES**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>Unit-I</b> 1. Origin of Chordates 1.1 Amphibians, Reptiles, Birds and Mammals. 2. Classification of Vertebrates 2.1 Amphibians 2.2 Reptiles 2.3 Birds 2.4 Mammals.
<b>AUGUST</b>	<b>Unit-II</b> 3. Vertebrate integument and its derivatives. 3.1 General structure and functions of Integument. 3.2 Structure and functions of glands, scales, horns, claws, nails, hoof, feather and hair. 4. Skeletal system in vertebrates. 4.1 Comparative account of (i) Jaw suspensorium, (ii) Limbs and Girdles
<b>SEPTEMBER</b>	<b>Unit-III</b> 5. Respiration in Vertebrates. 5.1 Comparative account of respiratory organs (structure and functions) 6. Circulation in Vertebrates. 6.1 Structure and function of blood. 6.2 Evolution of heart. 6.3 Evolution of aortic arches. <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>Unit IV</b> 7. Nervous System – Central, Peripheral and Autonomic. <b>Internal Test 2</b>
<b>NOVEMBER</b>	8. Sense organs. 8.1 Comparative account of Sensory Receptors. 9. Evolution of Urinogenital system in vertebrates. <b>Seminar</b>



**M. Sc. III Semester**  
**Zoology**  
**Paper-II**  
**BIOLOGICAL CHEMISTRY**

MONTH	PROPOSED PLAN
JULY	<b>UNIT I</b> 1. Properties of Proteins 1.1 Structure and properties of amino acids. 1.2 Classification of proteins. 1.3 Structure of proteins.
AUGUST	<b>UNIT I</b> 1.4 Biological Functions of Proteins. 1.5 Protein Metabolism. <b>UNIT II</b> 2. Carbohydrates 2.1 Classification of carbohydrates. 2.2 Structure and Functions of Carbohydrates. 2.3 Carbohydrate metabolism. 2.4 Utilization of Krebs cycle 3. Lipid 3.1 Lipid structure and functions 3.2 Lipid metabolism.
SEPTEMBER	<b>UNIT III</b> 4. Vitamins 4.1 Water and Fat soluble vitamins, 4.2 Chemistry, occurrence and physiological role. 5. Enzymes 5.1 Classification and nomenclature. 5.2 Mechanism of action 5.3 Regulation of enzyme activity and functions of Co-enzymes. <b>Internal Test 1</b>
OCTOBER	<b>UNIT IV</b> 6. Nucleic acid 6.1 Chemistry of DNA. 6.2 Chemistry of RNA
NOVEMBER	<b>UNIT IV</b> 6.3 Biological importance of nucleic acids. 6.4 Nucleoproteins. 6.5 Metabolism of nucleic acids. <b>Seminar</b>

**M. Sc. III Semester**  
**Zoology**  
**Paper-III**

**ENVIRONMENTAL BIOLOGY AND POPULATION ECOLOGY**

MONTH	PROPOSED PLAN
JULY	<b>Unit-I</b> 1. Ecology 1.1 Definition, concept and scope of ecology. 2. Structure and components of ecosystem.
AUGUST	<b>UNIT I</b> 1. Types and functions of ecosystem. 4. Ecological modeling. <b>Unit-II</b> 1. 5. Limiting factors 5.1 Energy flow, food chain, food web and trophic levels, ecological pyramids. 5.2 Ecological succession
SEPTEMBER	<b>UNIT II</b> 5.3 Biogeochemical cycles: water cycle, carbon, oxygen and nitrogen cycles. <b>Unit-III</b> 6. Population dynamics 6.1 Dynamics of population growth. 6.2 Factors that increase or decrease population. <b>Internal Test 1</b>
OCTOBER	<b>Unit-III</b> 7. Community dynamics 7.1 Characteristics and composition 7.2 Development and classification of communities. <b>Internal Test 2</b>
NOVEMBER	<b>Unit-IV</b> 8. Renewable and non-renewable resources: Forest, water and mineral resources. 9. Conservation of energy sources. 10. National Parks, Wild life sanctuaries and biosphere reserves <b>Seminar</b>

**M. Sc. III Semester**  
**Zoology**  
**Paper-IV**  
**ANIMAL BEHAVIOUR**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>Unit-I</b> 1. Historical perspectives- Ethology 2. Behavioral patterns 3. Innate behavior 4. Biological rhythms 4.1 Types of biological rhythm 4.2 Biological clock
<b>AUGUST</b>	<b>Unit-II</b> 5. Communications 5.1 Auditory 5.2 Visual 5.3 Chemical 6. Learning and Memory 6.1 Conditioning 6.2 Habituation 7. Reasoning 8. Reproductive behaviour.
<b>SEPTEMBER</b>	<b>Unit-III</b> 9. Orientation 10. Echolocation in bats 11. Bird migration and navigation. 12. Fish migration. <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>UNIT III</b> 13. Neural and hormonal control of behaviour <b>Unit-IV</b> 14. Hormonal effect on behavioural patterns. 15. Social behaviour 15.1 Social organization in insects and primates 15.2 Schooling in fishes and Flocking in birds <b>Internal Test 2</b>
<b>NOVEMBER</b>	<b>Unit-IV</b> 15.3 Homing, territoriality, dispersal 15.4 Altruism 15.5 Host–parasite relation <b>Seminar</b>

**M. Sc. IV Semester**  
**Zoology**  
**Paper-I**  
**ENVIRONMENTAL PHYSIOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<b>Unit-I</b> 1. Adaptations 1.1 Levels of adaptation. 1.2 Mechanisms of adaptation. 2. Adaptations to different environments. 2.1 Marine, shores and estuaries. 2.2 Freshwater. 2.3 Terrestrial Life.
<b>FEBRUARY</b>	<b>Unit-II</b> 2. Adaptations to different environments. 3.1 Aerial 3.2 Polar 3.3 Deep sea environment 3.4 Desert, Cave 3.5 Wet land 3.6 Parasitic habitats. <b>Unit-III</b> 1. 4. Stress Physiology 4.1 Basic concepts of environmental stress and strain, Concept of elastic and plastic strain. <b>Internal Test 1</b>
<b>MARCH</b>	<b>Unit-III</b> 4.2. Stress avoidance, stress tolerance and stress resistance. 4.3. Acclimatization, acclimation and adaptation. 4.4. Endothermic and physiological mechanism of regulation of body temperature <b>Internal Test 2</b>
<b>APRIL</b>	<b>Unit-IV</b> 5. Stress physiology in different conditions 5.1 Osmoregulation in aqueous and terrestrial habitats. 5.2 Physiological response to oxygen deficient stress. <b>Seminar</b>

**M. Sc. IV Semester**  
**Zoology**  
**Paper-II**  
**IMMUNOLOGY AND PARASITISM**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<b>Unit-I</b> 1. Cells of immune system 1.1 B-Lymphocytes, T-lymphocytes, Null Cells 1.2 Mononuclear cells 1.3 Granulocytic cells (Neutrophils, Eosinophils and Basophils) 1.4 Mast cells 1.5 Dendritic cells 2. Organs of immune system 2.1 Primary lymphoid organs (Thymus, bone marrow) 2.2 Secondary lymphoid organs (Lymph nodes, spleen, mucosal associated lymphoid tissue, cutaneous associated lymphoid tissue)
<b>FEBRUARY</b>	<b>Unit-II</b> 2. Immunoglobulin structure and function 3.1 Molecular structure of Ig, Light chain and Heavy chain 3.2 Immunoglobulin classes 3.2.1 IgG 3.2.2 IgM 3.2.3 IgE 3.2.4 IgD 3.3 Monoclonal antibodies <b>Unit-III</b> 1. 4. Antigens 4.1 Immunogenicity 4.2.1 Complement System: Classical & Alternative Pathways 4.2.2 Contribution of the immunogens. 4.2.3 Contribution of Biological system. 5. Antigen - Antibody Interaction <b>Internal Test 1</b>
<b>MARCH</b>	<b>Unit-III</b> 6. Vaccine 6.1 Active and passive immunization 6.2 Whole organism vaccine 6.4 Recombinant vector vaccines 6.5 DNA vaccines <b>UNIT IV</b> 7. Immune system in Health disease 7.1 Immune response to infectious disease 7.2 Immune response in cancer <b>Internal Test 2</b>
<b>APRIL</b>	<b>UNIT IV</b> 8. Pathophysiology of parasitic infection 8.1 Viral infections 8.2 Bacterial infection 8.3 Helminths infection 9. AIDS <b>Seminar</b>

**M. Sc. IV Semester**  
**Zoology**  
**Paper-III**  
**ICHTHYOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<b>Unit-I</b> 1. Skin and its derivatives in fishes. 2. Skeleton in fishes. 3. Fins-Types, structure, modification, functions 4. Locomotion in fishes. 5. Food, feeding habit and alimentary canal of fishes.
<b>FEBRUARY</b>	<b>Unit-II</b> 6. Respiration and accessory respiratory organs. 7. Swim bladder and Weberian ossicles. 8. Blood, heart and blood vascular system of fishes. 9. Excretion and Osmoregulation in fishes.  <b>Internal Test 1</b>
<b>MARCH</b>	<b>Unit-III</b> 10. Nervous system and sense organs in fishes 11. Specialized organs in fishes (organs of sound production & electric organs). 12. Reproduction in fishes 13. Development in fishes 14. Endocrine glands  <b>Internal Test 1</b>
<b>APRIL</b>	<b>Unit-IV</b> 15. Adaptation: 15.1 Colouration 15.2 Deep sea fishes 15.3 Hill stream fishes 16. Larvivorous fishes 17. Exotic fishes 18. Fish products and by-products 19. Setting and maintenance of an aquarium <b>Seminar</b>

**M. Sc. IV Semester**  
**Zoology**  
**Paper-IV**  
**AQUACULTURE AND FISHERIES**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<b>Unit-I</b> 1. General characteristics, classification, evolution and phylogeny of the following: Placoderms Elasmobranchs Holocephali Dipnoi. Teleostomi.
<b>FEBRUARY</b>	<b>Unit-II</b> 2. Fish culture in fresh water Physicochemical condition of water and its effect on fishes. Construction and maintenance of fish farm, management of ponds Fresh water fish breeding (dry and wet bundh breeding, induced breeding) Stocking and transport of fish seed and brood fish. Intensive culture of air breathing fishes. Fish cum paddy culture.  <b>Internal Test 1</b>
<b>MARCH</b>	<b>Unit-III</b> 3. Composite fish culture 4. Integrated fish farming 5. Sewage fisheries 6. Prawn fishery 7. Inland fisheries 8. Marine fisheries  <b>Internal Test 2</b>
<b>APRIL</b>	<b>Unit-IV</b> 9. Fish diseases 9.1 Viral diseases 9.2 Bacterial and protozoan diseases 9.3 Helminth parasites of fishes 9.4 Prophylaxis and treatment of fish diseases  <b>Seminar</b>

**GOVT. D.B. GIRLS P.G.COLLEGE, RAIPUR(C.G)**

**TEACHING PLAN 2019-20**

**M.Sc Ist SEMESTER Resource management**

**PAPER - I**

**TITLE OF PAPER- RESEARCH METHODOLOGY**

<b>Month</b>	<b>Plan</b>
<b>October</b>	<b>Science, Scientific methods and approach</b>  <b>Social research &amp; survey: Meaning, definition, nature, scope, objects, types, distinction between social survey and research</b>
<b>November</b>	<b>Pretesting &amp; pilot survey</b>  <b>Hypothesis: Definition, Source, characteristics, importance, main difficulties in the formation of hypothesis, disadvantage</b>  <b>Source of data: primary &amp; secondary sources</b>
<b>December</b>	<b>Methods or techniques of data collection</b>  <b>a. Observation</b>  <b>b. Interview</b>  <b>c. Schedule</b>  <b>d. Questionnaire</b>  <b>e. Case-study</b>  <b>Sampling: Meaning, characteristics, advantages, and disadvantages</b>  <b>Types:</b>  <b>Random sampling</b>  <b>Purposive sampling</b>  <b>Stratified sampling</b>  <b>Other sampling method</b>
<b>January</b>	<b>Classification and tabulation of data analysis and interpretation of data</b>  <b>Research design steps and process of its formulation</b>  <b>Types of research design- exploratory, descriptive, diagnostic and experimental</b>
<b>February</b>	<b>Diagrammatic presentation of data</b>  <b>Revision &amp; SEMINAR</b>



# TEACHING PLAN - HOME SCIENCE - RESOURCE MANAGEMENT

CLASS: M.Sc. I SEMESTER PAPER – II

## THEORY OF MANAGEMENT

2019-20

No.	MONTH		TEACHING PLAN
1	July	Unit-I	<p>-History and development of management in India and 2 in ancient civilization, the management in medieval period. Importance of Management in India.</p> <p><b>Management Function and Process:</b> Definition, what is management, Process of management, Characteristics of management, Types of management</p> <p><b>-Advantages and limitations of management</b></p> <p><b>-Management functions and process</b></p> <p>- Factors Effecting Decision making</p> <p>-making of effective decision</p> <p><b>Planning:</b> Objectives, principles and Types</p> <p><b>Organizing:</b> Purpose, principles, processes, delegations of authority</p> <p><b>-Controlling :</b> Tools for management control,</p> <p><b>-Evaluation :</b> Tool and Techniques</p>
2	August	Unit-II	<p><b>Resources in family :</b> Definitions of resources, Types, Characteristics of resources, Factors affecting Management</p> <p><b>- Guiding, directing</b></p> <p><b>- Leadership :</b> Definitions and Characteristics, Qualities of Leader, Functions of Leader</p>
3	September	Unit-III	<p><b>- Management abilities.</b></p> <p><b>- Ends sought through management :</b></p> <p><b>Goals:</b> Factors affecting endless chain, classification</p> <p><b>Values:</b> Sources of value patterns, status security</p> <p><b>Standards:</b> meaning, types, factors affecting it.</p> <p><b>- Communication:</b> Meaning and definition, characteristics and process, importance of communication in management</p>
4	October	Unit-IV	<p><b>Decision making:</b> Meaning and types, Process of decision making, Consequences of each alternative, Chain decisions, decision conflict, Factors affecting decision making, Making of effective decision, Conflict management.</p> <p><b>Motivation :</b> Meaning and definition, Characteristics and importance, Elements of motivation, Evaluation tools &amp; techniques</p>
5	November		Semester Exam & Project Work

# TEACHING PLAN - HOME SCIENCE - RESOURCE MANAGEMENT

CLASS: M.Sc. I SEMESTER PAPER – III

## CONSUMER ECONOMICS

2019-20

No.	MONTH		TEACHING PLAN
1	July	Unit-I	<b>Consumer and the Indian economic environment.</b> A. Definition and characteristics of consumers B. Definition role types and how does an economy function, problems of economy. C. Role of consumer in the economy of the nation <b>Contemporary economic environment.</b>
2	August	Unit-II	<b>Introduction of market Meaning, definition, characteristics, types.</b> <b>Consumer behavior :</b> A. Understanding consumer and their wants B. Determinants of consumer behavior-Opinion, leadership, group influence, social class and culture, consumer dissatisfaction. C. Market strategies influencing consumer behavior D. Guidelines for wise purchasing.
3	September	Unit-III	<b>Market practices that exploit consumers</b> A. <b>Type of exploitation :</b> Adulteration, packaging, label, weights and measures, advertising and sale gimmicks. B. <b>Causes of exploitation :</b> Consumer problem and their solutions
4	October	Unit-IV	<b>Consumer protections: Need and rationale</b> A. <b>History of consumer movement in India:</b> Origin, growth, causes for slow growth. B. <b>Role of consumer organizations:</b> National, regional and international. C. Role of government agencies, legislation. D. Empowerment of consumers. <b>Consumer credit :</b> A. Definition and types of credit B. Factors affecting consumer credit decisions.
5	November		Project Work & Semester Exam

## **M.SC I SEM RESOURCE MANAGEMENT**

### **PAPER IV**

#### **LAND SCAPING**

JULY- INTRODUCTION, HISTORY OF LAND SCAPING, GARDEN ESTABLISHMENT, ORNAMENTAL GARDENS MANAGEMENT, MAINTENANCE

AUG- LAND PROFILE, SOIL TYPES, TEXTURE, ORNAMENTAL GARDENS CHART, PRINCIPLES OF LAYOUTS GARDEN STYLE, FURNITURE, TOOLS, EQUIPMENT

SEPT- FARM SHED, GREEN HOUSE, BONSAI, STYLE MATERIAL. METHODS, PEDESTAL, MONUMENT STATUES, ABSTRACT, PERGOAL, MANURE, WEED, TYPES, DISTRIBUTION

OCT- INDOOR OUTDOOR PLANTS NATURAL ARTIFICIAL, SHRUBS, CREEPERS, GRASS, POT CULTURE TERRACE GARDEN, IRRIGATION, NEED, SOURCES, METHODS, WASTE MANAGEMENT, TYPES

NOV- PRACTICAL LAND SCAPING AND SEMINAR

DEC- SEMESTER EXAMINATION

PROPOSED TEACHING PLAN FOR THE SESSION OF **2019-20**

## **M.SC II SEM RESOURCE MANAGEMENT**

### **PAPER II**

#### **HOSPITALITY ADMINISTRATION**

JAN- HOSPITALITY MEANING, TYPES, DEFINITION, NATURE, SCOPE SIGNIFICANCE, HISTORY ROLE OF HOUSEKEEPING, RELATION TO COMMERCIAL AND WELFARE SECTORS, MANAGEMENT

FEB- SCOPE, IMPORTANCE OF HOUSEKEEPING, LAYOUT OF HOUSEKEEPING DEPARTMENT, SERVICE MANAGEMENT MAINTENANCE, REPAIR, REDECORATING

MAR- ADMINISTRATIVE POLICIES PERSONNEL MANAGEMENT, BUDGET, HUMAN BEHAVIOUR, PERSONALITY, ATTITUDE

APR- SAFETY, SECURITY, SANITATION, FIRE FIGHTING, FIRST AID, SAFETY IN USE OF EQUIPMENT PEST CONTROL, UNIFORM TYPES, SELECTION, DISTRIBUTION, CONTROL, HOSTESS TRAINING BANQUET MANAGEMENT, STRESS MANAGEMENT DEFINITION, TYPES, METHODS OF STRESS REDUCTION, TEAM MANAGEMENT

MAY- SEMINAR

JUNE- SEMESTER EXAMINATION

# TEACHING PLAN - HOME SCIENCE - RESOURCE MANAGEMENT

CLASS: M.Sc. II SEMESTER PAPER – III

## PUBLIC FINANCE

2019-20

No.	MONTH		TEACHING PLAN
1	January	Unit-I	<b>National income:</b> Income distribution, per capita income, Inequalities of income, Consumer price index, Inflation v/s Deflation, Wages and earning principles of wage determination, Wages differentials
2	February	Unit-II	<b>Financial planning and implementation:</b> <b>Budgeting:</b> Allocation of resources, identifying aspiration, expectations and goals, objectives and advantages of budgeting, control. Planning a budget for a Family of fixed income, Restaurant/hostel/any selected organization, Boutique, Small industry
3	March	Unit-III	<b>Tax planning:</b> Types of taxes, Principles and procedures of income tax, Preparation of statement of income and filling of income tax in case of returns, Individuals (Salary class), Knowledge of various exemptions and deductions <b>Saving and investments:</b> Importance of savings components, Saving facilities and investment opportunities, Evaluations of savings components, Economics security and components, Economics security and financial alternatives.
4	April	Unit-IV	<b>Impact of globalization and direct foreign investment on business opportunities in India.</b> a. Income and property rights- Will, trusts and legal aspects of economics insecurity. b. Unemployment, its nature and causes. Government programs designed to increase family financial security. <b>Markets and Marketing:</b> a. Basic concept of market and marketing b. Types of markets: Wholesale, retail, specialty, local, residential. c. Changing nature of the business world i.e. e-business and e-commerce. d. Marketing environment, marketing theories, models. <b>Markets and prices:</b> a. Definition and types of marketing prices. b. Pricing under perfect and imperfect competition and monopoly. <b>International Marketing management</b> a. Meaning, need, organization for international marketing b. scope, elements of international marketing c. analysis product planning for world marketing.

5	May		Semester Exam & Project Work

## TEACHING PLAN - HOME SCIENCE - RESOURCE MANAGEMENT

**CLASS: M.Sc. II SEMESTER      PAPER – IV**

### ENVIRONMENT MANAGEMENT

**2019-20**

No.	MONTH		TEACHING PLAN
1	January	Unit-I	<b>Fundamentals of environment:</b> <ol style="list-style-type: none"> <li>Environment definition. Scope of environmental studies.</li> <li>Life and environment. Physical, chemical factors in the environment, changes in the environment.</li> <li>Environment hazards and risks.</li> </ol>
2	February	Unit-II	<b>Eco-system:</b> <ol style="list-style-type: none"> <li>Ecology: Definition, objectives and concept of Eco-system, scope of Ecology.</li> <li>Tropic structure of Ecosystem</li> <li>Ecological pyramid</li> <li>Energy flow in Ecosystem</li> </ol>
3	March	Unit-III	<b>Environmental pollution:</b> <ol style="list-style-type: none"> <li>Concept of pollution, meaning, definition, causes and classification of pollution.</li> <li>Effect of Environmental pollution</li> </ol> <b>Urban pollution :</b> Pollution and environment with reference to soil and noise.
4	April	Unit-IV	<b>Sources of pollution :</b> <ol style="list-style-type: none"> <li>Effect of pollution.</li> <li>Remedies of control pollution.</li> <li>Air pollution control</li> </ol> <b>Environment legislation:</b> <ol style="list-style-type: none"> <li>Environment policies</li> <li>Human rights issues relating to environment</li> <li>Environment movements</li> <li>Environment ethics</li> </ol>
5	May		Semester Exam & Project Work

PROPOSED TEACHING PLAN FOR THE SESSION OF 2019-20

**M.SC.IIISEM RESOURCE MANAGEMENT**

**PAPER I**

**ERGONOMICS**

JULY- MEANING, SCOPE, DEFINITION OF ERGONOMICS, NATURE OF WORK, MAN  
MACHINE ENVIRONMENT SYSTEM, STRUCTURE AND FUNCTION OF MUSCLE,  
BIOCHEMISTRY OF MUSCLE WORK

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AUG- SOURCES OF ENERGY, ATP,CP,FOOD ,ENERGY REQUIREMENTS, DEFINITION OF  
ANTHROPOMETRY, HUMAN BODY AS A LEVER PRINCIPLES OF MOTION ECONOMY  
SEPT- IDENTIFICATION, ANALYSIS, TYPES OF POSTURE, EFFECTS OF WRONG POSTURE, CORRECT  
TECHNIQUES OF CARRYING AND LIFTING WEIGHTS, PHYSICAL ENVIRONMENT  
OCT- HEAT, THERMAL REGULATION, HEAT BALANCE, EXCHANGE OF HEAT, LIGHTING, COLOUR, NISE

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NOV- PRACTICAL ERGONOMICS, SEMINAR  
DEC- SEMESTER EXAMINATION

# TEACHING PLAN - HOME SCIENCE - RESOURCE MANAGEMENT

CLASS: M.Sc. III SEMESTER PAPER – II

## ENTREPRENEURSHIP

2019-20

No.	MONTH		TEACHING PLAN
1	July	Unit-I	<b>- Conceptual Framework :</b> Entrepreneurship ,Concept, nature & type of Entrepreneurship a. Development of Entrepreneurship. b. Entrepreneurship& socio-economic development <b>- Entrepreneurship :</b> Institutional finance and Entrepreneurship Organization, Concept, nature process and importance of Organization
2	August	Unit-II	<b>- The Entrepreneur :</b> i. Meaning , definition characteristics and function ii. Effectiveness of Entrepreneurs. iii. Social responsibility of an Entrepreneur <b>- The Entrepreneurs.</b> <b>- Organization Supporting Entrepreneurs.</b>
3	September	Unit-III	<b>- Licensing &amp; regulation of industries.</b> <b>- Infrastructure facilities.</b> <b>- Launching &amp; organizing Entrepreneurship :</b> Economic and sociological view points. Entrepreneurial development programs.
4	October	Unit-IV	<b>- Preparation of a new project.</b> <b>- Project report.</b> <b>- Start and expansion of a new business.</b>
5	November		Semester Exam & Project Work

# TEACHING PLAN - HOME SCIENCE - RESOURCE MANAGEMENT

CLASS: M.Sc. III SEMESTER PAPER – III

## HOUSING

2019-20

No.	MONTH		TEACHING PLAN
1	July	Unit-I	<ul style="list-style-type: none"><li>- <b>History of Housing.</b></li><li>- <b>Housing –Needs definition and importance.</b></li><li>- <b>Changes in Housing need &amp; standards.</b></li><li>- <b>Housing In India As Affected by Trends In :</b> Population, Establishment of Households, Level of Income per Households, Occupation, Family Mobil, Technological Development.</li></ul>
2	August	Unit-II	<ul style="list-style-type: none"><li>- <b>Present Housing Condition In India :</b> Rural &amp; Urban, Cost of Housing, Quality of Housing Available.</li><li>- <b>Private and Public Housing :</b> Various Housing Schemes &amp; Local Government Programs, Industrial Housing,</li><li>- <b>Housing finance.</b></li></ul>
3	September	Unit-III	<ul style="list-style-type: none"><li>- <b>Factors to be Considered While Designing :</b> Orientation, Grouping of users area, Circulation between &amp; within users area, Light &amp; Ventilation, Flexibility, Privacy, Roominess, Services, Aesthetics, Cost.</li><li>- <b>Type of Floor.</b></li><li>- <b>Study of building materials.</b></li></ul>
4	October	Unit-IV	<ul style="list-style-type: none"><li>- <b>False Ceilings :</b> Different types in various materials.</li><li>- <b>Kitchen Platform and type.</b></li><li>- <b>Storage areas :</b> Need and Rules for storage, Storage arrangements in different rooms.</li><li>- <b>Environmental Issues :</b> Human &amp; Environment.</li><li>- <b>Housing Research</b><ul style="list-style-type: none"><li>a. Agencies for research &amp; Development</li><li>b. Methods &amp; Techniques</li></ul></li></ul>
5	November		Semester Exam & Project Work



PROPOSED TEACHING PLAN FOR THE SESSION OF **2019-20**

**M.SC IIISEM,RESOURCE MANAGEMENT**

**PAPER IV**

**FUEL TECHNOLOGY**

JULY- SOURCES OF ENERGY, ENERGY CONSUMPTION PATTERNS,

AUG- FOSSIL FUEL, FUEL CLASSIFICATION SOLID, LIQUID, GAS, ARTIFICIAL FUEL LIQUID GAS SOLID

SEPT- SOLAR ENERGY, SOLAR TREE, AIR ENERGY, ENERGY FROM BIOMASS

OCT- ENERGY CONSERVATION, PRINCIPLES OF IMPROVING EFFICIENCY, PROPER USE OF ENERGY

NOV- SEMINAR

DEC- SEMESTER EXAMINATION

PROPOSED TEACHING PLAN FOR THE SESSION OF **2019-20**

**M.SC.IV SEM RESOURCE MANAGEMENT**

**PAPER I**

**RESIDENTIAL AND ESTABLISHMENT**

JAN- WATER SUPPLY SYSTEM TO BUILDING, WATER PIPES, VALVES, TYPES OF WATER SUPPLY

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FEB- WATER SUPPLY TO BATH ROOM, WC, TOILET AND KITCHEN, DRAINAGE SYSTEM, SEPTIC TANK,  
DRAINAGE USING SEPTIC TANK AND SOAKPI, DRAIN PIPES, TRAPS, PIPE

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MAR- ELECTRIC LAYOUTS AND WIRING SYSTEMS, AIR CONDITIONING BUILDING DISASTER  
MANAGEMENT

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APR- TERMITE PROOFING, DEMP PREVENTION, HEAT INSULATION, FIRE FIGHTING

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MAY- SEMINAR

JUNE- SEMESTER EXAMINATION

# TEACHING PLAN - HOME SCIENCE - RESOURCE MANAGEMENT

CLASS: M.Sc. IV SEMESTER PAPER – II

## CONSUMER EDUCATION

2019-20

No.	MONTH		TEACHING PLAN
1	January	Unit-I	<p><b>- Consumer Education :</b></p> <ul style="list-style-type: none"><li>a. Brief History</li><li>b. Definition, Concept and Significance/need.</li><li>c. Objectives</li></ul> <p><b>- Approach to consumer education :</b></p> <p>Economic, environment, socio cultural, health &amp; safety and legal.</p> <p><b>- Action line for consumer education :</b></p> <ul style="list-style-type: none"><li>a. <b>Action plan :</b> knowing situation, formulating plan of action, implementing, evaluation and follow up.</li><li>b. <b>Methods for imparting education :</b> Role-plays and games, project testing and evaluation.</li></ul>
2	February	Unit-II	<p><b>- Contents:</b></p> <p>Resource management, decision-making, sound purchasing habits, learning skills, conservation and protection of environment.</p> <p><b>- Resources:</b></p> <p>Media-Written, audio and visual. Market place, government agencies consumer organizations.</p> <p><b>- Problems faced and remedial measures.</b></p>
3	March	Unit-III	<p><b>- Teaching Consumerism :</b></p> <ul style="list-style-type: none"><li>a. Plans for teaching better consumption practices, factors</li><li>b. Consumer aids : Meaning, Classification types.</li><li>c. Consumer Rights and responsibilities.</li></ul>
4	April	Unit-IV	<p><b>- Consumer Protection :</b></p> <ul style="list-style-type: none"><li>a. Need, measures and methods.</li><li>b. Role of consumer organizations: National and International.</li><li>c. Consumers International regional Office at Pune India.</li><li>d. Consumer laws: Role and Provisions of the acts-Implications.</li></ul>
5	May		Semester Exam & Project Work

# TEACHING PLAN - HOME SCIENCE - RESOURCE MANAGEMENT

## CLASS: M.Sc. IV SEMESTER

### PAPER – III

### SPACE DESIGN

2019-20

No.	MONTH		TEACHING PLAN
1	January	Unit-I	Analysis of Housing Design 1. Selection of site 2. Analysis of Plan – Needs and definition importance 3. Process of Map making. 4. Site plan & floor plan Types of Designs 1. Structural design decorative design Styles of Interior Designs: Traditional style, cottage style, modern style. 2. Design and Color: Color theory, dimensions of Color, Classification of Colors, Psycho-social and physical effects of colors, types of color schemes.
2	February	Unit-II	Decoration: History of development of decoration. Object of decoration. 1. Furniture Design – Fundamentals of Furniture arrangement in various rooms. 2. Classification selection. 3. Residential Furniture – Sketch, form and sizes of all and details of any 6 items, such as sofa, diwan, chairs, puffed centre table, wall unit, dining table, side board, kitchen unit, bed, wardrobe, dressing table etc.
3	March	Unit-III	1. The Special Need .Division of Rooms and their arrangement. - Circulation in building. - Space needs in relation to furniture and fittings - Space in room and passage. 2. Layout and dimensions of rooms Entrance wall & front door. Living & drawing Room Bedroom & Children Room Guest Room a. The Kitchen Dining Room,Bathroom & W.C.
4	April	Unit-IV	Current Trends in Interior Design 1. Place of Art in the Home 2. Use of Principle of Art in the decoration Uses of color in Home decoration. 3. Current trends of Indian decorative regional art.
5	May		Semester Exam & Project Work

## **M.SC IV SEM RESOURCE MANAGEMENT**

### **PAPER IV**

#### **MANAGEMENT OF HUMAN RESOURCES**

JAN- PRINCIPLES OF HUMAN RESOURCES USE,FATIGUE TYPES CAUSES

FEB- FACTORS, CONCEPT AND TYPES OF EFFICIENCY AND EFFECTIVENESS, MEANING FACTORS OF PRODUCTIVITY ,EFFECT OF MOTIVATION ON PRODUCTIVITY

MAR- MEANING NATURE, CHARACTERISTICS, PROCESS,METHODS, IMPORTANCE, FACTORS OF MOTIVATION, METHODS AND TECHNIQUES OF IMPROVING RESOURCE USE

APR- PERSONALITY AND DEVELOPMENT OF MANAGER TYPES IMPORTANCE, METHODS ,TRAINING, LEADERSHIP, TRAINING FOR PERSONALITY DEVELOPMENT AND LEADERSHIP, GOALS OF TRAINING AND DEVELOPMENT

MAY- SEMINAR

JUNE- SEMESTER EXAMINATION

## **PROPOSED TEACHING PLAN FOR THE SESSION OF 2019-20**

### **M.SC I SEM RESOURCE MANAGEMENT PAPER IV LAND SCAPING**

JULY- INTRODUCTION, HISTORY OF LAND SCAPING, GARDEN ESTABLISHMENT, ORNAMENTAL GARDENS MANAGEMENT, MAINTENANCE

AUG- LAND PROFILE, SOIL TYPES, TEXTURE, ORNAMENTAL GARDENS CHART, PRINCIPLES OF LAYOUTS GARDEN STYLE, FURNITURE, TOOLS, EQUIPMENT

SEPT- FARM SHED, GREEN HOUSE, BONSAI, STYLE MATERIAL. METHODS, PEDESTAL, MONUMENT STATUES, ABSTRACT, PERGOAL, MANURE, WEED, TYPES, DISTRIBUTION

OCT- INDOOR OUTDOOR PLANTS NATURAL ARTIFICIAL, SHRUBS, CREEPERS, GRASS, POT CULTURE TERRACE GARDEN, IRRIGATION, NEED, SOURCES, METHODS, WASTE MANAGEMENT, TYPES

NOV- PRACTICAL LAND SCAPING AND SEMINAR

DEC- SEMESTER EXAMINATION

PROPOSED TEACHING PLAN FOR THE SESSION OF **2019-20**

**M.SC II SEM RESOURCE MANAGEMENT PAPER II HOSPITALITY ADMINISTRATION**

JAN- HOSPITALITY MEANING, TYPES, DEFINITION, NATURE, SCOPE SIGNIFICANCE, HISTORY ROLE OF HOUSEKEEPING, RELATION TO COMMERCIAL AND WELFARE SECTORS, MANAGEMENT

FEB- SCOPE, IMPORTANCE OF HOUSEKEEPING, LAYOUT OF HOUSEKEEPING DEPARTMENT, SERVICE MANAGEMENT MAINTENANCE, REPAIR, REDECORATING

MAR- ADMINISTRATIVE POLICIES PERSONNEL MANAGEMENT, BUDGET, HUMAN BEHAVIOUR, PERSONALITY, ATTITUDE

APR- SAFETY, SECURITY, SANITATION, FIRE FIGHTING, FIRST AID, SAFETY IN USE OF EQUIPMENT PEST CONTROL, UNIFORM TYPES, SELECTION, DISTRIBUTION, CONTROL, HOSTESS TRAINING BANQUET MANAGEMENT, STRESS MANAGEMENT DEFINITION, TYPES, METHODS OF STRESS REDUCTION, TEAM MANAGEMENT

MAY- SEMINAR

JUNE- SEMESTER EXAMINATION

PROPOSED TEACHING PLAN FOR THE SESSION OF **2019-20**

**M.SC III SEM, RESOURCE MANAGEMENT PAPER IV FUEL TECHNOLOGY**

JULY- SOURCES OF ENERGY, ENERGY CONSUMPTION PATTERNS,

AUG- FOSSIL FUEL, FUEL CLASSIFICATION SOLID, LIQUID, GAS, ARTIFICIAL FUEL LIQUID GAS SOLID

SEPT- SOLAR ENERGY, SOLAR TREE, AIR ENERGY, ENERGY FROM BIOMASS

OCT- ENERGY CONSERVATION, PRINCIPLES OF IMPROVING EFFICIENCY, PROPER USE OF ENERGY

NOV- SEMINAR

DEC- SEMESTER EXAMINATION

PROPOSED TEACHING PLAN FOR THE SESSION OF **2019-20**

**M.SC IV SEM RESOURCE MANAGEMENT PAPER IV MANAGEMENT OF HUMAN RESOURCES**

JAN- PRINCIPLES OF HUMAN RESOURCES USE, FATIGUE TYPES CAUSES

FEB- FACTORS, CONCEPT AND TYPES OF EFFICIENCY AND EFFECTIVENESS, MEANING FACTORS OF PRODUCTIVITY, EFFECT OF MOTIVATION ON PRODUCTIVITY

MAR- MEANING NATURE, CHARACTERISTICS, PROCESS, METHODS, IMPORTANCE, FACTORS OF MOTIVATION, METHODS AND TECHNIQUES OF IMPROVING RESOURCE USE

APR- PERSONALITY AND DEVELOPMENT OF MANAGER TYPES IMPORTANCE, METHODS , TRAINING, LEADERSHIP, TRAINING FOR PERSONALITY DEVELOPMENT AND LEADERSHIP, GOALS OF TRAINING AND DEVELOPMENT

MAY- SEMINAR

JUNE- SEMESTER EXAMINATION

**GOVT. D.B. GIRLS P.G.COLLEGE, RAIPUR(C.G)**  
**TEACHING PLAN 2019-20**  
**M.Sc Ist SEMESTER (FOOD & NUTRITION)**  
**PAPER - I**  
**TITLE OF PAPER- RESEARCH METHODOLOGY**

<b>Month</b>	<b>Plan</b>
<b>July</b>	<b>Science, Scientific methods and approach</b>  <b>Social research &amp; survey: Meaning, definition, nature, scope, objects, types, distinction between social survey and research</b>
<b>August</b>	<b>Pretesting &amp; pilot survey</b>  <b>Hypothesis: Definition, Source, characteristics, importance, main difficulties in the formation of hypothesis, disadvantage</b>  <b>Source of data: primary &amp; secondary sources</b>
<b>September</b>	<b>Methods or techniques of data collection</b>  <b>a. Observation</b>  <b>b. Interview</b>  <b>c. Schedule</b>  <b>d. Questionnaire</b>  <b>e. Case-study</b>  <b>Sampling: Meaning, characteristics, advantages, and disadvantages</b>  <b>Types:</b>  <b>Random sampling</b>  <b>Purposive sampling</b>  <b>Stratified sampling</b>  <b>Other sampling method</b>
<b>October</b>	<b>Classification and tabulation of data analysis and interpretation of data</b>  <b>Research design steps and process of its formulation</b>  <b>Types of research design- exploratory, descriptive, diagnostic and experimental</b>
<b>November</b>	<b>Diagrammatic presentation of data</b>

	<b>Revision &amp; SEMINAR</b>
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**PAPER - II**  
**TITLE OF PAPER- NUTRITIONAL BIOCHEMISTRY**

<b>Month</b>	<b>Plan</b>
<b>July</b>	<p><b>Heteropolysaccharides</b> – Definition, classification, structure and properties of glycoprotein and proteoglycans.</p> <p><b>Plasma proteins</b> – Nature, properties and function.</p> <p><b>Intermediately metabolism</b> – Reactions, standard for energy changes and regulation, carbohydrates – glycolysis, glycogenesis, citric acid cycle, hexose-mono-phosphate pathway.</p> <p><b>Lipids</b> – Beta-oxidation, de novo synthesis of fatty acids, synthesis and breakdown of unsaturated fatty acids, cholesterol, phospholipids and triglycerol.</p>
<b>August</b>	<p><b>Purines and pyrimidines</b> – Source and Biosynthesis of purines and pyrimidines.</p> <p><b>Nucleic acids</b> – DNA replication and transcription.</p> <p>DNA Transcription and recombinant –  Bio medical importance, restriction enzymes, cloning, libraries and library construction.</p> <p>Gene Mutation – Codon, characteristics of genetic code, Wobble, Single base changes, transition transversion.</p> <p><b>Protein biosynthesis</b> – Initiation, formation of 40s initiation complex, formation of 80s initiation complex, elongation, steps of elongation.</p>
<b>September</b>	<p><b>Hormones</b> – General Characteristics , Classification &amp; Mechanism of action, assay of hormones. Chemistry and functions of different hormones – Thyroxine, TSH, LH, ACTH And Insulin.</p> <p><b>Minerals</b> – Trace elements, their physiological functions, sources, absorption, excretion and deficiency of iron, copper, iodine, zinc and selenium.</p>
<b>October</b>	<p>Detoxification in the body – Metabolism of foreign compounds, oxidation, conjugation, reduction, hydrolysis.</p> <p>Major alteration in carbohydrates, protein and fat metabolism in chronic nutrition relate degenerative disease. (Diabetes, Heart diseases).</p>
<b>November</b>	<b>REVISION &amp; SEMINAR</b>



### PAPER - III

#### TITLE OF PAPER- CLINICAL NUTRITION

Month	Plan
<b>July</b>	<p>Etiopathophysiology, clinical symptoms, Complications, prevention and recent advances in nutritional management of GIT Disorders</p> <p>(i) <b>Peptic ulcer</b> – Aetiology, symptoms, dietary modification. Intervals of feeding, bland diet, four stage diet therapy, prevention of recurrence.</p> <p>(ii) <b>Diarrhoea</b>- Classification, modification of diet with special emphasis to fibre and fluids.</p> <p>(iii) <b>Constipation</b> – Classification, dietary consideration.</p> <p>(iv) <b>Ulcerative colitis</b> – Symptoms, dietary treatment</p> <p>(v) <b>Sprue</b> – Types, dietary consideration.</p> <p><b>Pancreatic disorders</b> – Etiology, Pathogenesis and nutritional care.</p>
<b>August</b>	<p>Diseases of <b>liver and gall bladder</b> :</p> <p>(vi) <b>Infective Hepatitis</b> – Types and dietetic management.</p> <p>(vii) <b>Cirrhosis</b> – Types and dietary management.</p> <p>(viii) <b>Cholecystitis</b> and <b>Cholelithiasis</b> –dietetic management.</p> <p><b>Cardio Vascular Diseases</b> –</p> <p>(i) Familial Hypercholesterolemia –nutritional care.</p> <p>(ii) Atherosclerosis–Etiological,factors,pathogenesis,dietetic management.</p> <p>(iii) Hypertension – Classification, etiology, nutritional care.</p>
<b>September</b>	<p><b>Renal Diseases</b> :</p> <p>Basic renal functions, Classification of renal diseases.</p> <p>(i) Glomerulonephritis – Acute and chronic – Symptoms and dietetic treatment</p> <p>(ii) Nephrosis – Symptoms and principles of nutritional care.</p> <p>(iii) Renal failure – Acute and chronic renal failure, dialysis.</p> <p>(iv) Renal Calculi – Etiology, types of stones and nutritional Care. Acid and alkaline ash diet.</p> <p><b>Fevers and infections-</b> Types of fever Tuberculosis, typhoid and malaria -Dietetic management</p>
<b>October</b>	<p>Historical background, prevalence, etiology, biochemical and clinical manifestations, preventive and therapeutic measures for metabolic disorders.</p> <p>Diabetes mellitus</p>

	<p>(i) Incidence and predisposing factors.  (ii) Symptoms, types and diagnosis  (iii) Metabolism in diabetes  (iv) Dietary management  (v) Hypoglycemic agents and insulin  (vi) Complication of diabetes.</p> <p>Disorders of thyroid gland :</p> <p>Normal Thyroid Function</p> <p>(vii) Hyperthyroidism – Symptoms and care.  Hypothyroidism – Symptoms and care</p>
<b>November</b>	<b>REVISION &amp; SEMINAR</b>

#### PAPER - IV

##### TITLE OF PAPER- FOOD SCIENCE

<b>Month</b>	<b>Plan</b>
<b>July</b>	<p><b>Water-</b> structure and Physical properties of water and ice and chemical nature, adsorption phenomena, types of water solution and colligative properties.</p> <ul style="list-style-type: none"> <li>- Free bound water</li> <li>- Water activity and food spoilage.</li> <li>-</li> </ul> <p><b>Food dispersion</b> – Colloidal sol, stabilization of colloidal systems, Rheology of food dispersion.</p> <ul style="list-style-type: none"> <li>- Gels : Structure, formation, strength, types and permanence.</li> <li>- Emulsion : Formation, stability, surfactants and emulsifiers.</li> </ul> <p>- Foams : Structure, formation and stabilization.</p>
<b>August</b>	<p><b>Polysaccharides, sugars and sweeteners:</b></p> <p><b>Starch:</b> Structure, Gelatinization, Characteristics of some food starches, modified food starches. Non starch polysaccharides : Cellulose, hemicelluloses, pectin, gum, animal polysaccharides.</p> <p><b>Sugars and sweeteners:</b> Sugars, syrups, potent sweeteners, sugar product.</p> <ul style="list-style-type: none"> <li>- Sweetener chemistry related to usage in food products : Structural relationships to sweetness perception, hydrolytic reactions, solubility and crystallization, hygroscopicity, fermentation, non-enzymatic browning.</li> </ul>

	<b>Cereals and cereals products:</b> <ul style="list-style-type: none"> <li>- Cereals grains : Structure and composition</li> <li>- Flours and flour quality</li> <li>- Extruded foods, breakfast cereals, wheat germ, bulger, puffed and flaked cereals</li> </ul>
<b>September</b>	<b>Fats, oils and related products:</b>  Sources, Composition, effect of composition on fat properties. Functional properties of fat and uses in food preparation. Fat substitutes, fat deterioration (Rancidity) and antioxidants.
<b>October</b>	<b>Dairy products: Milk</b> Composition, physical and functional properties. Denaturation effects of processing and storage.  <b>Milk products:</b> Cultured milk, yogurt, butter, whey, cheese, concentrated and dried products, frozen desserts, dairy product substitutes.  <b>Enzymes:</b> Nature of enzymes, stability and action. Proteolytic enzymes, oxidase, lipases, enzymes decomposing carbohydrates, immobilised enzymes  Protein denaturation, non enzymatic browning
<b>November</b>	<b>REVISION &amp; SEMINAR</b>

**M.Sc IInd SEMESTER (FOOD & NUTRITION)**

**PAPER - I**

**TITLE OF PAPER- STATISTICS & COMPUTER APPLICATION**

<b>Month</b>	<b>Plan</b>
<b>January</b>	<b>Statistics: Meaning, definition, scope, importance, characteristics, distrust of statistics</b>  <b>Measurement of central tendency:</b>  <b>Mean</b>  <b>Median</b>  <b>Mode</b>
<b>February</b>	<b>Graphic presentation of Data: Importance, types</b>  <b>-Histogram</b>  <b>-Fequency Polygon</b>  <b>-Frequency Curve</b>  <b>Correlation: Definition, Meaning and types</b>  <b>Methods of determining coefficientof correlation</b>  <b>-Product moment method</b>  <b>-Rank correlation</b>  <b>Methods of dispersion and variation</b>  <b>Mean deviation</b> <b>Standard deviation</b> <b>Quartile deviation</b>
<b>March</b>	<b>Introduction to computers</b>  <b>What is computer? Characteristics, components of computer system, CPU, I/O devices and memory (RAM and ROM), secondary storage devices (Hard disk, floppy disk, magnetic tape etc.)</b>  <b>Analysis of variance</b>

	<b>One way method: Direct and Shortcut</b>
<b>April</b>	<b>Computer generations</b> <b>Classification of computer: Analog, digital, hybrid, general and special purpose computer</b> <b>Types of computer: Micro, mini, mainframe and super computer</b> <b>Chi-square test and goodness of fit</b> <b>Application of student 't' test for small samples</b> <b>Working with MS-word:</b> <b>Getting started with word, formatting text and paragraph. Applying text and language tools. Designing pages with columns and tables, using graphics.</b>
<b>May</b>	<b>REVISION &amp; SEMINAR</b>

## PAPER - II

### TITLE OF PAPER- METHODS OF INVESTIGATION

<b>Month</b>	<b>Plan</b>
<b>January</b>	<p>Electrolytic dissociation : Principle, technique and theory of electrolytic dissociation.</p> <p>Hydrogen ion concentration : Principle and measurement of PH, indicators, buffers.</p> <p>Physiochemical techniques: Principles and methodology of the following-</p> <ul style="list-style-type: none"> <li>(a) Diffusion</li> <li>(b) Osmosis</li> <li>(c) Filtration</li> </ul>

	(d) Surface tension (e) Adsorption (f) Centrifugation
<b>February</b>	Chromatography: Principles, techniques and application of the following- (a) Paper chromatography- Circular, ascending and descending. (b) Ion exchange chromatography (c) Column chromatography (d) Thin layer chromatography (e) Gas liquid chromatography (f) High performance liquid chromatography
<b>March</b>	Electrophoresis: Principles and techniques of paper and gel electrophoresis. Microbiological assay : Principle and methodology of the following- (a) Vitamins (b) Amino acids Colorimetry : Principles, applications.
<b>April</b>	Radioactive isotopes: Properties, detection and uses of radioactive isotopes in medical science. Immunological methods: Principle and technique of the following- (c) Radio Immuno Assay (RIA) (d) Enzyme Linked Immuno sorbent Assay (ELISA) Collection of biological samples.
<b>May</b>	<b>REVISION &amp; SEMINAR</b>

### PAPER - III

#### TITLE OF PAPER- PROBLEMS IN NUTRITION

Month	Plan
January	<p>Nutritional screening and assessment of nutritional status of hospitalized</p> <p>Identification of high risk patients. Assessment of patient need based on interpretation of patient data (Clinical, biochemical, biophysical, personal etc.)</p> <p>Nutritional support service: Recent advances in techniques and feeding methods. (enteral nutrition, parental nutrition) pre and post operative diets, Diet in burns.</p>
February	<p><b>Weight imbalance—</b></p> <p><b>Obesity</b> – Types, etiology, assessment, treatment, diet and other measures, complications of obesity.</p> <p><b>Under weight</b> – Causes, dietetic management</p> <p><b>Neurological disorders :</b></p> <ul style="list-style-type: none"> <li>(i) Neuritis – Etiology, nutritional care.</li> <li>(ii) Migraine – Symptoms &amp; Dietary management</li> <li>(iii) Anorexia Nervosa – Etiology, treatment.</li> </ul>
March	<p><b>Diet in genetic disorders:</b></p> <p>Fructosuria, Galactosemia, Phenylketonuria.</p> <p><b>Musculoskeletal disorders:</b></p> <p>Gout – Characteristics, nutritional care</p> <p><b>Cancer:</b></p> <ul style="list-style-type: none"> <li>- Types of cancer, Nutritional effect of cancer, Nutritional disorders related to treatment,</li> <li>Nutritional care in cancer.</li> </ul>

<b>April</b>	<p>Prevalence , etiology, clinical manifestation, preventive and therapeutic measures for the following-</p> <p>Vitamin A deficiency</p> <p>IDD</p> <p>Rickets</p> <p>Dental caries : Etiology, nursing bottle caries.</p> <p>Nutrition in AIDS.</p>
<b>May</b>	<b>REVISION &amp; SEMINAR</b>



## **PAPER - IV**

### **TITLE OF PAPER- FOOD CHEMISTRY**

<b>Month</b>	<b>Plan</b>
<b>January</b>	<p>Meat and Poultry : Muscle composition, characteristics and structure. Post mortem changes during processing, preservation and their effects. Heat induced changes in meat variables in meat preparation, Tenderizing treatments, meat products.</p> <p>Eggs : Structure and composition, changes during storage. Functional properties of eggs, use in cookery. Egg processing, low cholesterol egg substitutes.</p>
<b>February</b>	<p>Fish and sea foods : Types and composition, storage and changes during storage, changes during processing, by- product and newer products.</p> <p>Pulses and Legumes : Structure, composition, processing, toxic constituents.</p> <p>Nuts and oil seeds : Composition, oil extraction and by-products.</p>
<b>March</b>	<p>Fruits and vegetables: Plant, anatomy, gross composition, structure, features and activities of living systems. Enzymes in fruits and vegetables. Flavour constituents, plant phenolics, pigments, post harvest changes. Texture of fruits and vegetables. Effects of storage, processing and preservation.</p> <p>Spices and condiments: Composition, flavouring extracts – Natural and synthetic.</p> <p>Beverages : Synthetic and natural, alcoholic and non-alcoholic, carbonated and non- carbonated, coffee, tea, cocoa, malted drinks.</p>
<b>April</b>	<p>Traditional processed products : jam, jellies &amp; squash.</p> <p>Protein concentrates : Hydrolysates and textured vegetable proteins, milk substitutes.</p> <p>Fermented food-cereal based, pulse based, fruit/vegetables based like vinegar, pickle and alcoholic beverages.</p>

	Leavened products: Leavened agents biologically leavened and chemically leavened products. Batters and dough, bakery products.  Salt and salt substitutes
<b>May</b>	<b>REVISION &amp; SEMINAR</b>

M.Sc IIIrd SEMESTER (FOOD & NUTRITION)

PAPER - I

TITLE OF PAPER- FOOD MICROBIOLOGY

Month	Plan
July	<p>Bacterial morphology, structure, structure, staining, culture media, culture method and identification of Bacteria.</p> <p>Growth and Nutrition of Bacteria :</p> <p>Microbial Criteria of Food.</p> <p>Microbial Standards and food safety.</p> <p>Microorganism important in food microbiology – Mold, Yeast, Bacteria.</p> <p>Controlling the microbial quality of foods –</p> <p>Quality control using microbial crities</p> <p>The HACCP – (Hazard Analysis and Critical Control Point) SYSTEM.</p> <p>Spoilage of different groups of foods :</p> <p>Cereals and cereal products</p> <p>Vegetables and fruits</p> <p>Fish and meat</p> <p>Eggs and poultry</p> <p>Milk and milk products</p> <p>Canned foods</p>
August	<p>Contamination of foods</p> <p>Food Preservation:</p> <p>General principles of food preservation:</p> <p>Asepsis, removal of micro-organism, maintenance of anaerobic conditions.</p> <p>Preservation by use of high temperature</p> <p>Preservation by use of low temperature</p> <p>Preservation by drying</p> <p>Preservation by food additives</p> <p>Preservation by radiation.</p>
September	<p>Preservation by radiation.</p> <p>(i) Food borne illness: Bacterial and viral food borne disorders. Food borne important animal parasites, mycotoxins.</p>
October	Fermented foods:

	Role of microbes in fermented foods - Fermented dairy products Fermented vegetables Fermented meat Fermented fish Beverage and distilled products. Anti Microbial Therapy Food laws.
November	REVISION & SEMINAR

## PAPER - II

### TITLE OF PAPER- NUTRITION FOR HEALTH OF WOMEN AND CHILDREN

Month	Plan
July	<p>Women in family and community : Demographic changes menarche, marriage, fertility, morbidity, mortality, life expectancy, sex ratio, aging, widowhood.</p> <p>Women and Health : Health facilities. Disease pattern and reproductive health.</p> <p>Policies and programs for promoting maternal and child nutrition and health.</p> <p>Concept of small family. Methods of family planning merits and demerits.</p>
August	<p>Importance of nutrition prior to and during pregnancy-prerequisites for successful outcome.</p> <p>Effect of under nutrition on mother and child including pregnancy outcome and maternal and child health - short term and long term effect.</p> <p>Physiology and endocrinology of pregnancy, embryonic and foetal growth and development.</p> <p>Nutritional requirements during pregnancy: Adolescent pregnancy, pregnancy and T.B., IUGE, gestational diabetes.</p>
September	<p>Lactation – Development of mammary tissue and role of hormones – Physiology and endocrinology of lactation. Synthesis of milk component, let down reflex, role of hormones. Lactational amenorrhea, effect of breast feeding on maternal health.</p> <p>Human milk composition and factors affecting breast feeding. Human milk banking.</p> <p>Management of Lactation : Prenatal breast feeding, skill education. Rooming in problems - sore nipples, engorged breast, inverted breast.</p> <p>Exclusive breast feeding.</p>

October	<p>Infant physiology : Preterm and low birth weight infant – Implication for feeding and management.</p> <p>Growth and development during infancy, childhood and adolescents.</p> <p>Feeding of infants and children and dietary management.</p> <p>Malnutrition – Etiology and management.</p>
November	REVISION & SEMINAR

### PAPER - III

#### TITLE OF PAPER- NUTRITION FOR HEALTH AND FITNESS

Month	Plan
<b>July</b>	<p><b>Definition, components of fitness</b></p> <p>Anatomical fitness</p> <p>Physiological fitness</p> <p>Psychological Fitness Physiological fitness :</p> <p>(a) Growth and development, (b) Strength, (c) Speed, (d) Skill, (e) Stamina or endurance, specific fitness, general fitness and health status.</p> <p>Holistic approach to the management of fitness and health</p>
<b>August</b>	<p><b>Review of different energy systems for endurance and power activity:</b></p> <p>Endurance : Definition, classification of endurance, factors affecting endurance.</p> <p>Fuels and nutrients to support physical activity : Shifts in carbohydrates and fat metabolism, mobilization of fat stores during exercise.</p> <p>Nutrition in Sports : Sports specific requirement.</p> <p>Pregame and post game meals. Assessment of different nutrigenic aids. Commercial supplements.</p>

<b>September</b>	<p>Diets for persons with high energy requirements, stress, fracture and injury.</p> <p>Water and electrolyte balance: Losses and their replenishment during exercise and sports. Effect of dehydration.</p> <p>Alternative systems for health and fitness like ayurveda, yoga, Meditation, Vegetarianism.</p>
<b>October</b>	<p>(A) Significance of physical fitness in the prevention and management of : Diabetes mellitus, (ii) Cardiovascular disorders, (iii) Bone health and obesity. Nutrition and exercise regimes for pre and post natal fitness.</p> <p>A Defining nutritional goals/guidelines appropriate to health and prevention and management of the chronic degenerative disorder - (a) Cardiovascular disorders, (b) Diabetic mellitus (c) Cancer, (d) Bone health and obesity B. Various dietary regimes for weight reduction.</p>
<b>November</b>	<b>REVISION &amp; SEMINAR</b>

#### **PAPER - IV**

#### **TITLE OF PAPER- ADVANCED NUTRITION**

<b>Month</b>	<b>Plan</b>
<b>July</b>	<p>Energy :</p> <p>Energy content of foods, physiological fuel values.</p> <p>Measurement of energy expenditure – BMR, RMR, Thermal effect of feeding and</p>

	<p>physical activity. Methods of measurement of basal metabolism.</p> <p>Estimating energy requirements of individuals.</p> <p>Carbohydrates:</p> <p>Classification, general functions of carbohydrates</p> <p>Dietary fiber</p> <p>fructo - oligosaccharids</p> <p>Starch : chemical composition and physiological effects.</p> <p>Glycemic index of foods</p>
<b>August</b>	<p>Proteins :</p> <p>Classification &amp; general functions of Protein</p> <p>Role of liver and gastro intestinal tract in protein metabolism</p> <p>Protein quality – Methods of evaluating Quality</p> <p>Protein and amino acid requirements, specific functions of amino acids.</p> <p>Lipids :</p> <p>Classification &amp; functions of Lipids</p> <p>EFA: Role of N-3, N-6 fatty acids in health and diseases requirement of total fat and fatty acid.</p> <p>Prostaglandins, phospholipids, cholesterol.</p>
<b>September</b>	<p>Water : Water balance and its regulation.</p> <p>Minerals :</p> <p>(For each nutrient sources, bioavailability, metabolism, function, requirements, RDI, deficiency and toxicity to be discussed)</p> <p>Macro Minerals : Calcium, Phosphorus, Magnesium, sodium, potassium and chlorides.</p> <p>Micro Minerals : Iron, copper, zinc, manganese, iodine, fluoride.</p> <p>Trace Minerals : Selenium, Cobalt, chromium, vanadium, boron, nickel.</p>

<b>October</b>	<p>Vitamins:</p> <p>Structure, food sources, absorption and transport, metabolism, biochemical functions, assessment of status physiological and therapeutic effect. The toxicity and deficiency with respect to the following:</p> <p>Fat soluble vitamin - A, D, E and K</p> <p>Water soluble vitamin – Thiamin, riboflavin, niacin, biotin, pyridoxine, folic acid, pantothenic acid, chlorine, cyanocobalamin, inositol, ascorbic acid.</p>
<b>November</b>	<b>REVISION &amp; SEMINAR</b>

**M.Sc IVth SEMESTER (FOOD & NUTRITION)**

**PAPER - I**

**TITLE OF PAPER- PHYSIOLOGY**

<b>Month</b>	<b>Plan</b>
<b>January</b>	<p>Cell Structure and Functions:</p> <p>Levels of cellular organizations and function - Brief review. Cell Membrane, transport across cell membrane and intercellular communication, Regulations of cell multiplication.</p> <p>Nervous System:</p> <p>Review of structure and function of neuron. Conduction of nerve impulse, synapses, role of neurotransmitters.</p> <p>Organisation of central nervous system, structure and functions of brain and spinal cord, afferent and efferent nerves. Hypothalamus and its role in various body functions – Obesity, sleep, memory.</p> <p>Immune system:</p> <p>Humoral immunity. Development of lymphocytes. Role of inflammation and defence.</p>
<b>February</b>	<p>Endocrine System:</p> <p>Endocrine glands – Structure, function, role of hormones, regulation of hormonal secretion. Disorders of endocrine glands.</p> <p>Sense organs:</p> <p>Review of structure and function. Role of skin, eye, ear, nose and tongue in perception of stimuli.</p>



	<p>Reproduction:</p> <p>Menstrual cycle, spermatogenesis, physiological changes in pregnancy.</p>
<b>March</b>	<p>Digestive System:</p> <p>Review of structure, secretory, digestive and absorptive functions. Role of liver, pancreas and gall bladder and their dysfunction.</p> <p>Respiratory Function:</p> <p>Review of structure and function. Role of lungs in the exchange of gases. Transport of oxygen and carbon dioxide, respiratory quotient, hypoxia and asthma.</p> <p>Excretory System:</p> <p>Structure and function of nephron. Urine formation. Water, electrolyte and acid base balance, diuretics.</p>
<b>April</b>	<p>Circulating System:</p> <p>Structure and function of heart and blood vessels. Regulation cardiac output and blood pressure, heart failure, hypertension.</p> <p>Blood:</p> <p>Formation and function of plasma protein and blood erythropoiesis, blood Clotting, blood group and histocompatibility, blood indices, use of blood for investigation and diagnosis of specific disorders, anaemia.</p> <p>Musculo-Skeletal System:</p> <p>Structure and function of bone, cartilage and connective tissue. Disorders of skeletal system.</p> <p>Types of muscles, Structure and Function.</p>
<b>May</b>	<b>REVISION &amp; SEMINAR</b>

## **PAPER - II**

### **TITLE OF PAPER- PUBLIC NUTRITION**

<b>Month</b>	<b>Plan</b>
<b>January</b>	<p>Concept of Public Health Nutrition:</p> <ul style="list-style-type: none"><li>- Relationship between health and nutrition.</li></ul> <p>Role of public nutritionist in the Health care delivery system.</p> <p>Health Care of the community. National health care delivery system.</p>
<b>February</b>	<p>Population dynamics:</p> <p>Demography, demographic cycle, world population trend, birth rates, death rates, growth rates, demographic trends in India, age pyramid, sex ratio.</p> <p>Environment and Health:</p> <p>Water: Water pollution, surveillance of drinking water quality. Air: Air pollution</p>
<b>March</b>	<p>Nutritional Status:</p> <p>Determinants of nutritional status of individual and populations.</p> <p>Major Nutritional Problems:</p> <p>Etiology, prevalence, clinical manifestations. Preventive and therapeutic measures of- Macro and micro deficiencies – LBW, PEM, xerophthalmia, nutritional anemia.</p>

<b>April</b>	<p>Other nutritional problems like lathyrism, aflatoxicosis, alcoholism and fluorosis.</p> <p>National Nutrition Policy.</p> <p>Health Planning in India.</p> <p>Occupational Health.</p>
<b>May</b>	<b>REVISION &amp; SEMINAR</b>

### **PAPER - III**

#### **TITLE OF PAPER- GERIATRIC NUTRITION**

<b>Month</b>	<b>Plan</b>
<b>January</b>	<p>Aging: Definition</p> <p>Molecular changes during aging – (i) Changes in proteins, (ii)Chromatin, (iii) Cross linkers, (iv)Immune response, (v) Hormones, (vi) Ageing of cells in culture,</p> <p>(vii) Age pigment.</p> <p>Mechanism of Aging-</p> <p>Somatic Mutation,</p> <p>Errors in proteins</p> <p>Gene regulation</p> <p>Socio-Psychological aspects of aging- Especially problems of elderly women.</p>
<b>February</b>	<p>Nutritional and Food requirement during old age- Process of aging, nutritional requirements</p> <p>Nutrition related problems of old age-</p> <p>- (i) Osteoporosis, (ii) Obesity, (iii) Neurological dysfunction, (iv) Anemia, (v) Malnutrition, (vii)Constipation.</p> <p>Policies and program of the government to the elderly.</p>

	Policies and program of the NGO sector pertaining to the elderly.
<b>March</b>	<p>Degenerative diseases in old age-</p> <p>(i) Atherosclerosis, (ii) Hypertension, (iii) Cancer, (iv) Diabetes mellitus, (v) Arthritis</p> <p>Common complaints during oldage.</p> <p>Dietary guidelines</p>
<b>April</b>	<p>Drug – Food and nutrient reaction in elderly.</p> <p>Effect of drugs on food intake and absorption.</p> <p>Effect of various foods and beverages on drug action.</p> <p>Drug nutritional interaction.</p> <p>Aging and Immunity.</p> <p>Aging and Nutrition, nutrition and longevity, food habits of elderly people, stress during oldage.</p>
<b>May</b>	<b>REVISION &amp; SEMINAR</b>

#### **PAPER - IV**

##### **TITLE OF PAPER- RESEARCH METHODS IN FOOD &NUTRITION**

<b>Month</b>	<b>Plan</b>
<b>January</b>	<p>Body Composition:-</p> <p>Normal Body Composition</p> <p>Changes through the lifecycle</p> <p>Methods of Assessing body composition</p> <p>Diet Surveys-Following factors to be considered in conducting diet surveys:-</p>

	<p>Trained personnel</p> <p>Population sampling</p> <p>Methods of diet surveys</p> <p>Calculation of the nutritive value of the diet in terms of adult consumption unit and interpretation.</p> <p>Nutrition Education:-</p> <p>Training in Nutrition</p> <p>Channels of nutrition education of the community</p> <p>Nutrition education methods</p>
<b>February</b>	<p>Principles of Epidemiology – Definition, aims, uses, epidemiological approach</p> <p>Screening for Disease – Concept of screening, aims and objective,</p> <p>-Types of screening ,Uses of screening,</p> <p>Design Strategies in research. (Descriptive Studies):-</p> <p>- Issues in the design and conduct of descriptive studies–</p> <p>Defining the population, defining the disease, measurement of disease, comparing with known indices, formulation of hypothesis, uses of descriptive studies.</p>
<b>March</b>	<p>Design strategies in Research – (Analytical Studies I):-</p> <p>- Issues in the design and conduct of case control studies – Selection of cases. selection of controls, matching, exposure status, analysis, advantages and disadvantages.</p> <p>Design Strategies in Research – ( Analytical Studies II):-</p> <p>- Issues in the design of cohort studies – Selection of exposed population, selection of comparison group, obtaining data on exposure, follow-up, analysis, advantages, disadvantages.</p> <p>Health Information – Component of health information system,</p> <p>Sources of health information, Uses of Health information</p>
<b>April</b>	<p>Experimental Studies:-</p> <p>Randomized controlled trials (Clinical trials) -- Protocol, selection of reference and experimental population, randomization, manipulation, follow-up, assessment. Brief Overview of Case Study and Cross Sectional</p>

	<p>Survey</p> <p>Brief Overview of Case Study and Cross Sectional Survey</p> <p>Qualitative Research-</p> <p>PRA - (a) Concept of PRA</p> <p>Tools and Techniques</p> <p>Evaluation</p>
May	<p><b>REVISION &amp; SEMINAR</b></p>

**M.Sc. FOODS AND NUTRITION**

**I<sup>st</sup> SEMESTER**

**SESSION: 2019-20**

**PAPER:III**

**NAME OF PAPER: CLINICAL NUTRITION**

August	<p>Etiopathophysiology, clinical symptoms, Complications, prevention and recent advances in nutritional management of GIT Disorders</p> <ul style="list-style-type: none"><li>(i) <b>Peptic ulcer</b> – Aetiology, symptoms, dietary modification. Intervals of feeding, bland diet, four stage diet therapy, prevention of recurrence.</li><li>(ii) <b>Diarrhoea</b>- Classification, modification of diet with special emphasis to fibre and fluids.</li><li>(iii) <b>Constipation</b> – Classification, dietary consideration.</li><li>(iv) <b>Ulcerative colitis</b> – Symptoms, dietary treatment</li><li>(v) <b>Sprue</b> – Types, dietary consideration.</li></ul> <p><b>Pancreatic disorders</b> – Etiology, Pathogenesis and nutritional care.</p>
September	<p>Diseases of <b>liver and gall bladder</b> :</p> <ul style="list-style-type: none"><li>(i) <b>Infective Hepatitis</b> – Types and dietetic management.</li><li>(ii) <b>Cirrhosis</b> – Types and dietary management.</li></ul> <p><b>Cholecystitis and Cholelithiasis</b> –dietetic management.</p> <p><b>Cardio Vascular Diseases</b> –</p> <ul style="list-style-type: none"><li>(i) Familial Hypercholesterolemia –nutritional care.</li><li>(ii) Atherosclerosis–Etiological,factors,pathogenesis,dietetic management.</li><li>(iii) Hypertension – Classification, etiology, nutritional care.</li></ul>
October	<p><b>Renal Diseases</b></p> <p>Basic renal functions, Classification of renal diseases.</p> <ul style="list-style-type: none"><li>a. Glomerulonephritis – Acute and chronic – Symptoms and dietetic treatment</li><li>b. Nephrosis – Symptoms and principles of nutritional care.</li><li>c. Renal failure – Acute and chronic renal failure, dialysis.</li><li>d. Renal Calculi – Etiology, types of stones and nutritional Care. Acid and alkaline ash diet.</li></ul>

	<b>Fevers and infections-</b> Types of fever
November	Tuberculosis, typhoid and malaria -Dietetic managementHistorical background, prevalence, etiology, biochemical and clinical manifestations, preventive and therapeutic measures for metabolic disorders. Diabetes mellitus (i) Incidence and predisposing factors. (ii) Symptoms, types and diagnosis (iii)Metabolism in diabetes (iv)Dietary management (v) Hypoglycemic agents and insulin Complication of diabetes Disorders of thyroid gland : Normal Thyroid Function (i) Hyperthyroidism – Symptoms and care. (ii) Hypothyroidism – Symptoms and care REVISION

## M.Sc. FOOD AND NUTRITION

### III<sup>rd</sup> SEMESTER

**SESSION: 2019-20**

### PAPER: IV

**NAME OF PAPER: ADVANCED NUTRITION**

July	<p style="text-align: center;"><b>Energy:</b></p> <p>(a) Review of Energy content of foods, physiological fuel values-.</p> <p>(b) Measurement of energy expenditure – BMR, RMR. Thermal effect of feeding and physical activity. Methods of measurement of basal metabolism.</p> <p>(c) Estimating energy requirements of individuals.</p> <p>(d) Regulation of energy metabolism – Control of food intake, digestion, absorption and body weight.</p>
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August	<p style="text-align: center;"><b>Carbohydrates:</b></p> <p>(a) Review of Types, classification, digestion and transport of carbohydrates</p> <p>(b) Dietary fiber, fructo-oligosaccharides Starch :chemical composition and physiological effects.</p> <p>(c) Glycemic index of foods,sweeteners – Nutritive and non-nutritive.</p>
September	<p style="text-align: center;"><b>Proteins:</b></p> <p>(a) Review of Classification, Digestion, absorption and transport of Proteins</p> <p>(b) Role of liver and gastro intestinal tract in protein metabolism.</p> <p>(c) Protein quality – Methods of evaluating Quality.</p> <p>(d) Protein and amino acid requirements, specific functions of amino acids.</p> <p style="text-align: center;"><b>Lipids:</b></p> <p>(a) Review of Classification, digestion, absorption and transport of Lipids</p> <p>(b) Functions of fat, EFA: Role of N-3, N-6 fatty acids in health and diseases requirement of total fat and fatty acid.</p> <p>(c) Prostaglandins, phospholipids, cholesterol.</p>
October	<p style="text-align: center;"><b>Water:</b> Water balance and its regulation<b>Minerals :</b></p> <p>(For each nutrient sources, bioavailability, metabolism, function, requirements, RDI, deficiency and toxicity to be discussed)</p> <p>(a) Macro minerals : Calcium, Phosphorous, Magnesium, sodium, potassium and chlorides.</p> <p>(b) Micro Minerals: Iron, copper, zinc, manganese, iodine, fluoride.</p> <p>(c) Trace minerals: Selenium, Cobalt, chromium, vanadium, boron, nickel</p>
November	<p style="text-align: center;"><b>Vitamins:</b></p> <p>Structure, food sources, absorption and transport, metabolism, biochemical functions, assessment of status physiological and</p>

	<p>therapeutic effect. The toxicity and deficiency with respect to the following:</p> <p>(a) Fat soluble: Vitamin A,D. E And K</p> <p>(b) Water soluble: Thiamin, riboflavin, niacin, biotin, pyridoxine, folic acid, pantothenic acid, choline, cyanocobalamin, inositol, ascorbic acid. Revision</p>
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**M.Sc. FOODS AND NUTRITION**

**II<sup>nd</sup> SEMESTER**

**SESSION: 2019-20**

**PAPER: III**

**NAME OF PAPER: PROBLEMS IN HUMAN NUTRITION**

January	<p>Nutritional screening and assessment of nutritional status of hospitalized and outdoor patients.</p> <p>Identification of high risk patients. Assessment of patient need based on interpretation of patient data (Clinical, biochemical, biophysical, personal etc.)</p> <p>2. Nutritional support service: Recent advances in techniques and feeding methods. (enteral nutrition, parenteral nutrition)</p> <p>3. pre and post operative diets, Diet in burns.</p> <p><b>Weight imbalance –</b></p> <p><b>Obesity</b> – Types, etiology, assessment, treatment, diet and other measures, complications of obesity.</p> <p><b>Under weight</b> – Causes, dietetic management</p>
February	<p><b>Neurological disorders :</b></p> <p>(i) Neuritis – Etiology, nutritional care.</p> <p>(ii) Migraine – Symptoms &amp; Dietary management</p> <p>Anorexia Nervosa – Etiology, treatment <b>Diet in genetic disorders :</b></p> <p>Fructosuria, Galactosemia, Phenylketonuria.</p> <p><b>Musculoskeletal disorders :</b></p> <p>Gout – Characteristics, nutritional care</p> <p><b>Cancer :</b></p> <p>Types of cancer, Nutritional effect of cancer, Nutritional disorders related to treatment Nutritional care in cancer.</p> <p>Prevalence, etiology, clinical manifestation, preventive and therapeutic measures for the following-</p>
March	<p>Vitamin A Deficiency</p> <p>IDD</p>

	Dental carries : Etiology, nursing bottle carries. Nutrition in AIDS. Rickets REVISION
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## **M.Sc.FOOD AND NUTRITION**

### **IV<sup>th</sup> SEMESTER**

**SESSION: 2019-2-**

### **PAPER: IV**

**NAME OF PAPER: RESEARCH METHODS IN FOOD &NUTRITION**

January	<p>Body Composition :-</p> <ul style="list-style-type: none"> <li>(a) Normal Body Composition</li> <li>(b) Changes through the life cycle</li> <li>(c) Methods of Assessing body composition</li> </ul> <p>Diet Surveys-Following factors to be considered in conducting diet surveys:-</p> <ul style="list-style-type: none"> <li>(a) Trained personnel</li> <li>(b) Population sampling</li> <li>(c) Methods of diet surveys</li> <li>(d) Calculation of the nutritive value of the diet in terms of adult consumption unit and interpretation.</li> </ul> <p>Nutrition Education:-</p> <ul style="list-style-type: none"> <li>(a) Training in Nutrition</li> <li>(b) Channels of nutrition education of the community</li> <li>(c) Nutrition education methods</li> </ul>
February	<p>Design strategies in Research – (Analytical Studies I):-</p> <p>Brief overview – Case control, clinical trials.</p> <p>Issues in the design and conduct of case control studies –</p> <p>Selection of cases. selection of controls, matching, exposure</p>

	<p>status, analysis, advantages and disadvantages</p> <p>Screening for Disease – Concept of screening, aims and objective,</p> <p>-Types of screening ,Uses of screening</p> <p>Design Strategies in research. (Descriptive Studies):-</p> <p>(a) Brief Overview of Case study, Cross sectional surveys.</p> <p>(b) Issues in the design and conduct of descriptive studies –</p> <p>Defining the population, defining the disease, measurement of disease, comparing with known indices, formulation of hypothesis, uses of descriptive studies.</p> <p>Principles of Epidemiology – Definition, aims, uses, epidemiological approach</p>
March	<p>Design Strategies in Research –( Analytical Studies II):-</p> <p>(a) Overview of types of cohort studies.</p> <p>(b) Issues in the design of cohort studies –</p> <p>Selection of exposed population, selection of comparison group, obtaining data on exposure, follow-up, analysis, advantages, disadvantages.</p> <p>Health Information – Component of health information system,</p> <p>Sources of health information,Uses of Health information</p> <p>Experimental Studies:-</p> <p>Randomized controlled trials (Clinical trials) --</p> <p>Protocol, selection of reference and experimental population, randomization, manipulation, follow-up, assessment.</p> <p>Qualitative Research-</p> <p>PRA - (a) Concept of PRA</p> <p>(b) Tools and Techniques</p> <p>(c) Evaluation</p>

**Govt. D.B. Girls P.G. Autonomous College , Raipur (C.G.)**  
**Proposed Teaching Plan For the Session 2019-20**  
**M.Com. Part - I Semester**

Month	UNITS	Managerial Economics	Advanced Accounting	Management Accounting	Statistical Analysis	Corporate Legal Framework
July	UNIT -I	Nature and Scope of Managerial, Economics: Objective of a firm; Economics theory and managerial theory; Managerial economist's role and responsibilities. Fundamental economic concepts-incremental principle, opportunity cost principle, discounting principle. equi-marginal principle.	Accounting for issue, Forfeited and redemption of shares.	Introduction of Accounting: Management accounting as a area accounting; Objectives, nature and scope of management accounting, techniques of management accounting, difference between financial accounting, cost accounting and management accounting, Management accounting and managerial decisions; Management accountant's position, role and responsibilities.	Statistics - Definitions, Characteristics, Scope and Nature, Functions, limitations, Distrust and misuse importance & Statistical Investigations., Classification & Tabulation, Dispersion, Co-efficient of variance and skewness,	The Companies Act, 1956 (Relevant Provisions) : Definition, types of companies Memorandum of association; Articles of association; Prospectus;
August	UNIT-II	Demand Analysis: Individual and Market demand functions Law of demand; determinants of demand; Elasticity of demand-its meaning and importance, Price elasticity; income elasticity and cross elasticity; Using elasticity in managerial decisions.	Accounting for issue and redemption of debentures. Final accounts and financial statements of companies.	Accounting Plan and Responsibility Centers: Meaning and significance of responsibility accounting; Responsibility centers -cost centre, profit centre and investment centre, Problems in transfer pricing, Objectives and determinants of responsibility centers.	Data Sources: Primary and Secondary, Primary data collection techniques, Schedule, Questionnaire and interview & Sources' of Secondary data. correlation - Karl-Pearsons and spearman's ranking method and Regression analysis, two variables case.	Share capital and membership. Meetings and resolutions - Company management; Managerial remuneration; Winding up and dissolution of companies.

September	UNIT-III	Theory of consumer Choice: Cardinal utility approach, indifference approach, revealed preference and theory of consumer choice under risk; Demand estimation for major consumer durable and non-durable products; Demand forecasting technique.	Accounting issues relative to amalgamation and reconstruction of companies.	Budgeting: Definition of Budget; Essentials of budgeting; Types of budgets functional, master etc. Fixed and flexible budget, Budgetary control, Zero-base budgeting; Performance budgeting. Marginal Costing: Concept of marginal cost; Marginal costing and absorption, costing, Marginal costing versus direct, costing; Cost-volume- profit analysis.	Probability Theory: Probability classical, relative and subjective probability, Addition and multiplication probability models - Conditional probability and Baye's Theorem.	The Negotiable Instruments Act, 1881 - Definition, types of negotiable instruments; Negotiation; Holder and holder in due course; payment in due course;
October	UNIT-IV	Production Theory: Production function-production with one and two variable inputs, Stages of production; Economics of scale; Estimation of production function.	Accounting for holding and subsidiary companies. Accounts relating to Liquidation of Companies.	Standard Costing and Variance Analysis:, Standard costing as a control technique; Setting of standards and their revision; Variance analysis-meaning and importance; Kinds of variances and their uses-material, labour and overhead variances; Disposal: of variances; Relevance of variance analysis to budgeting and standard costing.	Probability Distributions - Binomial, Poisson and Normal Distributions, Their characteristic sand applications.	Endorsement and crossing of cheque; Presentation of negotiable instruments. Legal Environment for Security Markets: SEBI Act 1992-organisation and objectives of SEBI.
November	Seminar And Internal Examination					
December	Semester Examination					

**Govt. D.B. Girls P.G. Autonomous College , Raipur (C.G.)**  
**Proposed Teaching Plan For the Session 2019-20**  
**M.Com. Part - II Semester**

Month	UNITS	Business Economics	Advanced Accounting	Accounting For Managerial Decision	Advanced Statistics	Business Law
January	UNIT -I	Cost Theory and Estimation, economic value analysis, Short and long run cost Functions- their nature, shape and inter-relationship; Law of variable proportions;-Law of returns to scale.	Accounts of General Insurance Companies.	Break-even-analysis; Assumptions and practical applications of break- even-analysis; Decisions regarding sales-mix, make or buy decisions and discontinuation of a product line etc.	Statistical Decision Theory: Decision environment, Expected profit under uncertainty and assigning probabilities and utility theory. Interpolation and Extrapolation - Parabolic Binomial, Newton and long ranges method.	SEBI Act-1992: Organization and objectives of SEBI, Functions and Role of SEB Rights and Power of SEBI. FEMA Act 1999: Objectives; Regulation and Management of FEMA, Penalties Appeal.
February	UNIT-II	Price Determination under Different Market Conditions: Characteristics of different market structures; Price determination and firm's equilibrium in short-run and long-run under perfect competition, monopolistic competition, oligopoly and monopoly,	Accounts of Banking Companies.	Analyzing financial Statements: Method, objects and ratio analysis. Cash flow analysis and Fund flow analysis.	Statistical Estimations and Test theory : Point and interval estimation of population mean, proportion and variance Statistical Testing - Hypothesis and Errors, Sample size – Large and Small Sampling test Z tests, T Tests & F Tests.	Competition Act 2002: Introduction, features, objects; Prohibition of certain agreements, Abuse of Dominant position and Regulation of combinations; Competition commission of India- duties, powers and functions, Competition Appellate Tribunal.



March	UNIT-III	Pricing Practices: Methods of price determination in practice, pricing of multiple products; price discrimination; International price discrimination and dumping; Transfer pricing.	Accounts of Public Utility concerns: Double Accounts System.	Contemporary Issues in Management Accounting: Value chain analysis; Activity bases costing, Quality costing, Target and life cycle costing.	Association of Attributes : Two Attributes, consistency of data, measurement of Association of Attributes - Percentage method, Co-efficient of Association, Comparison of Actual and (you le method) Expected frequency's & illusory Association.	Consumer Protection Act 1986: Needs of Act, Rights of consumers, Objectives of Act. Grievance redressal Machinery, District Forum, State Commission, National Commission.
April	UNIT-IV	Business Cycles: Nature and phases of la business .cycle; Theories of business cycles psychological, profit, monetary, innovation, cobweb, Samuelson and Hicks theories. Inflation: Definition, Characteristics and types; Inflation in terms of demand- pull and cost-push factors; Effects of inflation.	Royalty accounts. Investment accounts.	Reporting to Management : Objectives of reporting, reporting needs at different managerial levels; Types of ,reports," modes of reporting; reporting at different levels of management.	Statistical Quality Control: Causes of Variations in quality characteristics, Quality Control charts-purpose and logic, Process under control and out of control, warning limits, control charts for attributes-fraction defectives and number of defects, Acceptance sampling.	W.T.O.: Brief History of WTO, Objectives and Functions, Organization, W.T.O. and India, Regional groupings, anti-dumping duties and other NTBs, Doha declaration, Dispute settlement system, TRIP, TRIMS and GATS.
May	Seminar And Internal Examination					
June	Semester Examination					

**Govt. D.B. Girls P.G. Autonomous College , Raipur (C.G.)**  
**Proposed Teaching Plan For the Session 2019-20**  
**M.Com. Part - III Semester**

Month	UNITS	Management Concept	Organizational Behaviour	Advanced Cost Accounting	Income Tax Law and Accounts	Tax Planning and Management
July	UNIT -I	Schools of Management Thought : Scientific, process, human behaviour and social system school; Decision theory school; Quantitative and system school; Contingency theory of management; Functions of a manager. Staffing; Directions - nature, process, and techniques.	Organizational Behaviour : concept and significance ; Relationship between management and organizational behaviour; Emergence and ethical perspective; Attitudes; Perception; Learning; Personality; Transactional analysis.	Introduction – Cost Analysis, concepts and classification, Materials control– Techniques of Materials control. Labour cost – Computation and control, Overheads – Accounting and Control.	Law relating to Income tax :Brief study of the main provisions of the Indian Income Tax Act. Important definitions. Income exempted from tax, Residence and Tax liability.	Calculation of taxable Income and tax of Firm and Companies.
August	UNIT-II	Managerial Functions : Planning - concept, significance, types; Organizing - concept, principles of authority, theories, types of organizations, authority, responsibility, power, delegation, decentralization; Coordinating; Control - nature, process, and techniques.	Leadership : Concept; Leadership styles; Theories - trait theory, behavioural theory, Fielder's contingency theory; Harsey and Blanchard's situational theory; Managerial grid; Likert's four systems of leadership.Organizational Conflict :Dynamics and management; Sources, patterns, levels, and types of conflict; Traditional and modern approaches to conflict; Functional and dysfunctional organizational conflicts; Resolution of conflict.	Job, Batch, Contract Costing and operating costing.	Calculation of taxable income under the head : Salary and House property.	Return of Income, Provisional Regular, Expert and emergency assessment, Re-opening of assessment.

September	UNIT-III	Motivation : Process of motivation; Theories of motivation – need hierarchy theory, theory X and theory Y, two factor theory, Alderfer's ERG theory, McClelland's learned need theory, VictorVroom's expectancy theory, Stacy Adams equity theory.	Interpersonal and Organizational Communication: Concept of two-way communication; Communication process; Barriers to effective communication; Types of organizational communication ; Improving communication; Transactional analysis in communication.	Process Costing, Joint products & By – products costing. Uniform costing and Estimate costing.	Depreciation and Development allowance, Calculation of taxable Income under the head : Business and Profession, capital gains, income from other sources.	Concept of tax Planning ; Tax avoidance and tax evasions ; Tax planning with reference of location, nature and form of organization of new business. Tax planning to capital structure, decision dividend policy ; Inter corporate dividends and bonus shares.
October	UNIT-IV	Group Dynamics and Team Development : Group dynamics - Definition and importance, types of groups, group formation, group development, group composition, group performance factors; Principle- centred approach to team development.	Organizational Development : Concept; Need for change, resistance to change; Theories of planned change; Organizational diagnosis; Organizational Development intervention.	Budgetary control – Importance of budgets in accounting. Nature of budgetary control, Organization for budgetary control preparation of fixed and variable budgets. Cash Budget, Production and sales Budget.	Set off and carry forward of losses, Deduction from gross total Income Calculation of taxable Income and tax of an individual, and Hindu undivided Families. Appeals & Revisions Reference of High Court and Supreme court, offences & penalties, Income tax authorities.	Preparation of income tax returns, Computation of Income tax, Tax deduction at source; Advance payment of tax.
November	Seminar And Internal Examination					
December	Semester Examination					

**Govt. D.B. Girls P.G. Autonomous College , Raipur (C.G.)**  
**Proposed Teaching Plan For the Session 2019-20**  
**M.Com. Part - IV Semester**

Month	UNITS	Financial Management	Personnel Management	Production management	Strategic Management	Project
January	UNIT -I	Financial Management :Meaning, nature and scope of finance; Finance functions - investment, financing and dividend decisions. Capital Budgeting : Nature of investment decisions; Investment evaluation criteria - net present value, internal rate of return, profitability index, payback period, accounting rate of return; NPV and IRR comparison; Capital rationing; Risk analysis in capital budgeting.	Concept, Definition, Importance & Objectives of Personnel Management, Historical Development of Personnel Management, Nature, scope planning, Philosophy and Principles of personnel Management and its relation with behavioral sciences.	Fundamentals of production management, Nature, Scope, Functions ;Problems, Production and Productivity organizing for production. Types of manufacturing systems.	Concept of Strategy :Defining strategy, levels at which strategy operates; Approaches to strategic decision making; Mission and purpose, objectives and goals; Strategic business unit (SBU);Functional level strategies. Environmental Analysis and Diagnosis :Concept of environment and its components; Environment scanning and appraisal; Organisational appraisal; Strategic advantage analysis and diagnosis, SWOT analysis.	
February	UNIT-II	Cost of Capital :Meaning and significance of cost of capital; Calculation of cost of debt, preference capital, equity capital and retained earnings; Combined cost of capital (weighted); Cost of equity and CAPM. Operating and Financial Leverage :Measurement of leverages; Effects of operating and financial leverage on profit; Analysing alternate financial plans; Combined financial and operating leverage.	Personnel policies, programmes & procedures. Personnel Department; Personnel Functions, Position of personnel Department & Organization of Personnel Management.	Production planning, Objectives, Factors affecting Production Planning. Planning future activities, forecasting. Qualitative & Quantative forecasting Methods, long range forecasts, project planning method(P.E.R.T. and C.P.M.) Process planning System. Techniques of process planning : Assembly charts, process charts make or buy analysis.Process design, Factors affecting design Relation with types of manufacturing plant location and layout : Factors affecting location. Types of plans layout, evaluation of alternative layout.	Strategy Formulation and Choice of Alternatives : Strategies - modernisation , diversification, integration, Merger, take-over and joint strategies; Turnaround, divestment and liquidation strategies; Process of strategic choice-industry, competitor and SWOT analysis; Factors affecting strategic choice; Generic competitive strategies- cost leadership, differentiation focus, value chain analysis, bench marking, service blue printing.	

March	UNIT-III	Capital structure Theories :Traditional and M.M. hypotheses - without taxes and with taxes; Determining capital structure in practice.Dividend Policies : Issues in dividend decisions, Walter's model, Gordon's model, M-M hypothesis, dividend and uncertainty, relevance of dividend; Dividend policy in practice; Forms of dividends; Stability in dividend policy; Corporate dividend behaviour.	Man power planning Recruitment and Selection, Training &Development of Employees & Executives. Promotion, Demotion, Transfers, Absenteeism & Turnover.	Work measurement and work standards Uses of work measurement data procedure for work measurement. Direct work measurement. Time study, activity sampling, Indirect work measurement : Synthetic timing, Predetermined motion time system, analytical estimating. Methods analysis : Areas of application, Approaches to methods design, Tools for methods analysis, work simplification programme.	Functional Strategies :Marketing, production / operations and R & D plans and policies. Functional Strategies :Personnel and financial plans and policies. Strategy Implementation: Inter-relationship between formulation and implementation; Issues in strategy implementation; Resource allocation.	
April	UNIT-IV	Management of Working Capital :Meaning, significance and types of working capital; Calculating operating cycle period and estimation of working capital requirements; Financing of working capital and norms of bank finance; Sources of working capital; Factoring services; Various committee reports on bank finance; Dimensions of working capital management. Management of cash, and inventory.	Performance Appraisal and Merit Routing, Discipline. Job-evaluation Wage & Salary Administration, plans of Remuneration & Financial Rewards/Incentive payments. Employees Fringe Benefits & Services - Safety, Health & Security programme and welfare. Motivation and Moral.	Production Control – Control functions : Routing Loding, Scheduling, Despatching, Follow up. Quality control & inspection : place of quality control in modern enterprises, organisation of quality control. Statistical quality control, inspection location for inspection, inspection procedure and records, Inspection devices.	Strategy and Structure :Structural considerations, structures for strategies; Organisational design and change. Strategy Evaluation : Overview of strategic evaluation; Strategic control; Techniques of strategic evaluation and control. Techniques of strategic evaluation and control.	
May	Seminar And Internal Examination					
June	Semester Examination					

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**PROPOSED TEACHING PLAN FOR THE SESSION 2018-19**

**B.A. I ECONOMICS  
PAPER- I  
MICRO ECONOMICS**

<b>MONTH/DAYS</b>	<b>UNIT</b>	<b>TOPIC</b>
JULY /26	UNIT –I	Introduction-Definitions, Nature and scope of Economics, Methodology in Economics.
AUGUST/24	UNIT-I	Utility–Cardinal and Ordinal Approaches, Indifference Curve, Consumer's equilibrium, Giffin goods, compensated demand. Demand- Law of Demand, Elasticity of demand, Price, income and cross elasticity, Consumer's surplus.
SEPTEMBER/23	UNIT-II	Theory of Production and Cost– Production decision, Production function, Iso-quant, Factor substitution, Law of variable proportions, Returns to scale, Economies of scale. Different concepts of cost and their interrelation, Equilibrium of the firm.
OCTOBER/22	UNIT-III	Market structure-perfect and imperfect markets, Equilibrium of a firm-perfect competition.
NOVEMBER/19	UNIT-III	Monopoly and price discrimination. Monopolistic competition- Duopoly, Oligopoly, controlled and administered prices.
DECEMBER/21	UNIT –IV	Factor Pricing-Marginal productivity theory of distribution. Theories of wage determination- wages and collective bargaining wage differentials.
JANUARY/25	UNIT –IV	Rent – Scarcity Rent, differential rent, Quasi rent, Modern Rent Theory. Interest -Classical and Keynesian Theories, Modern Theory. Profits – Innovation, Risk bearing and Uncertainty theories.
FREBRUARY/23	UNIT –V	Welfare economics – What welfare economics is about? Role of value judgments in welfare economics, Pigou's contribution in the field of welfare economics. Parato's optimality. New welfare economics – Kaldor, Hicks welfare criterion, Scitovsky paradox, Social welfare function and social choice. Bergson's –Samuelsson social welfare function, Prof. Amartya Sens critique, Arrow impossibility theorem

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**PROPOSED TEACHING PLAN FOR THE SESSION 2018-19**

**B.A. I ECONOMICS**

**PAPER- II**

**INDIAN ECONOMY**

<b>MONTH/DAYS</b>	<b>UNIT</b>	<b>TOPIC</b>
JULY /26	UNIT –I	Towards a Market Economy – Changes in the land system. Commercialization of agriculture, Policy of discriminating protection and Industrial development, Monetary and currency developments, Central and Commercial Banking Developments.
AUGUST/25	UNIT-I	Indian Economy at the Time of Independence, Backward economy, Stagnant economy, other salient features, Planning exercises in India – National Planning Committee, Bombay Plan, People's Plan. Gandhian Plan, The Planning Commission
SEPTEMBER/23	UNIT-II	Structure of Indian Economy – Basic features, Natural resources – land, water and forest resources, Broad demographic features – Population size and growth rates, Sex composition, Rural – Urban migration, Occupational distribution, Problem of over population, Population policy, Infra – structure development, National Income.
OCTOBER/22	UNIT-III	Planning in India – Objectives, Strategy; Broad achievements and failures, Current Five Year Plan – Objectives, Allocation and targets, New economic Reforms – Liberalization, Privatization and Globalization..
NOVEMBER/19	UNIT-III	Agriculture – Nature and importance, Trends in agricultural production and productivity, Factors determining productivity, Land reforms, New agricultural strategies and green revolution, Rural credit, Agricultural Marketing
DECEMBER/21	UNIT –IV	Industry – Industrial Development during the planning period, Industrial policy. Industrial licensing policy – MRTP Act, FERA and FEMA,
JANUARY/26	UNIT –IV	Growth and problems of small scale industries, Role of public sector enterprises in India's industrialization
FREBRUARY/24	UNIT –V	External Sector – Role of foreign trade, trends in exports and imports, Composition and direction of India's foreign trade, Balance of payments crisis and the new economic reforms – Export promotion measures and the new trade policies. Important areas of concern- Poverty, inequality and unemployment, Rising Prices.

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**PROPOSED TEACHING PLAN FOR THE SESSION 2018-19**

**B.A. II ECONOMICS**

**PAPER- I**

**MACRO ECONOMICS**

<b>MONTH/DAYS</b>	<b>UNIT</b>	<b>TOPIC</b>
JULY /26	UNIT –I	National Income:-Concept and Measurement of National Income; Economic welfare and national income, Social accounting. Circular flow of income. National Income accounting, Green accounting.
AUGUST/25	UNIT-I	Classical theory of employment, Say's Law of Markets, Keynesian theory of employment
SEPTEMBER/23	UNIT-II	Consumption function – Average and marginal propensity to consume; Keynes's psychological law of consumption, determinants of the consumption function. The saving function. The investment multiplier and its effectiveness. , The investment function – marginal efficiency of capital, autonomous and induced investment. Saving and investment equality
OCTOBER/22	UNIT-III	Nature and characteristics of trade cycle; theories of trade cycle , Hawtrey's monetary theory; Hayek's over investment theory
NOVEMBER/19	UNIT-III	Keynes' view on trade cycle; Schumpeter's theory of innovation. Samuelson and Hicks multiplier- accelerator model, Control of trade cycles.
DECEMBER/21	UNIT –IV	International Trade – Inter-regional and international trade, Comparative advantage cost theory, opportunity Cost theory and Hecksher-Ohlin theory.
JANUARY/26	UNIT –IV	International trade and economic development, Tariffs & import Quotas. Concept of optimum tariff. Balance of trade & Balance of Payment- Concept & Components of BOP, Equilibrium & Disequilibrium in BOP. Relative merits & demerits of devaluation. Foreign Trade Multiplier.
FREBRUARY/24	UNIT –V	Functions and objective of international monetary fund, World Bank and world trade organization, international monetary reform and India, Foreign Trade in India- recent Changes in the Composition and direction of foreign trade. India's balance of payment, export promotion and import substitution in India, multinational corporation and India.



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**PROPOSED TEACHING PLAN FOR THE SESSION 2018-19**

**B.A. II ECONOMICS**

**PAPER- II**

**MONEY BANKING AND PUBLIC FINANCE**

<b>MONTH/DAYS</b>	<b>UNIT</b>	<b>TOPIC</b>
JULY /26	UNIT –I	Basic concepts: Money – Meaning and functions, Gresham's law; Quantity theory of money – Cash transaction and cash balance approaches;
AUGUST/25	UNIT-I	Value of Money- Inflation, deflation and reflation, definition, types, causes and effects of inflation on different sectors of the economy; Demand pull and cost push inflation; Measures to control inflation. Phillips curve, concept
SEPTEMBER/23	UNIT-II	Commercial banking- meaning and types; Functions of commercial banks, The process of credit creation purpose and limitations; Liabilities and assets of banks; Functions of a central bank, Role and functions of the Reserve bank of India; Objectives and limitations of monetary policy with special reference to India.
OCTOBER/22	UNIT-III	Meaning and scope of public finance; Distinction between private and public finance; public goods v/s private goods; The principle of maximum social advantage; Role of the government in economic activities;
NOVEMBER/19	UNIT-III	Public expenditure – Meaning, classification and principles of public expenditure, Trends in public expenditure and causes of growth of public expenditure in India.
DECEMBER/21	UNIT –IV	Sources of Public revenue- Taxation – Meaning, Canons and classification of taxes; Division of tax burden. The benefit and ability to pay approaches; Impact and incidence of taxes;
JANUARY/26	UNIT –IV	Taxable capacity; Effects of taxation; Characteristics of a good tax system, equity and justice in taxation Major trends in tax revenue of the Central and state Government in India
FREBRUARY/24	UNIT –V	Public debt and financial administration- Sources of public borrowing effects of public debt. Methods of debt redemption.  The public budget- Kinds of budget, Economic and functional classification of the budget; Preparation and passing of budget in India.

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**PROPOSED TEACHING PLAN FOR THE SESSION 2018-19**

**B.A. III ECONOMICS**

**PAPER- I**

**DEVELOPMENT AND ENVIRONMENTAL ECONOMICS**

MONTH/DAYS	UNIT	TOPIC
JULY /26	UNIT –I	Economic Growth and Development – Factors affecting economic growth, Capital and Technology Development & under development, Population of Under-developed Countries,
AUGUST/25	UNIT-I	Poverty-Absolut & Relative, Measuring development and Under development, Gap per capita income, Inequity of income and wealth. Human Development index GDI, GEM, Poverty Index of development & Quality of life.
SEPTEMBER/23	UNIT-II	Population problem and growth, pattern of population. Theory of demographic transition. Population poverty & Environment. Theory of Social Change, Immutable laws of Capitalist Development-Crisis in capitalism. Karl Marx, Mahalonobis Model. Schumpeter, Big-Push, Balance and unbalanced Growth, Critical Minimum Effort thesis, Low-Income Equilibrium Trap, Dualism: technical, behavioural & social
OCTOBER/22	UNIT-III	Harrod and Domar Growth Model, Neo Classical models, Solow
NOVEMBER/19	UNIT-III	Meade & Mrs. Joan Robinson's Growth model, Unlimited supply of Labour.
DECEMBER/21	UNIT –IV	Environment and Ecology: Economic linkage, Environment as a necessary and luxury, Population environment linkage, Environmental use & environmental disruption as an allocation problem. Market Failure for environmental goods, environment as a public good, the Common Property problem.
JANUARY/26	UNIT –IV	Human Right approach to environmental problem, valuation of environmental damages; land, water, air & forest pollution Control-Prevention. Control and abatement of pollution, Choice of policy instrument
FREBRUARY/24	UNIT –V	Concept of Intellectual Capital – Food Security, Education Health & Nutrition, Efficiency & Productivity in Agriculture, New Technology & Sustainable Agriculture, Globalization & Agriculture growth, the Choice of Technique & appropriate technology & employment, Role of Monetary & Fiscal policies in developing Countries

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**PROPOSED TEACHING PLAN FOR THE SESSION 2018-19**

**B.A. III ECONOMICS**

**PAPER- II**

**STATISTICAL METHODS**

MONTH/DAYS	UNIT	TOPIC
JULY /26	UNIT –I	Statistical Methods Statistics – Definition Statistical Data, Statistical Methods, Functions of Statistics. Importance of Statistics, Limitations of Statistics, Statistical Survey & Report writing.
AUGUST/25	UNIT-I	Collection of Data, Primary & Secondary Data, Sampling & Sampling Designs. Sampling Errors, Frequency Distribution, Diagrammatic & Graphic Presentation
SEPTEMBER/23	UNIT-II	Central Tendency. Measurement of Mean, Median, Mode, Geometric Mean & Harmonic Mean and their uses.
OCTOBER/22	UNIT-III	Dispersion : Meaning of Dispersion, Properties, good measure of Variation – Methods of Dispersion Range, Quartiles Deviation – Mean Deviation,
NOVEMBER/19	UNIT-III	Standard Deviation, Coefficients of Variation, Lorenz Curve, Skewness & Kurtosis.
DECEMBER/21	UNIT–IV	Coefficient of Correlation – Karl Pearson's Method, Probable Error, Spearman's Rank Correlation Coefficient.
JANUARY/26	UNIT–V	Index Number – Construction of Index Numbers, Simple & weighted Index Number's- Fisher's Ideal Index Number & Reversal Test. Consumer Price Index Numbers and Time Series Analysis – Components of Time-Series.
FREBRUARY/24	UNIT –V	Measurement of Trend – Graphic Method, Semi Average Method. Moving averages, Least Square Method, Measuring Trend by logarithms.

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**ENGLISH LANGUAGE (FOUNDATION COURSE)**  
**TEACHING PLAN SESSION: 2018-19**  
**PAPER – II-**

MONTH	PROPOSED PLAN
JULY	Unit – 1-Basic language skills: Grammar and Usage- Grammar and Vocabulary based on the prescribed text-Article –Lesson 1,2
AUGUST	<b>Unit – 2-Comprehension of an unseen passage</b> Lesson 3 ,4,5
SEPTEMBER	<b>Unit – 3-Composition:</b> Paragraph writing. Lesson 6,7
OCTOBER	<b>Unit – 4-Letter writing</b> Lesson 8,9
NOVEMBER	<b>Unit – 5-Texts:</b> Lesson 10 11, Grammar- Tenses
DECEMBER	<b>Unit – 5-Texts:</b> Lesson 12.13 Grammar-Direct & indirect Speech
JANUARY	<b>Unit – 5-Texts:</b> Lesson 14.15 Grammar-Active & Passive Voice
FEBRUARY	Grammar-Preposition/Modals etc. REVISION

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**DEPARTMENT OF ENGLISH**  
**B.A. – I ENGLISH LITERATURE**  
**TEACHING PLAN SESSION: 2018-19**  
**Paper – I Literature in English**  
**(1550 – 1750)**

MONTH	PROPOSED PLAN
July	Introduction to Literature, Definition and characteristics of poetry. Forms of Poetry: Lyric, Ode, Elegy, Sonnet, Epic. Unit – 2 Poetry – a. William Shakespeare – Sonnet Number 1 <i>From Fairest Creatures</i> , Sonnet Number 154 <i>The Little Love God</i>
August	Unit – 2 Poetry Milton – <i>How Soon Hath Time the Subtle Thief of Youth</i> John Donne – <i>Sweetest Love I don't Go, This is my Place Last Scene</i>
September	Unit – 3 Poetry a. John Dryden – <i>Portrait of Shadwell</i> b. Alexander Pope – <i>From 'An Essay on Criticism'</i>
October	Unit – 4 Prose a. Francis Bacon – ' <i>Of Studies</i> ', ' <i>Of Regiment Of health</i> ', ' <i>Of Friendship</i> ' b. Joseph Addison – ' <i>Sir Roger at Home</i> ' c. Richard Steele – ' <i>Of the Club</i> '
November	Unit – 5 Drama William Shakespeare – ' <i>The Merchant of Venice</i> ' Unit – 6 Fiction Johnathan Swift – <i>The Battle of the Books</i>
December	Unit – 7 Historical and Literary Topics <i>The Renaissance, Humanism, Re-Formation, The Civil War and Protectorate, The Restoration, The Rise of Colonialism.</i>
January	Unit – 7 Earlier Drama, Petrarchism and the Sonnet Cycle, The Influence of Seneca and Classical Dramatic Theory, The Elizabethan and Jacobean stage. English Renaissance Drama, Restoration drama, The Rise of Periodical Essay.
February	Revision

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**DEPARTMENT OF ENGLISH**  
**B.A. – I ENGLISH LITERATURE**  
**TEACHING PLAN SESSION: 2018-19**  
**PAPER – II- Literature in English from 1750 – 1900**

MONTH	PROPOSED PLAN
JULY	History and background of English Literature UNIT – II <b>POETRY</b> Blake – Tiger, Tiger Burning Bright.
AUGUST	UNIT – II <b>POETRY</b> Wordsworth – Daffodils and Solitary Reaper Coleridge – Frost at Midnight UNIT – III <b>POETRY</b> Shelley – Ode to Skylark Keats – Ode to Autumn
SEPTEMBER	UNIT – III <b>POETRY</b> Tennyson – Crossing the Bar Browning - Prospice UNIT – IV-PROSE Lamb – Dream Children : A Reverie Hazlitt – On Actors and Acting
OCTOBER	UNIT – V-FICTION Jane Austen – Pride and Prejudice
NOVEMBER	UNIT – VI-FICTION Charles Dickens – David Copperfield
DECEMBER	UNIT – VII Historical and Literary Topics The Reform Act, The Impact of Industrialization, Colonialism and Imperialism ,Scientific thoughts and Discoveries
JANUARY	UNIT – VII Historical and Literary Topics Faith and Doubt Classical and Romantic Concepts of Imagination Varieties of Romantic and Victorian Poetry The Victorian Novel ,Realism and the Novel, Aestheticism
FEBRUARY	UNIT – VII Historical and Literary Topics The Victorian Novel Realism and the Novel Aestheticism REVISION

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**DEPARTMENT OF ENGLISH**  
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**ENGLISH LANGUAGE (FOUNDATION COURSE)**  
**TEACHING PLAN SESSION: 2018-19**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
July	Unit – 1 Basic Language Skills, Grammar and Usage – Grammar and Vocabulary based on the prescribed text, Lesson 1 & 2 Articles, Auxiliary Verbs
August	Unit – 2 Lesson 3 & 4, Comprehension of unseen Passage
September	Unit – 3 Lesson 5 & 6, Report Writing
October	Unit – 4 Lesson 7 & 8, Expansion of Idea
November	Unit – 5 Lesson 9 & 10 Nouns and Pronouns, Adjectives and Adverb, Pre-positions
December	Unit – 6 Lesson 11 & 12, Non- Finite Verbs, Tenses
January	Unit – 7 Lesson 13 & 14 Tenses
February	Conditional Tenses, Modal Verbs, Active and Passive Voice Revision

**DEPARTMENT OF ENGLISH**  
**B.A. – II ENGLISH LITERATURE**  
**TEACHING PLAN SESSION: 2018-19**  
**Paper – I Modern English Literatures**

MONTH	PROPOSED PLAN
July	Introduction to syllabus, Characteristics of Modern Literature, Modern Novel, Modern Drama, Modern Poetry
August	Unit – 2 Poetry a. W. B. Yeats – <i>A Prayer for my Daughter, Byzantium.</i> b. T. S. Eliot – <i>Love Song of J. Alfred Prufrock</i>
September	Unit – 3 Poetry a. Dylan Thomas – <i>Lament, A Refusal to Mourn the Death.</i> b. Philip Larkin – <i>Toads, At Grass</i>
October	Unit – 4 Prose a. Bertrand Russel – <i>On the Value of Scepticism</i> b. Oscar Wilde – <i>The Happy Prince</i>
November	Unit – 5 Drama G. B. Shaw – <i>Pygmalion</i>
December	Unit – 6 Fiction and short stories a. Rudyard Kipling – <i>Kim</i> b. Catherine Mansfield – <i>A Cup of Tea</i>
January	Unit – 7 1. Elegy 2. Sonnet 3. Ode 4. Morality and Miracle Play 5. One Act Play 6. Interlude
February	Revision



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**DEPARTMENT OF ENGLISH**

**B.A. – II ENGLISH LITERATURE**

**TEACHING PLAN SESSION: 2018-19**

**Paper – II Modern English Literatures (Paper Code - 0176)**

MONTH	PROPOSED PLAN
JULY	Unit – 1- W.H.Auden-Seascape <b>Unit – 2- POETRY</b> Sassoon-At the Grave of Henry Vaughan Owen, W. H.-Strange Meeting
AUGUST	<b>Unit – 3 POETRY</b> Ted Hughes-The Howling of the Wolves
SEPTEMBER	<b>UNIT –IV</b> <b>PROSE</b> Robert Lynd- Forgetting H.Belloc-A conversation with a Reader
OCTOBER	<b>UNIT –V DRAMA</b> John Galsworthy-Strife
NOVEMBER	<b>Unit – V- DRAMA</b> J.M. Synge-Rider to the Sea.
DECEMBER	<b>UNIT –VI</b> FICTION William Golding-Lord of the Flies
JANUARY	<b>UNIT –VII</b> Simile, Metaphor, Alliteration , Onomatopoeia, Ballad, Epic, Dramatic Monologue
FEBRUARY	REVISION

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**BA/B.SC /B.COM– III**  
**ENGLISH LANGUAGE (FOUNDATION COURSE)**  
**TEACHING PLAN SESSION: 2018-19**  
**PAPER – II-**

MONTH	PROPOSED PLAN
JULY	Unit – 1- Grammar and Vocabulary based on the prescribed text-Articles, Preposition –Lesson 1,2
AUGUST	<b>Unit – 2-</b> Essay writing Lesson 3 ,4,5
SEPTEMBER	<b>Unit – 3</b> Precis writing Lesson 6,7
OCTOBER	<b>Unit – 4-Comprehension of an unseen passage</b> Lesson 8,9
NOVEMBER	<b>Unit – 5-</b> Grammar- Tenses Lesson 10 11
DECEMBER	Grammar-Direct & indirect Speech Lesson 12.13
JANUARY	Lesson 14.15 Grammar-Active & Passive Voice
FEBRUARY	Grammar- Modals/Question Tags etc. REVISION

GOVERNMENT D. B. GIRLS P. G. AUTONOMOUS COLLEGE RAIPUR,  
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**DEPARTMENT OF ENGLISH**

**B.A. – III ENGLISH LITERATURE**  
**TEACHING PLAN SESSION: 2018-19**  
**PAPER – I INDIAN WRITING IN ENGLISH**

MONTH	PROPOSED PLAN
JULY	History and background of Indian Writing in English UNIT – II POETRY Toru Dutt - Our Casuarina Tree Tagore - Songs 1 and 103 from ‘Gitanjali’
AUGUST	UNIT – III Kamala Das - The Old Playhouse Gauri Deshpandey - The Female of the species , Jayant Mahapatra - Dawn at Puri K. N. Daruwala - Death by Burial , Shiv K. Kumar - Indian Women
SEPTEMBER	UNIT – IV-PROSE Nirad C. Chaudhary - My Birth Place Dr. S. Radhakrishnan - The call of the Suffering
OCTOBER	UNIT – V -DRAMA Girish Karnad Hayavadana Tendulkar Silence! The Court is in Session.
NOVEMBER	UNIT – V –DRAMA Girish Karnad Hayavadana Tendulkar Silence! The Court is in Session.
DECEMBER	UNIT – VI FICTION- R.K.Narayan -Guide
JANUARY	UNIT – VII Lyric, Subjective Poetry, Couplet, Fable, Hymn, Allegory ,Autobiography
FEBRUARY	REVISION

GOVERNMENT D. B. GIRLS P. G. AUTONOMOUS COLLEGE RAIPUR,  
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**DEPARTMENT OF ENGLISH**

**B.A. – III ENGLISH LITERATURE**  
**TEACHING PLAN SESSION: 2018-19**  
**Paper – II American Literature**

MONTH	PROPOSED PLAN
JULY	Unit – 1- POETRY Walt Whitman-Oh Captain! My Captain,
AUGUST	<b>Unit – 2- POETRY</b> Walt Whitman - When the Lilacs lasts in the Dooryard Bloomed. Carl Sandberg-Who Am I? 'I am the People, the Mob'
SEPTEMBER	<b>Unit – 3 POETRY</b> Emily Dickinson-Hope is the Thing with feather, I felt a Funeral in my Brain' E.E. Cummings-The Cambridge Ladies As Freedom is a Breakfast Food
OCTOBER	<b>Unit – 4- PROSE</b> William Faulkner-Nobel Award acceptance Speech, W. Carlos Williams-In the American Grain
NOVEMBER	<b>Unit – 4 – PROSE</b> Walt Whitman-Preface to 'Leaves of Grass'
DECEMBER	<b>UNIT-V DRAMA</b> Eugene O' Neil-The Hairy Ape
JANUARY	<b>UNIT-VI FICTION</b> Ernest Hemingway- A Farewell to Arms, W.Faulkner- The Sound and the Fury
FEBRUARY	<b>UNIT-VII</b> Naturalism, Realism, Art for Art's Sake, Poetic Drama, Symbolism, American Renaissance, Existentialism REVISION

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2018-19  
TEACHING PLAN  
B. A. I GEOGRAPHY  
PAPER-I**

**TITLE OF THE PAPER: ELEMENTS OF PHYSICAL GEOGRAPHY**

MONTH	PROPOSED PLAN
JULY	<b>The nature and scope of Physical Geography; Inter relation of Physical Geography with other branches of earth science. The place of Geomorphology in Physical Geography,</b>
AUGUST	<b>Geological Time scale. Earth's interior, Wegner's theory of Continental Drift, Plate Tectonics. Earth movements: - orogenic and epeirogenic</b>
SEPTEMBER	<b>Earthquakes and Volcanoes.</b>  <b>Rocks - Origin and composition of rocks, weathering, formation of regolith and soils, rocks and relief.</b>
OCTOBER	Geomorphic agents and processes-erosion, transportation and deposition, mass wasting. Evolution of Land scape, concept of cycle of erosion, interruption of cycle of erosion.
NOVEMBER	<b>Fluvial, Arid, Glacial, Karst and Coastal Landscapes.</b>
DECEMBER	<b>Application of Geomorphology to Hydrology, Mining, Engineering works.</b>
JANUARY	<b>Hazard management and urbanization.</b>
FEBURARY	Revision

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2018-19  
TEACHING PLAN  
B. A. I GEOGRAPHY  
PAPER-II**

**TITLE OF THE PAPER: INTRODUCTION TO GEOGRAPHY & HUMAN GEOGRAPHY**

<b>MONTH</b>	<b>PRAPOSED PLAN</b>
<b>JULY</b>	The Nature of Geography, objectives and relevance, Place of Geography in the classification of Sciences,
<b>AUGUST</b>	Geography and other disciplines. Geography as the study of environment, man - environment relationship; ecology and ecosystems.
<b>SEPTEMBER</b>	Environmental determinism possibilism Neo - determinism; Dualism in Geography - Systematic / Regional, Physical/Human, Complementarity.
<b>OCTOBER</b>	Definition and scope of Human Geography. Human Races - Their characteristics and distribution. Human adaptation - To the environment; Eskimos, Bushman, Pigmy, Gond, Masai, and Naga
<b>NOVEMBER</b>	Growth of Population; Distribution of Population, world distribution pattern - physical, economic and social factors influencing spatial distribution,
<b>DECEMBER</b>	concept of overpopulation under population and optimum population. Migration - internal and international Settlements - Types and patterns of settlements.
<b>JANUARY</b>	A brief historical overview of Geography as a discipline, recent trends in geography with special reference to India, imperatives for the future, career opportunities for geographers.
<b>FEBURARY</b>	Revision

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2018-19  
TEACHING PLAN  
B.A. I GEOGRAPHY  
PRACTICAL**

MONTH	PRAPOSED PLAN
JULY	
AUGUST	Scale - Plain, Time, Diagonal and Comparative. Methods of showing relief - hachures, contours; Representation of different land forms by contours
SEPTEMBER	Line graph & Bar graph (Simple & Compound), Circle Diagram, wind rose.
OCTOBER	Mean, Median and Mode
NOVEMBER	Chain and tape Survey.
DECEMBER	Chain and tape Survey.
JANUARY	Chain and tape Survey.
FEBURARY	

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2018-19**

**TEACHING PLAN**

**B. A.II GEOGRAPHY**

**PAPER-I**

**TITLE OF THE PAPER: CLIMATOLOGY AND OCEANOGRAPHY**

MONTH	PRAPOSED PLAN
JULY	Weathers and climate; definition and significance of climatology. Elements of weather and climate; their causes. Composition and structure of the atmosphere.
AUGUST	Atmospheric Temperature: Insolation and Global energy budget, vertical, horizontal and seasonal distribution of temperature. : Vertical and horizontal distribution of pressure; planetary, periodic and local winds.
SEPTEMBER	Atmospheric moisture: humidity, evaporation; and condensation; hydrological cycle; types of precipitation, world patterns of rainfall: regional and seasonal distribution
OCTOBER	Atmospheric moisture: humidity, evaporation; and condensation; hydrological cycle; types of precipitation, world patterns of rainfall: regional and seasonal distribution
NOVEMBER	Relevance of oceanography in earth and atmospheric science. Definition of oceanography, Surface configuration of the ocean floor, continental shelf, continental slope, abyssal plain, mid-oceanic ridges and oceanic trenches. Relief of Atlantic, pacific and Indian oceans.
DECEMBER	Distribution of temperature and salinity of oceans and seas Circulation of oceanic waters ; Waves, tides and currents, currents of the Atlantic, Pacific and Indian ocean
JANUARY	storehouse of resources for the future
FEBURARY	Revision



**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2018-19**

**TEACHING PLAN**

**B. A.II GEOGRAPHY**

**PAPER-II**

**TITLE OF THE PAPER: REGIONAL GEOGRAPHY WITH SPECIAL REFERENCE TO NORTH AMERICA**

MONTH	PRAPOSED PLAN
JULY	Regional concept, bases of regionalization NORTH AMERICA: Structure, Relief Climate.
AUGUST	Soil, Forest, Mineral and Energy resources
SEPTEMBER	Agriculture - Major crops, Agricultural belts Livestock, Dairy farming
OCTOBER	Industries Localization, development & production - Iron and steel, Cotton Textile, Heavy Engineering,
NOVEMBER	Transport, Trade. Industrial region. Population
DECEMBER	Detailed study of regions: California valley, new England Region, Alaska
JANUARY	Prairie Region, St. Lawrence Valley
FEBURARY	Revision

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2018-19**

**TEACHING PLAN**

**B. A.II GEOGRAPHY**

**PRACTICAL**

MONTH	PROPOSED PLAN
JULY	
AUGUST	Distribution Maps: Dot, Choropleth & Isopleth
SEPTEMBER	Map Projections: Definition and classification, Cylindrical projections- simple, equal area, Gall's, Mercator's
OCTOBER	Interpretation of weather maps : Use of meteorological instruments.
NOVEMBER	Statistical Methods: Quartile: Mean deviation, standard deviation and Quartile deviation; Relative variability and co-efficient of variation.
DECEMBER	Surveying-Prismatic Compass Survey: open and closed traverse, correction of bearing, calculation of interior angles.
JANUARY	Surveying-Prismatic Compass Survey: open and closed traverse, correction of bearing, calculation of interior angles.
FEBURARY	

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2018-19**

**TEACHING PLAN**

**B.A. III GEOGRAPHY**

**PAPER-I**

**TITLE OF THE PAPER: RESOURCE AND ENVIRONMENT**

MONTH	PRAPOSED PLAN
JULY	Meaning, nature and components of resources and environment. Resources and environment interface. Classification of resources: renewable and nonrenewable: biotic (forests, wild-life, live-stock, fisheries, agricultural crops)
AUGUST	abiotic (land, water, mineral) Distribution and utilization of water mineral and energy resources, their economic and environmental significance and conservation. Types and distribution of forests, fauna and fisheries, their economic, and environmental significance and conservation. Major soil types and their distribution; problems of soil erosion and soil conservation
SEPTEMBER	Number, density, growth and distribution of population; population pressure and resource utilization.
OCTOBER	Classification of environment: Natural and Human. Man, environment interrelations with respect to population size, types of economy and technology;
NOVEMBER	exploitation of natural resources and environmental hazards. Emerging environmental issues - population explosion; food security
DECEMBER	deforestation; global warming, conservation of bio-diversity; sustainable development.
JANUARY	deforestation; global warming, conservation of bio-diversity; sustainable development.
FEBURARY	Revision

# GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

SESSION 2018-19

TEACHING PLAN

B. A. III GEOGRAPHY

PAPER-II

**TITLE OF THE PAPER: GEOGRAPHY OF INDIA WITH REFERENCE TO CHHATTISGARHS**

MONTH	PRAPOSED PLAN
JULY	Physical features: Structure, Relief, climate and soils. Physiographic regions, Drainage, Climate-origin and mechanism of monsoon, and regional and seasonal variation
AUGUST	Natural resources: Soils - types, their distribution and characteristics. Water resources (major irrigation and hydel power projects); Forests-types, distribution, economic significance and conservation. Mineral and Power Resources-Iron-ore, Manganese, Copper, Coal, Petroleum and Natural gas, Non-conventional sources of energy
SEPTEMBER	Cultural Features: Agriculture - Major crops, impact of green revolution and agricultural regions
OCTOBER	Industries Localization, development & production - Iron and steel, Cotton Textile, Cement, Sugar, Population - growth, density and distribution. Transport, Foreign Trade.
NOVEMBER	Physical features: Structure, Physiography, Drainage, Climate.  Soils. Forest resources, Water resources hydel power projects. Mineral resources-power resources
DECEMBER	Cultural Features: Agriculture . Population : Density distribution, Tribal Population. Industries, Trade and Transport, Tourism, Socio Economic development.
JANUARY	Revision
FEBURARY	Revision

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2018-19**

**TEACHING PLAN**

**B. A.III GEOGRAPHY**

**PRACTICAL**

MONTH	PROPOSED PLAN
JULY	
AUGUST	Band graph, Hythergraph and Climograph. Square root, cube-root and vernier scales
SEPTEMBER	Map Projection: Conical Projection: one standard parallel, two standard parallels, Bonne's, Polyconic, Polar Zenithal Projections; Gnomonic, Stereographic and Orthographic
OCTOBER	Study and Interpretation of Indian topographical sheets: classification and numbering system, Interpretation of topographical sheets with respect to cultural and physical features.
NOVEMBER	Importance of field work in Geography. Field work and field report: physical, social and economic survey of a micro-region.
DECEMBER	Surveying - Plane Table Survey, Basic Principles of plane table surveying, Plane table survey including intersection and resection.
JANUARY	Surveying - Plane Table Survey, Basic Principles of plane table surveying, Plane table survey including intersection and resection.
FEBURARY	

**प्राचार्य शास. दू.ब. महिला स्नात.(स्वशासी) महाविद्यालय**  
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टीचिंग प्लान "हिन्दी" सत्र 2018-19

प्रस्तावित पाठ्यक्रम बी.ए. प्रथम वर्ष

क्र.	माह/दिन	स्नातक हिन्दी साहित्य	बी.ए./बी.एस.सी./बी.कॉम. बी.एच.एस.सी. I वर्ष
1	जुलाई/26	इकाई, प्रश्न पत्र I, II	(क) पल्लवन, पत्रचार, अनुवाद, परिभाषिक शब्दावली
2	अगस्त/25	इकाई II जायसी, गबन	इकाई I (क) हिंदी के पदनाम (ख) ईदगाह कहानी
3	सितम्बर/23	इकाई III सूर, कफन, कहानी	इकाई II (क) शब्द शुद्धि, वाक्य शुद्धि, पर्यायवाची शब्द, अनेकार्थी शब्द, समश्रुत शब्द
4	अक्टूबर/22	इकाई IV तुलसी, आकाशदीप, परदा	इकाई II (क) अनेक शब्दों के लिए एक शब्द, मुहावरे, लोकोक्ति (ख) भारत वंदना
5	नवम्बर/19	इकाई V तुलसी, धनानंद सेठ, मलवे का मालिक, चीफ की दावत	इकाई III (क) देवनागरी लिपि, नामकरण, स्वरूप एवं देवनागरी लिपि की विशेषता
6	दिसम्बर/21	इकाई V विद्यापति, रहीम, जली हुई रस्सी, गदल	इकाई III (क) अपठित गद्यांश, संक्षेपण (ख) भोलाराम का जीव
7	जनवरी/26	इकाई V रसखान, अश्क, रेड्डी, शिवानी	इकाई V (क) कम्प्यूटर का परिचय एवं कम्प्यूटर का अनुप्रयोग (ख) शिकागो से स्वामी विवेकानंद का पत्र
8	फरवरी/24	पुनरावृत्ति	(क) मानक हिंदी (ख) सामाजिक गतिशीलता पुनरावृत्ति

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टीचिंग प्लान स्नातक हिंदी

सत्र 2018—19

प्रस्तावित पाठ्यक्रम बी.ए. द्वितीय वर्ष

क्र.	माह/दिन	स्नातक हिन्दी साहित्य	बी.ए./बी.कॉम./बी.एस.सी. बी.एच.एस.सी./हिन्दी भाषा
1	जुलाई/26	इकाई I प्रश्न पत्र I, II मैथिलीशरण गुप्त	खण्ड (क) महात्मा गांधी, विनोबा भावे, (ख) हिंदी भाषा के विविध रूप
2	अगस्त/25	इकाई II प्रश्न पत्र I, II सूर्यकांत त्रिपाठी निराला अंधेर नगरी	(क) आचार्य नरेन्द्र देव वर्मा (ख) कार्यालयीन भाषा, मीडिया की भाषा
3	सितंबर/23	इकाई II प्रश्न पत्र I, II पंत, निबंध—क्रोध, बसंत	(क) वासुदेव शरण अग्रवाल (ख) वित्त एवं वाणिज्य की भाषा
4	अक्टूबर/22	इकाई III प्रश्न पत्र I, II चतुर्वेदी, उस अमराई ने राम—राम कही है	खण्ड ग— अनुवाद व्यवहार, अंग्रेजी से हिंदी में अनुवाद
5	नवम्बर/19	इकाई IV प्रश्न पत्र I, II अज्ञेय, एकांकी, स्ट्राईक, एक दिन	खण्ड ग— हिंदी की व्याकरणिक कोटियाँ
6	दिसंबर/21	इकाई V प्रश्न पत्र I, II हरिऔध, सुभद्रा कुमारी चौहान, दस हजार	खण्ड क— हिमालय की व्युत्पत्ति खण्ड ग— संज्ञा, सर्वनाम
7	जनवरी/26	इकाई V प्रश्न पत्र I, II श्रीकांत वर्मा, मम्मी ठकुराइन, राहुल सांकृत्यायन	खण्ड क— डॉ. खूबचंद बघेल खण्ड ग— विशेषण, क्रिया, विशेषण
8	फरवरी/24	पुनरावृत्ति	पुनरावृत्ति

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टीचिंग प्लान स्नातक हिंदी

सत्र 2018—19

प्रस्तावित पाठ्यक्रम बी.ए. तृतीय वर्ष

क्र.	माह/दिन	स्नातक हिन्दी साहित्य	बी.ए./बी.कॉम./बी.एस.सी. बी.एच.एस.सी./टि.या.
1	जुलाई/26	इकाई I प्रश्न पत्र I, II छत्तीसगढ़ी भाषा का इतिहास हिंदी भाषा का स्वरूप	इकाई I (क) भारत माता, परशुराम की प्रतीज्ञा (ख) कथन की शैलियाँ
2	अगस्त/25	इकाई II प्रश्न पत्र I, II संत धर्मदास, हिन्दी साहित्य का इतिहास, भाषा के विभिन्न रूप	इकाई I (क) बहुत बड़ा सक इकाई II (ख) विकासशील देशों की समस्याएँ
3	सितंबर/23	इकाई II प्रश्न पत्र I, II लखनलाल गुप्त, हिन्दी का शब्द भण्डार— तत्सम, तद्भव, देशज, आगत	इकाई II (क) विकासात्मक पुनर्विचार और प्रौद्योगिकी, (ख) विभिन्न संरचनाएँ
4	अक्टूबर/22	इकाई III प्रश्न पत्र I, II अर्वाचीन रचनाकार, युग प्रवृत्तियाँ	इकाई III (क) आधुनिक तकनीकी सभ्यता, पर्यावरण प्रदूषण (ख) कार्यालयीन पत्र और आलेख
5	नवम्बर/19	इकाई III प्रश्न पत्र I, II डॉ. सत्यभामा आड़िल काव्यांग— रस के भेद	इकाई IV (क) जनसंख्या भारत के संदर्भ में और गरीबी तथा बेरोजगारी (ख) अनुवाद
6	दिसंबर/21	इकाई IV प्रश्न पत्र I, II डॉ. विनय पाठक, छंद, अर्थालंकार	इकाई V (क) ऊर्जा और शक्तिमानता का अर्थशास्त्र
7	जनवरी/26	इकाई V प्रश्न पत्र I, II मुकुंद कौशल, द्रुतपाठ, शब्दालंकार	इकाई V (ख) घटनाओं, समारोहों आदि का प्रतिवेदन और विभिन्न प्रकार के निमंत्रण पत्र
8	फरवरी/24	पुनरावृत्ति	पुनरावृत्ति



B A I HISTORY -I PAPER- HISTORY OF INDIA [up to 1206]

SESSION -2018-19

S N	MONTH	PLAN
1	JULY	<p>Survey of sources of Indian history</p> <p>Geographical features of India</p> <p>Pre historic age – Early stone age ,Neolithic age</p> <p>Harappan civilization</p>
2	AUGUST	<p>Salient features of Harappan civilization</p> <p>Political, social and economic life of the Harappan age</p> <p>Pre Vedic age [Rigvedic period]</p> <p>Later Vedic period – social ,political and economic life.</p> <p>Civilization and culture of Epic era</p>
3	SEPTEMBER	<p>India of the 6<sup>th</sup> century B C –</p> <p>Buddhism and Jainism</p> <p>Rise of the Magadha empire</p> <p>Alexander’s invasion of India and their effects</p>
4	OCTOBER	<p>Establishment of Maurya empire-</p> <p>Chandra Gupta Maurya</p> <p>Ashoka- Ashoka’s dharma</p> <p>Maurya administration ,economical arrangement</p> <p>Art and culture</p>
5	NOVEMBER	<p>Post Maurya period -Shunga, Satavahana</p> <p>Kushan dynasty -Kanishka</p> <p>Sangam period- literature and culture</p> <p>Chol dynasty</p>

6	DECEMBER	<p>Chol administration</p> <p>Pandya dynasty</p> <p>Gupta empire – administration.</p> <p>Economic social and cultural condition</p> <p>Rajput period – Pallava and chalukya</p>
7	JANUARY	<p>Vardhan ,Vakataka ,Pratihara</p> <p>Pal ,Sen ,Rashtrakut dynasty</p> <p>India's relations with south east Asia and Shree Lanka</p> <p>Muhammad bin Qasim</p>
8	FEBRUARY	<p>Invasion of Mahmud Gaznabi and Muhammad Gori</p> <p>Status of woman</p> <p>Rivision</p>

**B.A 2<sup>nd</sup> YEAR HISTORY**  
**1<sup>st</sup>PAPER- HISTORY OF INDIA (1206-1761)**  
**SESSION (2018-19)**

<b>S NO</b>	<b>MONTH</b>	<b>PLAN</b>
1	<b>JULY</b>	<p>General introduction of the first paper (medieval India)</p> <p>Sources of Sultanate Period.</p> <p>Sources of Mughal Period.</p> <p>Establishment of Delhi Sultanate – Slave dynasty.</p> <p>QutubuddinAibak</p> <p>Ilututmish (1211 – 1236) – works of Ilututmish.</p>
2	<b>AUGUST</b>	<p>Razia Sultana (1236 – 1240)</p> <p>Balban (1266 – 1288) – administrative principles of Balban, Achievements and estimate of Balban.</p> <p>The Khilzi dynasty – conquest and reforms of AlauddinKhilzi.</p> <p>Administrative arrangements of Khilzi.</p>
3	<b>SEPTEMBER</b>	<p>Tughlaq dynasty – Mohammad - bin – Tughlaq (1325 – 1351) - home policy – Mohammad Tughlaq’s schemes of reforms and their failure.</p> <p>Firoz Shah Tughlaq (1351 – 1388)</p> <p>Reforms of Firoz Shah Tughlaq</p> <p>Foreign policy of Firoz Shah</p> <p>Invasion of Timur in India and its effects</p>
4	<b>OCTOBER</b>	<p>Foundation of the Mughal Empire –</p> <p>Babur – political condition of India at the time of Babur invasion.</p> <p>The Battle of Panipat (1526 A.D), Battle of Khanwa,</p>

		<p>Chanderi and Ghaggar.</p> <p>Sher Shah Suri and his administration.</p> <p>Rajput policy of Akbar.</p>
5	<b>NOVEMBER</b>	<p>Religious policy of the Mughal Emperors (Akbar – Aurangzeb).</p> <p>Religious policy of Akbar- Din - e – Illahi.</p> <p>Religious policy of Jahangir, Shahjahan and Aurangzeb.</p> <p>Political institutions and administration.</p> <p>Social and economical condition of sultanate period.</p> <p>Social and economical condition of Mughal period.</p> <p>Religious and cultural condition of Mughal period.</p>
6	<b>DECEMBER</b>	<p>Bhakti movement – Causes and saints.</p> <p>Peculiarities of Bhakti movement.</p> <p>Sufism in India.</p> <p>Art and architecture of Sultanate period.</p> <p>Art and architecture of Mughal period.</p> <p>Education and literature of Sultanate period.</p> <p>Education and literature of Mughal period.</p>
7	<b>JANUARY</b>	<p>Vijayanagar Kingdom – King Krishnadev Rai – Battle of Talikot.</p> <p>Bahmani Kingdom – achievements of the Mahmood Gava.</p> <p>Rise of the Maratha power.</p> <p>Shivaji and his administration.</p> <p>3<sup>rd</sup> Battle of Panipat – causes, incidents and results.</p>
8	<b>FEBRURARY</b>	<p>Revision.</p>

**B A SECOND .HISTORY II PAPER-WORLD HISTORY-1789 TO 1870****SESSION- 2018-19**

S N.	MONTH	PLAN
1	JULY	French revolution – national convention to region of terror Administration of directory -problem and works Rise of Napoleon and his achievements Napoleon as a emperor – 1804 – 1815 A D.
2	AUGUST	Downfall of Napoleon. Venna congress – 1815 A D -Problems ,principles and works United system of Europe – 1815 -1825 A D Metternich – foreign policy
3	SEPTEMBER	July revolution – 1830 – causes ,incidents and results February revolution – 1848 – causes, ,incidents and results Industrial revolution in England – cause ,nature and results Liberalism in England -
4	OCTOBER	First reform act 1832 – provisions and results Second reform act- 1867 Chartist movement -1838 to1848 and their failure
5	NOVEMBER	Achievements of Napoleon third – 1852 to 1870 Eastern problem – because of the rise Greek freedom struggle – 1821 to 1829.
6	DECEMBER	Crimean war – 1854 to 1856 cause s incidents and results Russia – Jar Alexander second

		Unification of Italy –contribution of the Mazzini ,Cavour and Garibaldi.
7	January	Bismarck ,unification of Germany – background, Problems Bismarck contribution of unification of Germany Meiji restoration – 1868
8	FEBRUARY	RIVISION

**B.A FINAL YEAR HISTORY**  
**1<sup>st</sup>PAPER- HISTORY OF INDIA (1761-1950)**  
**SESSION (2018-19]**

S.NO	MONTH	PLAN
1.	JULY	<p>General introduction of first paper.</p> <p>Expansion of the British Empire – Anglo – French conflict (Karnataka war), reasons for the success of Britishers.</p> <p>Battle of Plassey (1757) – Background, causes, incident and results.</p> <p>Battle of Buxar (1763) – causes, incidents and results</p>
2.	AUGUST	<p>Subsidiary alliance of Lord Wellesley.</p> <p>Provisions of subsidiary alliance, Merit and demerits of subsidiary alliance.</p> <p>Doctrine of lapse (policy of the Lord Dalhousie).</p> <p>Principal and nature of doctrine of lapse.</p> <p>Administrative reforms in British period -</p>
3.	SEPTEMBER	<p>Reforms of Lord William Bentinck, Lord Lytton, Lord Rippon, Lord Curzon.</p> <p>Commercialism – downfall of Indian industries, downfall of trades, downfall of Indian Agriculture, Peasants movements.</p> <p>Land revenue system in British Period – background.</p>
4.	OCTOBER	<p>Permanent settlement, Raiyat Wadi, Mahal Wadi.</p> <p>Indian renaissance – Brahma Samaj – Raja Ram Mohan Roy.</p> <p>Arya Samaj – Swami Dayanand Saraswati, PrathnaSamaj – Mahadev Govind Ranade, Ramakrishna Mission – Swami Vivekananda, Theosophical Society – Smt. Annie Besant, Aligadh movement – Sir Sayyed Ahmed Khan.</p>
5.	NOVEMBER	<p>Western education and praise.</p> <p>Different Social class – Farmer, lebor , middle class, women’s.</p> <p>Rise of Nationalism – causes of nationalism, incidents of nationalism.</p>

		<p>Establishment of Indian National Congress – causes, concepts.</p> <p>Liberalism (1885 – 1904).</p> <p>Extremism (1905 – 1919).</p>
6.	DECEMBER	<p>Revolutionary movements.</p> <p>Gandhian movements – A. Non – cooperation movement (1920 -22), B. Civil disobedience movement (1930-34)</p> <p>C. Quit India movement (1942).</p> <p>Communalism – causes, rise and development.</p>
7.	JANUARY	<p>Subhash Chandra Bose and Azad Hind Fouze.</p> <p>Constitutional development of India – Indian government act 1919(Dyarchy), Indian government act 1935(Provincial Autonomy), Indian Independence act 1947.</p> <p>Independence of India and peculiarities of Indian constitution.</p>
8.	FEBRURARY	REVISION



**B. A. Final ,History second -1871 – 1945.**

**Session -2018-19**

S NO	MONTH	PLAN
1	JULY	Introduction of second paper Third republican of France and their achievements Home and foreign policy of Bismarck Kaiser William second -1890 -1918.
2	AUGUST	World politics of Kaiser William second Partition of Africa (New imperialism) Modernization of Japan
3	SEPTEMBER	Japanese imperialism – Russia Japan war 1904-5 Causes results Chinas revolution – 1911 -causes and results
4	OCTOBER	DR. San-yat-sen ,his contribution Eastern problem – Berlin congress-1878 A D Young Turkish movement- 1908
5	NOVEMBER	Balkan war- 1912-1913-causes and results First world war – 1914- 1918 – causes ,incidents and results. Paris peace conference – 1919 . Russian revolution – 1917 -causes and results .
6	DECEMBER	Treaty of Versailles – provisions and their review Fascism – Mussolini . Nazism – Hitler . Militarism in Japan

7	JANUARY	<p>Establishment of the league of Nation -14 point of Wilsons</p> <p>Second world war -1939 -45 -causes and results</p> <p>United nations organization – foundation .</p> <p>Achievements .</p>
8	FEBRUARY	Rivision

**B. A.I POLITICAL SCIENCE (2018-19)**  
**PAPER-I**  
**Political Theory**

MONTH	PLAN
JULY	Political Science :- Definition, Nature, Scope, Study Methods :- Traditional and Behavioral. Political Theory :- Importance, Authority, Meaning, Definition, Characteristics and Relations
AUGUST	State :- Meaning, Essential Elements of state various Theories of the origin of state, State in an effective Perspective
SEPTEMBER	Sovereignty: – Meaning, Characteristics, Theory, Importance, Citizenship, Rights, Liberty: – Meaning Definition, Characteristics and theory
OCTOBER	Equality And Justice: – Meaning, Definition, Characteristics, Relations. Democracy: – Meaning, Definition, Characteristics,
NOVEMBER	Essential Circumstances of democracy/ Challenges before democracy.
DECEMBER	Concept of development and welfare state: – Characteristics, Function, Achievement, Challenges, Theory of Social Change :- Meaning, Definition, Characteristics.
JANUARU	State in an effective , Citizenship, Rights Challenges before democracy
FREBRUARY	RIVISION

**B.A. – I POLITICAL SCIENCE**  
**SESSION: (2018-19)**  
**PAPER-II**  
**Indian Government & Politics**

MONTH	PRAPOSED PLAN
JULY	Composition and sources of the Indian constitution. Features of the India constitution preamble. Fundamental rights, fundamental duties and Directive principle of state policy.
AUGUST	Union Government: – The President, Parliament, council of ministers and Prime Minister –Organization / Appointing, Functions, Rights and Real position
SEPTEMBER	The State Government: – Governor, council of ministers and chief minister formation, power and functions and position. <del>Center-state relations – Administrative – Judicial and financial</del>
OCTOBER	Supreme court and the constitutional process: – Organization, power and function – changes in today. Political parties: – National and regional Meaning, Characteristics and kinds
NOVEMBER	Election commission and Electoral – Reforms – Organization, Functions and rights and the study of Electoral reforms.
DECEMBER	Major issues in Indian Politics –Caste, Religion, Language, Regions, Poverty – Alleviation.
JANUARU	Governor, council of ministers and chief minister formation, power and functions and position. Political parties: – National and regional Meaning, Characteristics and kinds
FREBRUARY	REVISION

## **B.A. – II POLITICAL SCIENCE**

**SESSION: (2018-19)**

### **PAPER-I**

MONTH	PRAPOSED PLAN
JULY	Plato - In the Context of Ideal state: Justice. Education, Communism & Philosopher King
AUGUST	Aristote – State, Classification of constitutions, slavery, view on Revolution
SEPTEMBER	Machiavelli - Machiavelli's views on State and Government, views on Religion. Morality & contribution to Political Philosophy. Hobbes - Social Contract Theory
OCTOBER	Locke -Locke's views on social contract Theory. Rousseau -Rousseau's views on social contract Theory, Theory of General will.
NOVEMBER	Bentham -Bentham's Utilitarianism. J.S. Mill -J.S. Mill's views on state, Liberty, Rights & Representative Government
DECEMBER	Hegel -Hegel's views on state, Dialectical method. T.H. Green -Green's view's on state & Government, Liberty & contribution to Political Philosophy. s
JANUARU	Karl-Marx- Marx's Dialectical materialism, Theory of class Struggle. Theory of surplus value, Economic interpretation of History, Contribution of Marx.
FREBRUARY	REVISION

**B.A. – II POLITICAL SCIENCE**  
**SESSION: (2018-19)**  
**PAPER-II**  
**Comparative Government and politics (Britain, America, China, Switzerland)**

MONTH	PRAPOSED PLAN
JULY	Meaning of Comparative Politics, Nature, Scope and Problems
AUGUST	Political system approach (David Eastan, Almond and Pawell) Constitutional Traditions and salient feature of the constitution.
SEPTEMBER	Constitutional Structure - Meaning of Chief Executive, Kinds, Centure of power and functions, Comparative study.
OCTOBER	Constitutional structure: - Legislature organization, Functions, Agreements in favour of second Chamber, comparative study.
NOVEMBER	Constitutional structure :- Judiciary, Organization, Functions, Independence Rule of Law Judicial Review
DECEMBER	Political Culture and Political Socialization Political Parties- Importance, Characteristics
JANUARU	Pressure Groups, Meaning, Kinds, Definition and importance, Role of women in the political process.
FREBRUARY	REVISION

**B.A. – III POLITICAL SCIENCE**  
**SESSION: (2018-19)**  
**PAPER-I**  
**International Politics**

MONTH	PRAPOSED PLAN
JULY	Meaning, Nature and Scope of International politics. Approaches to the study of international Politics.
AUGUST	Various theories of international Politics,
SEPTEMBER	Power: - Definition, Elements, Struggle for Power, Accumulation of Power, Increase of <del>power and exhibition of power</del>
OCTOBER	The concept of balance of power: – Theoretical advantage and evaluation.  The concept of the peace and security: – Theory of collective security
NOVEMBER	Diplomacy: – Definition, Kinds, functions, aims and means. Disarmament: – Meaning, definition and development.
DECEMBER	Disarmament: – Meaning, definition and development. Solution and hindrances in the path of Disarmament.
JANUARU	New paradigm of International Politics:- (1) Environmentalism (2) Globalization (3) Human Rights.
FREBRUARY	REVISION

## **B.A. – III POLITICAL SCIENCE**

**SESSION: (2018-19)**

### **PAPER-II**

#### **Public Administration**

<b>MONTH</b>	<b>PRAPOSED PLAN</b>
JULY	Public administration: – Meaning, nature and scope, importance. Evaluation of public administration as a discipline
AUGUST	Differences and similarities between public administration and personal administration.
SEPTEMBER	Public administration: – Methods of study and approaches, the new public administration.
OCTOBER	Politics and public administration: - Administrative, Behavior, Leadership, Decision making, Communication accountability.
NOVEMBER	The bureaucracy and the budget process, the new trends in public administration in the age of globalization & liberalization.
DECEMBER	Legislative control over administration, judicial, control on administration
JANUARU	Decision making, Communication accountability Evaluation of public administration as a discipline
FREBRUARY	REVISION



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PROPOSED TEACHING PLAN FOR THE SESSION 2018-19

Class B.A.I (Psychology)

Paper -I Title of the Paper -Basic Psychological Processes

MONTH/DAYS	Proposed plan
JULY /26	UNIT-I Introduction-definition and goals of psychology, perspectives-behaviouristic, cognitive, humanistic and cross-cultural,
AUGUST/25	UNIT-I Methods- experimental, observational, interview, questionnaire and case study.
SEPTEMBER/23	UNIT-II Biological basis of behaviour: genes and behaviour, the nervous system-the central nervous system , the autonomic nervous system and the peripheral nervous system, Emotions- types and bodily changes (internal and external)
OCTOBER/22	UNIT-III Perceptual processes: nature and types of sensation and perception, Attention -process, definition, type and determinants, Practical-introduction, test and experiment.
NOVEMBER/19	UNIT-III Principles of perceptual organization, Illusion- nature and types Practical- test and experiment.
DECEMBER/21	UNIT –IV Learning and Memory: classical and operant conditioning- basic processes, Verbal and Observational learning Practical- test and experiment
JANUARY/26	UNIT –IV Memory- sensory, short term and long term, Forgetting -process and theory. Practical- test and experiment
FREBRUARY/24	UNIT –V Cognitive and Non- cognitive process: Intelligence- nature and types, Motivation- biogenic and social motives, Thinking process- nature and types, Personality- nature and determinants, approaches to study personality-trait and type, Assessment of personality. Practical exam

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PROPOSED TEACHING PLAN FOR THE SESSION 2018-19

Class B.A.I (Psychology)  
Paper –II Psychopathology

MONTH/DAYS	Proposed Plan
JULY /26	UNIT –I Introduction; concept of Normality and Abnormality.
AUGUST/25	UNIT-I Models of Psychopathology- psychodynamic, behavioral and cognitive.
SEPTEMBER/23	UNIT-II Assessment of psychopathology; Diagnostic tests, Rating scales, Clinical interview. Practical –Introduction, Test& Experiment
OCTOBER/22	UNIT-III Unit-II Projective tests. UNIT-III Anxiety disorders, Panic disorder, Phobias, Obsessive-Compulsive disorder. Practical –Test& Experiment
NOVEMBER/19	UNIT-III Generalized Anxiety disorder UNIT –IV Mood disorders; Manic Depressive episode and Dysthymia. Practical –Test& Experiment
DECEMBER/21	UNIT –IV Personality disorder, Paranoid, Schizoid and Dependent Personality disorder. Dissociative disorder and Obesity. Practical –Test& Experiment
JANUARY/26	UNIT –IV Management of Psychopathology; Stress management, Medico and Psychosocial Therapy, Shock Therapy, Psychoanalysis, Group Therapy, and Behavior Therapy. Practical –Test& Experiment
FREBRUARY/24	Revision and Practical Exam

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PROPOSED TEACHING PLAN FOR THE SESSION 2018-19

Class B.A.II (Psychology)  
PAPER-I  
Title of the paper -Social Psychology

MONTH/DAYS	Proposed Plan
JULY /26	UNIT-I Introduction of social psychology – nature, scope and goals , Methods of social psychology – experimental, survey, interview, observational and Sociometry
AUGUST/25	UNIT-I Approaches to study social behavior – psychoanalytical cognitive and behavioral UNIT- II Social perception – perception of self and others , Impression formation and its determinants
SEPTEMBER/23	UNIT-II Prosocial behavior– co-operation and helping behavior, determinants of prosocial behavior–personal, situational and socio-cultural Practical- Introduction, test & experiment
OCTOBER/22	UNIT-III Stereotype and Prejudice– nature and determinants, Interpersonal Attraction- nature and determinants Practical- test & experiment
NOVEMBER/19	UNIT-III Attitude- nature and measurements Practical- test & experiment
DECEMBER/21	UNIT –IV Group Structure and Function – social facilitation, cohesiveness , conformity and group norms Practical- test & experiment
JANUARY/26	UNIT –IV Leadership – nature, types, characteristics and functions UNIT-V Social Issues – Aggression –nature, determinants, prevention and control , Mob Behavior , Population Explosion- nature and consequences , Pollution and corruption Practical- report writing and checking
FREBRUARY/24	UNIT –V Social Issues - Gender discrimination and Child labor Practical Exam &Revision

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### PROPOSED TEACHING PLAN FOR THE SESSION 2018-19

Class -B.A. II

Paper-II Psychological Assessment

MONTH/DAYS	Proposed Plan
JULY /26	UNIT –I I Psychological Assessment; concept, difference between physical and psychological assessment, levels of assessment.
AUGUST/25	UNIT-I Barriers in psychological assessment, unidimensional and multidimensional assessment
SEPTEMBER/23	UNIT-II Psychological test; concept, characteristics and types- standardized and non-standardized, group, performance and verbal, uses of psychological test. Practical –Introduction, Test& Experiment
OCTOBER/22	UNIT-III Test construction; steps in test construction and reliability- test-retest split-half, factors affecting reliability. Practical –Test& Experiment
NOVEMBER/19	UNIT-III Validity- content and predictive, factors affecting the validity, norms-age and grade. Practical –Test& Experiment
DECEMBER/21	UNIT –IV Cognitive and non-cognitive test; introduction to intelligence, aptitude, and achievement testing, introduction to the personality, interest and value testing Practical –Test& Experiment
JANUARY/26	UNIT –V Psychological testing in an applied aspect of life; Education, Occupation, Social, Health, and Organization, Social-Cultural factors in Psychological Assessment. Practical –Test& Experiment
FREBRUARY/24	Revision and Practical Exam

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**PROPOSED TEACHING PLAN FOR THE SESSION 2018-19**

**Class-B.A.III**

**Paper I Title of the paper -Psychological Statistics**

MONTH/DAY	Proposed Plan
JULY /26	UNIT –I Statistics: meaning and application in psychology, Nature of score, categorical and continuous variable , Frequency distribution
AUGUST/25	UNIT-I Graphical representation of data. UNIT-II Measures of central tendency- mean, median and mode of ungrouped and grouped data,
SEPTEMBER/23	UNIT-II Measures of variability-range, standard deviation, quartile deviation and average deviation, Applications of measures of central tendency and variability Practical – Introduction, Tests and Experiments.
OCTOBER/22	UNIT-III Nature and characteristic is of normal probability curve(NPC), the concept of skewness and kurtosis. Practical – Tests and Experiments.
NOVEMBER/19	UNIT-III Correlation- concept, types and methods-rank difference and product moment (ungrouped data). Practical – Tests and Experiments.
DECEMBER/21	UNIT –IV Inferential statistics- concept of null hypothesis, level of significance, type-I error and type-II error. Practical – Tests and Experiments.
JANUARY/26	UNIT –IV t-test for uncorrelated data. UNIT –V Distribution free statistics- chi-square, median and sign test. Practical – Tests and Experiments.
FREBRUARY/24	UNIT –V Application of computer in psychological statistics. Practical examination

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## PROPOSED TEACHING PLAN FOR THE SESSION 2018-19

Class B.A.II (Psychology)

PAPER-II

Title of the paper – Human Development

MONTH/DAYS	Proposed Plan
JULY/26	UNIT-I Concept of Human Development, Theories of Human Development : Psychoanalytical and Maslow, Determinants of Human Development - Biological, social, cultural factors, Approaches to study human developments: Longitudinal and cross - sectional.
AUGUST/25	UNIT-I Approaches to study human developments : Longitudinal and cross - sectional UNIT-II Socialization : Role of family, peers and school, Media and socialization
SEPTEMBER/23	UNIT-II Cognitive Development : Theoretical Perspectives Piaget, Information Processing, Vyogotsky
OCTOBER/22	UNIT-III Self and Identity : Emergence of self, Development of personal identity, identity crises, Physical and sexual maturation, Sequential development of emotions
NOVEMBER/19	UNIT-IV Development of morality and self concept, Development of gender differences and gender roles. Role of marriage, family and occupation in Human Development.
DECEMBER/21	UNIT-V Problems of Aging - Cognitive, conative, affective, Developmental Disabilities.
JANUARY/26	Psychological Experiments and Tests
FREBRUARY/24	Practical Exam & Revision

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PROPOSED TEACHING PLAN FOR THE SESSION 2018-19

Class - M.A. Psychology (I<sup>st</sup> & II<sup>nd</sup> Semester)

Paper- I– Basic Psychological process-I & Basic Psychological processes-II

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**PROPOSED TEACHING PLAN FOR THE SESSION 2018-19**  
Class -PG Diploma in Psychological Guidance and Counseling (PGC)  
PAPER-1 Psychological Guidance

MONTH/DAYS	Proposed Plan
JULY /26	UNIT –I Meaning and Functions of guidance. The bases of present guidance approach Basic Principle and assumption of guidance. Guidance services. Difference between Guidance and Counseling.
AUGUST/25	UNIT –II Understanding Individual ( use of interviews and questionnaires) Appraisals of Aptitude for guidance appraisal of personal qualities and interest : (Test and Inventories rating scale, behavior descriptions. Anecdotal records. Socio- metric devices evaluation of achievement, Cumulative Records, Case study and follow-up.
SEPTEMBER/23	UNIT –III Organization of guidance programme in school. Problems of guidance in India. Types of guidance services, characteristics of a well organized guidance programme.
OCTOBER/22	UNIT–IV Guidance Services for children. Guidance Of young children. Elementary School Children, Junior high school children. Adolescents.
NOVEMBER/19	UNIT –V Guidance services to adults, vocational guidance, Guidance of adults. Guidance towards family life. guidance in personal adjustment, guidance to deviates, guidance in group situation appraisals of guidance programmes, Emerging Trends in guidance.
DECEMBER/21	Internship
JANUARY/26	Internship
FREBRUARY/24	Lab work &Project work
MARCH	Seminars &Practical Exams

## PROPOSED TEACHING PLAN FOR THE SESSION 2018-19

Class -PG Diploma in Psychological Guidance and Counselling (PGC)

PAPER-II Counseling Theories and Techniques

MONTH/DAYS	Proposed Plan
JULY /26	UNIT –I COUNSELLING- The art and Science of helping Meaning. Purpose and goals of Counseling with special reference to India. Professional issues. Ethics. Education and training of the counselor. Counseling relationship.
AUGUST/25	UNIT–II COUNSELLING PROCESS: Theories and Techniques of Counseling. Psychodynamic Approach, Freudian, Neo Freudian, Modern. Humanistic Approach: Existential client centered.
SEPTEMBER/23	UNIT –III Cognitive Approach: rational emotive, Transaction analysis. Behavioral Approach: Operant conditioning. Behavior Modification. Indian contribution Yoga and Meditation.
OCTOBER/22	UNIT –IV COUNSELLING APPLICATION - 1 Counseling in schools, Career Counseling, Alcohol and Drug Abuse, Group counseling, Crises Intervention, Counseling Case Studies for each of the above types Of counseling applications, counseling interview.
NOVEMBER/19	UNIT –V <b>COUNSELING APPLICATION – 11</b> Management of- Shyness, Smoking, Depression, Stress, Marital Maladjustment ,Old age problems, Euthanasia, Phobias, Fear Of interview, Fear of stage performance, Problems in decision making.
DECEMBER/21	Internship
JANUARY/26	Internship
FEBRUARY/24	Lab work &Project work
MARCH	Seminars &Practical Exam



**TEACHING PLAN**  
**B.A. PART - I (SOCIOLOGY)**  
**PAPER - I**  
**INTRODUCTION TO SOCIOLOGY**  
**2018-19**

<b>NO.</b>	<b>MONTHS</b>	<b>TEACHING PLAN</b>
1	JULY	UNIT-I- Sociology: Meaning, Natures, Scope subject matter and significance
2	AUGUST	UNIT-II- Social Institution: - Marriage family and kinship.
3	SEPTEMBER	UNIT-II- Culture and Society: - Culture, Socialization, The individual and Society, Social control, Norms & Value.
4	OCTOBER	UNIT-III- Social Stratification: - Meaning, forms and theories.
5	NOVEMBER	UNIT-III- Social Mobility: - Meaning, forms and theories.
6	DECEMBER	UNIT-IV- Social Change:- Meaning and Patterns, Types, Tractors
7	JANUARY	UNIT-IV- Social Change: - Evolution & Progress UNIT-V- Social System: Social system, Meaning Characteristics and Elements.
8	FEBRUARY	UNIT-V- Social Progress: - Meaning, Element, Characteristics and types.

**TEACHING PLAN**  
**B.A. PART - I**  
**PAPER – II**  
**FOUNDATIONS OF SOCIOLOGICAL THOUGHT**  
**2018-19**

<b>MONTH</b>	<b>PLAN</b>
<b>JULY</b>	<b>Unit-I: Emergence of Sociology</b> – Europe before 19 <sup>th</sup> Century; Rise and Development of Sociology in West; <b>Auguste Comte</b> - Theory of Positivism.
<b>AUGUST</b>	<b>Unit-I: Herbert Spencer</b> – Social Darwinism; Social Organicism; <b>Unit-II: Emile Durkheim</b> – Theory of Social Solidarity; Theory of Suicide.
<b>SEPTEMBER</b>	<b>Unit-II: Max Weber</b> – Concept of Authority; Protestant Ethics and the Spirit of Capitalism.
<b>OCTOBER</b>	<b>Unit-III: Karl Marx</b> – Historical Materialism; Theory of Class Struggle
<b>NOVEMBER</b>	<b>Unit-IV: Vilfredo Pareto</b> – Logical and Non-Logical Actions; Circulation of Elites.
<b>DECEMBER</b>	<b>Unit-V: Development of Sociological Thought in India</b>
<b>JANUARY</b>	<b>Unit-V: Mahatma Gandhi</b> – Ahimsa; Satyagraha;
<b>FEBRUARY</b>	<b>Unit-V: Radhakamal Mukerjee</b> – Theory of Social Values.

**TEACHING PLAN**  
**B.A. PART – II**  
**PAPER - I**  
**SOCIETY IN INDIA**  
**2018-19**

NO.	MONTHS		TEACHING PLAN
1	JULY	UNIT – I	<b>Views About Indian Society :</b> The Classical Views, Varna, Ashram, karma & Dharma.
2	AUGUST	UNIT – I	<b>Field Views :</b> M.N. Srinivas & S.C. Dubey. Significance & Interface of Classical & Field Views.
3	SEPTEMBER	UNIT-II	<b>The Structure &amp; Composition of Indian Society :</b> Structure : Villages, Towns, Cities & Rural Urban Linkage.
4	OCTOBER	UNIT-II	<b>Composition :</b> Tribes, Dalits, Woman & Minorities.
5	NOVEMBER	UNIT-III	<b>Basic Institutions of Indian Society :</b> Caste System, Kinship, Family, Marriage.
6	DECEMBER	UNIT-III UNIT-IV	Class, Changing Dimension. <b>Familial Problems :</b> Dowry Domestic Violence & Divorce.
7	JANUARY	UNIT-IV UNIT-V	Intra-Intergenerational Conflict, Problems of Elderly. <b>Social problems :</b> Casteism, Regionalism,
8	FEBRUARY	UNIT-V	Communalism, Youth Unrest. Revision

**TEACHING PLAN**  
**B.A. PART – II**  
**PAPER - II**  
**CRIME & SOCIETY**  
**2018-19**

NO.	MONTHS		TEACHING PLAN
1	JULY	UNIT – I	<b>Conception &amp; Types of Crime:</b> Early Explanation- Classical Positives, Psychological.
2	AUGUST	UNIT – II	<b>Social Structure &amp; Anomie :</b> Criminality- Suicide, Organized Crime.
3	SEPTEMBER	UNIT-II	<b>White Collar Crime :</b> Terrorism : Causes, Effects & Remedies.
4	OCTOBER	UNIT-III	<b>Indian Social Problem :</b> Social Change in India & Crime, Social Disorganization.
5	NOVEMBER	UNIT-III	Alcoholism & Drug Addiction, Begary
6	DECEMBER	UNIT-IV	<b>Punishment :</b> Objectives & Forms – Theories of Punishment, Probation, Parole & Open Prison
7	JANUARY	UNIT-V	<b>Correctional Process:</b> Role of Police & Judiciary in India. Development of Jail Reform in India
8	FEBRUARY	UNIT-V	Sociology of Prison. Revision

**TEACHING PLAN**  
**B.A. PART - III**

**PAPER – I**

**SOCIOLOGY OF TRIBAL SOCIETY**

**2018-19**

<b>MONTH</b>	<b>PLAN</b>
JULY	<b>Unit-I:</b> Sociology of Tribal Society; Concept of Tribe, Tribe and Caste.
AUGUST	<b>Unit-II:</b> Classification of Tribal People; Tribal Economy and Economic Classification of Tribes.
SEPTEMBER	<b>Unit-III:</b> Socio Cultural Profile of Tribe; Kinship System amongst Tribes.
OCTOBER	<b>Unit-III:</b> Tribal Marriage; Tribal Family; Religious Beliefs and Cultural Traditions amongst Tribes.
NOVEMBER	<b>Unit-IV:</b> Social Mobility and Change Sensitization among Tribes; Schemes of Tribal Development.
DECEMBER	<b>Unit-IV:</b> Various Tribal Movements; <b>Unit-V:</b> Tribal Problems: Poverty, Illiteracy, Indebtedness.
JANUARY	<b>Unit-V:</b> Tribal Problems: Agrarian Issues and Exploitation;
FEBRUARY	<b>Unit-V:</b> Tribal Communities in Chhattisgarh: Oraon, Kanwar and Gond.

**TEACHING PLAN**  
**B.A. PART - III**  
**PAPER - II**  
**METHODS OF SOCIAL RESEARCH**  
**2018-19**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>
1	JULY	Unit-I	Meaning And Significance Of Social Research, Meaning And Nature Of Social Research Hypothesis, Formulation Of Hypothesis, Scientific Method And Its Applicability
2	AUGUST	Unit II	Positivism And Ethnography, Observation, Case Study Method
3	SEPTEMBER	Unit II	Case Study Method, Content Analysis
		Unit-III	Types Of Research: Historical, Descriptive, Exploratory, Experimental
4	OCTOBER	Unit-IV	Comparative, Exploratory and Experimental
5	NOVEMBER	Unit-IV	Methods And Techniques Of Data Collection : Survey method
6	DECEMBER	Unit-IV	Questionnaire, Interview, Schedule, Interview Guide
7	JANNUARY	Unit -V	Meaning Of Social Statistics: Importance And Limitations, Graphs And Diagrams
8	FEBRUARY	Unit -V	Measures Of Central Tendency: Mean, Median, Mode, Co-Relation

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PROPOSED TEACHING PLAN FOR THE SESSION 2018-19

KATHAK DANCE DEPARTMENT

THEORY and PRACTICAL OF KATHAK DANCE

BAI,BAII and BAIII

H/DAYS	Graduation (Timeline: Start/End)  BAI	Graduation (Timeline: Start/End)  BAII	Graduation (Timeline: Start/End)  BAIII
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JULY /26	<p><b>PAPER – I (THEORY)</b></p> <p>The Dance related stories of Uma-Shankar and Natwar Shri Krishna according to the Puranas.</p> <p><b>practical</b></p> <p>Tatkar in Teental and its Tah,Dugun and Chougun</p> <p>Practical demonstration of gestures.</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Definition of Abhinaya and brief study of its kinds.</p> <p><b>PRACTICAL</b></p> <p>Tatkar in Teental – practice</p> <p>Hastak      Sanchalan      (hand movements)</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Study of the history of Dance.</p> <p>Brief knowledge of the following classical dances:-</p> <p style="text-align: center;">Kuchipudi Kathak</p> <p><b>PRACTICAL</b></p> <p>Tatkar and its variations in T – practice</p> <p>Hastak      Sanchalan movements)</p>
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AUGUST/25	<p><b>PAPER – I (THEORY)</b></p> <p>The importance of Guru-Vandana in Indian theatre tradition.</p> <p>Description of Sangeet.</p> <p>The place of Dance in Sangeet.</p> <p><b>Practical</b></p> <p>Hastak Sanchalan (hand movements)</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Lakshan and Viniyog of Asamyukta Hasta Mudra according to “Abhinaya Darpan”</p> <p>Study of “Drishti-Bheda” described in Abhinaya Darpan.</p> <p><b>Practical</b></p> <p>Bhav Pradarshan on Krishna Vandana.</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Brief knowledge of the following classical dances:-</p> <p>(a) Odissi (b) Mohini Attam</p> <p>Definition of Rasa and study of its types.</p> <p><b>Practical</b></p> <p>Bhav Pradarshan on Vishnu Vandana or Shiv Vandana.</p>
DECEMBER/23	<p><b>PAPER – II (THEORY)</b></p> <p>The stories of origin of Natya (described in the first chapter of Natya- Shashtra of Bharat Muni).</p> <p>History of Dance – Sindhu-sabhyata, vedic period, Ramayan and Mahabharat period.</p> <p><b>Practical</b></p> <p>Guru-Vandana Greeva – sanchalan Asamyukta hand gestures</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Study of “Shiro-Bheda” with shloka described in Abhinaya Darpan.</p> <p>Study of Lokadharmi and Natyadharmi.</p> <p><b>Practical</b></p> <p>Presentation on Teentaal (other than learnt in the first year)</p> <p>Aamad, Chakkardar Toda, Chakkardar Paran, Tishra jati Toda or Paran, types of Tatkar.</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Definition of Bhava and study of its types.</p> <p>Lakshan and Viniyog of Samyukta Hasta Mudra according to “Abhinaya Darpan”.</p> <p><b>Practical</b></p> <p>Thaat (in detail)</p> <p>Presentation on Teentaal (other than learnt in the previous year)</p> <p>Aamad, two Tode, Chakkardar</p>

OBER/22	<p><b>PAPER – II (THEORY)</b> Physical and mental benefits of practicing Dance</p> <p>General introduction of of any two folk dances of Chhattisgarh (based on the festivals -Parva).</p> <p><b>Practical</b> Anchit-Kunchit</p> <p>Teental – Thaat,Aamad,Paran,Tode</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Brief knowledge of the following classical dances:-</p> <p>(a) Kathak (b) Bharata Natyam (c) Kathakali (d) Manipuri</p> <p><b>Practical</b></p> <p>Presentation on Teentaal (other than learnt in the first year)Aamad,Chakkardar Toda,Chakkardar Paran,Tishra jati Toda or Paran,types of Tatkar.</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Study of Bhrikuti Bheda according to “Abhinaya Darpan”.</p> <p>Knowledge of Nritya,Nritya.</p> <p><b>Practical</b></p> <p>Presentation on Teentaal (other than learnt in the previous years)Chakkardar Paran,Primelu,Tihaiya,Kavittas of Tatkar.</p>
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MBER/19	<p><b>PAPER – I (THEORY)</b> Short description of any two folk theatre tradition:-</p> <p>1-Ramleela    2-Rasleela    3-Bhawai    4-Raai    5-Maach    6-Mahabharat Nacha</p> <p><b>PRACTICAL</b></p> <p>Teental – Chakkardar Tode,Kavitta,Gatnikas (any five),Tatkar and its types.</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Position of Dance in the modern society.</p> <p><b>PAPER –II (THEORY)</b></p> <p>Notation of the Theka in Thah,Dugun,Tigun and Chougun of Choutaal and Ektaal.</p> <p>Notation of the compositions learnt in practical (Choutaal and Ektaal).</p> <p><b>PRACTICAL</b></p> <p>Practise of dance presentation on Choutaal or Ektaal – Aamad,Tode,Paran and Kavitta.</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Study of Guru-Shishya-Parampara and institutional education system in the education of Kathak Dance.</p> <p><b>PAPER – II (THEORY)</b></p> <p>Study of the Ten Pranas of Tala.</p> <p><b>PRACTICAL</b></p> <p>Practise of dance presentation on Dhamar or Rupak Taal – Thaata,Aamad,Tode,Paran, Kajari and Tihaiya.</p>
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MBER/21	<p><b>PAPER – II (THEORY)</b></p> <p>Definiton – Hastak,Toda,Salami,Namaskar,Aamad,Paran ,Chakkardar,TatkarTihai,Tukde,Kavitta ,Matra,Sam and Khali.</p> <p><b>PRACTICAL</b></p> <p>Jhaptal – Thaata,Namaskriya,Aamad,Paran,Tode,</p>	<p><b>PAPER – II (THEORY)</b></p> <p>Life sketch and contribution to Kathak Dance of Pt.Bindadin Maharaj,Jaylalji Maharaj,Achchan Maharaj and Lachchu Maharaj.</p> <p>Study of essential aspects of Kathak presentation.</p> <p><b>PRACTICAL</b></p> <p>Gatnikas – Murli and Ghunghat.</p>	<p><b>PAPER – II (THEORY)</b></p> <p>Study of the various Gharas of Kathak Dance.</p> <p>A brief study of Ashta Nayika A brief study of Nayaka</p> <p><b>PRACTICAL</b></p> <p>Gatnikas – Revision of all Gatnikas of previous years and Bindis Rukhsar ki Gat.</p>
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<p>UARY/25</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Introduction of Taal.</p> <p>Importance of Taal in Sangeet.</p> <p>Description of Taal.</p> <p><b>PRACTICAL</b></p> <p>Jhaptal – Thaat,Chakkardar Tode,Tihai,Kavitta, Tatkar and its types</p> <p>Description of Laya and its types.</p>	<p><b>PAPER – II (THEORY)</b></p> <p>Definition – Gatnikas,Gatbhav,Thumri,Tandav and Lasya.</p> <p>Corelation of Dance with other fine arts.</p> <p>Place of literature in Dance.</p> <p><b>PRACTICAL</b></p> <p>Bhav Pradarshan on Thumri or Bhajan.</p>	<p><b>PAPER – II (THEORY)</b></p> <p>Life sketch and contributi Kathak Dance of Narayan Pr and Sundar Prasad ji</p> <p>Notation of the Theka in Thah,Dugun,Tigun and Choug Dhamar and Rupak Taal.</p> <p>Notation of the compo learnt in practical (Dhama Rupak Taal)</p> <p><b>PRACTICAL</b></p> <p>Presentation of Panghat and Gatbhav.</p>
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UARY/23	<p><b>PAPER I THEORY</b></p> <p>Notations of the compositions learnt in practical</p> <p><b>PAPER II THEORY</b></p> <p>Life sketch and contribution – Shri Shambhu Maharaj, Shri Kalika Prasad Maharaj, Sitara Devi, Damyanti Joshi.</p> <p><b>PRACTICAL</b></p> <p>Ability to dance on any song or Bhajan and knowledge of folk dance.</p>	<p><b>PAPER – II (THEORY)</b></p> <p>Study of folkdances of India.</p> <p>Study of folk dances of Chhattisgarh region.</p> <p><b>PRACTICAL</b></p> <p>Practical demonstration of the single hand gestures according to the Abhinaya Darpana.</p>	<p><b>PAPER – II (THEORY)</b></p> <p>Essay writing on the topics related to Dance:-</p> <p>(a) Kathak and other classical dances</p> <p>(b) Kathak and religion</p> <p>(c) Kathak and Yoga</p> <p>(d) Classical and folk dance</p> <p>Kathak dance and Navrasa</p> <p><b>PRACTICAL</b></p> <p>Bhav Pradarshan on Thumri and Bhajan.</p> <p>Practical demonstration of double hand gestures according to the Abhinaya Darpana.</p>
MARCH			
APRIL			
MAY			
JUNE			

**GOVT.D.B.GIRL'S P.G. (AUTONOMOUS) COLLEGE**

**RAIPUR CHHATTISGARH**

**TEACHING PLAN FOR THE SESSION 2018-19**

**B.Sc. Part-I**

**Subject –Biotechnology**

**Paper -1**

**Title of the Paper: Biochemistry, Biostatistics and Computer**

MONTH/DAYS	Proposed Plan
JULY /26	<b>Unit1</b> Introduction to biochemistry: History, Scope and Development. Carbohydrates: Classification, Structure and function of Mono, Oligo & Polysaccharides. Lipids: Structure, Classification and Function.
AUGUST/25	<b>Unit 2</b> Amino acids and Proteins: Classification, Structure and Properties of amino acids, types of Proteins and their Classification and Function.
SEPTEMBER/23	<b>Unit 2</b> Enzyme: Nomenclature and classification of enzyme, Mechanism of enzyme action, Enzyme Kinetics and factors affecting the enzyme action. Immobilization of enzymes and their application
OCTOBER/22	<b>Unit 3</b> Hormones: Plant Hormones- Auxin and Gibberellins and Animal Hormone-Pancreas and Thyroid. Carbohydrates, Proteins and Lipid Metabolism- Glycolysis, Glycogenesis, Glyconeogenesis and Krebs cycle. Electron Transport Chain and $\beta$ -oxidation of Fatty acids.
NOVEMBER/19	<b>Unit 4</b> Scope of Biostatistics, Samples and Population concept, Collection of data-sampling techniques, Processing and Presentation of data.
DECEMBER/21	<b>Unit 4</b> Measures of Central Tendency: Mean Median and Mode and Standard Deviation. Probability Calculation : Definition of probability, Theorem on total and compound probability
JANUARY/26	<b>Unit 5</b> Computer –General Introduction. Organization of computer, digital and analogue computers, computers algorithm. Concept of Hardware and software, Input and output Devices. Application of computer in co-ordination of solute concentration, pH and Temperature etc. of a fermenter in operation and Internet application.
FEBRUARY/24	Revision

**TEACHING PLAN FOR THE SESSION 2018-19****B. Sc. Part-I****Subject –Biotechnology****Paper -II****Title of the Paper: Cell Biology, Genetics and Microbiology**

MONTH/DAYS	PROPOSED PLAN
JULY /26	<b>Unit1</b> Concept of life, Cell as a basic unit of living system and Cell theory.Diversity of Cell shape and size. Prokaryotic cell structure: Function and ultra structure of cell (Gram positive and Gram negative Bacteria), Plasma membrane, Flagella, Pili, Endospore and Capsule.Eukaryotic Cell: Plant cell wall and Plasma membrane.
AUGUST/25	<b>Unit 2</b> Cytoplasm: Structure and functions of Endoplasmic reticulum, Ribosome, Golgi complex, Lysosomes, Nucleus, Mitochondria and Chloroplast. Cytoskeleton: Microtubules, Microfilaments and Intermediate filaments.Cell division : Mitosis and Meiosis.Programmed Cell Death.
SEPTEMBER/23	<b>Unit 3</b> Mendel's Laws of Inheritance. Linkage and Crossing over.Chromosome variation in number and structures: Deletion, Duplication,
OCTOBER/22	<b>Unit3</b> Translocation, Inversion and Aneuploidy, Euploidy (Monoploidy and Ployploidy and its importance).
NOVEMBER/19	<b>Unit 4</b> History, Scope and Development of Microbiology. Basic techniques of Microbial Culture.
DECEMBER/21	. <b>Unit 4</b> Microbial growth & Nutrition of Bacteria: Isolation, media sterilization physical and chemical agents, pure culture pour plate method, streak plate method and spread plate method. General features and Economic importance of Fungi, Algae and Protozoa etc.
JANUARY/26	<b>Unit 5</b> Bacterial Reproduction: Conjugation, Transduction and Transformation.Mycoplasma- History, Classification, Structure, reproduction & Diseases Viruses- Basic features Structure, Classification, and Multiplication, Bacteriophages (Morphology, life cycle, infection and medicinal importance). Revision
FEBRUARY/24	Revision and Practical Exam



**TEACHING PLAN FOR THE SESSION 2018-19**  
**B.Sc. Part-II**  
**Subject –Biotechnology**  
**Paper -1**  
**Title of the Paper: Molecular Biology and Biophysics**

MONTH/DAYS	PROPOSED PLAN
JULY /26	<b>Unit1</b> <b>DNA</b> :Structure, types and replication <b>RNA</b> : Structure, types and Function Structure of gene ,old and new concept
AUGUST/25	<b>Unit 2</b> Genetic code : Properties, codon assignment, Secondary genetic code Protein Synthesis Mitochondrial genome Chloroplast genome
SEPTEMBER/23	<b>Unit 3</b> Gene therapy Transposable elements DNA damage and repair Tissue engineering :General concept
OCTOBER/22	<b>Unit 4</b> Law of Thermodynamics Beer Lambert's law, Radioisotopes techniques Autoradiography
NOVEMBER/19	<b>Unit 5</b> Biophysics introduction, scope and application.
DECEMBER/21	<b>Unit 5</b> Principle, structure, function of the following : a. Spectroscopy                      b.Electrophoresis c. Centrifugation
JANUARY/26	<b>Unit 5</b> Principle, structure, function of the following d.Colorimeter e. Chromatography      f. ELISA Revision
FREBRUARY/24	Practical Exam and Revision

**TEACHING PLAN FOR THE SESSION 2018-19**

**B.Sc. Part-II**

**Subject –Biotechnology**

**Paper -II**

**Title of the Paper: Recombinant DNA technology**

MONTH/DAYS	PROPOSED PLAN
JULY /26	<b>Unit-I</b> Scope and aim of the Biotechnology Recombinant DNA Technology: General Concept and Application, Strategies of recombinant DNA Technology in prokaryotes. Restriction enzymes: Endonuclease (type, Nomenclature, Restriction, Sequence and Cleavage Pattern).Modifications of cut ends.,Steps in gene cloning.Isolation of the desired gene.cDNA Library, Genomic Library.
AUGUST/25	<b>Unit-II</b> Vectors (Animal and Plant vectors) Bacteriophage vectors Introduction of vectors into appropriate host.
SEPTEMBER/23	<b>Unit-III</b> Types of PCR,Applications Advantages and Limitation of PCR,PCR: Procedure ( denaturation , annealing, extension)
OCTOBER/22	<b>Unit-IV</b> Monoclonal Antibodies : Structure ,production, Application.
NOVEMBER/19	<b>Unit-IV</b> In vitro fertilization and embryo transfer Genome map and Genome project,Apoptosis
DECEMBER/21	<b>Unit-V</b> Stem cell technology Targeted Gene Transfer DNA fingerprinting,
JANUARY/26	<b>Unit-V</b> Transgenic animals and plants and Revision
FREBRUARY/24	Practical Exam and Revision

**TEACHING PLAN FOR THE SESSION 2018-19**  
**B.Sc. Part-III**  
**Subject –Biotechnology**  
**Paper -1**  
**Title of the Paper: Plant, Environment and Industrial Biotechnology**

MONTH/DAYS	PROPOSED PLAN
JULY /26	<b>Unit-I</b> Plant cell and tissue culture: General introduction , history, scope.Application of tissue culture. Concept of cellular differentiation.Agro bacterium. Ti and Ri-plasmid.Bt gene, Molecular marker (RFLP,RAPD), edible vaccines.
AUGUST/25	<b>Unit-II</b> Organogenesis , Embryogenesis, protoplast isolation and fusion.Germplasm storage and Cryopreservation.Anther and ovary culture.
SEPTEMBER/23	<b>Unit-III</b> General introduction and scope of environmental Biotechnology.Environmental pollution and its types.
OCTOBER/22	<b>Unit-III</b> Control of pollution of through biotechnology. Wastewater treatment: - Physical, Chemical and Biological.
NOVEMBER/19	<b>Unit-IV</b> Biofertilizer , Biopesticides , IPR.Global environmental problem-general introduction, Ozone depletion, Acid rain.Green house effect.
DECEMBER/21	<b>Unit V</b> Bioreactors and its types.Fermentation (Lactic acid, alcohol).Maintenance of Industrial micro-organisms
JANUARY/26	<b>Unit-V</b> Food technology – Introduction, canning, packing and food preservation. and Revision
FEBRUARY/24	Practical Exam and Revision

**TEACHING PLAN FOR THE SESSION 2018-19****B.Sc. Part-III****Subject –Biotechnology****Paper -II****Title of the Paper: Immunology**

MONTH/DAYS	PROPOSED PLAN
JULY /26	<b>Unit-I</b> Immunology- general concept, history and development.Immune system and Immunity, organization of immune system
AUGUST/25	<b>Unit I</b> Antigen and antibody and its types <b>Unit-II</b> Cell involved in immune system, type and cells, basic structure and function ,Cytokines. Cell mediated immunity interferons , hypersensitivity.
SEPTEMBER/23	<b>Unit-III</b> Antigen- Antibody interaction, principles and types.
OCTOBER/22	<b>Unit –III</b> Immunohaematology – general concept blood group system Rh factor Medical application of blood groups.
NOVEMBER/19	<b>Unit -IV</b> Origin and diversity in immune system.Effectors mechanism.
DECEMBER/21	<b>Unit- V</b> Immunity of infection disease, monoclonal antibodies.
JANUARY/26	<b>Unit- V</b> Autoimmune disease, hemolytic anemia, Rheumatoid arthritis, insulin depend diabetes, Myasthenia gravis, organ transplantation ,immune deficient disease, cancer ,AIDS. and Revision
FEBRUARY/24	Practical Exam and Revision

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**PROPOSED TEACHING PLAN FOR THE SESSION 2018-19****DEPARTMENT OF BOTANY****B.Sc. Part-I****Paper- I : BACTERIA, VIRUSES, FUNGI, LICHENS AND ALGAE**

Month	Course
<b>July</b> <b>Unit I</b>	<b>VIRUSES:</b> General characteristics, types of viruses based on structure and genetic material. Multiplication of viruses (General account), Lytic and Lysogenic cycle. Economic importance. Structure and multiplication of Bacteriophages. General account of Viroids, Virusoids, Prions, and Cyanophages. Mycorrhiza-Types and Significance.
<b>August</b> <b>Unit II&amp;II</b>	<b>BACTERIA:</b> General characteristics and classification (on the basis of morphology), fine structure of bacterial cell, Gram positive and Gram negative bacteria, mode of nutrition and reproduction vegetative, asexual and recombination (Conjugation, transformation and transduction), Economic importance. Microbial Biotechnology, <i>Rhizobium</i> , <i>Azotobactor</i> , <i>Anabena</i> .
<b>September</b> <b>Unit III</b>	<b>FUNGI:</b> General account of habit and habitat, structure (range of thallus organization), cell wall composition, nutrition and reproduction in fungi. Heterothallism and Parasexuality. Outlines of classification of fungi. Economic importance of fungi.
<b>October</b> <b>Unit III &amp; IV</b>	<b>FUNGI:</b> Life cycles of <i>Saprolegnia</i> , <i>Albugo</i> , <i>Aspergillus</i> , <i>Peziza</i> , <i>Agaricus</i> , <i>Ustilago</i> , <i>Puccinia</i> , <i>Alternaria</i> and <i>Cercospora</i> . VAM Fungi <b>ALGAE:</b> Algae: General characters, range of thallus organization, Gaidukov phenomenon, reproduction, life cycle patterns and economic importance. Classification, Systematic position, occurrence, structure and life cycle of following genera : <i>Nostoc</i> , <i>Gloeocapsa</i> , <i>Volvox</i> , <i>Oedogonium</i> , <i>Vaucheria</i> , <i>Chara</i> , <i>Ectocarpus</i> , <i>Polysiphonia</i> .
<b>November</b> <b>Unit IV</b>	<b>ALGAE:</b> Life cycle of following genera : <i>Nostoc</i> , <i>Gloeocapsa</i> , <i>Volvox</i> , <i>Oedogonium</i> , <i>Vaucheria</i> , <i>Chara</i> , <i>Ectocarpus</i> , <i>Polysiphonia</i> .
<b>December</b> <b>Unit V</b>	<b>Lichens-</b> General account, types, structure, nutrition, reproduction and economic importance. Mycoplasma: Structure and importance. Blue Green Algae (BGA) in nitrogen economy of soil and reclamation of Ushar land. Mushroom Biotechnology
<b>January</b>	<b>Revision</b>
<b>February</b>	<b>Practical Exam</b>

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**PROPOSED TEACHING PLAN FOR THE SESSION 2018-19**

**DEPARTMENT OF BOTANY**

**B.Sc.I BOTANY PAPER II M.M.50**

MONTH	Cell Biology and Genetics
<b>July</b> <b>Unit I</b>	<b>The Cell envelopes:</b> Plasma membrane; bilayer lipid structure; functions; the cell wall ultra structure and function of nucleus, nuclear membrane, nucleolus and other cell organelles; Golgi bodies, ER, peroxisomes, vacuoles.
<b>August Unit I&amp; II</b>	nucleolus and other cell organelles; Golgi bodies, ER, peroxisomes, vacuoles. <b>Chromosome Organization:</b> Morphology, centromere and telomeres, Chromosomal alternations: deletions, duplications, translocations, inversions
<b>September</b> <b>Unit II &amp;III</b>	variations in chromosome number, aneuploidy, polyploidy, sex chromosomes. Mitosis, Meiosis. <b>DNA the genetic material:</b> DNA structure; replication; DNA-protein interaction, the nucleosome model; genetic code; satellite and repetitive DNA.
<b>October</b> <b>Unit III</b>	<b>Extra nuclear genome:</b> Presence and function of mitochondrial and plastid DNA Plasmids.
<b>November</b> <b>Unit IV</b>	<b>Gene expression;</b> Structure of gene; transfer of genetic information; transcription translation, protein synthesis;
<b>December</b> <b>Unit IV &amp; V</b>	tRNA, ribosome, regulation of gene expression in prokaryotes and eukaryotes; proteins 1D, 2D and 3D structure. <b>Genetic variations:</b> Mutations, spontaneous and induced .
<b>January</b> <b>Unit V</b>	transposable genetic elements; DNA damage and repair. <b>Genetic inheritance:</b> Mendel's laws of segregation and independent assortment, linkage analysis, allelic and non-allelic interactions.

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**PROPOSED TEACHING PLAN FOR THE SESSION 2018-19**

**DEPARTMENT OF BOTANY**

**B.Sc.I BOTANY PAPER II M.M.50**

**BRYOPHYTES, PTERIDOPHYTES, GYMNOSPERMS AND  
PALAEOBOTANY**

MONTH	<b>BRYOPHYTES, PTERIDOPHYTES, GYMNOSPERMS AND PALAEOBOTANY</b>
<b>July</b> <b>Unit I</b>	<b>BRYOPHYTA:</b> General characteristics, affinities, range of thallus organization, general classification and economic & ecological importance, Systematic position, occurrence, morphology anatomy and reproductive structure in <i>Riccia</i> , <i>Marchantia</i> , <i>Pellia</i> , <i>Anthoceros</i> , <i>Funaria</i> . Vegetative reproduction in Bryophytes, Evolution of sporophytes.
<b>August</b> <b>Unit I &amp; II</b>	<b>BRYOPHYTA:</b> <i>Riccia</i> , <i>Marchantia</i> , <i>Pellia</i> , <i>Anthoceros</i> , <i>Funaria</i> . Vegetative reproduction in Bryophytes, Evolution of sporophytes.  <b>PTERIDOPHYTES:</b> General characteristics, affinities, economic importance and classification, Heterospory and seed habit,
<b>September</b> <b>Unit II</b>	<b>PTERIDOPHYTES :</b> Stellar system in Pteridophytes, Aposory and apogamy, Telome theory, <i>Azolla</i> as Biofertilizer.
<b>October</b> <b>Unit III</b>	Systematic position, occurrence. Morphology, anatomy and reproductive structure of <i>Psilotum</i> , <i>Lycopodium</i> , <i>selaginella</i> , <i>Equisetum</i> , <i>Marsilea</i> .
<b>November</b> <b>Unit IV</b>	<b>GYMNOSPERM:</b> General characteristics, affinities, economic importance and classification, Morphology, anatomy and reproduction in <i>Cycas</i> , <i>Pinus</i> and <i>Ephedra</i> .
<b>December</b> <b>Unit IV &amp; V</b>	<b>GYMNOSPERM:</b> Morphology, anatomy and reproduction in <i>Cycas</i> , <i>Pinus</i> and <i>Ephedra</i> .
<b>January</b> <b>Unit V</b>	<b>PALAEOBOTANY:</b> Geological time scale, types of fossils and fossilization, Rhynia, study of some fossil gymnosperms. <i>Lygenopteris</i>

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**PROPOSED TEACHING PLAN FOR THE SESSION 2018-19**

**DEPARTMENT OF BOTANY**

**B.Sc.- II, PAPER -I**

**DIVERSITY OF SEED PLANTS AND THEIR SYSTEMATICS**

Month	Proposed Topic
JUL Unit-I	Characteristics of seed plants- Evolution of seed habits; seed plants with (angiosperms) & without (gymnosperms) fruits; fossils & living seed plants.  General features of gymnosperms & their classification- Evolution & diversity of gymnosperms, geological time scale, fossilization & fossil gymnosperms.
AUG Unit II	Morphology of vegetative & reproductive parts; anatomy of roots, stem & leaf, reproduction & life cycle of Pinus, Cycas & Ephedra.
SEP Unit III	Angiosperms origin & evolution. Some examples of primitive angiosperms.  Angiosperms taxonomy: brief history, aims & fundamental components; identification, keys taxonomic literature.
OCT Unit III & IV	Botanical nomenclature: Principles & rules; taxonomic ranks; type concept; principle of priority.  Classification of angiosperms; salient features of the systems proposed by Bentham & Hooker, Engler & Prantl.
NOV Unit IV	Major contributions of cytology, phytochemistry & taximetrics to taxonomy.
DEC Unit V	Diversity of flowering plants: general account of families:- Ranunculaceae, Brassicaceae ,Malvaceae, Rutaceae, Fabaceae, Apiaceae, Acanthaceae
JAN Unit V	Apocynaceae, Asclepiadaceae, Solanaceae, Lamiaceae, Chenopodiaceae, Euphorbiaceae, Liliaceae & Poaceae.



FEB	Practical exam Practicals done every month as per schedule
MAR	Theory exam
APR	

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**PROPOSED TEACHING PLAN FOR THE SESSION 2018-19**

**DEPARTMENT OF BOTANY**

**B.Sc.-II, PAPER-II**

**STRUCTURE DEVELOPMENT & REPRODUCTION IN FLOWER PLANTS**

Month	Proposed Topic
JUL  Unit-I	The basic body plan of a flowering plant: modular type of growth.  Diversity in plant form in annuals, biennials & perennials: convergence of evolution of tree habit in gymnosperms, monocotyledons & dicotyledons ; trees- largest & longest- live organisms.
AUG  Unit II	The shoot system: the shoot apical meristem & its histological organization; vascularization of primary shoot in monocotyledons & dicotyledons; formation of internodes, branching pattern; monopodial & sympodial growth, canopy architecture, cambium & its functions, formation of secondary xylem, a general account of wood structure in relation to conduction of water & minerals, characteristics of growth rings, sapwood & heart wood, role of woody skeleton secondary phloem – structure- function relationships, periderm.
SEP  Unit III	<b>Leaf:</b> origin, development, arrangement & diversity in size & shape, internal structure in relation to photosynthesis & water loss, adaptations to water stress, senescence & abscission.  <b>The root system;</b> the root apical meristem, differentiation of primary & secondary tissues & their roles, structural modifications for storage, respiration, reproduction & interaction with microbe
OCT  IV	Flower: a modified shoot; structure, development & varieties of flower, functions, structure of anther & pistil, the male & female gametophytes, types of pollination, attractions & rewards for pollinators, pollen- pistil interaction, self incompatibility, double fertilization, formation of seed- endosperm & embryo, fruit development & maturation.
NOV  Unit IV	Flower: Types of pollination, attractions & rewards for pollinators, pollen- pistil interaction, self incompatibility, double fertilization, formation of seed- endosperm & embryo, fruit development & maturation.
DEC  Unit V	Significance of seed; suspended animation, ecological adaptation: unit of genetic recombination & replenishment, dispersal strategies.
JAN  Unit V	Vegetative reproduction: vegetative propagation, grafting & economic aspects.

FEB	Practical exam
MAR	Theory exam
APR	

## TEACHING PLAN

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Proposed Teaching Plan ( Session-2018-19)

### DEPARTMENT OF BOTANY

#### B.Sc. –III BOTANY, Paper -I PLANT PHYSIOLOGY, BIOCHEMISTRY AND BIOTECHNOLOGY

MONTH	PAPER-I-PLANT PHYSIOLOGY, BIOCHEMISTRY AND BIOTECHNOLOGY
<b>JULY UNIT-I</b>	<b>Plant water relations:</b> importance of water to plant life; physical properties of water
<b>AUGUST UNIT-I</b>	<b>Plant water relations:</b> diffusion & osmosis; absorption, transport of water, transpiration; physiology of stomata. <b>Mineral nutrition:</b> Essential macro and micro elements and their role; mineral uptake; Deficiency and toxicity symptoms.
<b>SEPTEMBER UNIT-II</b>	<b>Transport of organic substances:</b> Mechanism of phloem transport; source- sink relationship; factors affecting translocation. <b>Basic of enzymology:</b> Discovery and nomenclature; characteristics of enzymes; concepts of holoenzyme, Apoenzyme, coenzyme and cofactor; regulation of enzyme activity, mechanism of action.
<b>OCTOBER UNIT- II &amp; III</b>	<b>Photosynthesis:</b> Significance; historical aspects; photosynthetic pigments, action spectra and enhancement effects, concept of 2 photosystem, Z- scheme, photophosphorylation; Calvin cycle; C4 pathway, CAM plants, photorespiration. <b>Respiration:</b> ATP- The biological energy currency; aerobic and anaerobic respiration;
<b>NOVEMBER UNIT- III</b>	<b>Respiration:</b> Kreb's cycle, electron transport mechanism (Chemi- Osmotic theory); redox potential, Oxidative phosphorylation, pentose phosphate pathway. <b>Nitrogen and lipid metabolism:</b> biology of nitrogen fixation; importance of nitrate reductase and its regulation; ammonium assimilation; saturated and unsaturated fatty acids; storage and mobilization of fatty acids.
<b>DECEMBER</b>	<b>Growth and development:</b> Definitions; phases of growth and development; kinetics of growth, seed dormancy, seed germination and factors of their

<b>UNIT-IV</b>	regulation; plant movements; the concept of photoperiodism; physiology of flowering; florigen concept; biological clocks; physiology of senescence, fruit ripening; plant hormones: Auxins, gibberellins, cytokinins, abscisic acid, ethylene, history of their discovery, biosynthesis and mechanism of action, photomorphogenesis, phytochromes and cryptochromes, their discovery, physiological role and mechanism of action.
<b>JANUARY</b>	<p><b>Genetic engineering:</b> tools and techniques of recombinant DNA technology; Cloning vectors; Genomic and cDNA library; transposable elements; techniques of gene mapping and chromosome walking.</p> <p><b>Biotechnology:</b> functional definition; basic aspects of plant tissue culture; cellular totipotency, differentiation and morphogenesis; biology of agro bacterium; vectors for gene delivery and marker genes; salient achievements in crop biotechnology.</p>

## PROPOSED TEACHING PLAN FOR THE SESSION 2018-19

### DEPARTMENT OF BOTANY

#### B.Sc.- III, PAPER –II

#### ECOLOGY AND UTILIZATION OF PLANTS

Month	Proposed Topic
JULY Unit-I	<p>Plants and environment: Atmosphere (gaseous composition), water (properties of water cycle), light (global radiation, photo synthetically active radiation), temperature, soil (development of soil profiles, physico-chemical properties), and biota.</p> <p>Morphological, anatomical and physiological responses of plants to water (hydrophytes &amp; xerophytes), temperature (thermoperiodicity), light (photoperiodism, heliophytes &amp; sciophytes) &amp; salinity.</p>
AUG Unit II	<p>Community Ecology: Community characteristics, frequency, density; cover, life form, biological spectrum; ecological succession.</p> <p>Ecosystems: Structure, abiotic &amp; biotic components; food chain, food web, ecological pyramid, energy flow; biogeochemical cycles of carbon, nitrogen and phosphorus.</p>
SEP Unit III	<p>Population ecology: Growth curves; ecotypes; ecades.</p> <p>Biogeographical regions of India.</p> <p>Vegetation types of India: Forests &amp; grasslands.</p>

OCT III	Vegetation types of India: Forests & grasslands.
NOV Unit IV	Utilization of plants  Food plants: rice, wheat, maize, potato, sugarcane.  Fibers: Cotton & Jute  Vegetable oils: groundnut, mustard and coconut  General account of sources of firewood, timber & bamboos.
DEC Unit V	Spices: General account.  Medicinal plants: :General account  Beverages :Tea & coffee  Rubber.
JAN	Practical Exam

GOVT. D.B.GIRL,S P.G.COLLEGE, RAIPUR (CHHATTISGARH)

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PROPOSED TEACHING PLAN FOR THE SESSION 2018-19

B.Sc. PART – ONE (CHEMISTRY)

MONTH	PROPOSED WORK	PAPER - ONE	PAPER – TWO	PAPER - THREE
July	UNIT – I	<b>A. ATOMIC STRUCTURE</b> Idea of de-Broglie matter-waves, Heisenberg Uncertainty principle, Schrodinger wave equation, significance of $\Psi$ and $\Psi^2$ , radial & angular wave functions and probability distribution curves, Atomic orbital and shapes of s, p, d orbital's, Aufbau and Pauli exclusion principles, Hund's Multiplicity rule, electronic configuration of the elements, Effective nuclear charge	<b>STRUCTURE &amp; BONDING</b> <b>A.</b> Resonance. Hyper conjugation, Inductive and other field effects, Aromaticity, hydrogen bonding. <b>B. MECHANISM OF ORGANIC REACTIONS</b> Homolytic & heterolytic bond breaking, types of reagents-electrophiles & nucleophiles	<b>MATHEMATICAL CONCEPTS FOR CHEMIST AND COMPUTER</b> <b>A.</b> Logarithmic relations, curve sketching linear graphs. Properties of straight line, slope and intercept. Differentiation of functions. Partial differentiation. Integration of some useful and relevant functions, Maxima and minima. Permutation and combination. Probability.
August	UNIT – I	<b>B. PERIODIC PROPERTIES</b> Ionization energy, Electron gain enthalpy and Electronegativity,	<b>B. MECHANISM OF ORGANIC REACTIONS</b>	<b>MATHEMATICAL CONCEPTS FOR CHEMIST AND COMPUTER</b> <b>B.</b> General introduction to computers, components of computer, hardware and

		trend in periodic table and applications in predicting and explaining the chemical behavior.	Structure and reactivity of reaction intermediates-Carbocation, carbanions, free radicals, carbenes and nitrenes.	software, input and output devices: binary numbers. Introduction to computer languages. Programming. Operation systems.
<b>September</b>	<b>UNIT – II</b>	<b>CHEMICAL BONDING</b> Valence bond theory and its limitations. Directional character of covalent bond, various types of hybridization and shape of simple inorganic molecules and ions. Valence shell electron pair repulsion theory (VSEPR) to $\text{H}_2\text{O}$ , $\text{NH}_3$ , $\text{SF}_4$ , $\text{H}_3\text{O}^+$ , $\text{ClF}_3$ and $\text{ICl}_2^-$ . Homonuclear and heteronuclear bond strength and bond energy, percentage ionic character from dipole moment and electronegativity difference.	<b>STEREOCHEMISTRY OF ORGANIC COMPOUNDS</b> <b>A.</b> Optical. Isomerism - enantiomers, diastereomers, threo and erythro, meso compound, resolution of enantiomers. inversion, retention and racemization, Relative and absolute configuration. Sequence rules. D and L and R & S systems of nomenclature. <b>B.</b> Geometrical isomerism - Syn and anti-forms, E & Z system of nomenclature, properties of cis-trans isomers.	<b>A. MOLECULAR VELOCITIES</b> Root mean square velocity average and most probable velocities. Maxwell's law of distribution of molecular velocities of gases, (Graphical interpretation), effect of temperature on distribution of molecular velocities, collision frequency, mean free path, Joule-Thompson effect, Liquification of gases. <b>B.</b> Deviation from ideal behaviour, Real gases, Vander Waal's equation of state. Relationship. Vander Waal's constant and critical constants, Law of corresponding state.
<b>October</b>	<b>UNIT – III</b>	<b>CHEMICAL BONDING</b> <b>Ionic solids-</b> Ionic structure, Radius ratio and coordination numbers, limitations of radius ratio rule, lattice defects,	<b>ALIPHATIC AND AROMATIC RING COMPOUNDS</b> <b>A.</b> Cycloalkanes- Nomenclature, methods of formation, chemical reactions, Bayer's strain theory	<b>A. LIQUID STATE</b> Inter molecular forces, magnitude of intermolecular force, structure of liquids. Properties of liquids, viscosity and surface tension.

		semiconductors, lattice energy Born-Haber cycle, Solvation energy and solubility of ionic solids, polarizing power and polarisability of ions, Fajan's rule, Metallic bond, band free electrons, Valence bond and Band theory. ,	and its limitations. Ring's strain in small rings (cyclopropane and cyclobutane), theory of strain less rings. The case of cyclopropane ring: banana bonds. <b>B.</b> Mono-nuclear and polynuclear aromatic ring. Structure of benzene & naphthalene. Molecular formula and Kekule structure.	<b>B.</b> Ideal and non-ideal solutions, modes of representing concentration of solutions, activity and activity coefficient.
<b>November</b>	<b>UNIT – III &amp; IV</b>	<b>UNIT-IV A. s-BLOCK ELEMENTS</b> Comparative study, Saliient features of hydrides, solvation and complexation tendencies including their function in biosystems and introduction to alky & aryl, Derivative of alkali and alkaline earth metals	<b>UNIT- III ALIPHATIC AND AROMATIC RING COMPOUNDS</b> Aromatic electrophilic substitution. General pattern of the mechanism, role of $\sigma$ and $\pi$ complexes. Electrophilic substitution in naphthalene. <b>UNIT- IV ALKENES, DIENES AND ALKYNES</b> <b>A.</b> Mechanism of dehydration of alcohols. <b>B.</b> Chemical reactions of alkenes- Mechanisms involved in electrophilic and free radical additions,	<b>UNIT- III A. LIQUID STATE</b> Dilute solution: Colligative Properties, lowering of vapour pressure of solvent, Raoult's law, Osmosis, van Hoff Theory of dilute solutions, measurements of Osmotic pressure, relationship between lowering of vapour pressure and osmotic pressure. Elevation of boiling point. Depression in freezing point, abnormal molar masses, Depression of dissociation and association of solutes, Vant Hoff factor. <b>UNIT- IV A. LIQUID CRYSTALS</b> Difference between liquid Crystal, solids and liquids, Classification. Structure "of



			hydroboration-oxidation, oxymercuration-reduction, epoxidation. Substitution at the allylic and vinylic positions of alkenes. Structure of allenes and butadiene, chemical Reaction- 1,2 and 1,4 addition.	nematic and cholestric phases, Thermography. Seven segment cell, applications of liquid Crystals.
<b>December</b>	<b>UNIT –IV</b>	<b>UNIT-IV B: CHEMISTRY OF NOBLE GASES</b> Chemical properties of the noble gases, Chemistry of xenon, structure, bonding in xenon compounds.	<b>UNIT- IV ALKENES, DIENES AND ALKYNES</b> Diel-Alder reaction. Chemical reactions of alkynes and acidity of alkynes. Electrophilic and nucleophilic addition reactions, hydroboration and oxidation with ozone and $\text{KMnO}_4$ .	<b>UNIT- IV B. COLLOIDAL STATE</b> Classification, Optical. Kinetic, and Electrical Properties of colloid. Coagulation, Hardy Schulze law, flocculation value. Protection, Gold number, Emulsion, micelle. Gel. Syneresis and thixotrophy. Application of colloid. <b>C. SOLID STATE</b> Space lattices, unit cells. Elements of Symmetry in crystallize solids, X-rays diffraction, Miller's indices, identification of unit cell by Braggs Spectrometer, Powder method, Neutron and electron diffraction (Elementary idea only)

January	UNIT – V	<p><b>UNIT-V p-BLOCK ELEMENTS</b></p> <p>Halides, hydrides, oxides and oxoacids of Boron, Aluminum, Nitrogen and Phosphorus, Boranes, Borazine, fullerenes, and silicates, interhalogens and pseudo halides.</p> <p><b>B. INORGANIC CHEMICAL ANALYSIS</b></p> <p>Chemical principles involved in the detection acids and basic radicals including interfering radicals.</p>	<p><b>UNIT- V ARENES AND AROMATICITY</b></p> <p><b>A. ALKYL HALIDES AND ARYL HALIDES</b></p> <p>Mechanism and stereochemistry of nucleophilic substitution reactions and alkyl halides and aryl halides with energy profile diagrams. <math>SN_1</math>, <math>SN_2</math>, <math>SN_i</math> mechanisms.</p> <p><b>B. Mechanisms and stereochemistry of elimination reaction and alkyl halides.</b></p> <p>Elimination Vs Substitution.</p>	<p><b>UNIT- V A. CHEMICAL KINETICS</b></p> <p>Rate of reaction, Factors influencing rate of reaction, rate constant. Order and molecularity of reactions. Zero, first and second order reaction, methods of determining order of reaction. Complex reactions: Consecutive, opposing and side reactions, Chain reactions. Temperature dependence of reaction rate, Arrhenius theory, Physical significance of Activation energy, collision theory, demerits of collision theory, non-mathematical concept of transition state theory.</p> <p><b>B. CATALYSIS</b></p> <p>Homogeneous and Heterogeneous Catalysis, types of catalyst, characteristics of catalyst. Enzyme Catalysed reactions. Micellar catalysed reactions. Industrial applications of Catalysis</p>
February	DOUBT CLASS	REVISION AND PRACTICAL EXAM.	REVISION AND PRACTICAL EXAM.	REVISION AND PRACTICAL EXAM.

GOVT.D.B. GIRL'S P.G. (AUTONOMOUS) COLLEGE

**TEACHING PLAN COMPUTER SCIENCE SESSION 2018-19**

**B.SC I COMPUTER SCIENCE  
PAPER-I  
COMPUTER HARDWARE**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT I- General Overview Of Computer Hardware :</b> <b>(a) introduction to computer :</b> computer vs-calculator & typewriter ; parts of a computer ; the system unit/inside the system unit, cpu; ram-keyboard storage media floppy & hard disk; monitor, mouse; printer; types of computer, evolution of personal computer from pc-xt,pc-at (286) to Pentium pc . hardware & software, types of software : system software, application software, introduction to programming languages, procedural oriented languages, structured programming, object oriented programming, languages [ex. basic, Cobol, Pascal, c, c++,visual basic, java & c#]. type of operating system “ introduction to dos, Unix, windows, simple dos commands and features of Unix & working of windows.
<b>AUGUST</b>	<b>UNIT I- computer system operation</b> number system: unary system, decimal system, binary system conversions, addition, subtraction by 9's and 10's complements and by 1's and 2's complements. binary multiplication & division ; octal number system & hexadecimal number system and use.  <b>UNIT II- computer digital electronics - part a :</b> <b>(a) computer communication code-</b> ' binary code, 8421 code; excess 3 code; parity code-, grey code ascii & ebcdic codes.
<b>SEPTEMBER</b>	<b>UNIT II- computer logic system logic gates :</b> diode and bjt as switch; response of bjt to square waves, new logic, mathematical logic, basic logic operators/gates,and, or, not operator./ gate, positive and negative logic, nor & nand gates, boolean, equations by logic symbol.  <b>UNIT III- computer digital electronic - part b :</b> <b>(A) integrated circuits for computer logic family :</b> electrical characteristics, propagation delay noise immunity,types of load rtl,dttl,ttl & como bipolar & mos integration circuits, ttl circuits.

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<b>OCTOBER</b>	<b>UNIT III-</b> (b) <b>basic done of digital circuitry, boolean algebra:</b> laws of boolean algebra,demorgans theorem,dual nature of boolean laws, boolean expression and logic diagram. the karnaugh map, truth table to 'k-map, simplification of k-map.  (c) <b>computer logic circuits</b> : ex-or, ex-nor circuitary, half and full adder, half and full subtractor, subtraction by 1's & 2's compliments
<b>NOVEMBER</b>	<b>UNIT IV-</b> computer digital electronics-part c : (a) more computer logic circuit combinational logic circuits : encoder & decoder, four bit binary, decoder, bcd to 7 segment, decoder encoder, multiplexers & demultiplexers, data transmission, logic function generator.
<b>DECEMBER</b>	<b>UNIT IV-(b) multivibrator circuits</b> : monostable, astable & bistable circuits, smitt trigger,rs flip-flop, rs flip-flop using nor gate and nand gate, ' clocked-rs flip-flop,d flip-flop or latch, edge triggered flip-flop, preset and clear, propagation delay-set-up time, hold time master-slave flip flop.
<b>JANUARY</b>	<b>UNIT V- computer digital electronics-part d:</b> (a) <b>computer counters-and shift registers:</b> binary counter, down counter, parallel or synchronous counter, counter with feedback, code-7 precision time interval,monitor horizontal to vertical generator, shift registers in brief, application of shift registers. (b) <b>computer memories</b> :types of memory, ram, rom, prom, eprom, dram, sram.
<b>FEBRUARY</b>	<b>REVISION + PRACTICAL EXAM</b>

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**B.SC I COMPUTER SCIENCE  
PAPER-II  
COMPUTER SOFTWARE**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<p><b>UNIT I- fundamentals for using the computer :</b></p> <p><b>(a) driving the computer</b></p> <p>(1) computer operating system &amp; other software :     (i) windows &amp; unix system software &amp; their versions.     (ii) hll software : basic, cobol, pascal,c,c++, visual basic, java &amp; c#     (iii) package software's - ms-office &amp; foxpro.</p> <p>(2) introduction to dos ver 6.22 &amp; windows-95, windows-98 &amp; windows-2000.</p> <p>(3) windows concept, various features &amp; advantages, windows structure, desktop,taskbar, start menu, my computer, recyclebin.</p> <p>(4) accessories : calculator notepad , paint, wordpad, character map, explorer : creating folders and other explorer facilities.</p> <p>(5) object linking &amp; embedding. communication- dialup networking, phone dialer.</p>
<b>AUGUST</b>	<p><b>UNIT I-</b></p> <p><b>(b) general idea of problem solving with computers</b>     problem analysis &amp; solving scheme, computational procedure, program outline, algorithm pseudo codes, flow chart, testing of flow chart, branching and looping,writing executing &amp; testing the program with examples.</p> <p><b>(c) programming constants and variables</b>-character set, constants (numeric string), variables(numeric &amp; string),rules for arithmetic expression and hierarchy of operations, relational expressions, logical expressions and operator, library functions.</p> <p><b>UNIT II-working with ms-office</b></p> <p><b>introduction to word :</b> basic of wordproccessing ; features and advantages of word processing ; creating, editing, formating &amp; previewing documents ; advanced features; using thesaurus, mail merge, table &amp; charts, implementing ole concept.</p> <p><b>Practical-</b> Giving the general idea of how to start computer. Basic knowledge of computer. How to open ms office and then introduction of ms word and its usage and some practical on ms word.</p>

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<b>SEPTEMBER</b>	<p><b>UNIT II- introduction to excel</b> : worksheet basics, creating, opening &amp; moving in worksheet, working with formula &amp; cell referencing, absolute &amp; relative addressing, working with ranges, formatting of worksheet, graphs &amp; charts, database, function and macros.</p> <p><b>introduction to power point</b> : creating a presentation, modifying visual elements adding objects, applying transitions, animations and linking, preparing, handouts, presenting a slide show</p> <p><b>working on internet</b>  <b>introduction to internet</b> : concept of internet, application of internet, services on internet, world wide web(www) &amp; web browsers, working with internet explorer, introduction to internet search engines, yahoo, alta vista, google etc. surfing the internet, chatting on internet electronic mail (e-mail), working with outlook express; overview of telnet &amp; ftp (file transfer protocol) services. internet security, web security firewalls, type of firewalls.</p> <p><b>Practical-</b> basic skills on ms excel,how to use it and practicing on calculations and how to use formula.  After excel learning about powerpoint presentation, how to make presentation ,usage of transition, animation and many more about presentation.</p>
<b>OCTOBER</b>	<p><b>UNIT III- programming with c : part -a</b>  introduction character set, identifiers and keywords, variables, displaying variables, reading variables, character and character string, qualifiers, type define statements, value initialized variables, constants, constants qualifier, operators and expressions, operator precedence and associativity  basic input output : single character i/o general outputs, types of characters in format string, scanf with specifier,searchset arrangements and supression character, format specifier for scanf control structure : if-statement, if else statement, multiway decision compound statement.</p> <p><b>Practical</b> – learn how to use c environment ,basic of c software and how to write program, compiling and running a program.</p>

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<b>NOVEMBER</b>	<p><b>UNIT III-</b> loops : for-loop, while loop do-while loop, break statement, switch statement continue statement, goto statement, functions function main, function accepting more than one parameter, user defined and library function, concept associatively with functions, function parameter, return value, recursion comparisons, of iteration and recursion variable length argument list.</p> <p><b>UNIT IV- programming with c : part-b</b> scope operator, arrays, strings, multidimensional arrays, strings, array of strings, function in string, pointers: definition and use of pointer, address operator, pointer variable, referencing pointer, void pointers, pointer arithmetic, pointer to pointer.</p> <p><b>Practical-</b> learning about how to deal with error in program ,practicing program on various control structure,looping and arrays.</p>
<b>DECEMBER</b>	<p><b>UNIT IV-</b> pointer and arrays, passing arrays to functions. pointer and functions, accessing array inside functions, pointers and two dimensional arrays, array of pointers, pointer constants, pointer and strings.</p> <p><b>UNIT V- programming with c : part-c</b> structure and union, declaring and using structure, structure initialization, structure within structure.</p> <p><b>Practical-</b> program on pointers and its types ,function, strings.</p>
<b>JANUARY</b>	<p><b>UNIT V-</b> operations of structure, array of structure, array within structure, creating user defined data type, pointer to structure and function. union, difference between union and structure, operation on union, scope of union.dynamic memory allocation, library function for dynamic memory allocation, dynamic multi dimensional arrays, self-referential structure, file:- introduction, structure, file handling, functions file types, unbuffered and buffered file, error handling, low level file input-output.</p> <p><b>Practical-</b> practice on program based on structures and union.</p>
<b>FEBRUARY</b>	<b>REVISION + PRACTICAL EXAM</b>

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**B.Sc – II COMPUTER SCIENCE  
PAPER –I  
COMPUTER HARDWARE**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>Unit I- classification and organization of computers</b> -digital and analog computers and its evolution. major components of digital computers; memory addressing capability of cpu; word length and processing speed of computers; microprocessors single chip microcomputers; large and small computers.
<b>AUGUST</b>	<b>UNIT I-</b> users interface hardware, software and firmware. multiprogramming, multiuser system. dumb smart and intelligent terminals computer network and multi processing, lan parallel processing, flinn"s classification of computers. control flow and data flow computers.  <b>UNIT II- central processing unit</b> -cpu organization, alu, control unit.
<b>SEPTEMBER</b>	<b>UNIT II-</b> registers. instructions of intel 8085. instruction word size, various addressing mode interrupts and exceptions, some special control signals and i/o devices, instruction cycles, fetch and execution operation, time diagram, data flow.  <b>UNIT III- memory of computers</b> -main memory, secondary memory, back up memory, cache memory.
<b>OCTOBER</b>	<b>UNIT III-</b> real and virtual memory. semiconductor memory, memory controller and magnetic memory.ram disks, optical disks, magnetic bubble memory, dasd, destructive and nondestructive readout ,program of data memory and mmu.
<b>NOVEMBER</b>	<b>UNIT IV-</b> i/o devices of microcontroller; processors, i/o devices, printer . other output devices; i/o port, serial data transfer scheme, micro controller, signal processors, i/o processor, arithmetic processors.
<b>DECEMBER</b>	<b>UNIT V- system software and programming technique</b> ml, al, hll, stac subroutine ,debugging of programs, macro micro programming, program design, software development.
<b>JANUARY</b>	<b>UNIT V-</b> flow & chart multi programming, multiuser, multitasking protection, operating system and utility program, application packages.
<b>FEBRUARY</b>	<b>REVISION + PRACTICAL EXAM</b>



**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**B.Sc – II COMPUTER SCIENCE  
PAPER –II  
COMPUTER SOFTWARE**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<p><b>UNIT I-</b> html basics &amp; website design principles concept of website, web standards, what is html? html versions, naming scheme for html documents, html document /file, html editor, explanation of the structure of the home page, elements in the html documents, html tags, basic html tags, comment tag in html, viewing the source of a webpage, how to download the web page source? xhtml, css, extensible markup language (xml) extensible style sheet language (xsl), some tips of designing webpages, html document structure. html document structure- head section, illustration of document structure, &lt;base&gt; element, &lt;isindex&gt; element,&lt;link&gt; element, meta, &lt;title&gt; element, &lt;script&gt;. element, practical applications, html document structures- body section:- body elements and its attributes: back ground: back ground color; text: link; active link (alink); visited link (vlink).</p> <p><b>Practical-</b> introduction to html program editor ,how to write html programs, running html program and running html programs.</p>
<b>AUGUST</b>	<p><b>UNIT I-</b> left margin; top margin, organization of elements in the body of the document; text block elements; text emphasis elements; special elements- hyper text anchors, character- level elements; character references, text block elements; hr (horizontal line); hn (headings); p (paragraph); lists; address: blockquote; table; div(html 3.2 and up); pre (preformatted; form, text emphasis elements, special; elements- hypertext anchors, character- level elements; line breaks (bra) and images (img), lists, address element, blockquote elements, table elements, comments in html, character emphasis modes, logical and physical styles, net scape, microsoft and advanced standard elements list, font, basefont, and center.</p> <p><b>Practical-</b> html programs on various tags like body and its elements,using table tag,address tag,image tag,font tag,list tag.</p>

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<b>SEPTEMBER</b>	<p><b>UNIT II-</b> image, internal and external linking between webpages netscape, microsoft and advanced standard elements list, font ,basefont and center ,insertion of images using the element img (attributes; src (source), width, heighth, alt (alternative), align, image (in line images), element and attributes, illustration of img alignment, images as hyper text anchors,internal .</p> <p><b>Practical-</b> practicing program on anchor tag, paragraph tag, heading tag ,links frames and many more.</p>
<b>OCTOBER</b>	<p><b>UNIT II-</b> external linking between web pages hyper text anchor, href in anchors, links to a particular place in a document, name attribute in an anchor, targeting name anchors, title attribute, practical it application designing web pages links with each other, designing frames in html. practical examples.</p> <p><b>UNIT III-</b> introduction to oop advantages of oop, the object oriented approach, characteristics of object oriented languages- object, classes, inheritance, reusability, polymorphism and c++. function: function declaration, calling function.</p> <p><b>Practical-</b> how to use cpp environment ,writing program,running and compiling a program.</p>
<b>NOVEMBER</b>	<p><b>UNIT III-</b> function defines, passing arguments to function, passing constant, passing value, reference argument, returning by reference, inline function, function overloading, default arguments in function.</p> <p><b>UNIT IV-</b> object classes and inheritance object and class, using the class, class constructor, class destructors, object as function argument, copy constructor.</p> <p><b>Practical-</b> programs on inheritance,constructor,class and objects.</p>
<b>DECEMBER</b>	<p><b>UNIT IV-</b>struct and classes, array as class member, static class data, static member functions, friend function, friend class, operator overloading, type of inheritance, base class, derive class, access specifier protected, function overloading, member function, string, template function.</p> <p><b>UNIT V-</b>pointers and virtual function pointers: &amp; and * operator pointer variables, pointer to pointer.</p> <p><b>Practical-</b> programs on array,function,friend class,operator overloading,strings,templates.</p>

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<b>JANUARY</b>	<b>UNIT V</b> -void pointer , pointer and array, pointer and function, pointer and string, memory management, new and delete, pointer to object, this pointer virtual function: virtual function, virtual member function, accesses with pointer, pure virtual function. file and stream: c++ streams, c++ manipulators, stream class, string i/o ,char i/o, object i/o, i/o with multiple object, disk i/o.  <b>Practical-</b> programs on various logics,pointers and many more.
<b>FEBRUARY</b>	<b>REVISION + PRACTICAL EXAM</b>

**B.Sc – III COMPUTER SCIENCE  
PAPER –I  
COMPUTER HARDWARE**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT I- ORGANISATION OF MICRO-PROCESSOR &amp; MICRO COMPUTER:-</b>  <b>1. INTRODUCTION &amp; ORGANIZATION OF MICRO COMPUTER:</b> (a) basic components of micro computer: basic block; prom ram memory;data memory; i/o ports; clock generator; integration of functional blocks. (b) interconnecting components in a micro computer: necessary functional block; bussed architecture for microcomputer; memory addressing; addressing i/o ports; comparison of i/o mapped and memory mapped i/o. (c) input output techniques: non-cpu devices, program & interrupt controlled i/o; hardware controlled i/o or dma.  <b>2. AN INTRODUCTION TO THE VARIOUS AS:</b> (a) general understanding of different $\mu$ p or cpu: intel 8088, 286, 386, 486, 586 pentium, p54c, mmx p55c; motorola 6800 & 88100 series; cyrix & amd cpus.

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<b>AUGUST</b>	<p><b>UNIT I-</b> (b) the registers of cpu: (give example of p-8088) register organization of 8088, scratch pad segment, pointer, index and flag, registers. (c) memory addressing modes of p-8088: segment offset; data addressing modes; addressing for branch instructions. (d) i/o addressing with p-8088: memory mapped i/o &amp; i/o mapped i/o.</p> <p><b>UNIT II- SYSTEM HARDWARE ORGANISATION OF COMPUTERS:</b></p> <p>1. Hardware Organization Of The Personal Computer :</p> <p>(a) block diagram with various parts of pc. (b) the mother board of general p.c.: 8088 cpu; rom &amp; ram; keyboard &amp; its interface; system timer/counters; hardware interrupt vectoring; dma controller &amp; channels; interfacing to audio speaker; bus slots &amp; factory cards. (c) the serial i/o ports, com-1 &amp; com-2. (d) the parallel port for printer. (e) expansion slots for ram. (f) disk controllers: for floppy, hard disk, cd-rom &amp; cassette drives.</p>
<b>SEPTEMBER</b>	<p><b>UNIT II- THE VIDEO DISPLAY OF PCS:</b></p> <p>(a) video monitors ; monochrome and colour. (b) video display adapters &amp; their video modes; monochrome &amp; colour graphics adapters. (c) video control through ansi-sys. (d) video control through rom-bios :int 10h. (e) direct video control; monochrome &amp; colour graphics adapters. (f) installing customized character sets.</p> <p><b>UNIT III- ORGANISATION OF OPERATING SYSTEM WITH SYSTEM HARDWARE:</b></p> <p><b>1. THE ROM-BIOS SERVICES:</b></p> <p>(a) introduction to unix, enix, sun, solaris, dos &amp; mac with special reference to dos &amp; windows it's ver., as dos becomes more popular than others in pcs. (b) the rom-bios diskette services, int 13h. (c) the rom-bios serial port services, int 14h. (d) the rom-bios keyboard services, int 16h. (e) the rom-bios printer services, int 17h. (f) miscellaneous service provided by the rom-bios: int 05h, int 11h, int 12h, int 18h, int 19h, int 1ah.</p>

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<b>OCTOBER</b>	<p><b>UNIT III-</b> 2. the fundamental of operating system viz. dos/windows:</p> <p>(a) the loading of dos &amp; its basic structure ; rom bootstrap, io.sys, dos.sys &amp; command.com.</p> <p>(b) the execution of the programs under dos; exec functions , program segment prefix; features of com &amp; exe program files.</p> <p>(c) device handling by dos; fdd,hdd,con, keyboard, prn, aux, clock and nul devices; block devices; character devices; driver installation sequence.</p> <p>(d) file structures of dos;</p> <p>(e) the dos interrupts: int 20h-2fh</p> <p>(f) the dos functions through int 21h; discuss only the understanding part of various other dos function to handle hard &amp; softwares.</p> <p>(g) installation of windows: important system files in windows.</p>
<b>NOVEMBER</b>	<p><b>UNIT IV-ORGANIZATION &amp; HANDLING BY OPERATING SYSTEMS:</b></p> <p><b>1. disk and files under dos;</b></p> <p>(a) logical structure of a disk; organization of disk for use ; boot record; fat files; disk or root directory.</p> <p>(b) file organization on a dos disk; logical volumes; sub directories; volume lables.</p> <p>(c) manipulating files under dos: file attributes; date and time, file access; fcb functions.</p> <p><b>2. memory allocation, program loading and execution;</b></p> <p>(a) memory management under dos; exec loader: memory management and its functions; modifying a program's memory allocation.</p>
<b>DECEMBER</b>	<p><b>UNIT IV-</b> (b) loading and executing programs under dos: the exec function; memory considerations; parameter blocks; calling &amp; returning from exec.</p> <p>(c) loading the program overlays through exec.</p>

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<b>JANUARY</b>	<b>UNIT V-organization of hardware by operating systems</b> 1. <b>interrupt handling through dos;</b> (a) types of interrupts. (b) interrupt vector table in pc. (c) interrupt service routines. (d) special interrupts in pc: clock interrupt; the c or break interrupt; dos reserved interrupt int 28h; patching memory resident routines. 2. <b>filters for dos:</b> (a) filters in operating systems. (b) redirection of i/o under dos. (c) the filters supplied with dos. (d) writing filters to run under dos. 3. <b>handling of various versions of windows o.s.:</b> (a) setup installation. (b) troubleshooting. (c) networking features.
<b>FEBRUARY</b>	<b>REVISION + PRACTICAL EXAM</b>

**B.Sc – III COMPUTER SCIENCE  
PAPER –II  
COMPUTER SOFTWARE**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT I-concept of d.b.m.s and data models</b>  (a) introduction of dbms: - purpose of data base systems, views of data , data modeling, database languages, transaction management, storage management, database administrator and user, database system structure.  (b) e-r model: basic concepts, constraints, keys , mapping constraint, e-r diagram, weak and strong entity sets, e-r database schema, reduction of an e-r schema to table.

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<b>AUGUST</b>	<p><b>UNIT II-relational database management system</b></p> <p>(a) relational model: structure of relational database, relational algebra, domain relational calculus, extended relational-algebra operation, modification of database, views.</p> <p>(b) relational database design: pitfalls in relational database design, decomposition functional dependencies, normalization: 1nf, 2nf, bcnf, 3nf, 4nf, 5nf.</p> <p><b>Practical-</b> learning about oracle environment. how to open software, running and debugging a simple program.</p>
<b>SEPTEMBER</b>	<p><b>UNIT III-introduction to rdbms software-oracle</b></p> <p>(a)introduction : introduction to personal and enterprises oracle , data types, commercial query language, sql, sql *plus.</p> <p>(b) ddl and dml: creating table, specifying integrity constraint, modifying existing table, dropping table, inserting deleting and updating rows in as table. where clause, operators, order by, group function, sql function, join, set operation, sql sub queries. views: what is views, create, drop and retrieving data from views.</p> <p>(c) security : management of roles, changing password, granting roles &amp; privilege, with drawing privileges.</p> <p><b>Practical-</b> making tables and performing various operations on table like updating a table,altering a table,deleting a table etc.</p>
<b>OCTOBER</b>	<p><b>UNIT III-</b> pl/sql: block structure in pl/sql, variable and constants, running pl/sql in the sql *plus, data base access with pl/sql, exception handling, record data type in pl/sql, triggers in pl/sql.</p> <p><b>UNIT IV- g.u.i programmimg</b></p> <p>(a) introduction to visual basic: event driven programming, ide, introduction to object , controlling objects, models and events, working with forms, mdi form working with standard controls.</p> <p><b>Practical-</b> practicing on pl sql programs and vb environment.</p>

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<b>NOVEMBER</b>	<p><b>UNIT IV-</b> overview of variables, declaring, scope, arrays, user defined data types, constants, working with procedures: function, subroutine and property. working with data, time, format, string and math's function. controlling program execution: comparison and logical operators , if..then statements, select case statement. looping structures, exiting a loop error trapping and debugging.</p> <p>file organization : saving data to file, sequential and random access file. the designing and coding.</p> <p><b>Practical-</b> practicing vb programs based on conditions ,looping, mdi forms, functions, strings.</p>
<b>DECEMBER</b>	<p><b>UNIT V-DATA BASE PROGRAMMING IN VB:</b></p> <p>(a) introduction :- concept of dao,rdo,ado, input validation : field &amp; form level validation, ado object model: the ado object hierarchy, the connection object, the command object, record set object, parameter object, field object, record object, stream object, error object parameter object.</p> <p>(b) <u>U</u>sing bound control to present ado data; using the ado data control, ado data control properties, binding simple controls: data list, data combo, data grid, data form wizard: single form wizard, grid form, master/detail form. programming the ado data control: refresh method, event, hierarchical flex grid control.</p> <p><b>Practical</b> –programs on various logics using different controls of vb.</p>
<b>JANUARY</b>	<p><b>UNIT V-</b> data environment &amp; data report: creating connection, using command object in the data environment, data environment option and operation, binding form to the data environment, ado events in the data report, print preview, print, export, data report in code: data reports events, binding data reports directly.</p> <p><b>Practical-</b> learning how to use various connectivity ,events and using database through vb programs.</p>
<b>FEBRUARY</b>	<p><b>REVISION + PRACTICAL EXAM</b></p>



**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**PGDCA I<sup>ST</sup> SEMESTER**

**PAPER I-INTRODUCTION TO SOFTWARE ORGANISATION**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>AUGUST</b>	<p><b>UNIT I- Introduction to Computers</b></p> <p>Computers – Introduction, Computer System Characteristics, Strength and Limitations of Computer, Development of Computers, Types of Computers, Generations of Computers. Introduction to Personnel Computers – Uses of PC"s, Components of PC"s, Evolution of PC"s, Developments of Processors, Architecture of Pentium IV, Configuration of PC"s; Input Device; Output Devices.</p> <p><b>UNIT II- Computer Organization</b> Central Processing Unit – Arithmetic Logic Unit, Control Unit, Registers, Instruction Set.</p>
<b>SEPTEMBER</b>	<p><b>UNIT II- Storage Devices</b> – Storage and its need, Storage Evaluation Units, Primary Storage, Secondary Storage, Data Storage and Retrieval Systems, SIMM, DIMM, Types of Storage Devices.</p> <p><b>UNIT III-: Computer Software</b> Basics of Software – needs of Software, Types of Software; Free Domain Software; Open Source Software; Compiler, Interpreter and Assembler; Linker and Loader; Debugger; Integrated Development Environment;</p>
<b>OCTOBER</b>	<p><b>UNIT III- Operating System</b> – Introduction, Uses of OS, Functions of OS, Booting process, Types of Reboot, Booting from different OS, Types of OS, DOS, Windows, Linux.</p> <p><b>UNIT – IV : Programming Languages</b> – Introduction, Comparison between Human and Computer Language; Program; Data, Information and Knowledge; Characteristics of Information; Types of Programming Languages; Generations of Languages; Program Development Steps; Programming Paradigms; Object-Oriented Programming; Structured Programming, Functional Programming, Process Oriented Programming</p>

## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>NOVEMBER</b>	<b>UNIT – V : Communication, Networks and Internet</b>  Communication – Introduction, Communication process, Communication Types, Communication Protocols, Communication Channels/Media. Networks – Introduction; Types of Network; Topology; Media - NIC, NOS, Bridges, HUB, Routers, Gateways. Internet –Introduction, Growth of Internet, Owner of Internet, Internet Service Provider, Anatomy of Internet, ARPANET and Internet History of World Wide Web, Services Available on Internet -File Transfer Protocol, Gopher, E-mail, Telnet, Newsgroups, WWW, Applications of Internet.
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### **PAPER II- PROGRAMMING IN 'C'**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>AUGUST</b>	<b>UNIT I : Introduction :</b>  Introduction Character set, Identifiers and Keywords, Variables, Displaying variables, Reading Variables, Character and Character String, Qualifiers, Type define Statements, Value initialized variables, Constants, Constant Qualifier, Operators and Expressions, Operator Precedence and Associativity, Basic input output: Single Character I/O, Types of Characters in format string, Scanf with specifier.  <b>UNIT II : Control Structures :</b> Control Structure: If - statement, If -else statement, Multi decision, Compound Statement,  <b>Practical-</b> how to use c software, how to run and compile a c program.
<b>SEPTEMBER</b>	<b>UNIT II- Loops:</b> For - loop, While -loop, Do-While loop, Break statement, Switch statement, Continue statement, Go to statement.  <b>UNIT III- Functions &amp; Arrays :</b> Functions : Function main , Functions accepting more than one parameter, User defined and library functions, Concept associatively with functions, function parameter, Return value, recursion comparisons of Iteration and recursion variable length argument list.  <b>Practical-</b> basic c programs like addition of numbers, swapping numbers etc., programs based on control structure and looping.

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<b>OCTOBER</b>	<p><b>UNIT III- Arrays :</b> Scope and Extent, Multidimensional Arrays, Array of Strings, Function in String, passing arrays to functions, accessing array inside functions.</p> <p><b>UNIT IV- Pointers :</b></p> <p>Pointers: Definition and use of pointer, address operator, pointer variable, referencing pointer, void pointers, pointer arithmetic, pointer to pointer, pointer and arrays, pointer and functions, pointers and two dimensional arrays, array of pointers, pointers constants, pointer and strings.</p> <p><b>Practical-</b> programs based on array and its types, pointers, function, strings.</p>
<b>NOVEMBER</b>	<p><b>UNIT V- Structure and Union :</b></p> <p>Declaring and using Structure, Structure initialization, Structure within Structure, Operations on Structures, Array of Structure, Array within Structure, Creating user defined data type, pointer to Structure and function. Union, difference between Union and Structure, Operations on Union, Scope of Union.</p> <p><b>Practical-</b> programs based on structure and union.</p>

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**PAPER III- OFFICE AUTOMATION & TALLY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>AUGUST</b>	<p><b>UNIT – I : Windows Concept</b></p> <p>Windows Concepts, Features, Structure, Desktop, Icons, Taskbar, Start Menu, My Computer, Recycle Bin, My document, creating shortcut. Accessories : Calculator, Notepad, Paint, WordPad, Character Map. Windows Explorer : Creating files &amp; folders and other Explorer facilities, Object Linking &amp; Embedding. Communication : Dialup Networking, Phone Dialer. Difference among windows versions.</p> <p><b>UNIT – II : Word Processing &amp; Spreadsheet</b></p> <p><b>Word</b> : Creating, Editing, &amp; Previewing Documents, Formatting, Advanced Features, Using Thesaurus, Mail Merge, Table &amp; Charts, Handling Graphics, Converting Word Documents into other Formats.</p> <p><b>Practical</b>- basic computer knowledge, using of wordpad, notepad. Various program based on microsoft word .</p>
<b>SEPTEMBER</b>	<p><b>UNIT II-Excel</b> : Worksheet Basics, Creating, Opening, &amp; Moving in Worksheet, Working with Formula &amp; Cell referencing, Absolute &amp; Relative addressing, Working with Ranges, Formatting of Worksheet, Graphs &amp; Charts, Database, Function, and Macros</p> <p><b>UNIT – III : Power Point &amp; FoxPro</b> <b>Power Point</b> : Creating a presentation, Modifying visual Elements, Adding objects, Applying Transitions, animations and linking, Preparing handouts, presenting a slide show.</p> <p><b>FoxPro</b> : Preparing Database files, access &amp; retrieval of records in a data base file, inserting &amp; deleting of records. Programming preliminaries. Sorting &amp; Indexing. Development of programs. LOOPING, Branching, report making.</p> <p><b>Practical</b>- programs on ms excel ,how to various functionalities of ms excel, powerpoint and foxpro.</p>

## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>OCTOBER</b>	<p><b>UNIT – VI : Access</b></p> <p>Introduction to MS Access, The Tables of a Database, Introduction to the Record of a Table, Introduction to Controls Design, Details on Controls Design, The Characteristics of a Table, The Characteristics of a Form, The Characteristics of a Window Control, Data Controls, Introduction to Data Expressions, Getting Assistance With Data Entry, Database Strings, Database Numeric Values, Database Conditional Values, Database Date and Time Values, Creating Reports, Characteristics of Reports.</p> <p><b>Practical-</b> learning about basics of database, how to create table in ms access and performing various operations on table.</p>
<b>NOVEMBER</b>	<p><b>UNIT – V : Tally</b></p> <p>Setting up Ledger &amp; Groups. Study of recording of transactions in the *Voucher*. (According to Golden rules). Study of „Final A/C preparation &amp; displaying in different mode/format“. Study of alteration &amp; Deletion of ledger/Groups. Study of cash &amp; fund flow, day book, sales register, purchase register, bills receivable/Payable etc. Study of data security &amp; backing up data. Outline of entry for Income Tax, ED, VAT, ST/CST, PF, Gratuity, Bonus, Loans &amp; Depreciation etc.</p> <p><b>Practical-</b> about tally software and how to use it.</p>

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**PGDCA II<sup>2ND</sup> SEMESTER**

**PAPER I- PROGRAMMING IN VISUAL BASIC**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<p><b>UNIT I- Introduction to visual Basic</b> - Editions of Visual Basic, Event Driven Programming, Terminology, Working environment, project and executable files ,Understanding modules, Using the code editor window, Other code navigation features, Code documentation and formatting, environment options, code formatting option, Automatic code completion features.</p> <p><b>Creating Programs</b> - Introduction to objects, Controlling objects, Properties, methods and events, Working with forms,Interacting with the user: MsgBox function, InputBox function, Code statements, Managing forms, Creating a program in Visual Basic, Printing.</p> <p><b>Practical-</b> learning about vb environment and various controls of vb.</p>
<b>FEBRUARY</b>	<p><b>UNIT II- Variable and Procedures</b> - Overview of variables, Declaring, Scope, arrays, User-defined data types, constants working with procedures, Working with dates and times, Using the Format function, Manipulating text strings.</p> <p><b>Controlling Program Execution</b> - Comparison and logical operators, If...Then statements, Select Case Statements looping structures, Using Do...Loop structures, For...Next statement, Exiting a loop.</p> <p><b>UNIT III- Working with Controls</b> - Types of controls, Overview of standard controls, ComboBox and ListBox, OptionButton and Frame controls Menu, Status bars, Toolbars, Advanced standard controls, ActiveX controls, Insertable objects, Validation.</p> <p><b>Practical-</b> practicing vb programs based on conditions ,looping,mdi forms,programs on different controls.</p>

## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>MARCH</b>	<p><b>UNIT III- Error Trapping &amp; Debugging</b> - Overview of run-time errors, error handling process, The Err object, Errors and calling chain, Errors in an error-handling routine, Inline error handling, Error-handling styles, General error-trapping options Type of errors, Break mode Debug toolbar, Watch window, Immediate window, Local window, Tracing program flow with the Call Stack.</p> <p><b>UNIT IV-Sequential and Random Files</b> - Saving data to file,basic filling, data analysis and file, the extended text editor, Random access file,The design and codeing.<b>Data Access Using the ADO Data Control</b> - Overview of ActiveX data Objects, Visual Basic data access features, Relational database concepts Using the ADO Data control to access data.</p> <p><b>Practical-</b> programs on error handling ,connectivity and making database.using different data access controls through vb programs.</p>
<b>APRIL</b>	<p><b>UNIT IV-</b> Overview of DAO, RDO, Data Control, structured query language (SQL), Manipulating data Using Data Form Wizard.</p> <p><b>UNIT V- Report Generation</b> - Overview of Report, Data Report, Add groups, Data Environment, Connection to database Introduction to Crystal Report Generator.</p> <p><b>Advances Tools</b> - Overview of drag and drop, Mouse events, Drag-and drop basics, Date Time Control, Calendar, Print Dialog, MDI(Multiple Document Interface).</p> <p><b>Practical-</b> various vb programs on dao,rdo etc There is one vb project in 2<sup>nd</sup> sem which is done by student and guided by a subject teacher.</p>

## PAPER II- DATABASE MANAGEMENT SYSTEM

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<p><b>UNIT I:- Introduction To DBMS</b></p> <p>Data, Information and knowledge, concept of DBMS, Advantages of DBMS, data independence, database administration roles, DBMS architecture, different kinds of DBMS users, importance of data dictionary, contents of data dictionary, types of database languages. Data models: network, hierarchical, relational, Introduction to ODBC concept.</p>

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<b>FEBRUARY</b>	<p><b>UNIT II- E-R Model</b> Entity - Relationship model as a tool for conceptual design- entities, attributes and relationships.</p> <p>ER diagrams; Concept of keys; Case studies of ER modelling Generalization; specialization and aggregation.</p> <p><b>UNIT III- Relational Model</b> Structure to Relational Database, Relational Algebra, Extended Relational- Algebra Operation, Simple and complex queries using relational algebra.</p>
<b>MARCH</b>	<p><b>UNIT III-</b> The Domain Relational Calculus, Tuple relational calculus.</p> <p><b>UNIT IV- Relational Database Design</b></p> <p>Pitfalls in Relational Database Design, Decomposition, Functional Dependencies, Normalization: 1NF, 2NF, BCNF, 3NF, 4NF, 5NF.</p> <p><b>Practical-</b> basic knowledge of oracle software and how to make database.How to make table and running a oracle program.</p>
<b>APRIL</b>	<p><b>UNIT V- Structured Query Language :</b></p> <p><b>DDL and DML:</b> Creating Table, Specify Integrity Constraint, Modifying Existing Table, Dropping Table, Inserting, Deleting and Updating Rows in as Table, Where Clause, Operators, ORDER BY, GROUP Function, SQL Function, JOIN, Set Operation, SQL Sub Queries. Views: What is Views, Create, Drop and Retrieving data from views.</p> <p><b>Security:</b> -Management of Roles, Changing Password, Granting Roles &amp; Privilege, with drawing privileges.</p> <p><b>Practical-</b> performing various command on table like updating a table,modifying,applying different functions on table.</p>



**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**PAPER III- ESSENTIALS OF E -COMMERCE & HTML**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<b>UNIT I- Introduction to Electronic Commerce</b> –The scope of E-commerce; Size, growth and future projection of E-commerce market Worldwide and in India; Internet and its impact on traditional businesses; Definition of E-commerce; Business models in E – Commerce environment; Case studies. <i>Emergence of E-commerce</i> - Ecommerce on private networks, Electronic Data Interchange (EDI), What is EDI, EDI in action, EDI basics, EDI standards, financial EDI, FEDI for international trade transaction, FEDI payment system within the US, ACH credit transfer payment system FEDI, application of EDI, benefits of EDI, Electronics Payment system,E-commerce on the web, E-commerce in India.
<b>FEBRUARY</b>	<b>UNIT II- Internet, Security and E-Commerce:</b> Security of Data/Information in Internet/web environment; Client security, Network security; Virus protection and Hacking; Security Measures: Authentication, Integrity, Privacy, Non-repudiation; Public information, Private information, firewall tunnels, encryption, secret key encryption, public key encryption, digital signature. Business–to-Business (B2B), Business-to-Consumer (B2C); Business-to-Business-to-Consumer (B2B2C) and Consumer-to-Consumer (C2C) ECommerce  <b>UNIT III- HTML Basics &amp; Web Site Design Principles</b> –Concept of a Web Site, Web Standards, What is HTML? HTML Versions, Naming Scheme for HTML Documents , HTML document/file, HTML Editor , Explanation of the Structure of the homepage , Elements in HTML Documents ,HTML Tags, Basic HTML Tags, Comment tag in HTML, Viewing the Source of a web page, How to download the web page source? XHTML, CSS, Extensible Markup Language (XML), Extensible Style sheet language (XSL), Some tips for designing web pages, HTML Document Structure. HTML Document Structure- Head Section, Illustration of Document Structure,<BASE> Element,<ISINDEX>.  <b>Practical-</b> learning about how to use html editor,making programs on it and running a html programs.Making html programs using body tag.

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<b>MARCH</b>	<p><b>UNIT III-</b> Element,&lt;LINK&gt; Element ,META ,&lt;TITLE&gt; Element,&lt;SCRIPT&gt; Element ,Practical Applications, <i>HTML Document Structure-Body Section</i>:-Body elements and its attributes: Background; Background Color; Text; Link; Active Link (ALINK); Visited Link (VLINK); Left margin; Top margin ,Organization of Elements in the BODY of the document: Text Block Elements; Text Emphasis Elements; Special Elements -- Hypertext Anchors; Character-Level Elements; Character References ,Text Block Elements: HR (Horizontal Line); Hn (Headings) ; P (Paragraph); Lists; ADDRESS ; BLOCKQUOTE; TABLE; DIV (HTML 3.2 and up) ; PRE (Preformatted); FORM ,Text Emphasis Elements, Special Elements -- Hypertext Anchors ,Character-Level Elements: line breaks (BR) and Images (IMG),Lists ,ADDRESS Element, BLOCKQUOTE Element, TABLE Element ,COMMENTS in HTML ,CHARACTER Emphasis Modes, Logical &amp; Physical Styles ,Netscape, Microsoft and Advanced Standard Elements List, FONT, BASEFONT and CENTER.</p> <p><b>UNIT IV- Image, Internal and External Linking between WebPages</b> - Netscape, Microsoft and Advanced Standard Elements List, FONT, BASEFONT and CENTER. Insertion of images using the element</p> <p><b>Practical-</b> html programs based on various tag like heading tag,paragraph tag,address tag,anchor tag,pre tag etc.</p>
<b>APRIL</b>	<p><b>UNIT IV-</b> IMG (Attributes: SRC (Source), WIDTH, HEIGHT, ALT (Alternative), ALIGN),IMG (In-line Images) Element and Attributes; Illustrations of IMG Alignment, Image as Hypertext Anchor, Internal and External Linking between Web Pages. Hypertext Anchors ,HREF in Anchors ,Links to a Particular Place in a Document ,NAME attribute in an Anchor ,Targeting NAME Anchors ,TITLE attribute, Designing Frames in HTML.</p> <p><b>UNIT V-Creating Business Websites with Dynamic Web Pages</b> – Concept of static web pages and dynamic web pages. Hosting &amp; promotion of the web site, Domain Name Registration, Web Space allocation, Uploading / Downloading the website- FTP, cute FTP. Web Site Promotion Search Engines, Banner Advertisements.</p> <p><b>Practical-</b> html programs based on anchor tag,list tag,form tag,table tag,frame tag etc.</p>

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**ADD ON (CERTIFICATE COURSE)**

**PAPER –I**

**COMPUTER FUNDAMENTALS & OFFICE AUTOMATION**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>AUGUST</b>	<p><b><u>UNIT I-Introduction to Computer</u></b></p> <p>1. What is Computer? Block diagram of computer. CPU, I/O Devices and Memory (RAM &amp; ROM). Secondary storage devices (Hard disk, Floppy, Magnetic tap etc.). Computer generations, Types of Computer- Analog, Digital, Hybrid &amp; general &amp; special purpose computer. Classification of computer – Micro, Mini, Mainframe &amp; Super computer</p>
<b>SEPTEMBER</b>	<p><b><u>UNIT II--Computer Software &amp; Application</u></b> What is Software? Type of Software. Introduction of System software &amp; application s/w.Generation of languages, Languages Vs Package. Type of Operating System- Single User &amp; Multi User Operating System Function of operating system. DOS software, Internal &amp; External DOS Command.</p> <p><b>Practical-</b> basic knowledge of computer,how to start and shut down the computer.Learning about desktop,icon,files,folders,recycle bin,how to do cut,copy,paste etc.</p>
<b>OCTOBER</b>	<p><b>UNIT II-</b> DOS editor. Window Concept , Multitasking , Desktop, start menu, task bar, My Computer, Accessories, Creating folders, files, Deleting, Hiding , Recycle Bin &amp; Network Neighborhood. Booting Process &amp; File System Structure, Booting Sequences, File Creation and Deletion concept for File System.</p> <p><b><u>UNIT III- Office Software: Word-Processing, Spreadsheets</u></b></p> <p><b>Word:</b> Creating ,Editing &amp; Preview Documents, Formatting ,Advanced Features, Using Thesaurus , Mail Merge, Table &amp; Charts Handling Graphics</p> <p><b>Practical-</b>making program using various ms word functionalities like using table</p>

## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>NOVEMBER</b>	<p><b>UNIT III- Excel:</b> Worksheet Basics, Creating, Opening &amp; moving in worksheet, working with Formula &amp; cell referencing, Absolute &amp; Relative addressing, working with ranges, formatting of worksheet, Graphic &amp; Charts, Database, Function and Macros.</p> <p><b>UNIT IV-<u>MS-Access</u></b></p> <p><b>Creating and working with databases:</b> Designing databases, Working with database objects, Working with Access files.</p> <p><b>Practical-</b> programs on ms excel, learning about how to use formula, different</p>
<b>DECEMBER</b>	<p><b>UNIT IV-</b> retrieval of records in a data base file, modification, insertion &amp; deletion of records, Sorting and Indexing, Working with controls &amp; charts</p> <p><b>UNIT V-<u>Introduction to Internet Application</u></b></p> <p>Concept of Internet, Application of Internet, Services on Internet, World Wide Web (www), Web Browser .</p> <p><b>Practical-</b> how to make tables in ms access and performing various operations on tables in ms access. Also learning about powerpoint presentation and its various functionalities.</p>
<b>JANUARY</b>	<p><b>UNIT V-</b> Internet search Engines: Gopher, Yahoo etc., Surfing the Internet, Electronic mail (e- mail), Internet Security Fire Walls, Type of Firewalls</p>
<b>FEBRUARY</b>	<p><b>REVISION + PRACTICAL EXAM</b></p>

### ADD ON (CERTIFICATE COURSE)

#### PAPER –II

#### Programming With “C “& Introduction to OOPs

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>AUGUST</b>	<p><b>UNIT I-</b>Introduction to “C “, Character set, Identifiers &amp; Keywords, Variables, Variable initialization, Constants, Characters, Strings, Qualifiers, Program structure.</p>

## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>SEPTEMBER</b>	<p><b>UNIT II-Control Structure:</b> - If-Statement, If-else, Nested If statements, Select case, Loops – For-loop, While-loop, Do-while loop, Nested loops, Break Statement, Continue Statement, Go to Statement.</p> <p><b>Practical-</b> how to use c software,making basic c programs ,running and compiling a c program.programs based on control structure</p>
<b>OCTOBER</b>	<p><b>UNIT III- Function:</b> - User define &amp; library function, Function Parameter, Recursive Function.</p> <p>Array: - Array, Array initialization, One dimensional Array, Two &amp; Three dimensional array, Array of Structure .</p> <p><b>Practical-</b> programs based on looping ,functions,array.</p>
<b>NOVEMBER</b>	<p><b>UNIT III- Pointer:</b> - definition &amp; Use of Pointer, Address Operator, Array of Pointers.</p> <p><b>UNIT IV-Structure &amp; Union:</b> - What is structure, declaring &amp; using structure, structure initialization.</p> <p><b>Practical-</b>programs based on pointer,array of pointer,pointer to pointer etc.</p>
<b>DECEMBER</b>	<p><b>UNIT IV- Structure within structure, Union , difference b/w Union &amp; Structure.</b></p> <p><b>UNIT V-</b> Introduction of C++, OOPs Concepts, Objects, Class, Polymorphism, inheritance,function &amp; Operator Overloading.</p> <p><b>Practical-</b>program based on structure and union.</p>
<b>JANUARY</b>	<p><b>UNIT V-</b> Characteristics of Object Oriented Programming language, benefits of OOPs.</p> <p><b>Practical-</b>programs based on various logics used in c and basic knowledge of cpp environment.</p>
<b>FEBRUARY</b>	<b>REVISION + PRACTICAL EXAM</b>

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**ADD ON (DIPLOMA COURSE)  
PAPER –I  
PROGRAMMING IN VISUAL BASIC**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>AUGUST</b>	<p><b>UNIT I- <u>Introduction to Visual Basic</u></b></p> <p>Editions of Visual Basic, Event Driven Programming , Terminology, Working environment, Project &amp; executable files, Understand Modules, Working Screen, Using code editor windows, Code documentation and formatting environment options, code formatting option .</p> <p>Introduction to object, Controlling objects, Properties, Methods &amp; Events, Working with forms. Interacting with user, MsgBox function, Input Box Function, Code statements, Managing forms, Creating a program in VB, Printing.</p> <p><b>Practical-</b> about vb environment and introduction of vb controls like command box,text box,labels etc.</p>
<b>SEPTEMBER</b>	<p><b>UNIT II-<u>Variable and Procedures and Controlling Program Execution</u></b></p> <p>Overview of Variables, Declaring Variable, Scope of Variables, Arrays, User Defined data type, Constants working with procedure, Working with date &amp; time, using the Format function, Manipulation text strings.</p> <p>Comparison &amp; logical Operators, if.... Then Statement, if .... Then ... Else Statements, Select Case Statement.</p> <p><b>Practical-</b> vb programs based on various control struture,scope of variables and using timer.</p>
<b>OCTOBER</b>	<p><b><u>UNIT II-</u></b>, Looping Structure, Using Do... Loop Structure, for...Next Statement, Exiting a loop.</p> <p><b><u>UNIT III- Working with Controls &amp; Controlling Program Execution</u></b></p> <p>Type of Control, Overview of standard Controls, Combo Box &amp; List Box, Option Button &amp; Check Button, Frame Control, Menus, Status bar, Tool bar, Advanced standard Controls, Active X Controls.</p> <p><b>Practical-</b> vb program based on looping and controls like list box,making menus,combo box etc.</p>

## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>NOVEMBER</b>	<p><b>UNIT III-</b> Overview of Run Time Errors, Error Handling Process, The Error Object, Error handling in routine, Inline Error handling ,Error handling style, General Window, Local Window.</p> <p><b>UNIT IV- <u>Sequential &amp; Random Files &amp; Data Access Using the ADO Data Control</u></b></p> <p>Record Structure, Random Access File, The design and coding, saving data to file.</p>
<b>DECEMBER</b>	<p><b>UNIT IV-</b>Overview of Active X Objects, VB data access features, Relational Database Concepts using the ADO Data Control to access data, Overview of ADO,RDO, Data Control, Structure Query Language (SQL), Manipulating data Using Data Form Wizard.</p> <p><b>Practical-</b> learning about various connectivity methods like ado,dao,rdo and its</p>
<b>JANUARY</b>	<p><b>UNIT V- <u>Report Generation and Advance Tools</u></b></p> <p>Overview of Report, Data Report, Add Groups, Data Environments, Connection to Database, Introduction to Crystal Reports Generator.</p> <p>Overview of drag and drop , Mouse Events, Date- Time Control, Calendar, Print Dialogue, MDI (Multiple Document Interface.)</p> <p><b>Practical-</b> programs on report making and mdi forms.</p>
<b>FEBRUARY</b>	<b>REVISION + PRACTICAL EXAM</b>

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**ADD ON (DIPLOMA COURSE)  
PAPER –II  
DBMS (SQL/Oracle)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>AUGUST</b>	<b>UNIT I- <u>Introduction To DBMS</u>:</b> -Purpose of database systems, Views of data, Data Modeling, Database Languages, Transaction Management, Storage Management, Database Administrator and User, Database System Structure.
<b>SEPTEMBER</b>	<b>UNIT II- <u>E-R Model</u>:</b> - Basic concepts, Constraints, Keys, Mapping Constraint, E-R Diagram, Weak and Strong Entity sets, E-R Database Schema, Reduction of an E-Schema to Table.  <b>Practical-</b> how to use oracle software.making table and running a program.
<b>OCTOBER</b>	<b>UNIT III-</b> Relational Model: Structure to Relational Database, Relational Algebra, The Domain Relational Calculus, Extended Relational- Algebra Operation, Modification of database, Views. <b>Relational <u>Database Design</u>:</b> - Pitfalls in Relational Database Design, Decomposition.  <b>Practical-</b> making table and using various commands like insert,update etc.
<b>NOVEMBER</b>	<b>UNIT III-</b> Functional Dependencies, and Normalization: 1NF, 2NF, BCNF, 3NF, 4NF, 5NF  <b>UNIT IV- <u>Introduction to RDBMS Software - Oracle</u></b> <b><u>Introduction</u>:</b> - Introduction to personnel and Enterprises Oracle, Data Types, Commercial Query Language, SQL, SQL* PLUS.  <b>Practical-</b> performing various operations on tables like where clause,like
<b>DECEMBER</b>	<b>UNIT IV-<u>DDL and DML</u>:</b> Creating Table, Specify Integrity Constraint, Modifying Existing Table, Dropping Table, Inserting, Deleting and Updating Rows in as Table, Where Clause, Operators, ORDER BY, GROUP Function, SQL Function, JOIN, Set Operation, SQL Sub Queries.  <b>Practical-</b> performing sql function on table like group function,using operators on table,applying different constraints on table.



## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>JANUARY</b>	<b>UNIT V-Views:</b> What is Views, Create, Drop and Retrieving data from Views. <b>PL-SQL/TSQL:</b> Block Structure in PL-SQL/TSQL, Variable and Constraints, Running PL- SQL/TSQL in the SQL *PLUS, Data base Access with PL-SQL/TSQL, Exception Handling, Record Data type in PL-SQL/TSQL Triggers in PL-SQL/TSQL.  <b>Practical-</b> how to create views,dropping views,some pl sql programs.
<b>FEBRUARY</b>	<b>REVISION + PRACTICAL EXAM</b>

### ADD ON (ADVANCE DIPLOMA) PAPER –I PROGRAMMING IN JAVA

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>AUGUST</b>	<b>UNIT I- Introduction</b> :Genesis of java, importance to the Internet, overview of features.  <b>OOP</b> : OOP features, data types, control structures, arrays, methods and classes, nested & inner classes, string and String Buffer class, Wrapper Class, vectors.  <b>Practical</b> -introduction to basic java environment. How to use programming tool
<b>SEPTEMBER</b>	<b>UNIT II- Inheritance</b> : Basics type, method Override, using abstract and final classes, using super.  <b>Packages and Interfaces</b> :Defined CLASSPATH, importing packages, implementing interface.  <b>Practical</b> – practice on basic program based on classes ,objects.inheritance.
<b>OCTOBER</b>	<b>UNIT III- Exception Handling</b> :Fundamental: exception types, using try and catch, throwing exceptions, defined exceptions.  <b>Multithreaded Programming</b> :Java spread model, creating threads, thread priorities, synchronization. Suspending resuming and stopping threads.  <b>Practical-</b> programming based on abstract class,uses of interface and packages.

## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>NOVEMBER</b>	<p><b>UNIT IV- Input/Output:</b> Basic Streams, Byte and Character Stream, predefined streams, reading and writing from console and files. Using standard Java Packages (lang, util, io)</p> <p><b>JDBC:</b> Setting the JDBC connectivity with backend database.</p> <p><b>Practical-</b> programming on exception handling, steps for doing various connectivity methods like jdbc.</p>
<b>DECEMBER</b>	<p><b>UNIT V- Applets :</b>Fundamentals, life cycle, overriding update, HTML APPLET tag, passing parameters. Developing single applets.</p> <p><b>Introduction to AWT :</b> Window fundamentals, creating windowed, programs wating with graphics, using AWT controls, menus. Delegation event model, handling mouse and keyboard events.</p> <p><b>Practical-</b>practicing in various programs .</p>
<b>JANUARY</b>	<p><b>JAVA PROJECT</b></p> <p><b>Practicals</b></p>
<b>FEBRUARY</b>	<p><b>REVISION + PRACTICAL EXAM</b></p>

# **TEACHING PLAN OF MATHEMATICS FOR SESSION 2018-19**

**B.Sc. I**

**Mathematics**

**PAPER-I**

## **ALGEBRA AND TRIGONOMETRY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>Unit 1 -</b> Symmetric, Skew Symmetric, Hermitian and Skew Hermitian matrices. Elementary operations on Matrices. Inverse of a matrix, Linear independence of row and column matrices. Cayley Hamilton theorem and its use in finding inverse of a matrix.
<b>AUGUST</b>	<b>Unit 1-</b> Row rank, column rank and rank of a matrix. Equivalence of column and row ranks. Eigenvalues, Eigenvectors and the characteristic equation of matrix.
<b>SEPTEMBER</b>	<b>Unit II-</b> Applications of matrices to a system of linear (both homogeneous and non-homogeneous) equations. Theorems on consistency of a system of linear equations. Relations between the roots and coefficients of general polynomial equation in one variable. Transformation of equations. Descartes's rule of signs, solution of cubic equations (Cardan's method). Biquadratic equations.
<b>OCTOBER</b>	<b>Unit III</b> Mappings, Equivalence relations and partitions. Congruence modulo $n$ . Definition of a group with examples and simple properties. Cyclic groups generators.
<b>NOVEMBER</b>	<b>Unit III</b> Cayley's theorem, Coset decomposition, Lagrange's theorem and its consequences. Fermat's and Euler's theorems, Normal subgroups, Quotient groups. Permutation Groups, even and odd permutations. The alternating groups
<b>DECEMBER</b>	<b>UNIT – IV</b> Homomorphism and Isomorphism The fundamental theorems of homomorphism. Introduction, properties and examples of rings, subrings, Integral domains and Fields. Characteristic of a Ring and field.
<b>JANUARY</b>	<b>UNIT – V</b> ( Trigonometry ) De Moivre's theorem and its applications. Direct and inverse circular and hyperbolic functions. Logarithm of a complex quantity. Expansion of Trigonometrically functions. Gregory's series. Summation of series.
<b>FEBRUARY</b>	<b>REVISION</b>

**B.Sc. I**  
**Mathematics**  
**PAPER-II**  
**CALCULUS**

MONTH	PROPOSED PLAN
JULY	<b>UNIT – I</b> $\epsilon - \delta$ definition of the limit of a function. Basic properties of limits. Continuous functions and classification of Discontinuities. Differentiability, Successive differentiation. Leibnitz's theorem, Maclaurin and Taylor series expansions
AUGUST	<b>Unit I-</b> Differentiability, Successive differentiation. Leibnitz's theorem, Maclaurin and Taylor series expansions
SEPTEMBER	<b>UNIT – II</b> Asymptotes, Curvature, Tests for concavity and convexity. Points of inflexion, Multiple points. Tracing of curves in Cartesian and polar coordinates.
OCTOBER	<b>UNIT – III</b> Integration of irrational algebraic functions and transcendental functions. Reduction formulae, Definite integrals, Quadrature, Rectification, Volumes and surfaces of solids of revolution.
NOVEMBER	<b>UNIT – IV</b> Degree and order of a differential equation. Equations of first order and first degree, equations in which the variables are separable. Homogeneous equations, Linear equations and equations reducible to the linear form. Exact differential equations, First order higher degree equations solvable for $x, y, p$ . Clairaut's form and singular solutions.
DECEMBER	<b>UNIT – IV</b> Geometrical meaning of a differential equation. Orthogonal trajectories. Linear differential equations with constant coefficients. Homogeneous linear ordinary differential equations.
JANUARY	<b>UNIT – V</b> Linear differential equations of second order. Transformation of the equation by changing the Dependent variable / the Independent variable. Method of variation of parameters. Ordinary simultaneous differential equations.
FEBRUARY	REVISION

**B.Sc. I**  
**Mathematics**  
**PAPER-III**  
**VECTOR ANALYSIS AND GEOMETRY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT I –</b> Scalar and vector product of three vectors, Product of four vectors,
<b>AUGUST</b>	<b>Unit I-</b> Reciprocal vectors, Vector differentiation, Gradient, Divergence and Curl.
<b>SEPTEMBER</b>	<b>UNIT II-</b> Vector Integration, Theorems of Gauss, Green, Stokes and problems based on these.
<b>OCTOBER</b>	<b>UNIT III-</b> General equation of second degree. Tracing of conics
<b>NOVEMBER</b>	<b>Unit III –</b> System of conics, Confocal Conics, Polar equation of a Conic.
<b>DECEMBER</b>	<b>UNIT – IV</b> Plane, The Straight line and the plane, Sphere, Cone and Cylinder.
<b>JANUARY</b>	<b>UNIT –V</b> Central Conicoids, Paraboloids, Plane section of Conicoids, Generating lines, Confocal Conicoids, Reduction of second degree equations.
<b>FEBRUARY</b>	<b>REVISION</b>

**B.Sc. II**  
**Mathematics**  
**PAPER-I**  
**ADVANCED CALCULUS**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT – I</b> Definition of a sequence. Theorems on limits of sequences. Bounded and monotonic sequences. Cauchy's convergence criterion. Series of non-negative terms. Comparison test,
<b>AUGUST</b>	<b>Unit I-</b> Cauchy's integral test, Ratio test, Raabe's test, Logarithmic test, De Morgan and Bertrand's tests. Alternating series, Liebnitz's theorem, absolute and conditional convergence.
<b>SEPTEMBER</b>	<b>UNIT – II</b> Continuity, sequential continuity, properties of continuous functions, uniform continuity. Chain rule of differentiability, Mean value theorems and their geometrical interpretations, Darboux's intermediate value theorem for derivatives. Taylor's theorem with various forms of remainders.
<b>OCTOBER</b>	<b>UNIT – III</b> Limit and continuity of functions of two variables, Partial differentiation, Change of variables,
<b>NOVEMBER</b>	<b>UNIT –III</b> <b>Euler's</b> theorem on homogeneous functions. Taylor's theorem for functions of two variables. Jacobians.
<b>DECEMBER</b>	<b>UNIT –IV</b> <b>Envelopes</b> , Evolutes, Maxima, Minima and saddle points of functions of two variables, Lagrange's multiplier method.
<b>JANUARY</b>	<b>UNIT –V</b> <b>Beta</b> and Gamma functions, Double and triple integrals, Dirichlet's integrals, change of order of integration in double integrals.
<b>FEBRUARY</b>	REVISION

**B.Sc. II**  
**Mathematics**  
**PAPER-II**  
**DIFFERENTIAL EQUATIONS**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT – I</b> Series solutions of differential equations - Power series method. Bessel and Legendre functions and their properties - convergence, recurrence and generating relations.
<b>AUGUST</b>	<b>Unit I –</b> Orthogonality of functions. Sturm-Liouville problem, Orthogonality of Eigen-functions, Reality of Eigen-values, Orthogonality of Bessel functions and Legendre polynomials.
<b>SEPTEMBER</b>	<b>UNIT – II</b> Laplace Transformation - Linearity of the Laplace transformation. Existence theorem for Laplace transforms. Laplace transforms of derivatives and integrals. Shifting theorems.
<b>OCTOBER</b>	<b>Unit II-</b> Differentiation and integration of transforms. Convolution theorem. Solution of integral equations and systems of differential equations using the Laplace transformation.
<b>NOVEMBER</b>	<b>UNIT – III</b> Partial differential equations of the first order. Lagrange's solution. Some special types of equations which can be solved easily by methods other than the general method, Charpit's general method of solution.
<b>DECEMBER</b>	<b>UNIT – IV</b> Partial differential equations of second and higher orders. Classification of linear partial differential equations of second order. Homogeneous and non-homogeneous equations with constant coefficients. Partial differential equations reducible to equations with constant coefficients. Monge's methods.
<b>JANUARY</b>	<b>UNIT – V</b> Calculus of Variations - Variational problems with fixed boundaries - Euler's equation for functional containing first order derivative and one independent variable. External. Functional dependent on higher order derivatives. Functional dependent on more than one independent variable. Variational problems in parametric form. Invariance of Euler's equation under coordinates transformation. Variational problems with moving boundaries - Functional dependent on one and two functions. One sided variations. Sufficient conditions for an Extremum - Jacobi and Legendre conditions. Second Variation. Variational principle of least action.
<b>FEBRUARY</b>	<b>REVISION</b>

**B.Sc. II**  
**Mathematics**  
**PAPER-III**  
**MECHANICS**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT – I</b> Analytical conditions of equilibrium. Stable and unstable equilibrium.
<b>AUGUST</b>	<b>UNIT - I</b> Virtual work. Catenary.
<b>SEPTEMBER</b>	<b>UNIT –II</b> Forces in three dimensions. Poinso't's central axis. Null lines and planes.
<b>OCTOBER</b>	<b>UNIT – III</b> Simple harmonic motion. Elastic strings
<b>NOVEMBER</b>	<b>UNIT III –</b> Velocities and accelerations along radial and transverse directions, Projectile, Central orbits.
<b>DECEMBER</b>	<b>UNIT – IV</b> Kepler's laws of motion, Velocities and acceleration in tangential and normal directions. Motion on smooth and rough plane curves.
<b>JANUARY</b>	<b>UNIT – V</b> Motion in a resisting medium. Motion of particles of varying mass. Motion of a particle in three dimensions. Acceleration in terms of different co-ordinate systems.
<b>FEBRUARY</b>	<b>REVISION</b>



**B.Sc. III**  
**Mathematics**  
**PAPER-I**  
**ANALYSIS**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT I-</b> Series of arbitrary terms, Convergence, Divergence and Oscillation. Abel's and Dirichlet's test. Multiplication of series. Double series. Partial derivation and differentiability of real valued functions of two variables. Schwarz's and Young's theorem. Implicit function theorem. Fourier series. Fourier expansion of piecewise monotonic functions.
<b>AUGUST</b>	<b>UNIT II –</b> Riemann integral. Integrability of continuous and monotonic functions. The fundamental theorem of Integral Calculus. Mean value theorems of integral calculus. Improper integrals and their convergence, comparison tests. Abel's and Dirichlet's tests. Frullani's integral, Integral as a function of a parameter. Continuity, derivability and integrability of an integral of a function of a parameter.
<b>SEPTEMBER</b>	<b>UNIT III-</b> Complex numbers as ordered pairs. Geometric representation of complex numbers. Stereographic projection. Continuity and differentiability of complex functions. Analytic functions, Cauchy Riemann equations, Harmonic functions.
<b>OCTOBER</b>	<b>UNIT III-</b> Elementary functions, mapping by elementary functions. Mobius transformations, Fixed points, Cross ratio, Inverse points and critical mappings, Conformal mappings.
<b>NOVEMBER</b>	<b>UNIT IV</b> Definition and examples of metric spaces. Neighbourhoods, Limit points, Interior points, Open and Closed sets, Closure and interior. Boundary points, Sub-space of a metric space. Cauchy sequences,
<b>DECEMBER</b>	<b>UNIT IV-</b> Completeness, Cantor's intersection theorem, Contraction principle, Construction of real numbers as the completion of the incomplete metric space of rational. Real numbers as a complete ordered field.
<b>JANUARY</b>	<b>UNIT V –</b> Dense subsets. Baire Category theorem, Separable, second countable and first countable spaces. Continuous functions. Extension theorem. Uniform continuity. Isometry and homeomorphism. Equivalent metrics.
<b>FEBRUARY</b>	<b>UNIT V –</b> Compactness, Sequential compactness. Totally bounded spaces. Finite intersection property. Continuous functions and compact sets. Connectedness, Components, Continuous functions and connected sets.

**B.Sc. III**  
**Mathematics**  
**PAPER-II**  
**ABSTRACT ALGEBRA**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT – I</b> Group-Automorphism, inner automorphisms. Automorphism groups and their computations, Conjugacy relation, Normaliser, Counting principle and the class equation of a finite group. Center for group of prime-order, Abelianizing of a group and its universal property. Sylow's theorems, Sylow's subgroup, structure theorem for finite Abelian groups.
<b>AUGUST</b>	<b>UNIT-II</b> Ring theory- Ring homomorphism, Ideals and Quotient Rings. Field of Quotients of an Integral Domain, Euclidean Rings, Polynomial rings, Polynomials over the Rational Field. The Eisenstein Criterion, Polynomial
<b>SEPTEMBER</b>	<b>UNIT-III</b> Definition and examples of vector spaces. Subspace, Sum and direct sum of subspaces, Linear span. Linear dependence, independence and their basic properties.
<b>OCTOBER</b>	<b>UNIT III</b> Basis Finite dimensional vector spaces, existence theorem for bases, invariance of the number elements of a basis set. Dimension, Existence of complementary subspace of a finite dimensional vector space. Dimension of sums of subspaces. Quotient space and its dimension.
<b>NOVEMBER</b>	<b>UNIT-IV</b> Linear transformations and their representation as matrices. The Algebra of linear transformations. The rank nullity theorem. Change of basis. Dual space, Bidual space and natural isomorphism, forms.
<b>DECEMBER</b>	<b>UNIT IV</b> Adjoint of a linear transformation, Eigenvalues and Eigen vectors of a linear transformation. Diagonalisation. Annihilator of a subspace, Bilinear, Quadratic and Hermitian
<b>JANUARY</b>	<b>UNIT-V</b> Inner product spaces-Cauchy-Schwarz inequality, Orthogonal vectors, Orthogonal complements, Orthonormal sets and bases. Bessel's inequality for finite dimensional spaces, Gram-Schmidt orthogonalization process.
<b>FEBRUARY</b>	<b>REVISION</b>

**B.Sc. III**  
**Mathematics**  
**PAPER-III**  
**DISCRETE MATHEMATICS**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JULY	<b>UNIT –I</b> <b><u>Sets and Propositions</u></b> - Cardinality, Mathematical induction, Principle of inclusion and exclusion. Computability and Formal Languages - Ordered sets, languages, Phrase structure Grammars, Types of Grammars and languages. Permutations, Combinations and Discrete probability.
AUGUST	<b>UNIT-II</b> <b><u>Relations and Functions</u></b> - Binary relations, Equivalence relations and Partitions. Partial Order Relations and Lattices. Chains and Antichains. Pigeon Hole Principle. <b><u>Graphs and Planar Graphs</u></b> - Basic Terminology, Multigraphs, Weighted graphs, Paths and circuits, Shortest paths, Eulerian Paths and circuits. Travelling Salesman Problem, Planner graphs. Trees.
SEPTEMBER	<b>UNIT-III</b> <b><u>Finite State machines</u></b> - Equivalent machines. Finite state machines as language recognizers
OCTOBER	<b>UNIT III</b> Analysis of Algorithms - Time complexity, Complexity of problems, Discrete Numeric functions and Generating functions.
NOVEMBER	<b>UNIT-IV</b> <b><u>Recurrence Relations and Recursive Algorithms</u></b> - Linear Recurrence Relations with constant coefficients. Homogeneous solutions, Particular solutions, Total solutions, Solution by the method of Generating functions, Brief review of Groups and Rings.
DECEMBER	<b>UNIT-V</b> <b><u>Boolean Algebra</u></b> - Lattices and Algebraic structures. Duality, distributive and complemented Lattices. Boolean Lattices and Boolean Algebras. Boolean functions and expressions.
JANUARY	<b>UNIT V</b> Propositional Calculus, Design and implementation of Digital Networks, Switching Circuits.
FEBRUARY	REVISION

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**PROPOSED TEACHING PLAN FOR THE SESSION 2018-19**

**Name of the Department: PHYSICS**

**CLASS B. SC. I**

Month/ Days	Paper I	Paper II
<b>July</b>	<b>Admission work</b> <b>UNIT I</b> <b>Cartesian, Cylindrical and Spherical co-ordinate system, Inertial and non-inertial frames of reference, uniformly rotating frame, Coriolis force and its applications. Motion under a central force, Kepler's laws.</b>	<b>Admission work</b> <b>UNIT I</b> <b>Repeated integrals of a function of more than one variable, definition of a double and triple integral. Gradient of a scalar field and its geometrical interpretation,</b>
<b>August</b>	Effect of centrifugal and Coriolis force due to earth's rotation. Center of mass ( C.M.). Lab and CM frame of reference, motion of C.M. of system of particles subject to external forces, elastic and inelastic collisions in one and two dimensions, Scattering angle in the laboratory frame of reference. Conservation of linear and angular momentum. Conservation of energy.	divergence and curl of a vector field and their geometrical interpretation, line , surface and volume integrals, flux of a vector field. Gauss's divergence theorem. Green's theorem and Stoke's theorem and their physical significance. Kirchoff's law Ideal constant-voltage and Constant-current Sources. Thevenin theorem, Norton theorem. Superposition theorem, Reciprocity theorem and Maximum Power Transfer theorem. Coulomb's law in vacuum expressed in vector form. Calculations of E for simple distributions of charges at rest, dipole and quadrupole fields. Work done on a charge in an electrostatic field expressed as a line integral, conservative nature of the electrostatic field.
<b>September</b>	Rigid body motion, rotational motion, moment of inertia and their products, principal moments and axes. Introductory idea of Euler's equations. Potential well and periodic oscillations, case of harmonic oscillations, differential equation and its solution, kinetic and potential energy, examples of simple harmonic oscillations, spring and mass system, simple and compound pendulum, torsional pendulum.	<b>UNIT II</b> Relation between Electric potential and electric field, torque on a dipole in a uniform electric field and its energy, flux of the electric field. Gauss's law and its application for finding E due to (1) an infinite line of charge , (2) a charged cylindrical conductor, (3) an infinite sheet of charge and two parallel charged sheets, capacitors, electrostatic field energy. Force per unit area on the surface of a conductor in an electric field, conducting sphere in a uniform field.
<b>October</b>	Bifilar oscillations, Helmholtz resonator, LC circuit, vibrations of a magnet, oscillations of two masses connected by a spring. Superposition of two simple harmonic motions of the same frequency, Lissajous figures, case of different frequencies. Damped	Dielectric constant. Polar and Non Polar dielectrics. Dielectrics and Gauss's Law. Dielectric Polarization. Electric Polarization vector P, electric displacement vector D. Relation between three electric vectors, Dielectric susceptibility and permittivity. Polarizability and mechanism of Polarization . Lorentz local field.

	harmonic oscillator, power dissipation, quality factor, examples, driven (forced) harmonic oscillator, transient and steady states, power absorption, resonance.	Clausius Mossotti equation, Debey equation. Ferroelectric and Paraelectric dielectrics. Steady current , current density J, non-steady currents and continuity equation, rise and decay of current in LR, CR and LCR circuits, decay constants, AC circuits,
<b>November</b>	E as an accelerating field, electron gun, case of discharge tube, linear accelerator, E as a deflecting field, CRO, sensitivity. Transverse B field, 180 degree deflection, mass spectrograph, curvature of tracks for energy determination, principle of a cyclotron. Mutually perpendicular E and B fields, velocity selector, its resolutions. Parallel E and B fields, positive ray parabolas, discovery of isotopes, elements of mass spectrographs, principle of magnetic focusing (lens).	complex numbers and their applications in solving AC circuit problems, complex impedance and reactance, series and parallel resonance, Q factor, power consumed by an AC circuit, power factor. Magnetization Current and magnetization vector M, three magnetic vectors and their relationship. Magnetic permeability and susceptibility. Diamagnetic, paramagnetic and ferromagnetic substances.
<b>December</b>	Elasticity : Strain and stress, elastic limit, Hook's law. Modulus of rigidity. Poisson's ratio. Bulk modulus. Relation connecting different elastic-constants, twisting couple of a cylinder (solid and hollow). Bending moment, Cantilever, Young modulus by bending of beam.	B.H. Curve, cycle of magnetization and hysteresis, Hysteresis loss. Biot and Savart's law and its applications: B due to (1) a straight Current Carrying Conductor and (2) Current Loop. Current Loop as a Magnetic Dipole and its Dipole Moment (Analogy with Electric Dipole) , Ampere's circuital law (Integral and Differential Forms.
<b>January</b>	Viscosity : Poiseuille's equation of liquid flow through a narrow tube, equations of continuity. Euler's equation , Bernoulli's theorem, viscous fluids, streamline and turbulent flow. Poiseuille's law. Coefficient of viscosity, Stoke's law. Surface tension and molecular interpretation of surface tension, surface energy. Angle of contact. Wetting.	Electromagnetic induction, Faraday's law, electromotive force, $\epsilon = \int \mathbf{E} \cdot d\mathbf{r}$ , integral and differential forms of Faraday's law, mutual and self inductance, transformers, energy in a static magnetic field. Maxwell's displacement current, Maxwell's equations, electromagnetic field energy density. The wave equation satisfied by E and B, Plane electromagnetic waves in vacuum, Poynting's vector.
<b>February</b>	<b>Revision and Practical Examinations</b>	<b>Revision and Practical Examinations</b>
<b>March</b>	<b>Annual Examinations</b>	<b>Annual Examinations</b>
<b>April</b>	<b>Annual Examinations</b>	<b>Annual Examinations</b>
<b>May</b>	<b>Annual Examinations</b>	<b>Annual Examinations</b>

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**PROPOSED TEACHING PLAN FOR THE SESSION 2018-19**

**Name of the Department: PHYSICS**

**CLASS B. SC. II**

Month/ Days	Paper I	Paper II
<b>July</b>	<b>Admission work</b> <b>UNIT I</b> The law of thermodynamics: The Zeroeth law, concept of path function and point function, various indicator diagrams, work done by and on the system, first law of thermodynamics, internal energy as a state function,	<b>Admission work</b> <b>UNIT I</b> Waves in media: Speed of transverse waves on a uniform string, speed of longitudinal waves in a fluid, energy density and energy transmission in waves, typical measurements. Waves over liquid surface: gravity waves and ripples.
<b>August</b>	reversible and irreversible change, Carnot's theorem and the second law of thermodynamics. Different versions of the second law. Clausius theorem inequality. Entropy, Change of entropy in simple cases: ( i ) Isothermal expansion of an ideal gas (ii) Reversible isochoric process (iii) Free adiabatic expansion of an ideal gas. Entropy of the universe. Principle of increase of entropy. The thermodynamic scale of temperature, its identity with the perfect gas scale. Impossibility of attaining the absolute zero; third law of thermodynamics.	Group velocity and phase velocity, their measurements. Harmonics and the quality of sound; examples. Production and detection of ultrasonic and infrasonic waves and applications. Reflection, refraction and diffraction of sound: Acoustic impedance of a medium, percentage reflection and refraction at a boundary, impedance matching for transducers, diffraction of sound, Principle of a sonar system, sound ranging.
<b>September</b>	<b>UNIT II</b> Thermodynamic relationships: Thermodynamic variables, extensive and intensive, Maxwell's general relationships, application to Joule - Thomson cooling and adiabatic cooling in a general system, vander Waals gas, Clausius-Clapeyron heat equation. Thermodynamic potentials and equilibrium of thermodynamical systems, relation with thermodynamical variables. Cooling due to adiabatic demagnetization, production and measurement of very low temperatures.	<b>UNIT II</b> Fermat's principle of extremum path, the aplanatic points of a sphere and other applications. Cardinal points of an optical system, thick lens and lens combinations. Lagrange's equation of magnification, telescopic combination, telephoto lenses. Monochromatic aberrations and their reductions; aspherical mirrors and Schmidt corrector plates, alpanatic points, oil immersion objectives, meniscus lens.
<b>October</b>	Black body radiation: Pure temperature dependence, Stefan – Boltzmann law, pressure of radiation, spectral distribution of black body radiation, Wien's displacement law, Rayleigh – Jean's law, the ultraviolet catastrophe, Planck's quantum postulates, Plank's law, complete fit with experiment.	Optical instruments: entrance and exit pupils, need for a multiple lens eyepiece, common types of eyepieces (Ramsden & Huygen's eyepieces). <b>UNIT III</b> Interference of light : The principle of superposition, two slit interference, coherence requirement for the sources, optical path retardation, lateral shift of fringes, Rayleigh refractometer, Localised fringes; thin films.

<b>November</b>	<p>UNIT III</p> <p>Maxwellian distribution of speeds in an ideal gas: Distribution of speeds and of velocities, experimental verification, distinction between mean, rms and most probable speed values. Doppler's broadening of the spectral lines. Transport phenomena in gases: Molecular collisions mean free path and collision cross sections. Estimates of molecular diameter and mean free path. Transport of mass, momentum and energy and interrelationship, dependence on temperature and pressure.</p>	<p>Haidenger's fringes: Fringes of equal inclination, Michelson interferometer, its application for precision determination of wavelength, wavelength difference and width of spectral lines, Twyman. Green Interferometer and its uses. Intensity distribution in multiple beam interference. Tolansky fringes, Fabry – Perot interferometer and etalon.</p>
<b>December</b>	<p>Liquefaction of gases: Boyle temperature and inversion temperature. Principle of regenerative cooling and of cascade cooling, liquification of hydrogen and helium. Refrigeration cycles, meaning of efficiency. UNIT IV</p> <p>The statistical basis of thermodynamics: Probability and thermodynamic probability, principle of equal a priori probabilities, statistical postulates. Concept of Gibb's ensemble, accessible and inaccessible states. Concept of phase space, canonical phase space, Gamma phase space and mu phase space. Equilibrium before two systems in thermal contact, Probability and entropy, Boltzmann entropy relation.</p>	<p>UNIT IV</p> <p>Fresnel half- period zones, plates, straight edge, rectilinear propagation. Fraunhofer diffraction: Diffraction at a slit, half - period zones, phasor diagram and integral calculus methods, the intensity distribution, diffraction at a circular aperture and a circular disc, resolution of images, Rayleigh criterion, resolving power of telescope and microscopic systems.</p> <p>Diffraction gratings: Diffraction at N parallel slits, intensity distribution, plane diffraction grating, reflection grating and blazed grating. Concave grating and different mountings, resolving power of a grating and comparison with resolving powers of prism and of a Fabry –Perot etalon. Double refraction and optical rotation: Refraction in uniaxial crystals, Phase retardation plates, double image prism. Rotation of plane of polarization, origin of optical rotation in liquids and in crystals.</p>
<b>January</b>	<p>Boltzmann canonical distribution law and its applications, law of equipartition of energy. Transition to quantum statistics: 'h' as a natural constant and its implications, cases of particle in a one – dimensional box and one – dimensional harmonic oscillator.</p> <p>UNIT V</p> <p>Indistinguishability of particles and its consequences, Bose–Einstein &amp; Fermi–Dirac conditions. Concept of partition function, Derivation of Maxwell - Boltzmann, Bose - Einstein and Fermi - Dirac statistics through canonical partition function. Limits of B–E and F–D statistics to M –B statistics. Application of B –E statistics to black body radiation. Application of F- D statistics to free electrons in a metal.</p>	<p>UNIT V</p> <p>Laser system: Purity of a spectral line, coherence length and coherence time, spatial coherence of a source, Einstein's A and B coefficients, Spontaneous and induced emissions, conditions for laser action, population inversion. Types of lasers: Ruby and He – Ne lasers and Semiconductor lasers. Application of lasers: Application in communication, Holography and non – linear optics. (Polarization P including higher order terms in E and generation of harmonics).</p>
<b>February</b>	<b>Revision and Practical Examinations</b>	<b>Revision and Practical Examinations</b>

<b>March</b>	<b>Annual Examinations</b>	<b>Annual Examinations</b>
<b>April</b>	<b>Annual Examinations</b>	<b>Annual Examinations</b>
<b>May</b>	<b>Annual Examinations</b>	<b>Annual Examinations</b>

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**PROPOSED TEACHING PLAN FOR THE SESSION 2018-19**

**Name of the Department: PHYSICS**

**CLASS B. SC. III**

<b>Month/ Days</b>	<b>Paper I</b>	<b>Paper II</b>
<b>July</b>	<b>Admission work</b> Unit-I Reference system, inertial frames Gallilean invariance and conservation laws, propagation of light, Michelson-Morley experiment; search for ether.	<b>Admission work</b> Unit - I Amorphous and crystalline solids, elements of symmetry, seven system, Cubic lattices, Crystal planes, Miller indices, Laue's equations for X- ray diffraction.
<b>August</b>	Postulates for the special theory of relativity, Lorentz transformations, length contraction time dilation, velocity addition theorem, variation of mass with velocity, mass – energy equivalence, particle with zero rest mass ,Compton effect.	Bragg's law. Bonding in solids classification. Cohesive energy of solid.Modelung constant, evaluation of parameters. Specific heat of solids, classical theory (Dulong- Petit's law). Einstein's and Debye theories. Vibrational modes of one dimensional monoatomic lattice, Dispersion relation, Brillouin zone.
<b>September</b>	Unit- II Origin of the quantum theory: Failure of classical physics to explain the phenomena such as black body spectrum, photoelectric effect. Wave particle duality and uncertainty principle: de Broglie's hypothesis for matter waves; the concept of wave and group velocities, evidence for diffraction and interference of particles, experimental demonstration of matter waves. Davisson and Germer's experiment.	Unit- II Free electron model of a metal, solution of one dimensional Schrodinger's equation in a constant potential. Density of states. Fermi energy , Energy bands in a solid (kronig – penny model without mathematical details). Metals, insulators and semiconductors. Hall effect.



<b>October</b>	<p>Consequence of de Broglie's concepts; quantization in hydrogen atom; energies of a particle in a box, wave packets.</p> <p>Consequence of the uncertainty relation: gamma ray microscope, diffraction at a slit.</p> <p>Unit – III</p> <p>Quantum Mechanics: Schrodinger's equation. Postulatory basis of quantum mechanics; operators, expectation values, transition probabilities,</p>	<p>Die, Para and Ferromagnetism. Langevin's theory of die and para magnetism. Curie – Weiss's law. Qualitative description of Ferromagnetism (Magnetic domains), B – H curve and hysteresis loss.</p>
<b>November</b>	<p>applications to particle in a one and three dimensional boxes, harmonic oscillator in one dimension, reflection at a step potential, transmission across a potential barrier.</p> <p>Hydrogen atom: natural occurrence of n, l and m quantum numbers, the related physical quantities.</p>	<p>Unit –III</p> <p>Intrinsic semiconductors, Carrier concentration in thermal equilibrium, Fermi level, Impurity, semiconductor, donor and acceptor levels, Diode equation, junctions, junction breakdown, Depletion width and junction capacitance, abrupt junction, Tunnel diode, Zener diode. Light emitting diodes, solar cell, bipolar transistors, PNP and NPN transistors, characteristics of transistors, different configurations, current amplification factor, FET.</p>
<b>December</b>	<p>Unit – IV</p> <p>Spectra of hydrogen, deuterium and alkali atoms, spectral terms, double fine structure, screening constants for alkali spectra for s, p, d and f states, selection rules,</p> <p>Discrete set of electronic energies of molecules, quantization of vibrational and rotational</p> <p>Energies, determination of internuclear distance, pure rotational and rotational vibrational spectra. Dissociation limit for the ground and other electronic states, transition rules for pure vibration and electronic spectra. Raman effect, Stokes and anti – Stokes lines complimentary character of Raman and</p>	<p>Unit – IV</p> <p>Half and full wave rectifier, rectification efficiency, ripple factor, Bridge rectifier, filters, Inductor filter, T and <math>\pi</math> filters, Zener diode, regulated power supply.</p> <p>Application of transistors. Bipolar transistor as amplifier. Single stage and CE small signal amplifiers, Emitter follower, Transistor as power amplifier, Transistor as oscillator. Wein bridge oscillator and Hartley oscillator.</p>

	infrared spectra, experimental arrangements for Raman spectroscopy.	
<b>January</b>	<p>Unit - V</p> <p>Interaction of charged particles and neutrons with matter, working of nuclear detectors, G-M counter, proportional counter and scintillation counter, cloud chamber, Spark Chambers emulsions. Structure of nuclei, basic properties (<math>I</math>, <math>\mu</math>, <math>Q</math> and binding energy), deuteron binding energy, p-p and n-p scattering and general concepts of nuclear forces. Beta decay, range of alpha particle, Geiger- Nuttal law. Gamow's explanation of beta decay, alpha decay and continuous and discrete spectra. Nuclear reactions, channels, compound nucleus, direct reaction (concepts). Shell model: liquid drop model, fusion (concepts), energy production in stars by p-p and carbon- nitrogen cycles (concepts).</p>	<p>Unit – V</p> <p>Introduction to computer organization, time sharing and multiprogramming systems, window based word processing packages, MS Word. Introduction to C programming and application to simple problems of arranging number in ascending/descending orders; sorting a given data in an array, solution of simultaneous equation.</p>
<b>February</b>	<p><b>Revision and Practical Examinations</b></p> <p><b>Annual Examinations</b></p> <p><b>Annual Examinations</b></p> <p><b>Annual Examinations</b></p>	<p><b>Revision and Practical Examinations</b></p> <p><b>Annual Examinations</b></p> <p><b>Annual Examinations</b></p> <p><b>Annual Examinations</b></p>
<b>March</b>		
<b>April</b>		
<b>May</b>		

# **TEACHING PLAN OF ZOOLOGY FOR SESSION 2018-19**

**B. Sc. I**

**Zoology**

**PAPER-I**

## **CELL BIOLOGY AND INVERTEBRATE**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>Unit I -</b> The cell (Prokaryotic and Eukaryotic) Methods in cell biology (Microscopy-Light and Electron)  Organization of Cell-extra-nuclear and nuclear
<b>AUGUST</b>	<b>Unit I-</b> Plasma membrane, Endoplasmic reticulum, Golgi bodies, Ribosome, Mitochondria, Lysosomes, Nucleus , Chromosome
<b>SEPTEMBER</b>	<b>Unit II-</b> Cell division (Mitosis and Meiosis). An elementary idea of cell transformation. An elementary idea of Cancer and Immunity
<b>OCTOBER</b>	<b>Unit III</b> General characters and classification of Phylum Protozoa up to orders Protozoa-Type study-Paramecium. Protozoa and diseases
<b>NOVEMBER</b>	<b>Unit III</b> General characters and classification of Phylum Porifera and Coelenterata up to orders Porifera- Type study-Sycon. Coelenterata-Type study-Obelia.
<b>DECEMBER</b>	<b>UNIT – IV</b> General characters and classification of Phylum Helminthes, Annelida and Arthropoda up to orders Platyhelminthes and Nema-helminthes-Type Study-Fasciola Annelida-Type Study-Pheretima. Arthropoda- Type Study-Palaemon.
<b>JANUARY</b>	<b>UNIT – V</b> General characters and classification of Phylum Mollusca and Echinodermata up to orders Mollusca- Type Study-Pila. Echinodermata- Type Study- Asterias(Starfish). Hemichordata – Type study - Balanoglossus
<b>FEBRUARY</b>	<b>REVISION</b>

**B. Sc. I**  
**Zoology**  
**PAPER-II**  
**VERTEBRATES AND EMBRYOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT – I</b> Chordata-Origin and classification of chordates. Protochordata-Type study-Amphioxus.
<b>AUGUST</b>	<b>UNIT- I</b> A comparative account of Petromyzon and Myxine. <b>UNIT – II</b> Fishes-Skin & Scales, migration in fishes, Parental care in Fishes. Amphibia-Parental care, Neoteny.
<b>SEPTEMBER</b>	<b>UNIT – II</b> Reptilia- Poisonous & Non-poisonous Snakes, Poison apparatus, snake venom <b>UNIT – III</b> Birds- Flight Adaptation, Migration Discuss-Birds are glorified reptiles.
<b>OCTOBER</b>	Mammals-Comparative account of Prototheria, Metatheria, Eutheria and Affinities
<b>NOVEMBER</b>	<b>UNIT –IV</b> Fertilization Gametogenesis, Parthenogenesis.
<b>DECEMBER</b>	<b>UNIT – IV</b> Development of Frog upto formation of three germ layers <b>UNIT –V</b> Embryonic induction, organizer and Regeneration.
<b>JANUARY</b>	<b>UNIT –V</b>  Development of Chick up to formation of three germ layer Placenta in mammals.
<b>FEBRUARY</b>	REVISION

**B. Sc. II**  
**Zoology**  
**PAPER-I**  
**ANATOMY AND PHYSIOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JULY	<b>UNIT I</b> – Comparative anatomy of various organ systems of vertebrates. Integument and its derivatives: structure of scales,
AUGUST	<b>UNIT I</b> - hair and feathers, Alimentary canal and digestive glands invertebrates Respiratory organs : Gills and lung , air-sac in birds
SEPTEMBER	<b>UNIT II</b> - Endoskeleton: Limbs, girdles and vertebrae Circulatory System: Evolution of heart and aortic arches Urinogenital System: Kidney and excretory ducts
OCTOBER	<b>UNIT III</b> -Nervous System: General plan of brain and spinal cord Endocrine glands- classification and histology
NOVEMBER	<b>Unit III</b> – Gonads and genital ducts <b>UNIT – IV</b> Digestion and absorption of dietary components Physiology of heart, cardiac cycle and ECG
DECEMBER	<b>UNIT IV</b> – Blood Coagulation Respiration: mechanism and control of breathing
JANUARY	<b>UNIT –V</b> - Excretion: Physiology of excretion, osmoregulation Physiology of muscle contraction Physiology of nerve impulse, Synaptic transmission Ear and Eye: structure and function
FEBRUARY	REVISION

**B. Sc. II**  
**Zoology**  
**PAPER-II**

**VERTEBRATE ENDOCRINOLOGY, REPRODUCTIVE BIOLOGY  
BEHAVIOUR, EVOLUTION AND APPLIED ZOOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT I-</b> General Characters of Hormones Hormone receptor Biosynthesis and secretion of thyroid, adrenal, ovarian and testicular hormones Endocrine disorder due to hormones and other glands
<b>AUGUST</b>	<b>UNIT II –</b> Reproductive cycle invertebrates Menstruation, lactation and pregnancy Mechanism of parturition Hormonal regulation of gametogenesis Extra-embryonic membrane
<b>SEPTEMBER</b>	<b>UNIT III-</b> Evidences of organic evolution. Theories of organic evolution.
<b>OCTOBER</b>	<b>UNIT III-</b> Variation, Mutation, Isolation and Natural selection. Evolution of Horse
<b>NOVEMBER</b>	<b>UNIT IV-</b> Introduction to Ethology. Patterns of Behaviour: Taxes, Reflexes, Drives and Stereotyped behaviours.
<b>DECEMBER</b>	<b>UNIT IV-</b> Reproductive behavioural patterns. Hormones, drugs and behaviour
<b>JANUARY</b>	<b>UNIT V –</b> Aquaculture Sericulture Apiculture Pisciculture
<b>FEBRUARY</b>	<b>UNIT V –</b> Poultry keeping Elements of pest control- Chemical control Biological control

**B. Sc. III****Zoology****PAPER-I****ECOLOGY, ENVIRONMENTAL BIOLOGY, TOXICOLOGY,  
MICROBIOLOGY AND MEDICAL ZOOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JULY	<b>UNIT – I</b> Aims and scopes of ecology Major ecosystems of the world-Brief introduction Population- Characteristics and regulation of densities Communities and ecosystem Bio-geo chemical cycles Air & water pollution Ecological succession
AUGUST	<b>UNIT-II</b> Laws of limiting factor Food chain in fresh water ecosystem Energy flow in ecosystem- Trophic levels Conservation of natural resources Environmental impact assessment
SEPTEMBER	<b>UNIT-III</b> Definition of toxicity Classification of toxicants Principle of systematic toxicology
OCTOBER	<b>UNIT III</b> Toxic agents & their action-Metallic & inorganic agents Animal poisons- snake venom, scorpion & bee poisoning Food poisoning
NOVEMBER	<b>UNIT-IV</b> General and applied microbiology Microbiology of domestic water and sewage
DECEMBER	<b>UNIT IV</b> Microbiology of milk & milk products Industrial microbiology
JANUARY	<b>UNIT-V</b> Brief introduction to pathogenic microorganisms, Rickettsia, Spirochaetes & Bacteria Brief account of life history & pathogenicity of the following pathogens with reference to man: prophylaxis & treatment Pathogenic protozoans- Entamoeba, Trypanosome & Giardia Pathogenic helminthes-Schistosoma Nematode pathogenic parasites of man Vector insects
FEBRUARY	REVISION

**B. Sc. III**  
**Zoology**  
**PAPER-II**  
**GENETICS, CELL PHYSIOLOGY, BIOCHEMISTRY, BIOTECHNOLOGY AND**  
**BIOTECHNIQUES**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JULY	<b>UNIT – I</b> Linkage & linkage maps Varieties of gene expression- multiple alleles; Lithogenesis, Pleiotropic Gene; Gene interaction; Epistasis Sex chromosomes systems & sexlinkage Mutation & chromosomal alteration; meiotic consequences Human genetics, chromosomal & single gene disorders (somatic cellgenetics)
AUGUST	<b>UNIT-II</b> General idea about pH &buffer Transport across membrane- cell membrane; mitochondria and endoplasmic reticulum Active transport & its mechanism; active transport in mitochondria & endoplasmic reticulum Hydrolytic enzymes-their chemical nature, activation &specificity
SEPTEMBER	<b>UNIT-III</b> Amino acids & peptides- Basic structure & biologicalfunction Carbohydrates & its metabolism- Glycogenesis; Gluconeogenesis; Glycolysis; Glycogenolysis; Cori-cycle
OCTOBER	<b>UNIT III</b> Lipid metabolism- Oxidation of glycerol; Oxidation of fattyacids Protein metabolism- Deamination, transamination, transmethylation; Biosynthesis of protein
NOVEMBER	<b>UNIT-IV</b> Biotechnology- Scope &importance Recombinant DNA & Genecloning
DECEMBER	<b>UNIT IV</b> Cloned genes & other tools ofbiotechnology Applications of biotechnology in (i) Pharmaceutical industry (ii) Food processing industry
JANUARY	<b>UNIT-V</b> Principles & techniques about the following: (i) pHmeter (ii) Colorimeter (iii) Microscopy- Light microscopes, Phase contrast & Electronmicroscopes (iv) Centrifugation (v) Separation of biomolecules by chromatography &electrophoresis (vi) Histo-chemical methods of determination of protein, lipid &carbohydrates
FEBRUARY	REVISION



**GOVT.D.B.GIRLS' P G (AUTONOMOUS) COLLEGE, RAIPUR**  
**TEACHING PLAN / SESSION 2018-19**

**B.SC.HOME SCIENCE PART I GROUP A PAPER II INTRODUCTION TO RESOURCE MANAGEMENT ECOLOGY AND ENVIRONMENT**

- JULY- INTRODUCTION, CONCEPT, PURPOSE OF MANAGEMENT, ACHIEVEMENT OF GOALS
- AUG- OBSTACLE TO IMPROVE MANAGEMENT, FACTORS AFFECTING MANAGEMENT, LIFESTYLE.  
TYPES OF FAMILY, SIZE, STAGES OF FAMILY LIFE CYCLE
- SEPT- DEFINITION, TYPES, UTILITY OF GOALS, IMPORTANCE, SOURCES CLASSIFICATION  
CHARACTERISTICS OF VALUE, CHANGING VALUES, STANDARD DEFINITION, QUANTITATIVE  
QUALITATIVE, CONVENTIONAL, NON CONVENTIONAL, ROLE OF DECISION IN MANAGEMENT ,  
AVAILABILITY OF RESOURCES, AND PRACTICAL
- OCT- MEANING OF MANAGEMENT PROCESSES PLANNING, CONTROLLING, EVALUATION, DECISION  
MAKING ,PLANNING IMPORTANCE, TYPES, TECHNIQUES, CONTROLLING PHASES ENERGIZING  
CHECKING, SUCCESS FACTORS, SUITABLY, PROMPTNESS, NEW DECISIONS, FLEXIBILITY &  
PRACTICAL
- NOV- SUPERVISION DIRECTIONS & GUIDANCE, ANALYSIS OF SUPERVISION, EVALUATION, IMPORTANCE  
RELATION TO GOALS, SELF EVALUATION, EVALUATION OF MANAGEMENT PROCESSES, TYPES  
AND FACTORS OF RESOURCES AND PRACTICAL
- DEC- MEANING, DEFINITION, SCOPE OF ECOLOGY AND ENVIRONMENT, LAND ENERGY, MINERALS  
RESOURCE, POLLUTION, SOURCES, DOMESTIC WASTE, HEALTH HAZARD PREVENTION  
CONTROL, WATER PROBLEM ISSUES, POLLUTION SCARCITY, POLLUTANTS, HEALTH HAZARD,  
CONTROL AND PRACTICAL
- JAN- UTILITY & RESOURCE OF FOREST, DEFORESTATION, CONSERVATION, AIR COMPOSITION,  
POLLUTANTS, SOURCES, HEALTH HAZARD, GREEN HOUSE EFFECT, & PRACTICAL
- FEB- ENERGY SOURCES, ALTERNATIVE, CONSERVATION, UNCONTROLLED POLLUTION GROWTH AND  
CONTROL, ENVIRONMENT EDUCATION, NEED, OBJECTIVES, ROLE OF GOVERNMENT, NGOS  
EDUCATION INSTITUTIONS, NATIONAL, INTERNATIONAL AGENCY, ENVIRONMENTAL  
PROTECTION POLICY, PROGRAMME, LEGISLATION

**GOVT.D.B.GIRLS'P G (AUTONOMOUS) COLLEGE, RAIPUR**  
**TEACHING PLAN / SESSION 2018-19**  
**BSc./ B.A. Part- I (FASHION DESIGNING)**  
**Group B / Paper-I**  
**NAME OF PAPER : TEXTILE SCIENCE**

MONTH	TEACHING PLAN
JULY	Introduction of the Subject. A brief historical background of Textile. Common Terminology used in Textile. Physical Properties of Textile fibers.
AUGUST	Chemical properties of Textile fibers. Introduction of Textile fibers Classification of Textile fibers : Natural fiber Vegetative Fiber : Cotton , Linen ( History, Cultivation , Manufacturing process & properties of each fiber )
SEPTEMBER	Animal Fiber : Silk,Wool ( History, Cultivation , Manufacturing process & properties of each fiber ) Mineral Fiber : Gold, Silver, Asbestoss Man-Made Fiber : Rayon ( History , Types, Production & Properties )
OCTOBER	Thermoplastic Fiber: Nylon ( History , Types, Production & Properties) Yarn : Meaning, yarn making. Types of yarn : Simple, Complex, Novelty. Yarn Twist
NOVEMBER	Methods of Fabric Construction:Weaving – Essential parts of Handloom Different types of Weaves. Other Methods of Fabric Construction.
DECEMBER	Identification of Fabric : Appearance test , Microscopic test , Burning test , Creasing test ,Breaking test ,Tearing test and Chemical test. Importance of Clothing
JANUARY	Selection of fabric for Dress according to Climate , Age, Occupation , Personality , Occasion , Figure type , Fashion etc. Wardrobe Planning
FREBRUARY	REVISION

**GOVT.D.B.GIRLS' P G (AUTONOMOUS) COLLEGE, RAIPUR**  
**TEACHING PLAN / SESSION 2018-19**  
**BSc./ B.A. Part- I (FASHION DESIGNING)**  
**Group B / Paper-II**  
**NAME OF PAPER : COLOR THEORY AND CONCEPTS**

MONTH	TEACHING PLAN
JULY	Introduction to Element of Design <ul style="list-style-type: none"> <li>• Color</li> <li>• Line &amp;</li> <li>• Texture</li> </ul>
AUGUST	Color Theories <ul style="list-style-type: none"> <li>• Prang's Color Theory</li> <li>• Munshell's Color Theory</li> </ul> Principles of Design <ul style="list-style-type: none"> <li>• Proportion</li> </ul>
SEPTEMBER	<ul style="list-style-type: none"> <li>• Balance</li> <li>• Harmony</li> <li>• Rhythm</li> <li>• Emphasis</li> </ul>
OCTOBER	Classification of Lines and its Significance. Combination of Lines, Different types of Patterns : Structural , Decorative , Geometrical , Abstract , Floral and Scrawly pattern.
NOVEMBER	Color Wheel ( According to Prang's Color Theory ) <ul style="list-style-type: none"> <li>• Single line design</li> <li>• Double line design</li> <li>• Four fold design</li> </ul>
DECEMBER	Color Scheme : Complementary, Double Complementary, Split Complementary, Traid Color Scheme, Pastel & Dusty Pastel, Contrast color scheme, Analogous color scheme, VIBGYOR color scheme, Neutral color scheme with Metallic colors, Nursery prints.
JANUARY	Enlargement of Pint. Texture : Fevicol texture , Thumb Impression, Rope Impression, Leaf Impression, Smoke and Spray texture, Wax drop & rubbing, Blowing, Stencils, Vegetable blocks, Stone Impression, Marble texture ,Dry brush etc.
FEBRUARY	REVISION

**GOVT.D.B.GIRLS'P G (AUTONOMOUS) COLLEGE, RAIPUR**  
**TEACHING PLAN / SESSION 2018-19**  
**BSc. Part- I ( HOME SCIENCE )**

**Group IV / Paper-B**

**NAME OF PAPER : PERSONAL EMPOWERMENT AND COMPUTER BASICS**

MONTH	TEACHING PLAN
JULY	Personal growth and personality development. The challenges: understanding and managing oneself. Personality development: Factors and influences. Peer pressures: Issues and management. Conflicts and stress, Simple coping strategies
AUGUST	Adjustment and readjustment to changing needs and conditions of contemporary society (technological changes, social changes, changes in values).Empowerment of women- Women and development: personal, familial, societal and national perspective.Capacity building for women: Education, decision-making abilities and opportunities.
SEPTEMBER	Women's organizations and collective strength: Women's action groups Women's participation in development initiatives.Study and discussion of life histories, case studies of illustrious Indian women from different walks of life eg. IndiraGandhi, Jhansi ki Rani, Kiran Bedi, Ha Bhat etc.
OCTOBER	Case studies: Medha Patkar, Vijaylaxmi Pandit, Sudha Chandran, Bhanvari Devi, Anutai Wagh. Home Science Education as Empowerment :The interdisciplinary of Home Science Education, the role of Home Science education for personal growth and professional development.
NOVEMBER	Home Science as holistic education with integration of goals for persons, enhancement and community development.Some Significant Contemporary Issues of Concern -Gender issues: inequities and discriminations, biases & stereotype; myths and facts.
DECEMBER	Substance abuse: Why and how to say no. Healthy habits: In relation to physique, to heterosexual interests. AIDS : Awareness and Education Computer Fundamentals : Overview about computers.
JANUARY	Computer Fundamentals : Components of a computer, Input / Output devices, Secondary storage devices, Number system : Decimal, Binary, Octal, Hexadecimal. Representation of information : BCD, EBCDIC, ASCII. Representation of Data : Files, Records, File organization and access. Security and safety of data. Introduction to operating systems.
FREBRUARY	RIVISION

**GOVT.D.B.GIRLS'P G (AUTONOMOUS) COLLEGE, RAIPUR**  
**TEACHING PLAN / SESSION 2018-19**  
**BSc./ B.A. Part- II (FASHION DESIGNING)**

**Group B / Paper-I**

**NAME OF PAPER: INTRODUCTION TO FASHION ILLUSTRATION & MODEL**

MONTH	TEACHING PLAN
JULY	Fashion : Definition ,Theories Fashion Trends In India. Terms Related To Fashion Industry. Factors Affecting Fashion.
AUGUST	Anatomy Of Human Body Skeleton & Muscular System Joints Of Human Body Normal Body , Abnormal Body
SEPTEMBER	Figure Problems & Different Types Of Figure Defects :Erect, Stooping, Low Shoulder, Square Shoulder, Thin Waist, Stout Waist, Long Body, Short Body, Full Back, Flat Back, Cylindrical, Corpulent, Head Forward, Head Backward
OCTOBER	Deformity : Natural & Accidental Principle Of Figure Drawing Sketching Of Different Body Features
NOVEMBER	Figure Head Theories : 7 ½ (Average Figure) 8 ½ (Average Figure) Drawing Of Human Form In Different Angles : Front , Back , Side .
DECEMBER	Figure Head Theories 10 ½ (Block Figure) 12 ½ (Fashion Figure) Drawing Of Human Form In Different Angles : Front , Back , Side .
JANUARY	Drawing Different Silhouettes Rendering Of Figure In Different Postures Sketching Styles For Different Age Group Male , Female , Kids
FREBRUARY	RIVISION

**GOVT.D.B.GIRLS'P G (AUTONOMOUS) COLLEGE, RAIPUR**

**TEACHING PLAN / SESSION 2018-19**

**BSc./ B.A. Part- II (FASHION DESIGNING)**

**Group B / Paper-II**

**NAME OF PAPER: DESIGN IDEAS IN GARMENTS**

MONTH	TEACHING PLAN
JULY	Body Measurements Anthropometric Measurements Methods Of Taking Body Measurements Standard Measurement Charts Based On Different Age Group
AUGUST	Pattern Making Principles, Techniques, And Application For Different Styles Basic Paper Pattern For : Children Wear (Any 3)
SEPTEMBER	Men's Wear (Any 2) Ladies Wear (Any 3) Preparing Layouts For Above Mention Paper Pattern Cloth Estimation For Different Garments
OCTOBER	Necklines :Study Of Different Types Of Necklines Variations Of Necklines Collars : Study Of Different Types Of Collars Collars Above The Necklines (Band Collars)
NOVEMBER	Collars Below The Necklines (Flat Collars) Tucks : Different Types Of Tucks (Pin, Diagonal, Blind, Cross, Spaced, Diamond, Shell, Corded)
DECEMBER	Pleats : Different Types Of Pleats (Simple, Knife, Box, Accordion, Kick, Reverse, Inverted Box) Seam : French & Counter Seam Gathers : Sheerings & Smocking
JANUARY	Yoke : Different Types Of Yokes (Body, Waist, Hip, Shoulder) Sleeves : Different Types Of Sleeves (Plain, Puff, Raglan, Kimono, Dolman)
FREBRUARY	REVISION

**GOVT.D.B.GIRLS'P G (AUTONOMOUS) COLLEGE, RAIPUR****TEACHING PLAN / SESSION 2018-19****BSc./ B.A. Part- III (FASHION DESIGNING)****Group B / Paper-I****NAME OF PAPER : MARKETING & SALES MANAGEMENT**

MONTH	TEACHING PLAN
JULY	Introduction to Marketing : Meaning, Definition, Nature & Scope ,Types, Functions & Method ,Marketing Process Standardization & Grading : Meaning, Definition, Importance & Advantages.
AUGUST	Product Policy Decision , Product Life Cycle Pricing Policies : Pricing Economic Concept & Objects Meaning of cost ,Methods of setting Price ,Factors Affecting Pricing Decisions, Sales Promotion: Meaning, Method, Strategies & Planning
SEPTEMBER	Salesmanship: Meaning,Definition,Characteristics & Scope Essentials of Successful Salesmanship, Duties & Main Qualities of Successful Salesmanship, Salesmanship & Advertisement,Channels of Distribution : Meaning, Definition, Types & Functions .
OCTOBER	Channels of Distribution of Consumer Goods & Industrial Goods,Role of Middleman. Channels of Distribution In India Advertisement: Meaning, Definition, Functions & Principles ,Advantages & Disadvantages, Media of Advertisement
NOVEMBER	Factors to be considered when selecting a medium of Advertisement,Consumer Education. Marketing Research &Information: Meaning,Definition,Object,Types,Procedure Importance & Advantages
DECEMBER	Market Report : Meaning & Types Market Terminology , Consumer Protection Entrepreneurship :Meaning, Definition, Nature & Types Qualities Of A Successful Entrepreneur
JANUARY	Theories & Models Of Entrepreneurship (Psychological, Sociological, Economic & 7 Integrated Models) Factors Affecting The Development Of Entrepreneurship Self Employment Programmes In India Consumer Association In India.
FREBRUARY	RIVISION

**GOVT.D.B.GIRLS'P G (AUTONOMOUS) COLLEGE, RAIPUR****TEACHING PLAN / SESSION 2018-19****BSc./ B.A. Part- III (FASHION DESIGNING)****Group B / Paper-II****NAME OF PAPER: CLOTHING CONSTRUCTION & FASHION DESIGNING**

MONTH	TEACHING PLAN
JULY	Clothing: Origin of Clothing, Meaning & Significance, Costumes of Ancient Age, Costumes of Modern Age. Personality : Meaning, Types & Factors Affecting Personality. Clothing & Personality. Selection of Children Clothing according to Age.
AUGUST	Fabric For Garment Making: Handling Of Different Types Of Fabric, Selection Of Suitable Fabric For Clothing, Suggestions For Persons Of Different Figures, Factors Affecting Clothing Decisions, Industrial Machines & Equipment Used For Cutting, Sewing And Finishing.
SEPTEMBER	Interrelationship Of Needles, Thread, Stitch Length, & Fabric Fitting : Fundamentals Of Fitting, Problems Area In Fitting, Factors Affecting Good Fit. Tailoring : General Principles, Proper Measurements , Principles Of Commercial Tailoring
OCTOBER	Pattern Making : General Instructions For Pattern Making, Method, Types & Layout, Use Of Commercial Paper Pattern, Pattern Alteration, Meaning & Types, Dart Manipulation & Dart Concealment, Drafting & Draping, Trimming Materials Used For Making Garment, Ornamentation Techniques
NOVEMBER	Embroidery : Fundamentals , Techniques , Design Color Combination , Use Of Different Threads , Different Types Of Stitches. Traditional Embroidery Of India: Kutch & Kathiyawar Of Gujrat, Zari Embroidery, Applique Work
DECEMBER	Traditional Embroidery of India: Kashida of Kashmir & Bihar, Kantha If Bengal, Phulkari of Punjab. Chikenkari of Lucknow, Kasuti of Karnataka, Costume of Men For Different States, Details of Costumes, Jewellery & Accessories
JANUARY	Costume of Women For Different States , Details of Costumes Jewellery & Accessories, Marriage Costumes For Different States of India, Various Dance Costumes Of India, Accessories: Importance & Types, Factors Affecting Selection Of Accessories
FREBRUARY	REVISION



PROPOSED TEACHING PLAN FOR THE SESSION OF **2018-19**

**B.SC.HOME SCIENCE PART III GROUP C PAPER I I**

JULY- DESIGN DEFINITION, TYPES STRUCTURAL, DECORATIVE, ELEMENTS OF DESIGN LINE, SIZE, FORM, STRUCTURE,SPACE, PATTERNS, SHAPES

AUG- LIGHT CHARACTERISTICS, CLASSIFICATION, STUDY OF COLOUR, CLASSIFICATION, DIMENSION, COLOUR SCHEMES, EFFECT, PRINCIPLES OF DESIGN DEFINITION CHARACTERISTICS, TYPES OF BALANCE, HARMONY, SCALE, PROPORTIONS, RHYTHM, EMPHASIS

SEPT- INDIAN REGIONAL, TRADITIONAL, CONTEMPORARY ART IN FLOOR DECORATION, HOME DECORATION, ACCESSORIES AND PRACTICAL, APPRECIATION OF ART IN TERMS OF PRINCIPLES OF ART &DESIGN, IN TERMS OF COMPOSITION And AESTHETIC APPEAL And PRACTICAL

OCT- FAMILY HOUSING NEED PROTECTIVE, ECONOMIC, AFFECTIONAL,SOCIAL, STANDARD OF LIVING , HOUSING GOALS, STYLE, FUNCTION, OCCUPATION, FACTORS INFLUENCING SELECTION & PURCHASE OF SITE FOR HOUSE BUILDING LEGAL ASPECT, LOCATION, PHYSICAL FEATURE, SOIL CONDITIONS, COST, SERVICES &PRACTICAL

NOV- HOUSE PLANNING READING HOUSE PLANS, GROUPING OF ROOMS, ORIENTATION, CIRCULATION, FLEXIBILITY, PRIVACY, SPECIOUSNESS, SERVICES, AESTHETIC, ECONOMY LIGHT VACCINATION, PLANNING OF DIFFERENT ROOMS LIVING,SLEEPING, DINING ROOM KITCHEN, STORE TOILET, PASSAGE, STAIRCASE ,LAND SCAPING PRINCIPLES &APPLICATION

DEC- FINANCIAL CONSIDERATIONS AVAILABILITY OF FUND FOR HOUSING HDFC, COOPERATIVE HOUSING SOCIETY, LIC,COOPERATIVE BANK, PF,FCI&PRACTICAL

JAN DISABILITY OF OWNING VERSUS RENTING,  
HOUSING PROBLEMS AND REMEDIES &PRACTICAL

FEB- FURNITURE STYLE TRADITIONAL, CONTEMPORARY, MODERN, SELECTION OF FURNITURE FOR COMFORT, REST, RELAXATION, WORK, STORAGE, ARRANGEMENT OF FURNITURE OF LIVING, SLEEPING, DINING AND MULTIPURPOSE ROOM, UPHOLSTERED FURNITURE MATERIAL TECHNIQUES, DESIGN, TYPES OF CURTAINS, DRAPERIES, FLOOR COVERINGS, RUGS, CARPETS CUSHION COVERS, SELECTION AND USE OF ACCESSORIES AND THEIR ROLE IN INTERIORS

**B.SC.HOME SCIENCE PART III GROUP C PAPER II FOUNDATION OF ART &DESIGN**

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JULY- DESIGN DEFINITION & TYPES STRUCTURAL, DECORATIVE, ELEMENTS OF DESIGN, LINE, SIZE, FORM STRUCTURE, SPACE, PATTERN, SHAPE, LIGHT CHARACTERISTICS CLASSIFICATION

AUG- STUDY OF COLOUR, CLASSIFICATION, DIMENSION, COLOUR SCHEMES, EFFECT, PRINCIPLES OF DESIGN, DEFINITION, CHARACTERISTICS & TYPES OF BALANCE, HARMONY, SCALE, PROPORTIONS. RHYTHM, EMPHASIS

SEPT- INDIAN REGIONAL, TRADITIONAL CONTEMPORARY ART IN FLOOR DECORATION, HOME DECORATION, ACCESSORIES, APPRECIATION OF ART IN TERMS OF PRINCIPLES OF ART & DESIGN IN TERMS OF COMPOSITION & AESTHETIC APPEAL AND PRACTICAL

OCT- FAMILY HOUSING NEED PROTECTIVE, ECONOMIC, AFFECTIONAL, SOCIAL STANDARD OF LIVING HOUSING GOALS, STYLE, FUNCTION OCCUPATION FACTORS INFLUENCING SELECTION &

PURCHASE OF SITE FOR HOUSE BUILDING LEGAL ASPECT LOCATION PHYSICAL FEATURE SOIL

CONDITIONS, COST, SERVICE AND PRACTICAL

NOV- HOUSE PLANNING READING HOUSE PLANS, GROUPING OF ROOMS. ORIENTATION,

CIRCULATION, FLEXIBILITY, PRIVACY, SPACIOUSNESS, SERVICES, AESTHETICS,

ECONOMY, LIGHT, VENTILATION, PLANNING OF DIFFERENT ROOMS LIVING, DINING, BEDROOM KITCHEN, STORE, TOILET, PASSAGE, STAIRCASE, LAND SCAPING PRINCIPLES & APPLICATION AND PRACTICAL

DEC- FINANCIAL CONSIDERATIONS AVAILABILITY OF FUNDS FOR HOUSING HDFC, COOPERATIVE HOUSING SOCIETY, LIC, COOPERATIVE BANK, FCI, PF & PRACTICAL

JAN- DISABILITY OF OWNING VERSUS RENTING, HOUSING PROBLEMS, CAUSES, REMEDIAL MEASURES

PRACTICAL

FEB- FURNITURE STYLE TRADITIONAL, CONTEMPORARY, MODERN, SELECTION OF FURNITURE FOR

COMFORT, REST, RELAXATION, WORK, STORAGE, ARRANGEMENT OF FURNITURE FOR LIVING,

SLEEPING, DINING AND MULTIPURPOSE ROOM, UPHOLSTERED FURNITURE MATERIAL,

TECHNIQUES, DESIGN, TYPES OF CURTAINS, DRAPERIES, FLOOR COVERINGS, RUGS, CARPETS

CUSHION COVERS, SELECTION AND USE OF ACCESSORIES AND THEIR ROLE IN INTERIORS

**DEPARTMENT OF HOME SCIENCE**  
**B.Sc. (H.Sc.)-III**  
**SESSION 2018-19**  
**GROUP-C**  
**PAPER-1**  
**EARLY CHILDHOOD EDUCATION**

Month	Plan
July	<b>UNIT-I</b> Significance and objectives of early childhood care and education. <ul style="list-style-type: none"> <li>1. Significance of early childhood years in individuals development.</li> <li>2. Meaning and need for intervention programmes for better growth and development.</li> <li>3. Objectives of ECCE.</li> <li>4. Different types of programs currently offered. Objectives of the program routine and target group covered by each of the following. ECE programme - Balwadi, anganwadi, Nursery school, Kindergarten, Montessori, laboratory nursery school ECCE Program - ICDS and mobile cretch. Play group : day care.</li> </ul>
August	<b>UNIT-II</b> Current Status and Expansion of Scope of ECE to ECCE <ul style="list-style-type: none"> <li>Expansion from ECE to ECCE.</li> <li>Current Status of ECCE programme.</li> <li>Objectives : staff qualifications, teacher-children ratio, indoor and outdoor play space and play facilities, equipment, curriculum and evaluation.</li> <li>Admission tests and effects on children.</li> <li>Effects of pressures on young children due to formal education.</li> <li>Need for ECCE programmes to provide quality care where mothers are at work.</li> <li>Historical overview of ECCE.</li> <li>Global perspective - views of educationists - Froebel, Mac Millan sister, Deweu and Montessori,</li> <li>ECE in India : Overview of pre.and post independence period.</li> <li>Contributions of Ravindranath Tagore, Mohandas Gandhi, Gijubhai Bodheka, Tarabai Modak, Anutai Wagh</li> </ul>
September	<ul style="list-style-type: none"> <li>Recent Developments : Policies, Institutions and contributions of NGOs</li> <li>national policy on children.</li> <li>National policy on education 1986.</li> <li>Adoption of Ram Joshi Committee Report on Child Education by Government of Maharashtra.</li> <li>Role of Indian Association of Preschool Education, National Institute of Public Cooperation and Child Development, National Council for Educational Research and Training, SCERT and NGOs</li> </ul>
October	<b>UNIT-III</b> <ul style="list-style-type: none"> <li>Meaning of curriculum, Foundation of. curriculum development.</li> <li>Impact of play as means of development and learning.</li> <li>Developmental stages of play. Types of Play - Solitary play, parallel play, associative play and coopertives play.</li> <li>Functions of play - play as a means of assessing children's development.</li> <li>Teachers Role in creating environment and Promoting play.</li> <li>Classical theories of play - Surplus energy theory relaxation theory, Preexercise &amp; recapitulation theory.</li> </ul>
November	<ul style="list-style-type: none"> <li>Programme Planning - Approaches to learning : Incidental and planned learning.</li> <li>Principles of programme planning : - from known to unknown, simple to complex, concrete to abstract.</li> <li>Balance between individual and group activity, indoor and outdoor play, quiet and active plays, guided and free activities.</li> <li>Factors influencing programme planning.</li> </ul>

	<ul style="list-style-type: none"> <li>Formal versus non-formal approach in education : advantages and disadvantages. - Integrated learning approach or project method that is covering various components of curriculum that is focussing on one topic/theme at a time.</li> <li>Short and long term planning.</li> </ul>
December	<p><b>UNIT-IV Languages</b></p> <ul style="list-style-type: none"> <li>Goals of language teaching.</li> <li>Readiness for reading and writing. Meaning of readiness.</li> <li>Factor to be considered for readiness : Age, Vision, Hearing, Physical, emotional, social, experiential background, attention span, finer motor coordination, eye hand coordination, reading from left to right and top to bottom.</li> </ul> <p><b>Mathematics</b></p> <ul style="list-style-type: none"> <li>Importance of number and mathematics.</li> <li>- Number as a language and history of its development.</li> <li>Abstract nature of number.</li> <li>Mathematical readiness.</li> <li>Analysis of prerequisite skill for 'number classification, comparing, seriation, patterning, counting, shape and space, measurement fractions, vocabulary, numeral operations.</li> <li>Decimal system of numeration (base 10)</li> <li>Number line-position and relevance of zero.</li> <li>Operations and relevant rules and properties; subtraction, multiplication and division.</li> <li>Two and three dimension shapes, properties, characteristics.</li> <li>Basic principles of measurements 0 time/distance, weight, capacity and money.</li> </ul>
January	<p><b>Environmental studies</b></p> <ul style="list-style-type: none"> <li>Scope of environmental studies.</li> <li>Importance and goals of environmental studies.</li> <li>Content : to conclude understanding from biological, physical and social environment.</li> </ul> <p><b>UNIT-V Project method</b></p> <ul style="list-style-type: none"> <li>Introduction</li> <li>Meaning and advantages of using project method.</li> <li>Planning .</li> <li>Resource unit.</li> </ul> <p><b>Alternative to Home Work</b></p> <ul style="list-style-type: none"> <li>Disadvantages of learning by role.</li> <li>Suitable alternatives such as observations, exploration, experimentation and reporting orally, picture or at. Something related to the concepts covered in class.</li> </ul>
February	<p><b>Evaluation</b></p> <ul style="list-style-type: none"> <li>Need for evaluation.</li> <li>Formative and summative evaluation.</li> <li>Methods of evaluation : Observations.</li> <li>Evaluation of daly work, tools for evaluation</li> <li>Reporting to parents.</li> <li>Revision</li> </ul>

**Govt. D.B. Girls P.G. Autonomous College , Raipur (C.G.)**  
**Proposed Teaching Plan For the Session 2018-19**  
**B.Com. Part - I**

Month	Financial Accounting	Business Mathematics	Business Communication	Business Regulatory Framework	Business Environment	Business Economics
July	UNIT-I Meaning & Scope of Accounting : Need, development & Definition, OBJECTIVES of accounting, difference between Book – keeping and accounting ; Branches of accounting ; Accounting principles.	UNIT-I Calculus (Problems and theorems involving trigonometrically ratios are not to be done) Differentiation : Partial derivatives up to second order ; Homogeneity of functions and Euler's theorem.	UNIT-I Introducing Business Communication: Definitions, concepts and Significance of communication, Basic forms of communication; Communication models and process, Principles of effective communication; Theories of communication ; Audience analysis.	UNIT-I Law of Contract(1872) : Nature of contract ; Classification ; Offer & Acceptance ; Capacity of parties to contract , free consent , considerations, legality of object ;	UNIT-I Business Environment : Concept , Components and Importance, Economic Trends (over view) : Income ;	UNIT-I Introduction: Basic problems of an economy ; Working of price mechanism . Elasticity of Demand : Concept and measurement of elasticity of demand ; Price , income and cross elasticity's ; Average revenue , marginal revenue and elasticity of demand ; Determinants of elasticity of demand ; importance of elasticity of demand.
August	UNIT-I Accounting Standards : International accounting standards (only outlines); Accounting standards in India. Accounting Transactions: Accounting cycle; Journal; Rules of debit & credit; Compound Journal entry ; Opening entry ; Relationship between journal & Ledger ; Capital & Revenue Classification of Income & Expenditure & Receipts.	UNIT-I Maxima & Minima; Cases of one variable involving second or higher order derivatives; logarithm's.	UNIT-I Self – Development and Communication : Development of positive personal attitudes, SWOT Analysis; Vote's model of interdependence; Whole communication.	UNIT-I <b>Agreement</b> declared void; Performance of contract; Discharge of contract; Remedies for breach of contract.	UNIT-I Savings and investments ; Industry ; Trade and balance of payments , money , Finance , Prices.	UNIT-II Production Function : Law of variable proportions ; Iso-quants ; Expansion path ; Returns to scale ; Internal & External economies and diseconomies.

September	UNIT-II Final accounts : Trial Balance; Manufacturing accounts ; Trading account ; Profit & Loss account; Balance Sheet ; Adjustment entries. Rectification of errors: Classification of errors; Location of errors; Rectification of errors; Suspense account; Effect on profit.	UNIT-II Matrices & Determinants : Definition of a matrix; Types of matrices; Algebra of matrices; Properties of determinants; Calculation o values of determinants upto third order; Adjoint of a matrix, elementary row or column operations;	UNIT-II Corporate communication: Formal and Informal communication networks; Grapevine; Miscommunication (Barriers); improving communication.	UNIT-II Special Contracts: Indemnity; Guarantee; Bailment and pledge; Agency.	UNIT-II Problems of Growth : Unemployment ; Poverty ; Regional imbalance ; Social injustice ; Inflation Parallel economy ; Industrial sickness.	UNIT-II Law of Demand: Meaning and Definitions, Effecting Factors, Types; Exception of Law of Demand
October	UNIT-III Depreciation, Provisions, & Reserves : Concept of depreciation ; Causes of depreciation ; Depreciation, depletion , amortization; Depreciation accounting; Methods of recording depreciation ; Methods of providing depreciation;	UNIT-II Finding inverse of a matrix through adjoint and elementary row or column operations; Solution of a system of linear equations having unique solution and involving not more than three variables.	UNIT-II Practices in business communication: Group discussions; Seminars; Effective listening: Principles of affective listening; Factor affective listening exercises; Oral, Written, and video sessions. Audience analysis and Feedback.	UNIT-III Sale of Goods Act, 1930 : Formation of contract of sale ; Goods and their classification , price , conditions , and warranties ; Transfer of property in goods ; Performance of the contract of sale; Unpaid seller and his rights , sale by auction ; Hire purchase	UNIT-III Role of Government : Monetary and fiscal policy ; Industrial policy ; Industrial Licensing; Privatization ; Devaluation ;	UNIT-III Theory of Costs : Short-run and Long-run cost curves - traditional and modern approaches. Market Structures I Market structures and business decisions; OBJECTIVE of a business firm. a. Perfect Competition: Profit maximization and equilibrium of firm and industry; Short - Run and Long-run supply curves; Price and output determination. Practical Applications.
November	UNIT-III Depreciation of different assets ; Depreciation of replacement cost; Depreciation policy; as per Indian accounting standard : .Provisions & Reserves. Accounts of Non–Trading Institutions	UNIT-III Linear Programming – Formulation of LPP: Graphical method of solution; Problems relating to two variables including the case of mixed constraints ; Cases having no solutions , multiple solutions, unbounded solution and redundant constraints.	UNIT-III Writing Skills : Planning business messages; Rewriting and editing; The first draft; Reconstructing the final draft; Business letters and memo formats; Appearance request letters; Good news & bad news letter's; Persuasive letters ; Sales letters ; Collection letters ; Office memorandum.	UNIT-IV Negotiable Instrument Act (1881) :Definition of negotiable instruments; Features ; Promissory Note ; Bills of Exchange & Cheque ; Holder & Holder in the due course ;	UNIT-III Export – Import policy ; Regulation of Foreign investment; Collaborations in the light of recent changes.	UNIT-III b. Monopoly : Determination of price under monopoly ; Equilibrium of a firm; Comparison between perfect competition and monopoly ; Multi–plant monopoly, Price discrimination. Practical Applications.

December	UNIT-IV Special Accounting Areas : Branch Account : Dependent branch : Debtor system , stock & debtor system; Hire-purchase and instalment purchase system; Meaning of hire-purchase contract; Legal provision regarding hire-purchase contract; Accounting records for goods of substantial sale	UNIT-III Transportation Problem , Ratio & Proportion.	UNIT-IV Report Writing :Introduction to a proposal, short report and formal report, report preparation. Oral Presentation : Principles of oral Presentation , factors effecting presentation, sales presentation , training Presentation , conducting surveys , speeches to motivate , effective Presentation skills.	UNIT- IV Crossing of a cheque , Types of crossing ; Negotiation ;Dishonour and Discharge of negotiable instrument	UNIT- IV Review of Previous Plans, The Current Five Year Plan : Major policy ; Resource allocation..	UNIT-III Returns to scale and Equal product Curve Analysis; Internal & External economies and dis-economies.
January	UNIT-V a. Partnership Accounts : Essentials characteristics of partnership ; Partnership deed: Final accounts; Adjustment after closing the accounts; Fixed and fluctuating capital ; Goodwill ; AS-10 ; Joint Life Policy ; Change in profit sharing ratio	UNIT-IV Compound Interest and Annuities : Certain different types of interest rates; Concept of present value and amount of a sum ; Types of Annuities ; Present value and amount of an annuity, Including the case of continuous compounding;	UNIT-V Non-Verbal Aspects of Communicating : Body language : Kinesics , Proxemics , Para language. Effective Listening: Principles of effective listening ; Factors affecting listening exercises; Oral , Written , and video sessions. Interviewing S kills : Appearing in interview ; Conducting interview ; writing resume and letter of application.	UNIT-V The Consumer Protection Act 1986: Salient features; Definition of consumer ; Grievances Redressal Machinery..	UNIT-V International Environment : International trading environment (over view) ; Trends in World trade and the problems of developing countries ; Foreign trade and economic growth;	UNIT-IV Market Structures: Concept, characteristics, classification. Determination of Price under condition of Perfect Competition, Imperfect Competition and Monopoly, Monopolistic Competition, Oligopoly and Duopoly.
February	b. Reconstitution of a Partnership Firm – Admission of Partner : Retirement of a partner; Death of a partner; Dissolution of a firm, Accounting Entries ; Insolvency of partners - Modes of dissolution of a firm; Accounting Entries; Insolvency of partners distribution.	UNIT-IV Valuation of simple loans and debentures; Problems relating to sinking funds UNIT-V Averages, Percentages, Commission, Brokerage, Profit & Loss.	UNIT-V Modern Forms of Communication : Fax ; E-mail ; Video conferencing , etc. International Communication: Cultural sensitiveness and cultural context; Writing and presenting in international situations ; Inter- cultural factors in interactions ; Adapting to global business.	UNIT -V Foreign Exchange Management Act 2000 : Definitions and main Provisions. Right to Information Act 2005 ( Main Provisions )	UNIT-V International economic groupings. International economic institutions - GATT , WTO , World Bank , IMF , FDI, Counter trade.	UNIT-V Theories of distribution, Marginal Productivity theory of distribution, Concept and theories of Wages, Rent, Interest & Profit.

**Govt. D.B. Girls P.G. Autonomous College , Raipur (C.G.)**  
**Proposed Teaching Plan For the Session 2018-19**  
**B.Com. Part - II**

Month	Corporate Accounting	COST ACCOUNTING	PRINCIPLES OF BUSINESS MANAGEMENT	COMPANY LAW	BUSINESS STATISTICS	FUNDAMENTALS OF ENTREPRENEURSHIP
July	Unit-I Issue , Forfeiture and Re-issue of Shares	Unit-I Introduction : Nature and scope of cost accounting; Cost concepts and classification; Methods and techniques ; Installation of costing system ; Concept of cost audit.	Unit-I Introduction: Concept, nature, process and significance of management ; Management roles (Mintzberg) ;	Unit-I Corporate Personalities : Kinds of companies , Nature & Scope, promotion and Incorporation of companies.	UNIT-I Introduction : Statistics as a subject ; Descriptive Statistics – compared to Inferential Statistics ; Types of data ; Summation operation ; Rules of Sigma $\Sigma$	Unit-I Introduction : The entrepreneur , Definition ; Emergence of entrepreneurial class ; Theories of entrepreneurship ; Role of socio - economic environment
August	Unit-I Redemption of preference shares ; Issue and Redemption of debentures .	UNIT-I Accounting for Material : Material Control and techniques ; Pricing of material Issues ; Treatment of material losses.	UNIT-I An overview of functional areas of management ; Development management thought ; Classical and neo-classical system ; Concept Approaches.	UNIT-II Memorandum of Association ; Articles of Association ; Prospectus ,	UNIT-I Operations ; Analysis of University Data ; Construction of a frequency distribution; Concept of central tendency.	Unit-II Promotion of a Venture : Opportunities analysis ; External environmental analysis : Economic , social and technological ; Competitive factors ;
September	Unit-II Final Accounts (as per company act 2013),	Unit-II Accounting for Labour : Labour cost control procedure; Labour turnover ; Idle time and overtime; Methods of wage payment–time and piece rates; Incentive schemes.	Unit-II Planning : Concept , process and types . Decision making – concept and bounded Rationality; management by objectives ; Corporate planning ; Environment analysis and diagnosis ; Strategy formulation.	UNIT-II Share ; Share Capital – transfer and transmission.	UNIT-II Dispersion and their measurements: Partition values; Moments; Skewness and measures .	UNIT-II Legal requirements for establishment of a new unit and raising of funds ; Venture capital sources and documentation required



October	Unit-II Liquidation of Company	UNIT-II Accounting for overheads ; Classification and departmentalization ; Absorption of Overheads ; Determination of overhead rates ; Under and over absorption and its treatment.	UNIT-III Organizing : Concept , nature , process and significance; Authority and resident Relationships; Centralization and Decentralization ; Departmentalization ; Organization Structure – forms and contingency factor.	UNIT-III Capital Management: borrowing powers , mortgages and charges , debentures.	UNIT-III Analysis of Bivariate Data: Linear regression two variables & correlation.	Unit-III Entrepreneuria I Behavior : Innovation and entrepreneur ; entrepreneurial Behavior and Psycho – Theories , Social responsibility.
November	<b>Unit-III</b> Valuation of Goodwill and Shares.	Unit-III Cost Ascertainment : Unit costing ;	Unit-IV Motivating and Leading People at Work : Motivation – concept ; Theories Herzberg , McGregor and Ouchi ; Financial and non-financial incentives.	UNIT-III Directors – Managing Director, whole time director, Appointment, Remuneration and duties.	Index Number : Meaning , types and uses ; Methods of Constructing price and quantity indices ; Test of adequacy ; Chain - base index numbers; Base shifting , splicing and defaulting ; Problems of constructing index numbers ; Consumer price index. Analysis of time series : Causes of variation in time series data ; Components of time series ;	Unit-IV Entrepreneurial Development Programs ( EDP ) : EDP , their role, relevance and achievements ; Role of government in organizing EDPs ;Critical evaluation.
December	UNIT -IV Accounting for Amalgamation of Companies as per Indian Accounting Standard-14;	UNIT-III Job , batch and contract costing.	UNIT-IV Leadership – concept and leadership styles ; Leadership theories ( Tannenb Schmidt) ; Likert's System Management Communication – nature, process , networks and barriers , Effective communication.	Unit-IV Companies Meetings : Kinds , quorum , voting , resolutions , minutes.	UNIT-IV Decomposition – Additive and multiplicative models; Determination of trend – Moving Averages Method and method of least squares ; Computation of seasonal indices by simple averages, ratio – -to-moving average , and link relative methods.	Unit-V Role of Entrepreneur : Role of Entrepreneur in economic growth as an innovator, generation of employment opportunities , complementing and supplementing economic growth , bringing about social stability and balanced regional development of industries ;

January	UNIT-IV Accounting for Amalgamation of Companies as per Indian Accounting Standard-14;	Unit-IV Operating costing ; Process costing – excluding inter – process profits and joint and by – products.	Unit-V Managerial Control : Concept and process ; Effective control system ; Technical Control – traditional and modern.	Unit-V Majority powers and Minority rights ; Prevention of oppression and	UNIT-V Forecasting and Methods : Forecasting – Concept , types and importance ; General approach to forecasting ; Methods of forecasting ; Demand ; Industry Vs Company sales forecast ; Factors affecting company sales.	UNIT-V Role in export promotion and import substitution, forex earning and augmenting and meeting local demands.
February	UNIT-V Consolidated Balance Sheet of holding companies with one subsidiary only	Unit-V Cost Records : Integral and non- integral system ; Reconciliation of cost and financial accounts ; Break Even Point.	UNIT-V Management of change : Concept , nature , and process of planned Resistance to Change ; Emerging horizons of management in a environment.	UNIT-V mismanagement . Winding up : Kinds and conduct.	UNIT-V Theory of Probability : as a concept ; The three approaches to defining probability ; Addition and Multiplication laws of probability ; Conditional probability ; Bayes' Theorem ; Expectations and variances of a random variable.	

**Govt. D.B. Girls P.G. Autonomous College , Raipur (C.G.)**  
**Proposed Teaching Plan For the Session 2018-19**  
**B.Com. Part - III**

Month	Income Tax	Indirect Taxes	Management Accounting	Auditing	Principles of Marketing	International Marketing
July	<b>UNIT-I</b> Basic Concepts : Income, agriculture Income , casual income, assessment year, previous year, gross total income, total income, person ; Basis of charge :	UNIT-I Central Excise : Nature & Scope of Central Excise; Important terms and definitions under the Central Excise Act. ; General procedure of Central Excise ; Clearance and excisable goods ; Concession to small scale industries under Central Excise Act.	UNIT-I Management Accounting : Meaning , nature ,scope and function of management accounting ; Role of management accounting in decision making ; Management accounting Vs financial accounting ; Tools and techniques of management accounting ;	UNIT-I Introduction : Meaning and objectives of auditing ; Types of audit ; Internal audit. Audit Process : Audit programme ;	UNIT -I Introduction : Nature and scope of marketing ; Importance of marketing as a business function and in the economy ; Marketing Concepts –traditional and modern ; Selling Vs marketing ; Marketing Mix ; Marketing environment.	UNIT -I International Marketing : Nature , definition and scope of international marketing; Domestic marketing Vs International marketing ; International environment – internal and external.
August	<b>UNIT-I</b> : Scope of total income, residence and tax liability, income which does not form part of total income .	UNIT-II State Excise ; CENVAT. Detail study of State excise during calculation of tax.	UNIT-I Financial statement ; Objectives and methods of financial statements analysis ; Ratio analysis ; Classification of ratio – Profitability ratios ; turnover ratios , liquidity ratios , Advantages of ratio analysis ; Limitations of accounting ratios.	UNIT- I Audit and books ; Working papers and evidences .  UNIT-II Internal Check System : Internal control.	UNIT_II Consumer Behavior and Market Segmentation : Nature , scope and Significance of consumer behavior ; Market segmentation – Concept and Importance ; Bases for market segmentation.	UNIT-II Identifying & Selecting Foreign Market: Foreign market entry mode decisions. Product Planning for international market : Product designing ; Standardization Vs adaptation; Branding & Packaging ; Labeling and quality Issues ;

September	<b>UNIT-II</b> Heads of Income : UNIT-IIe Salaries ;	UNIT-III Customs : Role of Customs in international trade ; Important terms and definitions; Goods ; Duty ; Exporter ; Foreign going vessel ; Aircraft goods Export Manifest ; Letter of credit ; Kinds of duties Basic , auxiliary , additional and countervailing ; Basics of levy-advallorem, Specific duties ; Prohibition of export and import of goods and provisions regarding notified & specified goods;	UNIT-II Funds Flow Statement as per Indian Accounting Standard – 3 ; Cash Flow Statement.	UNIT-II Audit Procedure : Vouching : Verification of assets and liabilities.	UNIT-III Product : Concept of product, consumer and industrial goods ; Product Planning and development ; Packaging role and functions ; Brand name and Trade mark ; after sale service ; product-life-cycle concept.	UNIT-II After sale service . International Pricing : Factors influencing International price; Pricing process and methods ; International price quotations and payment terms.
October	<b>UNIT-II</b> Income from House Property.	UNIT-III Import of goods – Free import and restricted import; Type of import - Import of cargo , import of personal baggage, import of stores. Clearance Procedure : For home consumption, for warehousing for re- export; Clearance Procedure for import by post ; Prohibited export of cargo , export of baggage ; Export of Cargo by land , sea , and air routes.	UNIT -III Absorption and Marginal Costing : Marginal and differential costing as a tool for decision making – make or buy ; Change of price mix ; Pricing ;	UNIT-III Audit of Limited Companies : a) Company auditor – Appointment , powers , duties & liabilities. b) Divisible profits and dividends. c) Auditors report – standard report and qualified report.	UNIT-III Price : Importance of price in the marketing mix ; Factors affecting price of a product/service ; Discounts and rebates.	UNIT-III Promotion of Product and Service Abroad : Methods of international promotion ; Direct mail and sales literature ;
November	<b>UNIT-III</b> Profit and gains of business or profession, including provisions relating to specific Business	Unit-IV Central Sales Tax : Important terms and definitions under the Central Sales Tax Act. 1956 : Dealer , dealer goods ,	UNIT- III Break-even analysis ; Exploring new markets ; Shut down decisions.	UNIT -III d) Special audit of banking companies. e) Audit of	UNIT-IV Distribution channels and Physical Distribution : Distribution channels – Concept and role ; Types of	UNIT-III Advertising ; Personal selling ; Trade fairs and exhibitions.

	Capital gains	place of business , sale , sale price, turnover, year, appropriate Authority ; Nature & scope of Central Sales Tax Act. ;		educational institutions. f) Audit of Insurance companies.	distribution channel ; Factors affecting choice of a distribution channel ; Retailers & wholesalers.	
December	<b>UNIT-III</b> Income from other sources. <b>UNIT-IV</b> Computation of Tax Liability : Set-off and carry forward of Losses ; Deduction from gross total income.	UNIT-IV Provisions relating to inter-state sales; Sales/Purchase in the course of imports and export out of India. Registration of dealers and procedure thereof ; Rate of tax ; Exemption of subsequent sales ; Determination of turnover.	UNIT-IV Budgeting for Profit Planning and Control : Meaning of budget and Budgetary control; Objectives ; Merits and limitations ; Types of budgets; Fixed and flexible budgeting ;	UNIT- IV Investigation : Investigation ; Audit of non profit companies a)Where fraud is suspended , and b)When a running a business is proposed.	UNIT-IV Physical Distribution of goods – Transportation , warehousing , Inventory Control ; Order processing.	UNIT-IV International Distribution : Distribution Channels and logistic decisions ; Selection and appointment of foreign sales agents.
January	<b>UNIT-IV</b> Aggregation of income ; Computation of total income and tax liability of an Individual , H.U.F, and Firm	Unit-V State Commercial Tax Definition , Registration , Tax liability , Procedure of computation & collection of Tax , Penalties & Prosecution calculation of tax .	UNIT- IV Control ratio ; Zero based budgeting ; Responsibility accounting ; Performance budgeting.	<b>UNIT-V</b> Recent Trends in Auditing : Nature and significance of cost audit ; Tax audit;	UNIT -V Promotion : Methods of promotion ; Optimum promotion mix ; Advertising Media – their relative merits and limitations ;	UNIT-V Export Policy and Practices in India : EXIM Policy – an overview ; Trends in India's foreign trade ; Steps in starting an export business ; Product selection ;
February	<b>UNIT-V</b> Tax Management : Tax deduction at source , Advance payment of tax ; Assessment procedures ; Tax planning for individuals. Tax evasion, Tax avoidance and Tax Planning Tax Administration : Authorities , appeals , penalties.	UNIT-V VAT- Preliminary Knowledge.	<b>UNIT-V</b> Standard Costing and Variance Analysis : Meaning of Standard cost and Standard costing; Advantages and application ; Variance analysis – material ; Labour and overhead ( Two-way analysis) ; Variances .	<b>UNIT-V</b> Management audit . Company auditing – Qualification , Appointment ,Resignation and Liabilities.	UNIT -V Characteristics of an effective advertisement ; Personal selling ; Selling as a career ; Classification of successful sales person ; Functions of salesman.	UNIT-V Export pricing; Export finance; Documentation; Export procedures ; Export assistance and incentives.

**CLASS: P.G.DIPLOMA IN DIETETICS**  
**SESSION:2018-19**

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**NAME OF PAPER: BASIC DIETETICS**

August	<b>CONCEPT OF DIET THERAPY</b>  Growth and source of dietetics, Purpose & principles of therapeutic diets, Modification of Normal Diet, Classification of therapeutic Diets.
September	<b>ROLE OF DIETICIAN</b>  Definition Of Nutritional Care, Inter Personal Relationship with Patient, Planning and Implementing dietary care, Team approach to nutritional care.  <b>INTRODUCTION TO HOSPITAL FOOD SERVICE MANAGRMENT</b>  Types of food services, Selection of food material, Cost Control ,Sanitation and safety(In brief).
October	<b>ROUTINE HOSPITAL DIETS</b>  Per-operative and post-operative diets, study and review of hospital diets, Basic Concepts and methods of (I)Oral Feeding(II)Tube Feeding(III) Parental Nutrition.  .

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PROPOSED TEACHING PLAN FOR THE SESSION 2018-19

ECONOMICS

M.A. I & II SEMESTER

PAPER-I MICRO ECONOMICS

MONTH	UNIT	TOPIC
JULY	UNIT-I	Demand Analysis; Economic models. Equilibrium and Disequilibrium Systems. Elasticity of supply. Theories of demand-Utility.
AUGUST	UNIT-II	Indifference curve ; Consumer's Surplus, Price formation - Theory of Production and Costs.
SEPTEMBER	UNIT-III	Isoquants- ; Returns to factor; Economies of scale; Elasticity of substitution; Euler's theorem, Monopoly .
OCTOBER	UNIT-IV	Monopolistic Competition, Oligopoly.
NOVEMBER	Seminars & Internal assessment	
DECEMBER	Semester Exam	
JANUARY	UNIT-I	Critical evaluation of marginal analysis.
FREBRUARY	UNIT-II	NEO-Classical Approach of Distribution and General Equilibrium Theory of distribution.
MARCH	UNIT-III	welfare economics.
APRIL	UNIT-IV	Partial and General equilibrium.
MAY	Seminars & Internal assessment	
JUNE	Semester Exam	

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PROPOSED TEACHING PLAN FOR THE SESSION 2018-19  
ECONOMICS  
M.A. I & II SEMESTER  
PAPER-II MACRO ECONOMICS

MONTH	UNIT	TOPIC
JULY	UNIT-I	National income and accounts, Social accounting,
AUGUST	UNIT-II	Consumption function
SEPTEMBER	UNIT-III	Investment function
OCTOBER	UNIT-IV	Demand for money – Quantity theory of money
NOVEMBER	Seminars & Internal assessment	
DECEMBER	Semester Exam	
JANUARY	UNIT-I	Theory of Inflation, control of inflation.
FREBRUARY	UNIT-II	Business Cycles.
MARCH	UNIT-III	Monetary Policy.
APRIL	UNIT-IV	Fiscal Policy.
MAY	Seminars & Internal assessment	
JUNE	Semester Exam	



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PROPOSED TEACHING PLAN FOR THE SESSION 2018-19

ECONOMICS

M.A. I & II SEMESTER

PAPER-III QUANTITATIVE METHODS & RESEARCH METHODOLOGY

MONTH	UNIT	TOPIC
JULY	UNIT-I	Skewness Correlation-
AUGUST	UNIT-II	Regression analysis: Interpolation and extrapolation
SEPTEMBER	UNIT-III	Association of Attributes Probability
OCTOBER	UNIT-IV	Index Number Time series
NOVEMBER	Seminars & Internal assessment	
DECEMBER	Semester Exam	
JANUARY	UNIT-I	Research Methodology and Research Methods. Methods of collection of data.
FREBRUARY	UNIT-II	Classification and tabulation of data, Frequency distribution of data,. Hypothesis,
MARCH	UNIT-III	Sampling and sample designs .
APRIL	UNIT-IV	Test of Significance – meaning, Procedure of test of significance, Student 't' test, Chi-square test.
MAY	Seminars & Internal assessment	
JUNE	Semester Exam	

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ECONOMICS  
M.A. I & II SEMESTER  
PAPER-IV INDIAN ECONOMICS

MONTH	UNIT	TOPIC
JULY	UNIT-I	GDP and National Income of India
AUGUST	UNIT-II	Demographic Features of Indian Population
SEPTEMBER	UNIT-III	Agricultural Development in Indian Economy
OCTOBER	UNIT-IV	Industrial Development in India
NOVEMBER	Seminars & Internal assessment	
DECEMBER	Semester Exam	
JANUARY	UNIT-I	Planning in India
FEBRUARY	UNIT-II	Problem of Poverty and Inequality Problem of Unemployment in India
MARCH	UNIT-III	Public Finance in Indian Economy
APRIL	UNIT-IV	External Sector Behavior of Indian Economy
MAY	Seminars & Internal assessment	
JUNE	Semester Exam	

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PROPOSED TEACHING PLAN FOR THE SESSION 2018-19

ECONOMICS

M.A. I & II SEMESTER

PAPER-V LABOUR & INDUSTRIAL ECONOMICS

MONTH	UNIT	TOPIC
JULY	UNIT-I	Industrialization pattern, Market Structure, Theories of Industrial Localization.
AUGUST	UNIT-II	Size & Growth of the firm, Industrial Productivity Industrial Policy of India, Industrial Policy of Chhattisgarh. Role of Public & Private Sectors. Liberalization and privatization. Regional industrial growth in India.
SEPTEMBER	UNIT-III	Industrial Finance.
OCTOBER	UNIT-IV	Industrial Labour and Labour Legislation.
NOVEMBER	Seminars & Internal assessment	
DECEMBER	Semester Exam	
JANUARY	UNIT-I	Labour Market, Employment and development relationship - Poverty, Unemployment – concept, types and measurement.
FREBRUARY	UNIT-II	Impact of rationalization, public sector and employment in agricultural sector; analysis of educated employment policy in five year plans its evaluation. Wage Determination
MARCH	UNIT-III	Productivity and wage relationship. Asymmetric information and efficiency of labour markets in wage determination; National wage policy,
APRIL	UNIT-IV	Labour legislation in India.
MAY	Seminars & Internal assessment	
JUNE	Semester Exam	

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PROPOSED TEACHING PLAN FOR THE SESSION 2018-19

ECONOMICS

M.A. III & IV SEMESTER

PAPER-I ECONOMICS OF GROWTH

MONTH	UNIT	TOPIC
JULY	UNIT-I	Economic Growth and Development, Physical Quality of Life Index, Human development index,
AUGUST	UNIT-II	Capital Output Ratio, input-output Analysis, Project evaluation and Cost – Benefit Analysis.
SEPTEMBER	UNIT-III	The Adam Smith model, The Ricardian model, The Marxian model. The Schumpeterian model, Keynesian, Mahalanobis .
OCTOBER	UNIT-IV	Harrod-Domar Model, Kaldor model, John Robinson model, Meads, Solow .
NOVEMBER	Seminars & Internal assessment	
DECEMBER	Semester Exam	
JANUARY	UNIT-I	Economic Planning- Objective. Achievements and Failures of Indian Plans
FREBRUARY	UNIT-II	Vicious circle of Poverty, Unlimited Supply of labour model, Big-Push Theory, Theory of critical minimum efforts, Balanced and unbalanced growth. Ranis and Fai model
MARCH	UNIT-III	Investment criterion in economic development
APRIL	UNIT-IV	measuring poverty and Income inequalities, unemployment, The choice of techniques, sustainable development, Role of state in Economic development. Problem of Price-rise in India.
MAY	Seminars & Internal assessment	
JUNE	Semester Exam	

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**PROPOSED TEACHING PLAN FOR THE SESSION 2018-19**

**ECONOMICS**

**M.A. III & IV SEMESTER**

**PAPER-II International Trade**

<b>MONTH</b>	<b>UNIT</b>	<b>TOPIC</b>
JULY	UNIT-I	Theory of International Trade
AUGUST	UNIT-II	Heckschar-Ohlin Theory of International Trade, Terms of Trade & Economic Development.
SEPTEMBER	UNIT-III	The Theory of Intervention – Tariffs, Quotas, and nontariff barriers.
OCTOBER	UNIT-IV	Balance of Payments, Foreign Exchange Rate.
NOVEMBER	Seminars & Internal assessment	
DECEMBER	Semester Exam	
JANUARY	UNIT-I	The Theory of Regional Blocks-Forms of Economic Co-operation, reforms for the emergence of trading blocks at the Global level
FREBRUARY	UNIT-II	Regionalism of European Union, NAFTA, Multilateralism and WTO,
MARCH	UNIT-III	Theory of short term & long term capital movement and international trade
APRIL	UNIT-IV	WTO and World Bank, Export policies of India, working and regulations of MNCs in India.
MAY	Seminars & Internal assessment	
JUNE	Semester Exam	

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ECONOMICS

M.A. III & IV SEMESTER

PAPER-III Public Finance

MONTH	UNIT	TOPIC
JULY	UNIT-I	Role of Government in organized Society. Principles of maximum social advantages, Taxation.
AUGUST	UNIT-II	Indian tax System, Indirect & direct tax, personal income tax..
SEPTEMBER	UNIT-III	Public Expenditure.
OCTOBER	UNIT-IV	Fiscal Federation in India.
NOVEMBER	Seminars & Internal assessment	
DECEMBER	Semester Exam	
JANUARY	UNIT-I	Fiscal Policy,
FREBRUARY	UNIT-II	Public Debt.
MARCH	UNIT-III	Federal Finance.
APRIL	UNIT-IV	Analysis of Chhattisgarh Govt. Financial Responsibilities and budget management Act.
MAY	Seminars & Internal assessment	
JUNE	Semester Exam	

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PROPOSED TEACHING PLAN FOR THE SESSION 2018-19

ECONOMICS

M.A. III & IV SEMESTER

PAPER-IV ENVIRONMENTAL ECONOMICS

MONTH	UNIT	TOPIC
JULY	UNIT-I	Welfare Economics – Definition of welfare Economics. Criterion of Social Welfare-Bentham Criteria, Cardinalize Criterion, Pareto Optimality Criterion .
AUGUST	UNIT-II	Social Welfare function, Maximization of social welfare, Maximization in perfect competition, public goods and private goods. Market failure & public goods
SEPTEMBER	UNIT-III	Environmental Economics – Definition of Environmental Economics, Relation between Environmental Economics and Economics.
OCTOBER	UNIT-IV	Theories of Externalities –Pigouvian Taxes and Subsidies. Environmental values , international carbon Tax, Environment and W.T.O.
NOVEMBER	Seminars & Internal assessment	
DECEMBER	Semester Exam	
JANUARY	UNIT-I	Pollution – Classification of pollution
FREBRUARY	UNIT-II	Environmental Protection- Environmental laws.
MARCH	UNIT-III	Classification of Resource, social forestry
APRIL	UNIT-IV	Economics of Education, Human Capital, Human Capital Vs. Physical capital. Health Economics- Prospective HDI, GDI, GEM and HPI.
MAY	Seminars & Internal assessment	
JUNE	Semester Exam	

GOVT.D.B.GIRL'S P.G. (AUTONOMOUS) COLLEGE  
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PROPOSED TEACHING PLAN FOR THE SESSION 2018-19

ECONOMICS

M.A. III & IV SEMESTER

PAPER-V DEMOGRAPHY

MONTH	UNIT	TOPIC
JULY	UNIT-I	Demography – Meaning and importance, Theories of Population – Theory of optimum population and Theory of demographic transition.
AUGUST	UNIT-II	Migration.
SEPTEMBER	UNIT-III	Mortality.
OCTOBER	UNIT-IV	Fertility.
NOVEMBER	Seminars & Internal assessment	
DECEMBER	Semester Exam	
VIVA		



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**M. A. ENGLISH LITERATURE**  
**SEMESTER - I**  
**PAPER-I**  
**POETRY-I**

<b>MONTH</b>	<b>PLAN</b>
<b>JULY</b>	<b>UNIT-I</b> Geoffrey Chaucer: Prologue to the Canterbury Tales (Detailed)
<b>AUGUST</b>	<b>UNIT-II</b> John Donne: Death Be not Proud, Valediction, Forbidden Mourning, The Good Morrow, Extasie, Cannonization (Detailed) Shakespeare: Sonnets 1, 18, 26, 54, 116 (Non- detailed)
<b>SEPTEMBER</b>	<b>UNIT-III</b> John Milton: Paradise Lost – Book 1 (Lines 1-300) (Detailed) John Dryden: Absalom and Achitophel (Non - detailed) <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>UNIT-IV</b> Alexander Pope: Rape of the Lock (Detailed Study) Thomas Gray: Elegy Written in a Country Churchyard (Detailed) <b>Internal Test 2</b>
<b>NOVEMBER</b>	<b>UNIT-IV - William Collins: Ode to Evening (Non-Detailed)</b> <b>SEMINAR/EXAM</b>
<b>DECEMBER</b>	<b>EXAM /SEMESTER BREAK</b>

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**SEMESTER - I**  
**PAPER-II**  
**DRAMA-I**

<b>MONTH</b>	<b>PLAN</b>
<b>JULY</b>	<b>UNIT-I</b> Christopher Marlowe: Dr. Faustus (Detailed)
<b>AUGUST</b>	<b>UNIT-II</b> John Webster: The Duchess of Malfi (Detailed) Ben Jonson: The Alchemist (Non-Detailed)
<b>SEPTEMBER</b>	<b>UNIT-III</b> William Congreve: The Way of the World (Non-Detailed) Oliver Goldsmith: She Stoops to Conquer (Detailed) <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>UNIT-V</b> William Shakespeare: King Henry IV- Part I (Non- detailed) The Tempest (Detailed) <b>Internal Test 2</b>
<b>NOVEMBER</b>	<b>SEMINAR/EXAM</b>
<b>DECEMBER</b>	<b>SEMESTER BREAK</b>

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**PAPER-III**  
**PROSE-I**

<b>MONTH</b>	<b>PLAN</b>
<b>JULY</b>	<b>UNIT-I</b> Francis Bacon: Selected Essays: Of Studies, Of Truth, Of Friendship (All – Detailed)
<b>AUGUST</b>	<b>UNIT-II</b> Thomas Browne: Urn Burial (Detailed Study) John Milton: Aeropagitica (Non -detailed)
<b>SEPTEMBER</b>	<b>UNIT- IV</b> Joseph Addison: Sir Roger at Home, Sir Roger at Assizes, Sir Roger at Church (All Detailed) Richard Steele: Recollections of Childhood, A Day in London, The Spectator Club (Non-Detailed) Rousseau: Confessions (Non -detailed) <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>UNIT- IV</b> Samuel Johnson: Life of Milton (Non-Detailed) R. L. Stevenson: Walking Tours, An Apology for Idlers, El Dorado (All Detailed) <b>Internal Test 2</b>
<b>NOVEMBER</b>	<b>SEMINAR/EXAM</b>
<b>DECEMBER</b>	<b>SEMESTER BREAK</b>

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**PAPER-IV**  
**FICTION-I**

<b>MONTH</b>	<b>PLAN</b>
<b>JULY</b>	<b>UNIT-I</b> John Bunyan: The Pilgrim's Progress Daniel Defoe: Robinson Crusoe
<b>AUGUST</b>	<b>UNIT-II</b> Henry Fielding: Joseph Andrews Oliver Goldsmith: The Vicar of Wakefield
<b>SEPTEMBER</b>	<b>UNIT-III</b> Sir Walter Scott: Ivanhoe Jane Austen: Pride and Prejudice <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>UNIT-IV</b> Charles Dickens : Great Expectations Thomas Hardy: Tess of Du'bervilles <b>Internal Test 2</b>
<b>NOVEMBER</b>	<b>SEMINAR/EXAM</b>
<b>DECEMBER</b>	<b>EXAM /SEMESTER BREAK</b>

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**SEMESTER - II**  
**PAPER-I**  
**POETRY-II**

<b>MONTH</b>	<b>PLAN</b>
<b>JANUARY</b>	<b>UNIT-I</b> <b>William Wordsworth:</b> Immortality Ode (Non-Detailed) Tintern Abbey (Detailed) <b>Samuel Taylor Coleridge:</b> Dejection an Ode (Non-Detailed) Kubla Khan (Detailed)
<b>FEBRUARY</b>	<b>UNIT-II</b> <b>P. B. Shelly:</b> Ode to the Westwind (Detailed) To the Skylark (Non-Detailed) <b>John Keats:</b> Ode to Autumn, Ode to Nightingale (Detailed) Ode to Grecian Urn (Non-Detailed)
<b>MARCH</b>	<b>UNIT-III</b> <b>Alfred Tennyson:</b> Lotus Eaters (Detailed) Ulysses (Non-Detailed) <b>Robert Browning:</b> Prospice, The Last Ride Together (Detailed)
<b>APRIL</b>	<b>UNIT-IV</b> <b>Mathew Arnold:</b> Scholar Gypsy (Non-Detailed) <b>Gerard Manley Hopkins:</b> The Windhover, Pied Beauty, Felix Randal (Detailed) <b>Seminar</b>
<b>MAY</b>	<b>SEMESTER EXAM</b>

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**PAPER-II**  
**DRAMA**

<b>MONTH</b>	<b>PLAN</b>
JANUARY	<b>UNIT-I</b> <b>William Shakespeare:</b> Hamlet (Detailed) Macbeth (Non-Detailed)
FEBRUARY	<b>UNIT-II</b> <b>George Bernard Shaw:</b> St. Joan (Detailed) <b>J. M. Synge:</b> Riders to the Sea (Non-Detailed)
MARCH	<b>UNIT-III</b> <b>Thomas Stearns Eliot:</b> Murder in the Cathedral (Detailed)
APRIL	<b>UNIT-IV</b> <b>Henrik Ibsen:</b> A Doll's House (Detailed) <b>Anton Chekov:</b> The Cherry Orchard (Non-Detailed) <b>Seminar</b>
MAY	SEMESTER EXAM

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**PAPER-III**  
**PROSE-II**

<b>MONTH</b>	<b>PLAN</b>
JANUARY	<b>UNIT-I</b> <b>Charles Lamb:</b> Dream Children, A Bachelor's Complaint, Dissertation upon a Roasted Pig. (Detailed) <b>William Hazlitt:</b> On going on a Journey, Indian Jugglers (Non-Detailed)
FEBRUARY	<b>UNIT-II</b> <b>Thomas Carlyle:</b> Hero as a Poet (Detailed) <b>John Ruskin:</b> Sesame and Lilies (Non-Detailed)
MARCH	<b>UNIT-III</b> <b>Robert Lynd:</b> On Forgetting, The Pleasure of Ignorance (Non-Detailed) <b>A.G. Gardiner:</b> On saying "Please", On the rule of the Road (Detailed)
APRIL	<b>UNIT-IV</b> <b>Thomas Moore:</b> Utopia (Detailed) <b>Machiavelli:</b> The Prince (Non-Detailed) <b>Seminar</b>
MAY	SEMESTER EXAM

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**PAPER-IV**  
**FICTION-II**

<b>MONTH</b>	<b>PLAN</b>
JANUARY	<b>UNIT-I</b> <b>James Joyce:</b> Portrait of the Artist as a Young Man <b>Virginia Woolf:</b> Mrs. Dalloway
FEBRUARY	<b>UNIT-II</b> <b>D. H. Lawrence:</b> Sons and Lovers <b>George Orwell:</b> Animal Farm
MARCH	<b>UNIT-III</b> <b>Joseph Conrad:</b> Heart of Darkness <b>Chinua Achebe:</b> Things Fall Apart
APRIL	<b>UNIT-IV</b> <b>J. M. Coetzee:</b> Disgrace <b>Doris Lessing:</b> The Grass is singing. <b>Seminar</b>
MAY	SEMESTER EXAM



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**SEMESTER - III**  
**PAPER-I**  
**CRITICAL THEORY- I**

<b>MONTH</b>	<b>PLAN</b>
<b>JULY</b>	<b>UNIT-I</b> Aristotle: Poetics
<b>AUGUST</b>	<b>UNIT-II</b> Longinus: On the Sublime
<b>SEPTEMBER</b>	<b>UNIT-III</b> Philip Sidney: An Apology for Poetry John Dryden: Essay on Dramatic Poesy <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>UNIT-IV</b> William Wordsworth: Preface to Lyrical Ballads S. T. Coleridge: Biographia Literaria chapter XIII to XVII <b>UNIT-V</b> Mathew Arnold: The Study of Poetry, The Function of Criticism in Present Times <b>Internal Test 2</b>
<b>NOVEMBER</b>	<b>UNIT-V</b> New Bearings in English Poetry <b>SEMINAR/EXAM</b>
<b>DECEMBER</b>	<b>EXAM /SEMESTER BREAK</b>

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**SEMESTER - III**  
**PAPER-II**  
**INDIAN WRITING IN ENGLISH - I**

<b>MONTH</b>	<b>PLAN</b>
<b>JULY</b>	<b>UNIT-I</b> Sri Aurobindo: Savitri- Book I, Canto I Rabindranath Tagore: Songs 1 to 15 from Gitanjali
<b>AUGUST</b>	<b>UNIT-II</b> Kamla Das: The Freaks, A Hot Noon IN Malabar, The Looking Glass, The Sunshine Cat Nissim Ezekiel: Enterprise, Poet Lover and Birdwatcher Night of the Scorpion
<b>SEPTEMBER</b>	<b>UNIT-III</b> Girish Karnad: Nagmandala Vijay Tendulkar: Silence 'The Court is in Session' <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>UNIT-IV</b> Raja Rao: Kanthapura Mulk Raj Anand: Coolie <b>UNIT-V</b> V.S. Naipaul :A House for Mr.Biswas
<b>NOVEMBER</b>	<b>UNIT-V</b> Mnaju Kapur: Difficult Daughters <b>SEMINAR/EXAM</b>
<b>DECEMBER</b>	<b>EXAM /SEMESTER BREAK</b>

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**SEMESTER - III**  
**PAPER-III**  
**AMERICAN LITERATURE - I**

<b>MONTH</b>	<b>PLAN</b>
<b>JULY</b>	<b>UNIT-I</b> A brief survey of American literature, Puritanism, Democracy in America, Romanticism in America, Indian Thought in Emerson, Thoreau and Whitman, New England Renaissance,
<b>AUGUST</b>	<b>UNIT-II</b> Walt Whitman: When Lilacs last in the Dooryard Bloomed There was a child went forth everyday Edgar Allan Poe: Dreamland, The Raven. <b>UNIT-III</b> Robert Frost: Birches, Stopping by the Woods on a Snowy Evening, Departmental Emily Dickinson: Bring Me the Sunset in a Cup (128); The Soul selects her own Society (303); Some keep the Sabbath Going to Church (324)
<b>SEPTEMBER</b>	<b>UNIT-IV</b> Wallace Stevens: Peter Quince at the Clavier, Of Modern Poetry, Sunday Morning, A Postcard from the Volcano <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>UNIT-V</b> Ralph Waldo Emerson: Self-Reliance Henry David Thoreau: Civil Disobedience <b>Internal Test 2</b>
<b>NOVEMBER</b>	<b>SEMINAR/EXAM</b>
<b>DECEMBER</b>	<b>EXAM /SEMESTER BREAK</b>

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**SEMESTER - III**  
**PAPER-IV**  
**LINGUISTICS - I**

<b>MONTH</b>	<b>PLAN</b>
<b>JULY</b>	<b>UNIT-I</b> Language: Definition, Human Language and its difference with Animal Communication, Speech and Writing as manifestations of Language, Characteristics of Human Language.
<b>AUGUST</b>	<b>UNIT-II</b> Linguistics: Definition, Objective, Branches of Linguistics: Phonetics, Phonology, Morphology, Syntax and Semantics, Linguistics and its Related Disciplines.
<b>SEPTEMBER</b>	<b>UNIT-III</b> Phonetics: Definition, Branches: Articulatory /Acoustic Phonetics, Auditory Phonetics, The Organs of Speech and their Functions. <b>UNIT-IV</b> Classification of Human Speech Sounds: Characteristics of Vowels and Consonants, Similarities and Dissimilarities between Vowels and Consonants, Phonetics Symbols (IPA). <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>UNIT-V</b> Classification of Vowels: On the Basis of Height of the Tongue, Parts of the Tongue, Position of Soft Palate, Position of Muscles and Length. Classification of Consonants: On the Basis of Place and Manner of articulation, aspiration and voicing. <b>Internal Test 2</b>
<b>NOVEMBER</b>	<b>UNIT-V</b> Sound Attributes: Length, Stress, Pitch, Intonation and Juncture. <b>SEMINAR/EXAM</b>
<b>DECEMBER</b>	<b>EXAM /SEMESTER BREAK</b>

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**SEMESTER - IV**  
**PAPER-I**  
**CRITICAL THEORY-II**

<b>MONTH</b>	<b>PLAN</b>
JANUARY	<b>UNIT-I</b> <b>Bharata:</b> Natyashastra (Rasa and Bhava Theory) <b>Anandavardhanacharya:</b> Dhvanyaloka
FEBRUARY	<b>UNIT-II</b> <b>T. S. Eliot:</b> Tradition and Individual Talent <b>UNIT-III</b> <b>I. A. Richards:</b> 'Poetry for Poetry's Sake' Analysis Of Poem
MARCH	<b>UNIT-IV</b> <b>Ferdinand S Sassure:</b> Nature of Linguistic Sign <b>Michael Foucault:</b> What is an Author?
APRIL	<b>UNIT-V</b> <b>Northrop Fry:</b> The Function of Criticism <b>Elaine Showalter:</b> Feminist Criticism in Wilderness <b>Seminar</b>
MAY	SEMESTER EXAM

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**SEMESTER - IV**  
**PAPER-II**  
**INDIAN WRITING IN ENGLISH-II**

<b>MONTH</b>	<b>PLAN</b>
JANUARY	<b>UNIT-I</b> <b>A.K. Ramanujan:</b> Obituary, Love Poem for a Wife <b>Jayant Mahapatra:</b> Indian Summer, A Missing Person, Dawn at Puri
FEBRUARY	<b>UNIT-II</b> <b>N. C. Choudhary:</b> The Autobiography of an Unknown Indian <b>J. L. Nehru:</b> The Discovery of India (chapter 1 to 5)
MARCH	<b>UNIT-III</b> <b>M. K. Gandhi:</b> The Story of my Experiments with Truth <b>A.P.J. Kalam:</b> Ignited Minds <b>UNIT-IV</b> <b>Shashi Deshpande:</b> The Dark Holds no Terror
APRIL	<b>UNIT-IV</b> <b>Anita Desai:</b> Cry the Peacock <b>UNIT-V</b> <b>Arundhati Roy:</b> The God of Small Things <b>Arvind Adiga:</b> The White Tiger <b>Seminar</b>
MAY	SEMESTER EXAM

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**PAPER-III**  
**AMERICAN LITERATURE-II**

<b>MONTH</b>	<b>PLAN</b>
<b>JANUARY</b>	<b>UNIT-I</b> Expressionism, Naturalism, Realism, Existentialism, The Theatre of Absurd <b>UNIT-II</b> <b>Eugene O' Neill:</b> The Emperor Jones
<b>FEBRUARY</b>	<b>UNIT-II</b> <b>Tennessee Williams:</b> The Glass Menagerie <b>UNIT-III</b> <b>Arthur Miller:</b> All My Sons <b>Edward Albee:</b> Who's Afraid of Virginia Woolf?
<b>MARCH</b>	<b>UNIT-IV</b> <b>William Faulkner:</b> The Sound and the Fury <b>Ernest Hemingway:</b> The Old Man and the Sea
<b>APRIL</b>	<b>UNIT-V</b> <b>Nathaniel Hawthorne:</b> The Scarlet Letter <b>Mark Twain:</b> The Adventures of Huckleberry Finn
<b>MAY</b>	<b>SEMESTER EXAM</b>

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**SEMESTER - IV**  
**PAPER-IV**  
**LINGUISTICS-II**

<b>MONTH</b>	<b>PLAN</b>
JANUARY	<b>UNIT-I</b> <b>Phoneme:</b> Definition, Distinctive features of Sounds, Allophones and Classification of English Phonemes <b>UNIT-II</b> <b>Morphology:</b> Morpheme, Morph, Allomorph, Types of Morphemes, Word-Classes
FEBRUARY	<b>UNIT-III</b> <b>Syntax:</b> Sentence types- Simple, Compound, Complex, Constituents, Immediate Constituents, I C Analysis
MARCH	<b>UNIT-IV</b> <b>Semantics:</b> Semene, Types of meaning: Synonymy, Antonymy, Polysymy, Homonymy, Collocation, Sets
APRIL	<b>UNIT-V</b> Introduction to Phrase Structure Grammar Limitation to Phrase Structure Grammar
MAY	SEMESTER EXAM



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**SEMESTER - IV**  
**PAPER-V**  
**MODERNIST LITERATURE-II**

<b>MONTH</b>	<b>PLAN</b>
JANUARY	<b>UNIT-I</b> <b>Samuel Beckett:</b> Waiting for Godot <b>UNIT-II</b> <b>John Osborne:</b> Look Back in Anger
FEBRUARY	<b>UNIT-III</b> <b>Alice Walker:</b> The Color Purple <b>Ralph Allison:</b> The Invisible MaN
MARCH	<b>UNIT-IV</b> <b>Edward Said:</b> Orientalism
APRIL	<b>UNIT-V</b> <b>Toni Morrision:</b> Beloved <b>George Lamming:</b> The Pleasures of Exile
MAY	SEMESTER EXAM

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**SESSION 2018-19**

**TEACHING PLAN**

**M. A.I SEMESTER GEOGRAPHY**

**PAPER-I**

**TITLE OF THE PAPER: GEOMORPHOLOGY**

MONTH	PLAN
JULY	Nature and scope of geomorphology, fundamental concepts. Interior of the earth.
AUGUST	Earth movements: Endogenic movement: Plate tectonics, volcanic with special reference to Himalayas. Exogenic process: concept of gradation agents and processes of gradation
SEPTEMBER	weathering mass wasting, Normal cycle of erosion, Interruption of the cycle of erosion, Drainage patterns
OCTOBER	Glacial, Aeolian and Marine (Coastal) River, Karst: processes and resulting landforms, slope, Analysis by penck wood & king
NOVEMBER	Geological structure and landforms: development of drainage and landscape on folded and domal structure, Applied geomorphology.

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**M. A.I SEMESTER GEOGRAPHY**

**PAPER-II**

**TITLE OF THE PAPER: CLIMATOLOGY**

MONTH	PROPOSED PLAN
JULY	Nature and scope of climatology and its relationship with meteorology. Composition of atmosphere; Insulation, heat balance of the earth, stability and instability, green house effect, vertical and horizontal distribution of temperature; Jet stream
AUGUST	General circulation in the atmosphere, acid rain, concept of air masses and atmospheric disturbances, ocean- atmospheric interaction, El Nino and La Nino; Monsoon winds & cyclones.
SEPTEMBER	application of general principles of elementary, physical and synoptic meteorology to the study and classification of climate, climatic classification of Koppen and Thornthwaite.
OCTOBER	Major climates of the world: Tropical, Temperate, Desert and Mountain climate; Climatic change and Global warming, Environment impact and Society's response.
NOVEMBER	Applied climatology.

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**M. A.I SEMESTER GEOGRAPHY**

**PAPER-III**

**TITLE OF THE PAPER: GEOGRAPHICAL THOUGHT**

MONTH	PROPOSED PLAN
JULY	Definition, scope and function of geography, geography as a science of aerial differentiation. Environmentalism, Determinism, Possibilism and Neo- determinism. Laws and theories in geography
AUGUST	The growth of geographical knowledge from earliest time up to 15 <sup>th</sup> century, contribution of Greek and Roman thinkers, <b>Arab</b> geographers:- Al- baruni. Al-masudi, Ibn-e-batuta and Al- idarsi . Geographical information in ancient Indian literature. The Dark Age in geography. The great age of maritime discovery and exploration.
SEPTEMBER	Contribution of Various Schools of thought in modern geography.  German school -Humbolt, Ritter, Ratzel. 2. French school - Vidal -de- la-bliche.3. British school - Mackinder.4.American - Davis and Huntington. Models in geography, quantitative revolution, positivism.
OCTOBER	Behaviouralism, Humanistic geography-relevance and the movement, Radical geography. Changing paradigm, status of Indian geography. Dualism in geography. :- Physical and Human, Systematic VS regional
NOVEMBER	Inductive VS Deductive.

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**TEACHING PLAN**

**M. A.I SEMESTER GEOGRAPHY**

**PAPER-IV**

**TITLE OF THE PAPER: ADVANCED GEOGRAPHY OF INDIA**

MONTH	PROPOSED PLAN
JULY	Physical & Biological elements in the geography of India, Geological structure, relief, climate water resources. Vegetation and Soils
AUGUST	Agriculture : major characteristics and problems, Important crops : wheat. rice, cotton, sugarcane, oil seeds, tea and coffee: Agricultural regions.
SEPTEMBER	Population : distribution density and growth, problems and policies. Sources of power coal, petroleum, natural gas, hydroelectricity .Mineral resources with specific reference to Iron-ore. Manganese. Bauxite and Copper
OCTOBER	Industrial development with special reference to Iron and steel. Cement. Cotton Textile and Sugar. Industrial regions Industrial Policy.
NOVEMBER	Trade Transport & Communication.

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**M. A.I SEMESTER GEOGRAPHY**

**PAPER-PRACTICAL**

**TITLE OF THE PAPER: ADVANCED CARTOGRAPHY**

MONTH	PROPOSED PLAN
JULY	
AUGUST	Thematic maps- Chorochromatic and choropleth map, isolines, dot map, routed map. flow map,
SEPTEMBER	Morphometric analysis: Profiles, Slope analysis, Altimetric and Hypsometric curves, Drainage analysis, Block diagram
OCTOBER	Map projection: Properties and principles of construction of world projection
NOVEMBER	Interpretation of maps: Topographical sheets

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**M. A.III SEMESTER GEOGRAPHY**

**PAPER-I**

**TITLE OF THE PAPER: ECONOMIC GEOGRAPHY**

MONTH	PLAN
JULY	Nature, scope and systematic development of Economic geography. Fundamental concepts in economic geography. Approaches and methods to study of Economic Geography
AUGUST	Mineral: - Iron - ore, Bauxite, Manganese .Energy resource: - Coal, Hydro-electricity, Petroleum and Non conventional resource
SEPTEMBER	Weber 's Theory of industrial location. Case studies of selected industries: Iron and Steel; Chemical, Engineering Textile; Industrial Regions, Transport and trade. Trade blocks: EEC, LAFTA and ASIAN
OCTOBER	Distribution factors of Economic Activities: - Primary and Secondary Economic Activities, World economies and economic regions, Market orientated economy.
NOVEMBER	Globalization and with special reference to India.

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2018-19**

**TEACHING PLAN**

**M. A.III SEMESTER GEOGRAPHY**

**PAPER-II**

**TITLE OF THE PAPER: RESEARCH METHODOLOGY**

MONTH	PLAN
JULY	Research Methodology : An over view Procedure of Scientific Research, Defining research problem, formulating Hypothesis, Research Design.
AUGUST	Methods of data collection : Observation, Questionire, Schedule and Interview, Sampling : sampling Methods, Si, of samples.
SEPTEMBER	Processing and analysis of Data : Processing, Editing, Coding, Classification and Tabulation. Analysis, Measurement of Central Tendency, Disperssion, Correlation
OCTOBER	Preparation of Research Reports; Steps layout Types of Report
NOVEMBER	Revision



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**SESSION 2018-19**

**TEACHING PLAN**

**M. A.III SEMESTER GEOGRAPHY**

**PAPER-III**

**TITLE OF THE PAPER: REGIONAL DEVELOPMENT AND PLANNING**

	PLAN
JULY	Concept of Planning, Region and Planning regions, Origin Definition and scope of Regional Planning. Evolution, Functions and Objectives of Regional Planning
AUGUST	Spatial Organisation: Von Thunen's Isolated State, Industrial Location Theory of Weber. Central Place theory: Single Function Central Place System, Multiple Functions and Hierarchies, Loschian Modification,
SEPTEMBER	Regional Development Theories: Export Base Theory, Neoclassical Exogeneous Growth Theory, Cumulative Causation Theory of Myrdal, Regional Development Theory of Hirschman., Core –periphery theory of Friedmann, Growth Pole Theory , New Economic Geography.
OCTOBER	Concept of Development. Planning for special areas: River basins- Damodar Valley Corporation, National Capital Region,
NOVEMBER	Development programme (HADP)/ Western Ghats Development programme (WGDP) and Tribal area of Chhattisgarh,

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2018-19**

**TEACHING PLAN**

**M. A.III SEMESTER GEOGRAPHY**

**PAPER-IV**

**TITLE OF THE PAPER: POPULATION GEOGRAPHY**

MONTH	PLAN
JULY	Definition and scope of Population geography. Historical development of population geography in western countries and in India. Sources of demographic data. Census and its history.
AUGUST	: Population density and its types, factors affecting population distribution. Population distribution in the world with special reference to Europe and Asia. Distribution of population in India
SEPTEMBER	Prehistoric and modern trends of population growth in the world. Regional aspect of population growth in India. Population theories. Demographic transition, future growth of population.
OCTOBER	Population composition in terms of age and sex, rural-urban, educational status and occupational structure, Significance of these elements in population analysis,
NOVEMBER	Migration of population: causes, characteristics and types. Methods of estimating internal migration. Internal migration in India. Important international migration

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2018-19**

**TEACHING PLAN**

**M. A.III SEMESTER GEOGRAPHY**

**PRACTICAL**

**Quantitative Techniques, Remote Sensing and Aerial Photographs**

MONTH	PLAN
JULY	
AUGUST	<b>Quantitative Techniques</b>  (i) Measures of Central tendency. Dispersion and Variability. Product Moment and Rank Correlation Coefficient, Linear Regression.  (ii) Hypothesis Testing: Chi-Square and 't' tests, Analysis of Variance and F test: Sampling,
SEPTEMBER	Running mean. Mean centre, Nearest Neighbour Analysis Lorenz Curve, Normal Distribution curve, probability
OCTOBER	<i>Remote Sensing and GIS</i> Air Photos and Photogrammetry: Elements of Photographic Systems: types, scales and ground coverage resolution, films with aerial Cameras, vertical photographs, relief displacement, airphoto interpretation.
NOVEMBER	Image Processing; types of imagery, basic concepts and techniques of visual interpretation, ground verification and transfer of interpreted thematic information to base maps. Remote sensing programme of India: image interpretation, mapping of land use and study of water resources. Application of remote sensing , elements of GIS

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2018-19**

**TEACHING PLAN**

**M. A.II SEMESTER GEOGRAPHY**

**PAPER-I**

**TITLE OF THE PAPER: GEOGRAPHY OF CHHATTISGARH**

MONTH	PLAN
JANUARY	Physical setting- location, extent, geology, physical, features, climate, drainage, soil and vegetation.
FEBURARY	Socio-economic-, major crops and agriculture region Water resources, irrigation, major irrigation projects, mineral and power resources [renewable and non- renewable] and power projects.
MARCH	Major industries - Iron and Steel, Cement, Aluminium, Agro and Forest-industries.  Population: Distribution of Population, Social, Cultural characteristics of population and tribes of Chhattisgarh
APRIL	Urbanization.Transport and Trade, Tourist places of Chhattisgarh, National parks, wild LIFE

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2018-19**

**TEACHING PLAN**

**M. A.II SEMESTER GEOGRAPHY**

**PAPER-II**

**TITLE OF THE PAPER: OCENOGRAPHY**

MONTH	PLAN
JANUARY	Nature and scope of oceanography, Detailed study of distribution of land and water, major features of ocean basins: continental shelf, continental slope oceanic plain and deeps, composition of sea water.
FEBURARY	Inter link between atmospheric circulation and circulation pattern in. the oceans, oceanic currents; Temperature, Salinity, Density, waves and tides.
MARCH	Marine sediments: Marine-biological environments, Bio- geo- chemical cycle in the ocean, bio-zones, types of organisms, food and mineral resources of the sea.
APRIL	Major marine environments: coastal, estuary, delta barrier Island, rocky coasts Pelagic environment impact of humans on the marine environment. Exclusive Economic Zone: with special reference to Indian ocean. Applied oceanography.

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2018-19**

**TEACHING PLAN**

**M. A.II SEMESTER GEOGRAPHY**

**PAPER-III**

**TITLE OF THE PAPER: AGRICULTURAL GEOGRAPHY**

MONTH	PLAN
JANUARY	Definition, nature, scope and significance of agricultural geography, approaches to the study of agriculture in geography commodity, deterministic, systematic, regional, behavioral and ecosystem Origin and dispersal of agriculture.
FEBURARY	Determinants of agricultural land use – Physical, economic, social, and technological, Land holding and land tenure systems, Land reforms, land use policy and planning. Cropping pattern, crop concentration, intensity of cropping, degree of commercialization, diversification and specialization efficiency and productivity, crop combination regions and agricultural development.
MARCH	Theories of agricultural location :- Von Thunen's theory of agricultural location and its recent modifications; Whittlesey's classification of agricultural regions; land use and land capability
APRIL	Agriculture in India : Landuse pattern, regional pattern of productivity : Green Revolution, Food deficit and food surplus regions; Specific Problems in Indian agriculture and their management; Agricultural policy in India.

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2018-19**  
**TEACHING PLAN**  
**M.A. II SEMESTER GEOGRAPHY**  
**PAPER- IV**  
**TITLE OF THE PAPER: URBAN GEOGRAPHY**

MONTH	PLAN
JANUARY	Definition and scope of urban geography. Centrifugal and centripetal forces in urban Geography , urban morphology and landuse pattern :- Burgess concentric zone theory , Hoyt sector model ,Ullman and Harris multiple Nuclei model.
FEBURARY	Evolution and growth of urban settlement . the geographical setting of urban centers :- site, situation and location , rank size rule. Functional classification of towns-Harris and Nelsion,
MARCH	Central place theory:- Christaller theory . Growth centre theory. Umland. Rural-urban fringe. Economic bases of Town. Basic -Non Basic concept.
APRIL	Urban Planning : Types and elements ,Urban Problem, Blight and renewal Urbanization in World and in India, Urban planning with reference to Naya Raipur.

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2018-19**

**TEACHING PLAN**

**M.A. II SEMESTER GEOGRAPHY**

**PAPER-PRACTICAL**

**TITLE OF THE PAPER: ADVANCED CARTOGRAPHY AND SURVEYING**

MONTH	PLAN
JANUARY	Graphs and Diagrams: Triangular graph. Ergograph, Snail diagram climatograph ; Pie- diagram and divided rectangles, proportional circles, spheres and cubes. Interpretation of Maps :-Geological maps and Thematic maps
FEBURARY	Principles and Methods of topographical survey involving the use of Theodolite and Dumpy level



**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2018-19**  
**TEACHING PLAN**  
**M. A.IV SEMESTER GEOGRAPHY**  
**PAPER- I**  
**TITLE OF THE PAPER: SOCIAL GEOGRAPHY**

MONTH	PLAN
JANUARY	Definition meaning and scope of Social geography . Nature and Relationship with other social sciences. Development of social geography. Approaches to the study of social geography, Evolution of Man. , Definition , Origin and Types of Society and Human Races.
FEBURARY	Society and Environment , Quality of Social Environment, Man's impact on Social environment-environmental pollution. Social well being and human development. Cultural Realms , Cultural Regions of Asia
MARCH	Indian Society in Historical Perspective, Traditional Hindu Social Organisation. Human Race of India .Religious and Linguistic groups of India .Backward and Scheduled Castes. Tribes Of India
APRIL	Social Change in India , Status of Woman in India , Human Development in India, Social Planning In India, Gender Inequality , Woman Empowerment, Urbanization and Related Problems in India.

**SESSION 2018-19**

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**TEACHING PLAN  
M. A.IV SEMESTER GEOGRAPHY  
PAPER-II**

**TITLE OF THE PAPER: POLITICAL GEOGRAPHY**

MONTH	PLAN
JANUARY	Nature, scope, history and recent development in Political geography; approaches to study, major schools of political thought. Global Strategic Views.
FEBURARY	Geographic Elements and the State: Physical Elements; Human elements: Economic elements; Cultural elements and Political geography and environment interface .Concept of State , Nation, Frontiers and Boundaries
MARCH	Capital and Core Area , Geographical studies of Election , Supra - Nationalism i.e Emergance of International Organisation and their Role in World Politics, The changing patterns of World Powers.
APRIL	Geopolitical significance of Indian Ocean: Political geography of SAARC Region. Political geography of contemporary India with special reference to its spirit: Unity in Diversity. Emerging Politico - geographical issues in modern World.

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2018-19**

**TEACHING PLAN**

**M. A.IV SEMESTER GEOGRAPHY**

**PAPER-III**

**TITLE OF THE PAPER: ENVIRONMENT GEOGRAPHY**

MONTH	PLAN
JANUARY	Meaning, definition, Concepts and theories related to environment. Environment and its components, Man environment relationship, Ecology and Ecosystem.
FEBURARY	Plant and Animal Kingdom, Bio-diversity. Biomes. Food Chains, Tropic level and productivity, Energy flow, Circulation of Elements, hydrological cycle.
MARCH	Soil system-erosion, Man and Climate, Environment Degradation. Environment Planning and Management, Pollution.
APRIL	Deforestation and Desertification, Hazards and Disaster. Environment Problem- global and in Indian scenario, Global Co-operation, World Summit on Sustainable development.

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**TEACHING PLAN**  
**SESSION 2018-19**  
**M.A. IV SEMESTER GEOGRAPHY**  
**PAPER-IV**  
**TITLE OF THE PAPER: DISASTER MANAGEMENT**

MONTH	PLAN
JANUARY	Disaster meaning and concept- hazard, risk, vulnerability, disaster management, plans, managing environment. Disaster its effect on different social group. Poverty and vulnerability. Disaster management prevention, preparedness and mitigation.
FEBRUARY	Disaster - Classification of disaster; Natural disaster - earthquake, floods, drought and global warming causes consequences and mitigation, natural disaster prone areas of world and India
MARCH	manmade disasters, their types-technological and industrial disasters. Social disaster: cause consequences and mitigation. With special reference to India.
APRIL	Disaster management- relief and response, reconstruction and rehabilitation. Disaster - Strategies for survival, types of strategies. Importance of information in disaster management, significance of Remote Sense and GIS. Planning in the context of Disaster management.

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2018-19**

**TEACHING PLAN**

**M. A.IV SEMESTER GEOGRAPHY**

**PROJECT WORK**

**TITLE OF THE PAPER: SOCIO ECONOMIC SURVEY**

MONTH	PLAN
JANUARY	Physical aspect- Location, Physical feature, Climate, Vegetation, Drainage, Soil and Land use. Cultural aspect- Population, Economic activities, Services and Settlements. Analysis of the findings and report writing.
FEBURARY	
MARCH	
APRIL	

**प्राचार्य शास. दू.ब. महिला स्नात.(स्वशासी) महाविद्यालय**  
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**टीचिंग प्लान हिंदी स्नातकोत्तर सेमेस्टर परीक्षा**

**सत्र 2018—19**

क्र.	माह/दिन	स्नातकोत्तर I, II सेमेस्टर	स्नातकोत्तर III, IV सेमेस्टर
1	जुलाई/26	इकई 1 प्रश्न पत्र I, II, III, IV स्नातक हिन्दी साहित्य का इतिहास कबीर ग्रंथावली, गुप्त नाटक	इकई I प्रश्न पत्र I, II, III, IV भारतीय काव्यशास्त्र, भाषा और भाषाविज्ञान, हिंदी के विभिन्न रूप, भारतीय साहित्य
2	अगस्त/25	इकई II आदिकाल चंद्रवरदाई, प्रसाद, राकेश	इकई II प्रश्न पत्र I, II, III, IV अलंकार, रूपन, परिभाषिक शब्द
3	सितम्बर/23	इकई III काल, जायसी, निराला, निबंध	इकई III प्रश्न पत्र I, II, III, IV पाश्चात्य काव्यशास्त्र, व्याकरण, इन्टरनेट
4	अक्टूबर/22	इकई III सूफी काव्य, रहीम, रैदास, निबंध	इकई IV प्रश्न पत्र I, II, III, IV लॉजाइनस, अर्थ विज्ञान, पत्रकारिता
5	नवम्बर/19	इकई IV भक्ति, खुसरो, मीराबाई, रत्नाकर, महादेवी वर्मा, आंतरिक मूल्यांकन, सेमिनार	इकई IV प्रश्न पत्र I, II, III, IV लेखन कला, संपादन, पत्रकार वार्ता, आंतरिक मूल्यांकन, सेमिनार
6	दिसम्बर/21	सेमेस्टर परीक्षा	सेमेस्टर परीक्षा
क्र.	माह/दिन	II, IV सेमेस्टर	
1	जनवरी/26	इकई I प्रश्न पत्र I, II, III, IV उत्तर मध्यकाल, सूरदास, गोदान	इकई I प्रश्न पत्र I, II, III, IV अभिसाव्यवाद, भाषाएँ, मीडिया, छत्तीसगढ़ का इतिहास
2	फरवरी/24	इकई II प्रश्न पत्र I, II, III, IV आधुनिककाल, तुलसीदास, मुक्तिबोध, मैला आँचल	इकई II प्रश्न पत्र I, II, III, IV काव्यशास्त्रीय चिंतन, बोली, दृश्य, श्रव्य माध्यम, छत्तीसगढ़ के साहित्यकार
3	मार्च	इकई III प्रश्न पत्र I, II, III, IV द्विवेदी युग, बिहारी, नागार्जुन कहानी	इकई III प्रश्न पत्र I, II, III, IV आलोचना, हिंदी के विविध रूप, अनुवाद, क्षया उपन्यास
4	अप्रैल	इकई IV प्रश्न पत्र I, II, III, IV गद्य द्रुतपाठ, द्रुतपाठ कहानी	इकई IV प्रश्न पत्र I, II, III, IV समीक्षा, लिपि. अनुवाद प्रकार, करमछड़हा नाटक
5	मई	इकई IV प्रश्न पत्र I, II, III, IV आन्तरिक मूल्यांकन, सेमिनार	इकई IV प्रश्न पत्र I, II, III, IV आन्तरिक मूल्यांकन, सेमिनार
6	जून	सेमेस्टर परीक्षा	सेमेस्टर परीक्षा

M A I ,II SEM. HISTORY , 1<sup>st</sup> PAPER

HISTORY METHOD WRITING

SESSION – 2018-19

S.NO.	MONTH	PLAN
1	AUGUST	History meaning and definition . The extent and types of history. History relation to other social sciences. Utility of history.
2	SEPTEMBER	Cause of Action in history. Objectivity in history. Facts in history. Is history a science or an art.
3	OCTOBER	Relativistic theory of history . The cyclist theory of history . Sociological theory of history . Idealistic theory of history .
4	NOVEMBER	Comparative theory of history . Critical theory of history . Materialistic theory of history . Etihasvad .
5	DECEMBER	RIVISION
1	JANUARY	II SEM Greek and Roman historiography . Chinese historiography . Arab and Persian historiography . The tradition of writing historiography in ancient India .
2	FEBRUARY	Medieval Indian historiography . Modern Indian historiography . Themes ofindian history - economic history . Thimes ofindian history - social and cultural history .
3	MARCH	Imperialist interpretation ofindian history . Nationalist interpretation of indian history . Marxist interpretation of indian history . Nationalist interpretation of indian history . Democratic interpretation of indian history .
4	April	Ancient indian history – nomenclature of Indus valley civilization , Origin of Rajput's . Medieval indian history – Muhammad Bin Tughlaq ,Aurangzeb's religious fanaticism .  Modern indian history – Form of revolution 1857 ,partition of india .

M A I , II SEM ,HISTORY

SECOND PAPER – WORLD HISTORY 1871 -1919

SESSION 2018-19

S NO	MONTH	PLAN
1	AUGUST	New imperialism – partition of Africa . Development of Capitalism . Rise of Labaralism in England ,France. Rise of Socialism .
2	SEPTEMBER	Home and foreign policy of Bismark . Foreign policy of Kaiser William II . Foreign policy of Italy [1871 -1914] Industrial development in United State of America .
3	October	Meiji Restoration in Japan . Russio –Japanese war –1904-5 . Chinese revolution – 1911 . Eastern problem –1878 -1913—Berlin congress – 1878
4	NOVEMBER	Balkan war – 1912 -13. First world war – 1914 -1918 –causes incidents and results . Russian revolution -1917—causes and results Peace treaties of Paris .
1	JANUARY	II SEM Achievement and failure of league of nations . Problem of compensation . Problem of disarmament . World recession - 1929
2	FEBRUARY	Fascism in Italy - Mussolini Nazism in Germany – Hitler . Second world war – causes Incidents and results .
3	MARCH	Communism in China National movement in Indochina . National movement in Indonesia . Arab nationalism .
4	April	United Nations Organization Cold war Non –Alignment movement. Role of India in non alignment movement



M A I,II SEM 3<sup>rd</sup> PAPER – HISTORY OF CHHATTISGARH

SESSION 2018-19

S N	MONTH	I SEM PLAN
1	AUGUST	Introduction of Chhattisgarh – nomenclature and geographical location Vedic to Maurya period Chhattisgarh -political social economic and cultural condition . Chhattisgarh during the Satavahana period Gupta vakataka era Chhattisgarh
2	SEPTEMBER	Nala and Rajershitulya dynasty Sharabhpuriya dynasty Pandu dynasty Chindacknagvansh and Phaninagvansh
3	OCTOBER	Establishment of Kalchuri rule Early Kalchury king Post Kalachuri king- arrival before Marathas Social economic and cultural condition of Kalchuris
4	NOVEMBER	Maratha invasion Bimbaji Bhosle Suba administration Socio economic and cultural condition of Maratha period
1	JANUARY	II SEM Chhattisgarh under British protection and Raghuji 3 <sup>rd</sup> [1818-1830] British administration in Chhattisgarh Governance system after the formation of the central provinces British land revenue system
2	FEBRUARY	Social change in British era Chhattisgarh Economic condition in British era Chhattisgarh Cultural condition in British era Chhattisgarh British policy towards the princely states of chhattisgarh
3	MARCH	The Revolt of 1857 in Chhattisgarh National movement in Chhattisgarh – 1885-1919 National movement in Chhattisgarh – 1920-1947 Peasant ,lebar and tribal movement in Chhattisgarh
4	APRIL	Religious faith of chhattisgarh -Shaiva, shakta, Vaishnav ,Jain Buddha Kabir sect, Satnam sect Folk culture of Chhattisgarh Background of Chhattisgarh state formation

M A I,II SEM,HISTORY,4<sup>th</sup> PAPER- Tourism theory and practice  
SESSION 2018-19

1	AUGUST Unit -1	Explanation of tourism Principles and objectives of tourism . Concept of tourism. Tourism information.
2	SEPTEMBER Unit - 2	History of tourism . Travel agency formation . Functions of travel agencies . Tour operators and guides .
3	OCTOBER Unit -3	Impact of tourism on the industry . Tourism – Accommodation and Hotel industry . Tourism and Handicrafts industry . Shops ,emporium and Fair.
4	NOVEMBER Unit -4	Tourism and folk culture . Important historical tourist center of India --Agra ,Ajanta Ellora Caves, Bhimbetka Caves ,Hampi ,Sun temple- Konark ,Khajuraho ,Rameshwaram . Important historical tourist center of Chhattisgarh – Sirpur, Giroudpuri ,Bhoramdev ,Dantewada, DongargarhRatanpurRamgiri . Vibrant culture and performing spiritual arts .
1	JANUARY Unit -1	Tourism organization . Central tourism organization of india. Tourism department and organization of Chhattisgarh . State government tourism -encouragement plans-with reference of Chhattisgarh.
2	FEBRUARY	Tourism Marketing . International tourism. Tourism and transport. Wildlife of Chhattisgarh -Barnawapara ,Achanackmarga.
3	MARCH	Tourism and environment . Importance of national parks in tourism . Tourism and fair- in a national perspective. Monuments and Museums.
4	APRIL	Tourism prospects in Chhattisgarh . Major tourist places of Chhattisgarh.

M A III ,IV SEM ,HISTORY – I PAPER – Ancient India

SESSION -2018-19

S NO	MONTH	II SEM PLAN
1	AUGUST	A review of sources related to ancient Indian history Stone age culture Megalithic civilization Harappan civilization
2	SEPTEMBER	Pre Vedic society – political ,economic ,social and religious life Later Vedic society – political economic social and religious life Culture of Epic era Religious movement – Jainism and Buddhism
3	OCTOBER	Mahajanapada period – sixteen Mahajanapadas Republic system Urban centers and economic development Body corporate -castsystem ,Aashram system, tradition ,marriage Status of woman
4	NOVEMBER	Agricultural development of ancient India Development of industry and trade Scientific advancement in ancient times Ancient religious architecture
1	JANUARY	IV SEM Rise of Magadha empire -Haryak to Nand dynasty Alexander's invasion -causes and result Sangam era – social economic and religious condition of south India Administrative arrangement in Maurya period
2	FABRUARY	Art and architecture Ashoka's dhamma Downfall of Maurya empire Culture of Kushan satavahana period
3	MARCH	Gupta period administrative system Scientific ,literary and cultural development in Gupta period Harshvardhan period Development of Vaishnavism and Shaivism in ancient India
4	APRIL	Rise of cast system in ancient India ,untouchability Social and religious status of woman Development of education in ancient India Development of Temple architect sculpture art

M A III & IV SEM HISTORY -II PAPER- HISTORY OF INDIA[650 to 1200]

SESSION -2018-19

S N	MONTH	III SEM PLAN
1	AUGUST	Means of knowing history Political changes Economic and social changes Eastern India – Pal ,Sen dynasty
2	SEPTEMBER	Indian state – Pratihara, Chauhan , Parmar dynasty Kalchuri ,Chandel dynasty Pallava ,Chalukya dynasty Rashtrakoot, Chola dynasty
3	OCTOBER	Origin of Rajput Raj system and administration of Rajput Socio, economic ,religious condition of Rajput period Trade relation with south east Asia and western Asia
4	NOVEMBER	Early contact with Arab , Arab invasion in Sindh Arrival of Turks in India – Mahmud Ghaznavi Muhammad Gori -invasion -causes and result Success of Turks
1	JANUARY	IV SEM Agricultural economic arrangement – land donation Development of agricultural technology Urban economy -craft and trade Contribution of 'Guild' in economic arena
2	FEBRUARY	Development of new Trade and craft class Origin of caste system Untouchability Social status of woman
3	MARCH	Educational development and teaching institution Development of regional languages and literatures Temple architecture Development of Sculpture art
4	APRIL	Bhakti movement -with special reference of south India – Shaivism , Vaishnavism and Tantricism Vedanta ,Mimamsa philosophy Sufi movement

M A III ,IV SEM – III PAPER- INDIANs NATIONAL MOVEMENT

SESSION 2018-19

S N.	MONTH	III SEM PLAN
1	AUGUST	Revolt of 1857 – causes , nature results and failure Indian Renaissance -means and cause Social religious reform movement -Bramhasamaj, Arya samaj Ramacrishana mission, theosophical socity ,Aligarh movement
2	SEPTEMBER	Political organization of pre congress Establishment of national congress Liberalism Militancy
3	OCTOBER	Swadeshi movement Revolutionary movement -first step- Bengal Maharashtra Panjab " " step Marle -Minto reforms -1909
4	NOVEMBER	Home -rule movement Gandhian political thought Khilafat movement Indian government act 1919
1	JANUARY	IV SEM Non co operation movement Swaraj party Civil dis obedience movement Indian government act - 1935
2	FEBRUARY	Development of Indian industries Peasant and labor movement Tribes movement Quit India movement and Subhash Chandra Bos
3	MARCH	Communalism in Indian politics Cripps mission Cebinet mission plan Mount batton plan
4	APRils	Integration of Indian princely states -contribution of Sardar Patel Great leaders of india Twenty years of post independence -internal change ,foreign policy Five years plans

M A III ,IV SEM – IV PAPER- INDIANs NATIONAL MOVEMENT

SESSION 2018-19

S N.	MONTH	III SEM PLAN
1	AUGUST	SOURCE OF WOMAN STUDIES IDEOLOGY OF WOMAN STUDIES- LIBRILIST , EXTRIMIST IDEOLOGY OF WOMAN STUDIES- SOCILIST , COMMUNIST IDEOLOGY OF WOMAN STUDIES- PHYCISOLOGIEST
2	SEPTEMBER	POSITION OF WOMANS IN DIFFERENT RELIGIONS – HINDU RELIGION IN BUDDHISM AND JAINISM POSITION OF WOMANS IN ISLAM POSITION OF WOMAN IN SIKH RELIGION
3	OCTOBER	LIGEAL POSITION OF WOMANS- IN ANCIENT INDIA LIGEAL POSITION OF WOMANS -IN MEDIVAL INDIA SOCIAL RIGHTS-PROPERTY RIGHTS WOMAN ORGANISATION IN REFERENCE OF 20 <sup>TH</sup> CEN.
4	NOVEMBER	WOMANS AND FREEDOM MOMENT GANDHIAN MOMENT AND WOMANS WOMANS LIBERATION MOMENT WOMANS AND POLITICS IN POST INDEPENDECE INDIA
1	JANUARY	IV SEM WOMANS AND THERE WORK AREA DOMESTIC WORK AREA AGRICULTURE AND INDUSTRIAL AREA , TRADE WORK AREA EMPLOYED WOMAN
2	FEBRUARY	WOMANS AND CULTURE CENEMA THEATER AND MEDIA AREA LITRATURE AND RELIGION AREA LITRARY WRITING AND HISTEREOGRAPHY
3	MARCH	REFORM MOMENT AND WOMANS- BHAKTI MOMENT RELIGIOUS REFORM MOMENT AND WOMANS- BRAMH SAMAJ ARYA SAMAJ REFORM MOMENT AND WOMANS- ALIGARH MOMENT REFORM MOMENT AND WOMANS- THIOSOPHICAL SOCEITY , SELF RESPECT MOMENT
4	APRIL	ROLE OF WOMANS IN MOMENT AND POLITICS AREA- TRIBLE MOMENT PEASANT MOMENT LABOUR MOMENT ROLE OF MOMENTS IN LOCAL BODIES

**M.A. I SEM.  
SESSION 2018-19  
TEACHING PLAN**

**PAPER-I**

**पाश्चात्य राजनीतिक चिंतन**

MONTH	PLAN
JULY	प्लेटो, अरस्तु
AUGUST	मैकियावली, जेरेमी, बेन्थम
SEPTEMBER	टॉमस हाब्स, जॉन लाक, जीन जैक्स,रुसो
OCTOBER	जॉन स्टुअर्ट मिल, थामस हिल ग्रीन
NOVEMBER	कार्ल मार्क्स एवं मार्क्सवाद

**SESSION 2018-19**  
**TEACHING PLAN**

**PAPER-II**  
**तुलनात्मक राजनीति**

MONTH	PLAN
JULY	राजनीतिक व्यवस्था के अध्ययन में तुलनात्मक पद्धति। तुलनात्मक राजनीति का अर्थ, प्रकृति
AUGUST	तुलनात्मक राजनीति का क्षेत्र। तुलनात्मक राजनीति का विकास। राजनीतिक व्यवस्था की अवधारणा
SEPTEMBER	तुलनात्मक राजनीति के अध्ययन के विविध उपागम – परम्परागत, मार्क्सवादी
OCTOBER	तुलनात्मक राजनीति के अध्ययन के विविध उपागम—निवेश—निर्गत। संरचनात्मक :- प्रकार्यात्मक, राजनीतिक समाजशास्त्रा उपागम।
NOVEMBER	राजनीतिक संस्कृति एवं राजनीतिक समाजीकरण। राजनीतिक संचार



**SESSION 2018-19**  
**TEACHING PLAN**

**PAPER-III**  
**लोक प्रशासन**

MONTH	PLAN
JULY	लोक प्रशासन :- परिभाषा, प्रकृति, क्षेत्र । निजी प्रशासन एवं लोक प्रशासन में अंतर ।
AUGUST	अध्ययन के उपागम :- व्यावहारवादी, तुलनात्मक, निर्णयपरक, विकास प्रशासन एवं नवीन प्रशासन
SEPTEMBER	संगठन के सिद्धांत:- नियंत्रण का क्षेत्र, पदसोपान, प्रत्यायोजन, समन्वय, केन्द्रीयकरण एवं विकेन्द्रीयकरण ।
OCTOBER	मुख्य कार्यपालिका :- प्रकार एवं भूमिका , सूत्रा एवं स्टॉफ अभिकरण,
NOVEMBER	विभागीय संगठन, स्वतंत्रा नियामकीय आयोग, लोक निगम

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**TEACHING PLAN**

**PAPER-IV**  
**भारत की विदेश नीति**

MONTH	PLAN
JULY	विदेशनीति :- अर्थ एवं निर्धारक तत्व । भारतीय विदेशनीति :- सिद्धांत एवं उद्देश्य ।
AUGUST	भारत की विदेशनीति के आंतरिक निर्धारक :- भूगोल, इतिहास, संस्कृति
SEPTEMBER	भारतीय विदेशनीति के बाह्य निर्धारक :- वैश्विक, क्षेत्रीय एवं द्विपक्षीय । विदेशनीति निर्माण प्रक्रिया की संरचना
OCTOBER	भारतीय विदेशनीति में नैरन्तर्य एवं परिवर्तन । भारतीय विदेशनीति तुलनात्मक परिपेक्ष्य में
NOVEMBER	पड़ोसी देशों के प्रति भारतीय नीति, प्रमुख वैश्विक मुद्दों के प्रति भारतीय दृष्टिकोण, सीमापार आतंकवाद, पर्यावरण एवं मानव अधिकारों का प्रश्न ।

**SESSION 2018-19**  
**TEACHING PLAN**  
**PAPER-I**  
**भारतीय शासन एवं राजनीति**

MONTH	PLAN
JULY	संविधान सभा की पृष्ठभूमि, संगठन (संरचना) एवं कार्यप्रणाली, वैचारिक आधार, प्रस्तावना
AUGUST	मौलिक अधिकार एवं मौलिक कर्तव्य, राज्य के नीति निर्देशक सिद्धांत, सामाजिक परिवर्तन के उपकरण के रूप में संविधान संशोधन प्रक्रिया
SEPTEMBER	संघीय सरकार – राष्ट्रपति, प्रधानमंत्री, मंत्रीपरिषद, संसद
OCTOBER	सर्वोच्च न्यायालय एवं न्यायिक पुनरीक्षण, न्यायिक सक्रियतावाद
NOVEMBER	दलपद्धति की प्रकृति, राष्ट्रीय एवं क्षेत्रीय दल, दबाव समूह

**SESSION 2018-19**  
**TEACHING PLAN**  
**PAPER-II**  
**अंतर्राष्ट्रीय राजनीति के सिद्धांत**

MONTH	PLAN
JULY	अंतर्राष्ट्रीय राजनीति का विषय के रूप में विकास, प्रकृति एवं क्षेत्रा । अध्ययन पद्धतियों :- परम्परागत एवं वैज्ञानिक
AUGUST	अंतर्राष्ट्रीय राजनीति के सिद्धांत :- (वृहत्) यथार्थवाद, आदर्शवाद, साम्यावस्था, निर्णय-निर्माण, खेल, संचार, व्यवस्था सिद्धांत
SEPTEMBER	शक्ति संकल्पना :- तत्व एवं सीमाएं । शक्ति प्रबंधन – शक्ति संतुलन । सामूहिक सुरक्षा
OCTOBER	अंतर्राष्ट्रीय राजनीति में राष्ट्रीय हित । निःशस्त्रीकरण । परमाणु अप्रसार – सी.टी.बीटी. एन.पी.टी. ।
NOVEMBER	क्षेत्रवाद, क्षेत्रीय संगठन । साम्राज्यवाद, नव-साम्राज्यवाद

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**TEACHING PLAN**  
**PAPER-III**  
**शोध प्रविधि**

MONTH	PLAN
JULY	सामाजिक अनुसंधान – अर्थ एवं प्रकृति, वैज्ञानिक पद्धति
AUGUST	वैज्ञानिक पद्धति एवं सामाजिक विज्ञानों में उपयुक्तता, सामाजिक विज्ञान में अध्ययन की कठिनाईयों, शोध के चरण।
SEPTEMBER	सामाजिक सर्वेक्षण – उद्देश्य, महत्व, प्रमुख चरण, वैयक्तिक अध्ययन पद्धति।
OCTOBER	अनुसंधान, अभिकल्पना, उपकल्पना, तत्वों के प्राथमिक एवं द्वितीयक स्रोत।
NOVEMBER	तथ्य संग्रहण के एवं प्रविधियाँ : अवलोकन पद्धति, साक्षात्कार पद्धति :- गुणदोष एवं सीमाएं

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**TEACHING PLAN**  
**PAPER-IV**  
**अंतर्राष्ट्रीय संगठन**

MONTH	PLAN
JULY	अंतर्राष्ट्रीय संगठनों की प्रकृति एवं विकास। अंतर्राष्ट्रीय संगठन – राष्ट्र राज्य एवं अंतर्राष्ट्रीय व्यवस्था का समन्वय
AUGUST	राष्ट्रसंघ – उत्पत्ति संरचना कार्य एवं असफलता
SEPTEMBER	संयुक्त राष्ट्र संघ – संरचना एवं कार्य
OCTOBER	विवादों का शांतिपूर्ण समाधान एवं बाध्यकारी उपाय, अंतर्राष्ट्रीय न्यायालय
NOVEMBER	आर्थिक एवं सामाजिक विकास में संयुक्त राष्ट्र संघ की भूमिका। उत्तर शीत युद्धकाल और संयुक्त राष्ट्रसंघ

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**TEACHING PLAN**

**PAPER-I**  
**राजनीतिक चिंतन**

MONTH	PLAN
JANUARY	मनु, कौटिल्य
FEBURARY	महात्मा गांधी, डॉ. भीमराव अम्बेडकर जार्ज बिलहेलम
MARCH	फ्रेडरिक हीगल, हेरल्ड जे. लास्की एवं बहुलवाद परम्परागत राजनीतिक सिद्धांत एवं आधुनिक राजनीतिक सिद्धांत की विशेषताएं
APRIL	परम्परागत राजनीतिक सिद्धांत एवं आधुनिक राजनीतिक सिद्धांत की विशेषताएं

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### TEACHING PLAN

#### PAPER-II

विकासशील देशों की राजनीति एवं तुलनात्मक राजनीति

MONTH	PLAN
JANUARY	राजनीतिक विकास । राजनीतिक अभिजन
FEBURARY	सरकार का वर्गीकरण :- एकात्मक व संघात्मक, संसदीय व अध्यक्षीय
MARCH	नौकरशाही :- संरचना, कार्य व भूमिका । राजनीतिक दल, दबाव समूह  राजनीतिक संस्थाएँ :- व्यवस्थापिका – संरचना, कार्य व भूमिका । कार्यपालिका :- संरचना, कार्य व भूमिका
APRIL	न्यायपालिका :- न्यायिक पुनरीक्षण । शक्ति पृथक्करण । अवरोध एवं संतुलन



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### TEACHING PLAN

#### PAPER-III

#### लोक प्रशासन (स्थानीय स्वायत्त शासन)

MONTH	PLAN
JANUARY	कार्मिक प्रशासन : भर्ती पदोन्नति, प्रशिक्षण, सेवानिवृत्ति
FEBURARY	संघ लोक सेवा आयोग, नौकरशाही, कार्मिकों की समस्याओं के निवारण की व्यवस्था।
MARCH	वित्तीय प्रशासन :- अर्थ प्रकृति, विशेषताएं। बजट :- सिद्धांत एवं महत्व, भारत में बजट निर्माण प्रक्रिया  कार्यपालिका, व्यवस्थापिका, न्यापालिका एवं जन समूह का प्रशासन पर नियंत्रण
APRIL	लोक प्रशासन में भ्रष्टाचार, आम्बुड्समेन, लोकपाल, लोकायुक्त एवं लोक संपर्क स्थानीय स्वायत्तशासी संस्थाओं की भूमिका

**SESSION 2018-19**

**TEACHING PLAN**

**PAPER-IV**

**प्रमुख शक्तियों की विदेशनीति**

MONTH	PLAN
JANUARY	विदेशनीति के अध्ययन के उपागम । अमेरिका की विदेशनीति
FEBURARY	ब्रिटेन एवं फ्रांस की विदेशनीति जर्मनी एवं जापान की विदेशनीति
MARCH	सोवियत संघ / रूस की विदेशनीति, चीन की विदेशनीति
APRIL	प्रमुख वैश्विक मुद्दों के प्रति भारतीय दृष्टिकोण – वैश्वीकरण, निःशत्रुीकरण एवं शस्त्र नियंत्रण ।

**SESSION 2018-19**

**TEACHING PLAN**

**PAPER-I**

**भारतीय शासन में राज्यों की राजनीति**

MONTH	PLAN
JANUARY	निर्वाचन आयोग, संघ लोक सेवा आयोग भारतीय संघवाद तथा केन्द्र राज्य संबंध, राज्यपाल, मुख्यमंत्री एवं मंत्रीमंडल
FEBURARY	राज्य विधान मंडल, राष्ट्रीय राजनीति का राज्य, राजनीति पर प्रभाव
MARCH	राज्यों की स्वायत्ता की मांग – गठबंधन की राजनीति
APRIL	दलबदल की राजनीति, भारतीय राजनीति में जाति, धर्म, क्षेत्रवाद, भाषा का प्रभाव ।

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**TEACHING PLAN**

**PAPER-II**

**अंतर्राष्ट्रीय राजनीति के सिद्धांत (समकालीन मुद्दे)**

MONTH	PLAN
JANUARY	अंतर्राष्ट्रीय राजनीति में असंलग्नता – आधार, भूमिका, महत्व एवं प्रासंगिकता । शीतयुद्ध एवं शीतयुद्ध की समाप्ति – कारण एवं परिणाम । नई विश्व व्यवस्था
FEBURARY	उत्तर शीत युद्धकालीन महत्वपूर्ण मुद्दे – वैश्वीकरण, मानवधिकार  उत्तर शीत युद्धकालीन महत्वपूर्ण मुद्दे – पर्यावरण, आतंकवाद
MARCH	प्रमुख राष्ट्रों की विदेश नीतियां – भारत, संयुक्त राज्य अमेरिका
APRIL	चीन एवं रूस की विदेश नीति

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**TEACHING PLAN**

**PAPER-III**

**शोध प्रविधि – क्षेत्रीय कार्य**

MONTH	PLAN
JANUARY	प्रश्नावली एवं अनुसूची :- प्रकार, गुण, दोष, सीमाएं ।  निदर्शन :- अर्थ, प्रकार, सारणीयन, प्रतिवेदन लेखन, अनुमापन प्रविधियाँ
FEBURARY	अनुसंधान दल, अनुसंधान की समस्याएँ, प्रक्षेपी प्रविधियाँ
MARCH	सामाजिक अनुसंधान में साँख्यिकी की उपयोगिता एवं सीमाएँ – मीन, मोड, मीडियन
APRIL	कम्प्यूटर का उपयोग एवं संकेतन

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### TEACHING PLAN

#### PAPER-IV

#### अंतराष्ट्रीय कानून

MONTH	PLAN
JANUARY	अंतराष्ट्रीय कानून :- प्रकृति क्षेत्रा, विकास, स्रोत एवं संहिताकरण । राष्ट्रीय एवं अंतराष्ट्रीय कानून ।
FEBURARY	अंतराष्ट्रीय कानून एवं राष्ट्र उत्तराधिकार एवं मान्यता । राज्यों के अधिकार एवं कर्तव्य । क्षेत्राधिकार समानता एवं आत्मरक्षा
MARCH	युद्ध :- परिभाषा, प्रकृति, लक्षण, घोषणा, प्रभाव । स्थल युद्ध के नियम :- समुद्री युद्ध के नियम एवं वायु युद्ध के नियम, आणविक युद्ध, अधिग्रहण न्यायालय  युद्ध की समाप्ति, शांति संधि एवं पूर्वावस्था । युद्ध अपराध, युद्धबंदी एवं दण्ड
APRIL	तटस्थता :- परिभाषा, प्रकार, लक्षण । तटस्थ राज्यों के अधिकार एवं कर्तव्य ।  नाकाबंदी, राजनयिक उन्मुक्तियों एवं विशेषाधिकार । अंतराष्ट्रीय कानून एवं आर्थिक विकास, नवीन विश्व के संदर्भ में

## PROPOSED TEACHING PLAN FOR THE SESSION 2018-19

Class M.A. Psychology (I<sup>st</sup>&II<sup>rd</sup>Semester)

Title of the paper – Social Psychology & Group Processes and Cultural Psychology

MONTH/DAYS	Proposed Plan
JULY/26 SEM-I	UNIT-I Introduction and Social Psychological Perspective Social Psychology- Nature And Scope , Historical Background and Methods of Social Psychology, Theoretical Perspectives- Cognitive Dissonance, Attribution, Field and Psychodynamic, Symbolic Interaction and Socio-Biology
AUGUST/25	UNIT-II Social Cognition and Person Perception Sources of Errors in Social Cognition, Social Perception and Person Perception, Determinants of Person Perception, Impression Formation and Management, Role of Stereotypes in Person Perception
SEPTEMBER/23	UNIT-III Process of Social Influences Meaning and Nature of Social Influence , Social Facilitation, Conformity, Compliance and Obedience, Social Power , Reactance Attitude– Nature and Characteristics, Development and Formation of Attitudes, Theories of Attitude Change
OCTOBER/22	UNIT-IV Social Psychology and Social Situations Prosocial Behavior, Aggression and Violence- nature, characteristics, determinants and theories, Management of Aggression
NOVEMBER/19	Seminars &Project work Practical- Psychological Experiments
DECEMBER/21	Semester Exam (Theory &Practical)
JANUARY/26 SEM-II	UNIT-I Intergroup Relations Group Dynamics and Group Behaviour. Group Effectiveness and Group Cohesiveness-meanings, formation, decision making, problem solving and Group level behaviours.
FREBRUARY/24	UNIT-II Leadership Leadership –meaning, nature and functions, Styles and Effectiveness of Leadership, Psychology of Followers
MARCH	UNIT-III Social Issues Poverty, Caste, Gender and Population issues in India, Communal Tension and Harmony Culture and Behaviour-I Culture, Cognition and Emotions, Culture and Organization
APRIL	UNIT-IV Culture and Behaviour-II Culture and Health, Culture and Personality, Health , Environment and Law Practical – Psychological Tests
MAY	Seminars &Project work
JUNE	Semester Exam (Theory &Practical)

MONTH/DAYS	PROPOSED PLAN
JULY /26 SEM-I	UNIT-I Psychophysics: Nature, Problem And methods, Signal detection theory, Subliminal perception and related factors. Perceptual process- Approaches to study Perception: Gestalt, Physiological, processing and Ecological Approaches. Perceptual Organization: Gestalt, Figure and Ground, Law of organization. Perceptual Constancy: Size, Shape and Brightness,
AUGUST/25	UNIT-I Depth perception; Monocular and Binocular cues, Movement Perception: Nature, Types and Theories. UNIT-II Attention: Nature, Concept and Mechanism of Attention. Types, Theories and Applications
SEPTEMBER/23	UNIT-III Motivation and Emotion: Basic Motivational concept: Instincts, needs, drive, incentive, Motivational cycle. Approaches to study Motivation; Psychoanalytical, Ethological, S-R Cognitive, Humanistic, Biological Motives, Social motives: Achievement, Affiliation, and Approval. Emotion concept; physiological correlates of Emotions. Theories of Emotions; James- Lange, Canon- Bard. Schechter and Singer. Conflicts: Sources and Types
OCTOBER/22	UNIT-IV Consciousness: Nature and concept of consciousness, Theories of Consciousness, Methods to Studying Consciousness, Consciousness Self and identity.
NOVEMBER/19	Lab work, Seminars & Project work
DECEMBER/21	Semester Exam (Theory & Practical)
JANUARY/26 SEM-II	UNIT- I Learning Process: Classical Conditioning: Procedure, Phenomena and related issue. Instrumental Learning: phenomena, paradigms And Theoretical issue, Process Escape Conditioning, Avoidance Conditioning, Generalization, Reinforcement: Basic variable and schedule. Experimental Analysis of behavior: Behavior Modification, Shaping, Discrimination Learning, Neurophysiology of Learning
FREBRUARY/24	UNIT-II Verbal Learning: Methods and Materials, Organizational Process, learning Theories: Hull, Tolman, and Skinner. Cognitive Approaches In Learning: latent Learning, Observational Learning.
MARCH	UNIT-III Memory and Forgetting: Memory Processes; Encoding, Storage and Retrieval. Stages of Memory: Sensory Memory, Short Term Memory and Long Term Memory. Episodic and Semantic Memory.
APRIL	UNIT-IV Forgetting: Nature and causes of Forgetting, Theories of Forgetting; Interference, Decay, Retrieval. Improving Memory.
MAY	Lab work, Seminars & Project work
JUNE	Semester Exam



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PROPOSED TEACHING PLAN FOR THE SESSION 2018-19

Class - M.A. Psychology ( I<sup>st</sup> & II<sup>nd</sup> Semester ) Paper- III<sup>rd</sup>

Title of the paper- BASIC RESEARCH METHODOLOGY & ADVANCE RESEARCH  
METHODOLOGY

MONTH/DAYS	PROPOSED PLAN
JULY /26	UNIT-I Introduction to Psychological Research Meaning, Purpose and Dimensions of Research. Types of Psychological Research: Qualitative and Quantitative. Parametric and Non-Parametric Statistics. Methods of Psychological Research: Experimental. Quasi-Experimental. Case Studies, Field Studies. Variables: Nature and Types. Techniques of experimental manipulation, controlling experiment.
AUGUST/25	UNIT-II Research Process Research Process: Consideration of Research Problem and Hypothesis, Operationalization .Sampling: Probability and Non probability Sampling. Sources of Bias. Ethical Issues in Psychological Research.
SEPTEMBER/23	UNIT-III Research Designs: Cross Sectional and Longitudinal, Experimental, Correlation. Single Factor, Quasi - Experimental.
OCTOBER/22	UNIT-IV Central Tendencies, Measures of Dispersion, Normal Probability Curve, its properties and utility. Null Hypothesis, Type-I and Type-II Errors, Level of Significance. Inferential Statistics: t -Test. Method of Data Collection Survey and Observation Method: Questionnaire, Interview. Tests and Scales.
NOVEMBER/19	Lab work, Seminars & Project work
DECEMBER/21	Semester Exam (Theory & Practical)
JANUARY/26	UNIT-I Experimental Design; Randomized groups, Matched Groups, Factorial Designs; Between and within Groups, Repeated Measures (One Factors).
FREBRUARY/24	UNIT-II Analysis of Variance; ANOVA; One Way and Two-Way
MARCH	UNIT-III Measures of Relationships; Bi-serial, point Bi-serial, Tetra choric and Phi, Multiple and partial Correlations
APRIL	UNIT-IV Regression and Factor Analysis: Simple and Multiple, factor Analysis: Assumptions, Methods, Rotation and Interpretation. Report Writing; Uses of computer in Psychological Researches, Research Report Writing.(APA Style)
MAY	Seminars & Project work
JUNE	Semester Exam

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PROPOSED TEACHING PLAN FOR THE SESSION 2018-19

Class - M.A. Psychology (I<sup>st</sup>&II<sup>nd</sup>Semester)

Title of the paper – Psychopathology and Physiological Psychology and Health Behavior

MONTH/DAYS	PROPOSED PLAN
JULY /26 I <sup>st</sup> sem	UNIT-I Concept of Psychopathology and Classification System Diagnosis: Purpose, diagnostic system: Mental Status Examination (MSE).Clinical Interview and Diagnostic Tools. Classification Systems: ICD and DSM .Evaluation of Classification System. Theoretical Models of Psychopathology Psychodynamic, Behavioural, Cognitive, Humanistic, Biological and Socio-Cultural.
AUGUST/25	UNIT – II Disorders of Anxiety, Somatoform, and Behavioural Syndromes Panic, Phobic, OCD, Post-Traumatic, GAD, Somatoform Disorders, Impulse Control Disorder, Eating Disorder, Sleep Disorder. Dissociative Disorder: Types, Characteristics, Etiologic and Management.
SEPTEMBER/23	UNIT – III Psychotic Spectrum Disorders Schizophrenia, Mood Disorder. Personality Disorders: Clinical Characteristics, Etiologic and Management.
OCTOBER/22	UNIT – IV Substance Related Disorders and Developmental Disorders of Childhood Mental Retardation. Disorders of Childhood: Autism Spectrum Disorder (ASD), Attention Deficit Disorder (ADD), Attention Deficit and Hyperactive Disorder (ADHD). Learning disabilities.
NOVEMBER/19	Seminars & Project work
DECEMBER/21	Semester Exam (Theory & Practical)
JANUARY/26 II <sup>nd</sup>	UNIT – I Methods and Basic Concepts Methods of Physiological Psychology: Lesion and Brain Stimulation. Receptors, Effectors and Adjuster Mechanisms. Neural Impulse: Origin. Conduction and Measurement.
FREBRUARY/24	UNIT – II Sensory System Vision and Audition. Human Nervous System: Structure and Functions.
MARCH	UNIT – III Sleep and Waking: Stages of Sleep, Disorders of Sleep and Physiological Mechanisms of Sleep and Waking .Drinking and its Neural Mechanism; Hunger and its Neural Mechanism. Endocrine System: Chemical and Glandular.
APRIL	UNIT - IV Approach to Therapy Psychoanalytic, Biological, Behavioural, Behavioural Medicine and Spiritual Therapy. Mental Health Mental Health Promotion and Maintenance. Current Issues and Trends in Health Psychology.
MAY	Seminars & Project work
JUNE	Semester Exam

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**PROPOSED TEACHING PLAN FOR THE SESSION 2018-19 Class -**

**M.A. Psychology (III<sup>rd</sup> & IV<sup>th</sup> Semester)**

Paper- I<sup>ST</sup> Personality and Indigenous Psychology-I & Life Span Development  
(Compulsory)

MONTH/DAYS	PROPOSED PLAN
JULY /26 III <sup>TH</sup>	UNIT-I Personality; Meaning, Perspective and measurement of Personality Concept of Mature Personality, Personality Theory-Problems and Procedures.
AUGUST/25	UNIT – II Approaches to Personality- I Psychodynamic Perspectives of Personality: Theories of Personality: Freud, Erikson, Adler. Structure, Dynamics and Development of Personality. Methods to study Personality. Approaches to Personality –II Theories of Personality: Cattell and Eysenck - Structure, Dynamics and Development of Personality. Research Methods.
SEPTEMBER/23	UNIT – III Approaches to Personality-III Cognitive, Behavioral and Humanistic. Kelly, Bandura and Roger's. Structure, Dynamics and Development of Personality. Research Methods.
OCTOBER/22	UNIT – IV Approaches to Personality-IV Indigenous Concept and Models of Personality – Yogic, Samkhya. Current Researches in the Field of Personality.
NOVEMBER/19	Internship, Seminars & Project work
DECEMBER/21	Semester Exam (Theory & Practical)
JANUARY/26 IV <sup>TH</sup>	UNIT-I Scope, Nature and Principles of development, Concepts-maturity, experience factors in development: Biogenic, Psychogenic and Sociogenic. Factors influencing development: Heredity, Environment, Motivation and Learning. Development processes: Nature, Principles and related.
FREBRUARY/24	UNIT-II Methods; Cross-sectional, longitudinal approach, Research strategies: Co relational, Experimental and other sequential techniques. The Developmental tasks and theories of Development. Psychoanalytic, Behaviourist and cognitive.
MARCH	UNIT-III How life begins Infancy, baby hood and childhood. The Characteristics, adjustment, hazards and Personality Development.
APRIL	UNIT-IV Adolescence and Adulthood. Characteristic, Physical, Social and Cognitive development psychosocial Changes and adjustment. Middle and Old age, Characteristics, problems. Personal social and vacation adjustment.
MAY	Seminars & Project work
JUNE	Semester Exam

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**PROPOSED TEACHING PLAN FOR THE SESSION 2018-19**

**M.A. Psychology (III<sup>rd</sup> & IV<sup>th</sup> Semester)**

**PAPER- II PSYCHOLOGICAL ASSESSMENT I**

MONTH/DAYS	Proposed Plan
JULY /26	UNIT-I Nature of psychological assessment: difference between physical and psychological assessment, problems in psychological assessment. Levels of assessment.
AUGUST/25	UNIT-II–SCALING- Unidimensional and multidimensional scale. Scale construction technique. Difference between tests, scales, questionnaires and schedule. Characteristics of a good psychological test. Difference between psychometric and projective tests.
SEPTEMBER/23	UNIT-III Construction of a psychological tool: steps in test construction, item writing, pre try- out, item difficulty, discrimination power, types of psychological tests.
OCTOBER/22	UNIT-IV Adaptation of Tests. Test taking Response Styles: Social Desirability, Acquiescence and Faking. Use of Psychological tests in Applied Field of Life: Diagnosis, Psychotherapy, Education, Occupations and Organizations.
NOVEMBER/19	Lab work, Seminars & Project work
DECEMBER/21	Semester Exam
JANUARY/26	UNIT-I Concept and Measurement of Intelligence, Major Tests of Intelligence developed under Western and Indian Cultural set up.
FREBRUARY/24	UNIT-II Concept and Measurement of Aptitude; Major Test of Aptitude developed under Western and Indian Cultural set up. Achievement; concept and measurement of Achievement Test; Major Test of Achievement developed under Indian Cultural set up.
MARCH	UNIT-III Test of Personality: Projective and Psychometric Approaches, Major Test of Personality, developed under Western and Indian Cultural set up.
APRIL	UNIT-IV Test of Adjustment, Values, Interest, Stress and Anxiety development under Indian condition. Psychological Testing in Applied Field: Neuropsychological Testing: Objectives and Major Neuropsychological Test. Emotional Intelligence: Concept and Major Test of emotional Intelligence developed under western and Indian cultural set up.
MAY	Lab work, Seminars & Project work
JUNE	Semester Exam

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PROPOSED TEACHING PLAN FOR THE SESSION 2018-19

Class - M.A. Psychology (III<sup>st</sup>&IV<sup>rd</sup>Semester )  
Paper III – Cognitive Psychology &  
Psychology of Cognitive Abilities

MONTH/DAYS	PROPOSED PLAN
JULY /26	UNIT-I UNIT-I Theories of thought processes: Associationism, Gestalt, Information processing. Concept formation: Rules and Strategies.
AUGUST/25	UNIT-II Problem- Solving: Type and strategies. Role of concepts in thinking. Cognitive Strategies: Algorithms and heuristics. Convergent and divergent thinking. Decision- making; its impediments to problem-solving.
SEPTEMBER/23	UNIT-III Models of memory: Atkinson and Shiffrin, Craik and Lockhart, Tulving. Semantic memory: Episodic, trace model and network model.
OCTOBER/22	UNIT-IV Biological basis of memory: The search for the engram, PET scan, and biochemical factors in memory. Improving memory: Strategies.
NOVEMBER/19	Lab work, Seminars & Project work
DECEMBER/21	Semester Exam (Theory & Practical)
JANUARY/26	UNIT-I Creative thinking and problem - solving. Language and thought. Theories of intelligence: Cattell, Jensen, Sternberg, Goleman. Creativity: Views of Torrance, Getzels, Guilford.
FEBRUARY/24	UNIT-III Intelligence and creativity: Relationship. Abilities and achievement: Concept and role of emotional intelligence.
MARCH	UNIT-III Intelligence; Biological, Social, Eco- cultural determinants. Theories of intelligence: Spearman, Thurston, Guilford.
APRIL	UNIT-IV Individual and group differences: Extent and causes. Measurement of human abilities.
MAY	Internship, Seminars & Project work
JUNE	Semester Exam

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**PROPOSED TEACHING PLAN FOR THE SESSION 2018-19**

Class - M.A. Psychology (III<sup>st</sup>&IV<sup>th</sup>Semester )

Paper IV (Elective) – Educational Instructional Psychology &  
Basics of Psychological Guidance and Counselling

MONTH/DAYS	PROPOSED PLAN
JULY /26	UNIT-I Conceptual and Theoretical Perspectives in Educational Psychology. Theories: Behaviouristic, Social Learning and Cognitive Application in Teaching.
AUGUST/25	UNIT-II Instructional Models Programmed Learning, Concept, Characteristics and Models.
SEPTEMBER/23	UNIT-III Learning Styles: Nature, Approaches to Learning Style, Measurement of Learning Styles. Attempt to Modify Learning Styles.
OCTOBER/22	UNIT-IV Individual and Group Differences in Intelligence. Theories of Intelligence, Gender Differences issues in the Classroom. Learning and Motivation, Study Habit, importance, Levels of Learning.
NOVEMBER/19	Lab work/Internship, Seminars &Project work
DECEMBER/21	Semester Exam (Theory &Practical)
JANUARY/26	UNIT-I Nature, Need and Functions of Counseling. Counseling and Psychotherapy. Intervention, Goal and objectives of Counseling. Approaches of Counseling: Directive, Non-directive, Eclectic. Individual and group counseling. Evaluation of counseling. Follow up and placement services. Techniques of appraising the client: Standardized Techniques, Intelligence, Personality, Aptitude and Interest Interview.
FEBRUARY/24	UNIT-II Characteristics of a good Counselor. Counselors, Training, Issues and trends in guidance and counseling. Ethical standards. Nature, Need and Functions of Guidance. Principles of Guidance. Techniques of appraising the client: Non-Standardized Methods. Anecdotal Record, Auto biography, Case study, Sociometric, Observation, Rating scale, Questionnaire.
MARCH	UNIT-III Guidance service: - Kinds of guidance services. Various services in guidance programme- 1. Information 2. Self inventory 3. Preparation, follow up 4. Placement 5. Individual data collection 6. Counseling 7. Research Services. Organization of a guidance program Relevance of Guidance under 10+2+3 educational patterns.
APRIL	UNIT-IV Special areas of Guidance and Counseling: Marital, Family. Counseling for the pre-school and elementary school children adolescent. Special areas of Guidance- Vocational Guidance, Educational Guidance, personal Guidance Problems of Guidance in India.
MAY	Seminars &Project work
JUNE	Semester Exam

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PROPOSED TEACHING PLAN FOR THE SESSION 2018-19

Class - M.A. Psychology (III<sup>rd</sup> & IV<sup>th</sup> Semester)

Paper –IV (Elective) Clinical Diagnosis and Psychotherapeutic Counseling

MONTH/DAYS	PROPOSED PLAN
JULY /26 III <sup>RD</sup> sem	UNIT-I History And Current trends, Growth of the Branch; Growth in numbers, Differentiation. Professionals spiral of growth. Growth in India, Approach of Clinical Psychology: Psychodynamic, Behaviouristic, Humanistic, Cognitive and Socio- Cultural.
AUGUST/25	UNIT – II Personality assessment: Projective, psychometric and behavioral measures. Projective tests: Characteristics and clinical use, Rorschach & TAT.
SEPTEMBER/23	UNIT – III Human Diversity and Education Psychometric tests: MMPL, WAIS & WISC.
OCTOBER/22	UNIT – IV Individual and Group Differences Dynamic diagnosis: Observation, Case history, and Interview. Neuropsychological examination: Approaches; Approaches; Halstead Neuropsychological test battery, Luria Nebraska.
NOVEMBER/19	Internship, Seminars & Project work
DECEMBER/21	Semester Exam (Theory & Practical)
JANUARY/26 IV <sup>TH</sup>	UNIT-I Methods for preventing problems and developing resourcefulness: Training family members, sibling's behavior change agents, Maintenance of parent raining. Development of academic skills- Teaching study skills to adults, improving study behavior through self- control technique. Assertiveness Training, Developing Assertive Behavior through Converts Modeling Training, Developing Assertive Behavior through Converts Modeling. Personal Appearance, Improving clients grooming.
FREBRUARY/24	UNIT-II Methods for Promoting Wise Decision- Making: With Children, Career Decision Making Evaluation of Problem Solving Competence. Social Interaction: Conversational Skills, Weight: Control: Psychological techniques, improving Physical Fitness, Cardio Vascular Problems: Psychological prevention. Drug Abuse: Drug abuse perception Reimforment of alternatives Peer Counseling: Peer Guidance program and behavioral interventions, Counselor Accountability System.
MARCH	UNIT-III Psychotherapeutic Counseling: Psychoanalytic Technique, Behavioral. Technique, Client centered technique, Community interventions and Group therapeutic techniques. Methods for Altering Maladaptive Behavioral deficits: Shyness, delinquency, depression, Speech and sexual dysfunctions.



APRIL	UNIT-IV Methods of altering inappropriate behavior: Marital maladjustment, child-misbehavior, homosexuality, and exhibitionism. Methods for altering maladaptive behavioral excesses: Excessive smoking, alcoholism, drug addiction and temper-outburst, physical aggression. Methods for altering fears and anxiety and treating psycho physiological disorders: test-anxiety, generalized anxiety, stress, school phobia, snake phobia, combination of fears, CHD, asthma and peptic ulcer
MAY	Seminars & Project work
JUNE	Semester Exam



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**PROPOSED TEACHING PLAN FOR THE SESSION 2018-19**  
Class -PG Diploma in Psychological Guidance and Counseling (PGC)  
PAPER-1 Psychological Guidance

MONTH/DAYS	Proposed Plan
JULY /26	UNIT –I Meaning and Functions of guidance. The bases of present guidance approach Basic Principle and assumption of guidance. Guidance services. Difference between Guidance and Counseling.
AUGUST/25	UNIT –II Understanding Individual ( use of interviews and questionnaires) Appraisals of Aptitude for guidance appraisal of personal qualities and interest : (Test and Inventories rating scale, behavior descriptions. Anecdotal records. Socio- metric devices evaluation of achievement, Cumulative Records, Case study and follow-up.
SEPTEMBER/23	UNIT –III Organization of guidance programme in school. Problems of guidance in India. Types of guidance services, characteristics of a well organized guidance programme.
OCTOBER/22	UNIT–IV Guidance Services for children. Guidance Of young children. Elementary School Children, Junior high school children. Adolescents.
NOVEMBER/19	UNIT –V Guidance services to adults, vocational guidance, Guidance of adults. Guidance towards family life. guidance in personal adjustment, guidance to deviates, guidance in group situation appraisals of guidance programmes, Emerging Trends in guidance.
DECEMBER/21	Internship
JANUARY/26	Internship
FREBRUARY/24	Lab work &Project work
MARCH	Seminars &Practical Exams

## PROPOSED TEACHING PLAN FOR THE SESSION 2018-19

Class -PG Diploma in Psychological Guidance and Counselling (PGC)

PAPER-II Counseling Theories and Techniques

MONTH/DAYS	Proposed Plan
JULY /26	UNIT –I COUNSELLING- The art and Science of helping Meaning. Purpose and goals of Counseling with special reference to India. Professional issues. Ethics. Education and training of the counselor. Counseling relationship.
AUGUST/25	UNIT–II COUNSELLING PROCESS: Theories and Techniques of Counseling. Psychodynamic Approach, Freudian, Neo Freudian, Modern. Humanistic Approach: Existential client centered.
SEPTEMBER/23	UNIT –III Cognitive Approach: rational emotive, Transaction analysis. Behavioral Approach: Operant conditioning. Behavior Modification. Indian contribution Yoga and Meditation.
OCTOBER/22	UNIT –IV COUNSELLING APPLICATION - 1 Counseling in schools, Career Counseling, Alcohol and Drug Abuse, Group counseling, Crises Intervention, Counseling Case Studies for each of the above types Of counseling applications, counseling interview.
NOVEMBER/19	UNIT –V <b>COUNSELING APPLICATION – 11</b> Management of- Shyness, Smoking, Depression, Stress, Marital Maladjustment ,Old age problems, Eurenesis, Phobias, Fear Of interview, Fear of stage performance, Problems in decision making.
DECEMBER/21	Internship
JANUARY/26	Internship
FREBRUARY/24	Lab work &Project work
MARCH	Seminars &Practical Exam

**TEACHING PLAN**  
**M.A. SEMESTER – I**  
**PAPER – I**  
**CLASSICAL SOCIOLOGICAL TRADITION**  
**SESSION 2018-19**

<b>MONTH</b>	<b>PLAN</b>
JULY	<b>Unit-I: Historical Development of the Emergence of Sociology</b> – Historical development of social thought; Tradition feudal economic and social structure.
AUGUST	<b>Unit-I: Historical Development of the Emergence of Sociology</b> – Impact of Industrial Revolution and New Mode of production on society and Economy; Emergence of Capitalist mode of production: Nature and Feature of Capitalism; Enlightenment and it's impact on thinking and reasoning.
SEPTEMBER	<b>Unit-II: August Comte</b> – Social Static's and Dynamics; Law of three stages; Hierarchy of Sciences; Positivism; Scheme of Social Reconstruction.
OCTOBER	<b>Unit-III: Emile Durkheim</b> – Social Facts; Mechanical and Organic Solidarity; Division of Labour; Theory of Suicide; Collective Representation.
NOVEMBER	<b>Unit-IV: Velfredo Pareto</b> – Theory of Social Change; Contribution of Methodology; Theory of the Circulation of Elite; Theory of Logical and Non-Logical Action.
DECEMBER	<b>Seminars and Projects Semester Exam</b>

**TEACHING PLAN**  
**SEMESTER - I SOCIOLOGY**  
**PAPER - II**  
**PHYLOSOPHICAL AND CONCEPTUAL FOUNDATION OF**  
**RESEARCH METHODOLOGY**  
**2018-19**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>
1	July	Unit-I	Philosophical Roots Of Social Research: Issues In The Theories Of Epistemology Forms And Types Of Knowledge
2	August	Unit-I	Validation Of Knowledge, Positivism And Its Critique Research Design, Steps And Process
3	September	Unit-II	Objectivity In Social Science: Scientific Methods In Social Science, Objectivity, Problems Of Objectivity Problems Of Concept And Theory, Hypothesis
4	October	Unit-III	Qualitative Methods In Social Research: Techniques And Methods Of Qualitative Research: Observation And Interview Guide, Case Study, Content Analysis, Experiences In Field Work
5	November	Unit-IV	Issues In Social Research: Issues In Qualitative Research, Theoretical Vs. Applied Research, Interdisciplinary Research
6	December		Semester Exam & Project Work

**TEACHING PLAN**  
**SEMESTER - I SOCIOLOGY**  
**PAPER - III**  
**SOCIAL CHANGE IN INDIA**  
**2018-19**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>
1	July	Unit-I	<b>Conceptual &amp; Theoretical Frame Work :</b> <ul style="list-style-type: none"> <li>a. Social change concepts, Characteristics &amp; Forms</li> <li>b. Linear Theory &amp; Cyclical Theory, Evolution &amp; Progress</li> </ul>
2	August	Unit-I	<ul style="list-style-type: none"> <li>c. Economic Factors &amp; Biotech Factors of Social Change</li> <li>d. Culture &amp; Development</li> </ul>
3	September	Unit-II	<b>Trends &amp; Processes of change in Modern India :</b> <ul style="list-style-type: none"> <li>a. Sanskritization</li> <li>b. Westernization</li> <li>c. Globalization</li> <li>d. Mass Media</li> </ul>
4	October	Unit-III	<b>Changes in Tribal &amp; Rural India :</b> <ul style="list-style-type: none"> <li>a. Changes in Tribal Society</li> <li>b. Changes in Rural Society</li> <li>c. Rural economy</li> <li>d. Tradition &amp; Modernity</li> </ul>
5	November	Unit-IV	<b>Changes in Urban &amp; Industrial India :</b> <ul style="list-style-type: none"> <li>a. Migration</li> <li>b. Development of Slums</li> <li>c. Development of Criminal Activities</li> <li>d. Welfare Measures &amp; Consequent changes</li> </ul>
6	December		Project Work & Semester Exam

**TEACHING PLAN**  
**SEMESTER - I SOCIOLOGY**  
**PAPER - IV**  
**RURAL SOCIOLOGY**  
**2018-19**

No.	MONTH		TEACHING PLAN
1	July	Unit-I	Characteristics & Approaches a. Rural Social Structure b. Characteristics of rural Society
2	August	Unit-I	c. Subltern Approaches d. Land Ownership and its types
3	September	Unit-II	Planned Change a. Panchayati raj b. Five Years Plan in India c. Changing Scenario of Indian Village d. Rural Leadership & Functionalism
4	October	Unit-III	<b>Rural Development &amp; Change</b> a. Agrarian Legislation & Land Reform b. Green Revolution c. Globalization & its impacts on Agriculture d. Power Structure in Rural India
5	November	Unit-IV	Welfare Measures & Consequents changes a. Community Development Projects b. Self Help Group c. MANREGA(Mahatma Gandhi Rural Employment Guarantee Act) d. Diversification of Occupation e. SSA (Sarv Siksha Abhiyan)
6	December		Project Work & Semester Exam

**M.A. SEMESTER – II**  
**PAPER – I**  
**CLASSICAL SOCIOLOGICAL THINKERS**  
**2018-19**

<b>MONTH</b>	<b>PLAN</b>
JANUARY	<b>Unit-I: Karl Marx</b> – Materialistic Interpretation of History; Class and Class Struggle; Alienation; Theory of Ideology; Theory of Surplus Value.
FEBRUARY	<b>Unit-II: Max Weber</b> – Theory of Social Action; Concept of Status, Class and Power; Sociology of Religion and Economic Development; Contribution to Methodology; Bureaucracy.
MARCH	<b>Unit-III: Talcott Parsons</b> – Social Action; Pattern Variables; Social Stratifications-Class, Gender & Race; Social System.
APRIL	<b>Unit-IV: Robert K. Merton</b> – Reference Group; Social Conformity and Anomie; Middle Range Theory; Functional Paradigm.
MAY	<b>Seminars and Projects</b>
JUNE	<b>Semester Exam</b>

**TEACHING PLAN**  
**SEMESTER - II SOCIOLOGY**  
**PAPER - II**  
**QUANTITATIVE RESEARCH TECHNIQUES IN SOCIOLOGY**  
**2018-19**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>
1	Jan	Unit-I	Tools And Techniques Of Social Research: Techniques Of Survey Research, Interview, Preparations Of Questionnaire And Interview Schedule, Sampling Design, Sampling Error
2	Feb	Unit-II	Measurement And Scaling Techniques: Levels Of Measurement, Types Of Scales: Nominal And Ordinal Reliability And Validity Of Scaling, Measures Of Social Distance: Thurston, Lickert, And Bogardus Scale
3	March	Unit-III	Statistics In Social Research: Measures Of Central Tendency: Mean Median And Mode, Measures Of Dispersion: Stander
4	April	Unit-IV	Commuter Application And Social Research: Application Of Computer In Social Research, MS Office, Ethical Issues In Social Research: Use Of Computer In Data Processing, Processing Of Data: Classification, Tabulation, And Interpretation,
5	May		Project Work & Semester Exam



**TEACHING PLAN**  
**SEMESTER - II SOCIOLOGY**  
**PAPER – III**  
**SOCIOLOGY OF DEVELOPMENT**  
**2018-19**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>
1	Jan	Unit-I	Perspective on development a. Modernization b. Social Transformation c. Change in Social Structure in Contemporary India d. Economic Aspects of Human Development & Social Development
2	Feb	Unit-II	Indian Experiences on Development a. Sociological Appraisal of Five Year Plan b. Social Consequences of Economic Reforms c. Socio Culture Impact of Globalization d. Social Implication of Info Tech & Biotech Revolution
3	March	Unit-III	Consequences of Development : a. Indicators of Social Development b. Development & Socio Economic Disparities c. Ecological Perspectives of Development d. Development & Migration
4	April	Unit-IV	Issues & Development in Contemporary India a. Gender Discrimination b. Privatization c. Sustainable Development d. Issues of Community Development in India
5	May		Project Work & Semester Exam

**TEACHING PLAN**  
**SEMESTER - II SOCIOLOGY**  
**PAPER - IV**  
**INDIAN RURAL SOCIETY**  
**2018-19**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>
1	Jan	Unit-I	Tribal Society as Agrarian Society a. Structure & Characteristics of Tribal Society b. Tribe Cast & changing problems of Tribal's c. Agriculture & Landless Labor
2	Feb	Unit-II	Social Issues a. Migration b. Land Alienation c. Inequalities d. Rural Poverty
3	March	Unit-III	Contemporary Issues a. Health & Education b. Depeasantisation c. Changing Status of Rural Women d. Rural & Urban Community
4	April	Unit-IV	Peasant Women e. Cause & Types f. Tebhaga, Telangana, Naxalwadi g. Naxalite Movement in Contemporary India its origin & Causes h. Present Status Government Measures & People Response.
5	May		Project Work & Semester Exam

**M.A. SEMESTER – III**  
**PAPER – I**  
**CLASSICAL SOCIOLOGICAL THEORIES**  
**2018-19**

<b>MONTH</b>	<b>PLAN</b>
JULY	<b>Unit-I: Positivism</b> – Origin and basic postulates; Contribution of Comte; Contribution of Durkheim.
AUGUST	<b>Unit-I: Positivism</b> -Contribution of Max Weber; Criticism and present status.
SEPTEMBER	<b>Unit-II: Conflict Theory</b> – Origin and basic Postulates; Contribution of Karl Marx; Contribution of Dahrendorf; Contribution of Coser; Criticism and Present Status.
OCTOBER	<b>Unit-III: Structuralism</b> – Origin and basic Postulates; Contribution of Levistrauss; Contribution of Goldiner; Contribution of M. Foucault; Criticism and Present status.
NOVEMBER	<b>Unit-IV: Social Exchange Theory</b> – Intellectual Roots; Contribution of Levi-Strauss; Contribution of George C. Homans; Contribution of Peter M. Blau; Criticism and Present status.
DECEMBER	<b>Seminars and Projects, Semester Exam</b>

**TEACHING PLAN**  
**SEMESTER-III**  
**PAPER-II**  
**PERSPECTIVES OF STUDY TO INDIAN SOCIETY**  
**2018-19**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>	<b>PLAN</b>
1	July	Unit-1	<b>Distinctive Characteristics of Indian Society :</b>	
2	August	Unit-I	a. Configuration of Indian Society b. Consequences of Increasing Linkages & Network in Indian Society c. Village in Relation to the Wider World	
3	September	Unit-II	<b>Textual &amp; Structural Functionalism Perspective :</b> a. G.S. Ghurye b. S.C. Dubey c. M.N. Srinivas	
4	October	Unit-III	<b>Marxism :</b> a. D.P. Mukherjee b. A.R. Desai c. Criticism & Present Status	
5	November	Unit-IV	<b>Subaltern Perspective &amp; Civilization Perspective:</b> a. B.R. Ambedkar b. David Hardiman c. N.K. Bose d. Surjeet Sinha e. Criticism & Present Status	
6	December		Project Work & Semester Exam	

**TEACHING PLAN**  
**SEMESTER-III**  
**PAPER-III**  
**INDUSTRY AND SOCIETY IN INDIA**  
**2018-19**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>	<b>PLAN</b>
1	July	Unit-I	Industrial Sociology And Classical Sociological Tradition	
2	August	Unit-I	A-Development Of Industrial Sociology, Industry, Industrialization B-Division Of Labour C- Bureaucracy And Rationality D-Production Relation And Alienation	
3	September	Unit-II	Industrial Organization: A-Industrial Organization :Formal, Informal B-Industrial Management C-Scientific Management D-Sociology Of Work: Work Innovation ,Motivation Culture, Work, Satisfaction, Incentives And Its Effects	
4	October	Unit-III	Concept Of Industrialization And Social Problems Of Industrialization A-Migration B-Habitat And Settlement C-Environment D- Indebtedness of Industrial Workers	
5	November	Unit-IV	Technology Change And Automation A-Technology And Social Structure In Industry B-Socio Technological System C-Organisational change And Technological Change D-Automation And Its Consequences	
6	December		Project Work & Semester Exam	

**TEACHING PLAN**  
**SEMESTER - III**  
**PAPER - IV**  
**CRIMINOLOGY**

**2018-19**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>	<b>PLAN</b>
1	July	Unit-1	<b>Conceptual &amp; Theoretical Approaches :</b> a. Conceptual Approaches to Crime b. Legal & Sociological Approach	
2	August	Unit-I	c. Crime Deviance : Causes, Prevention & Control d. Theories on Crime Causation : Classical & Positivist	
3	September	Unit-II	<b>Types of Criminal &amp; Crime :</b> a. Types of Crime b. Juvenile Delinquency c. Women & Crime d. White Collar Crime	
4	October	Unit-III	<b>Changing Profile of Crime &amp; Criminals :</b> a. Corruption : Types, Causes & Consequences b. Cyber Crime : Causes, Prevention & Control c. Crime against Women : Causes, Prevention & Control d. Terrorism in India : Its Origin & Causes	
5	November	Unit-IV	<b>Theories of Punishment :</b> a. Retributive, Deterrent : Theories & Criticism b. Reformatory Theory : Probation & Parole c. Open Prison : Its Success & Failure d. Futility & Cost of Punishment	
6	December		Project Work & Semester Exam	

**M.A. SEMESTER – IV**  
**PAPER – I**  
**MODERN SOCIOLOGICAL THEORIES**  
**2018-19**

<b>MONTH</b>	<b>PLAN</b>
JANUARY	<b>Unit-I: Symbolic Interactionism</b> – Origin and Basic Postulates; Contribution of G.H. Mead; Contribution of H. Blumer; Contribution of E. Goffman; Criticism and Present status.
FEBRUARY	<b>Unit-II: Phenomenology</b> – Origin, Basic postulates of phenomenology; Contribution of Schutz; Contribution of Berger; Contribution of E. Husserl; Criticism and Present status.
MARCH	<b>Unit-III: Ethnomethodology</b> – Origin Basic postulates of Ethnomethodology; Contribution of Garfinkel; Contribution of Goffman; Contribution of Ckorel; Criticism and present status.
APRIL	<b>Unit-IV: Post Modernism</b> – Origin and Development; Contribution of Foucault; Contribution of Derrida; Contribution of Baudrillard; Criticism and present status.
MAY	<b>Seminars and Projects, Semester Exam</b>

**TEACHING PLAN**  
**SEMESTER - IV**  
**PAPER - II**  
**COMPARATIVE SOCIOLOGY**  
**2018-19**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>	<b>PLAN</b>
1	JANUARY	Unit-I	<b>Historical &amp; Social Context of Emergence of Sociology in the West :</b> a. <b>Emergence of Growth of Sociology in India</b> b. <b>Western Sociological Tradition</b> c. <b>Americanization of Sociology</b>	
2	FEBRUARY	Unit-II	<b>Central Themes in Comparative Sociology:</b> a. Modernity & Development b. Diversity & Multiculturalism c. Environment d. Globalization	
3	MARCH	Unit-III	<b>Theoretical Concern in Comparative Sociology :</b> a. Problems of Theoring in Sociology b. Theoretical & Methodological Approaches in Sociology c. Sociology in India d. Trends of Sociology in India	
4	APRIL	Unit-IV	<b>Current Debates :</b> a. Contextualization b. Indigenization c. Use of Native Categories in The Analysis of Indian Society d. Text & Context	
5	MAY		Project Work & Semester Exam	



**SEMESTER - IV**  
**PAPER - III**  
**INDUSTRY AND SOCIETY IN INDIA**  
**2018-19**

No.	MONTH		TEACHING PLAN	PLAN
1	JAN.	UNIT-I	Industrial Relation: A-Importance Of Human Relation At Work B-Conflict: Causes And Types, Resolution Of Conflict C-Collective Bargaining D-Worker Participation In Management E-Education Training And Development Of Manpower F-Labour Welfare In India	
2	FEB	UNIT-II	Contemporary Issues: A-Industrialization And Women Labour B-Industrialization And Child Labour C-Industrialization And Environment D-Problems Of Industrialization In Developing Countries	
3	MARCH	UNIT-III	A-History Of Trade Unionism In India B-Objectives And functions Of Trade Union C-ILO D-Trade Unionism And Globalization	
4	APRIAL	UNIT-IV	A-MNCS And Third World B-FDI And Third World C-International Agencies: World Bank And Third World Countries D-Status Of Industries In Third World Countries	
5	MAY		Project Work & Semester Exam	

**SEMESTER - IV**  
**PAPER - IV**  
**CRIMINOLOGY**  
**2018-19**

No.	MONTH		TEACHING PLAN	PLAN
1	JAN.	UNIT-I	<b>Roots of Correction to Prevent Crime:</b> <ul style="list-style-type: none"> <li>a. Socialization, Role of Family Values &amp; Education</li> <li>b. Correctional Programs in Prison : history of Prison, Reform in India</li> <li>c. Correctional Program : Meditational &amp; Recreation</li> <li>d. After Care &amp; Rehabilitation Program</li> </ul>	
2	FEB	UNIT-II	<b>Problems of Correctional Administration :</b> <ul style="list-style-type: none"> <li>a. Antiquated Jail manual &amp; Prison Act</li> <li>b. Over Crowding Lack of Inter Agency Coordination among Police Prosecution Judiciary &amp; Prison</li> <li>c. Prison Offenses</li> <li>d. Problem of Criminal Justice Administration</li> </ul>	
3	MARCH	UNIT-III	<b>Victimological Perspectives :</b> <ul style="list-style-type: none"> <li>a. Historical Background of Victimology</li> <li>b. Victims Responsibility in Crime</li> <li>c. Compensation to Victims</li> <li>d. Violation of Prisoners Human Rights</li> </ul>	
4	APRIAL	UNIT-IV	<b>Community Policing:</b> <ul style="list-style-type: none"> <li>a. Concept of Police</li> <li>b. Role of Police</li> <li>c. Concept of Judiciary</li> <li>d. Role of Judiciary</li> </ul>	
5	MAY		Project Work & Semester Exam	

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**PROPOSED TEACHING PLAN FOR THE SESSION 2018-19**

**DEPARTMENT OF BOTANY**

**SEMESTER 1, PAPER 1 -CELL BIOLOGY M.M. 80**

MONTH	CELL BIOLOGY
JULY Unit-I	<b>The dynamic cell:</b> Structural Organization of the plant cell, specialized plant cell type, chemical foundation, and biochemical energetic. <b>Cell wall</b> – Structure and functions, biogenesis growth.
AUGUST Unit-I & Unit II	<b>Plasma membrane:</b> Structure, models and functions, site for ATPases, ion carries, channels and pumps, receptors. <b>Chloroplast:</b> Structure, Genome organization, Gene expression, RNA editing
September Unit II & Unit III	<b>Mitochondria:</b> Structure, Genome organization, Biogenesis. <b>Plant Vacuole:</b> Tonoplast membrane, ATPases, transporters as a storage organelle. <b>Nucleus:</b> Structure, Nuclear Pore.
October Unit III	<b>Ribosome:</b> Structure and functional significance <b>Cell cycle and Apoptosis:</b> Control mechanisms, Role of cyclins dependent kinases Retinoblastoma and E2F proteins, cytokinesis and cell plate formation, mechanism of programmed cell death.
November Unit IV	<b>Other cell organelles:</b> Structure and functions of microtubules, Microfilaments, Golgi apparatus, Lysosome, Endoplasmic Reticulum. <b>Techniques in cell biology:</b> Immuno-techniques, in situ hybridization to locate transcripts in cell types FISH, GISH, Confocal microscopy, Flow Cytometry.
DECEMBER	<b>Revision,</b> Practicals done every month as per schedule

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Proposed Teaching Plan ( Session-2018-19)

**DEPARTMENT OF BOTANY**

**SEMESTER-I, PAPER- II –Genetics**

<b>MONTH</b>	<b>PAPER-II, GENETICS</b>
<b>JULY</b> <b>UNIT-I</b>	❖ <b>Chromatic Organization:</b> Chromosome structure and packaging of DNA, Nucleosome organization, molecular organization of centromere and telomere, nucleolus and ribosomal RNA genes, Euchromatin and heterochromatin, karyotype, banding pattern.
<b>AUGUST</b> <b>UNIT-I</b>	❖ <b>Chromatic Organization:</b> Specialized type of chromosomes, polytene, lamp brush, B chromosomes and sex chromosomes Molecular basis of chromosome pairing, chromosomal aberration and polyploidy.
<b>SEPTEMBER</b> <b>UNIT-II</b>	❖ <b>Mapping of Bacteriophage genome,</b> Phage phenotype, and recombination in phage, genetic transformation and transduction in bacteria.
<b>OCTOBER</b> <b>UNIT-III</b>	❖ <b>Genetic recombination &amp; genetic mapping:</b> Mechanism of crossing over, molecular mechanism of recombination, role of Rec-A and Rec-B, C, D enzyme, site specific recombination, linkage group, genetic marker
<b>NOVEMBER</b> <b>UNIT-IV</b>	❖ <b>Alien gene transfer through chromosome manipulation:</b> Transfer of whole genome, examples from Wheat, Arachis & Brassica. Transfer of individual chromosomes & chromosome segment, methods for detecting Alien chromatin production.  ❖ Characterization and utility of Alien addition & substitution lines, genetic basis of breeding and heterosis, exploitation of hybrid vigour.

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**PROPOSED TEACHING PLAN FOR THE SESSION 2018-19**

**DEPARTMENT OF BOTANY**

**SEMESTER I PAPER- III – Microbiology, Phycology and Mycology**

**Max.Marks 80**

Month	<b>Microbiology, Phycology and Mycology</b>
JULY Unit-I	<b>Archaeobacteria and Eubacteria:</b> General account, ultra structure nutrition and reproduction, biology and economic importance. <b>Cyanobacteria:</b> Salient feature and biological importance.
AUGUST Unit-I & II	<b>Viruses:</b> Characteristics and ultra structure of virus, isolation and purification of viruses, chemical nature, replication, transmission of viruses, economic importance. <b>Phytoplasma:</b> General characteristic and role in causing plant diseases.
SEPTEMBER Unit – III	<b>Phycology:</b> Algae in diversified habitats (terrestrial, freshwater, marine), thallus organization, cell ultra structure, reproduction (vegetative, asexual, sexual)  General account of Chlorophyta, Xanthophyta, Bacillariophyta, Phaeophyta and Rhodophyta.  Economic importance of algae.
OCTOBER Unit-IV	<b>Mycology:</b> General character of fungi, substrate relationship in fungi, cell structure, unicellular and multicellular, organization, cell wall composition, nutrition (saprobic, biotrophic, symbiotic)
NOVEMBER Unit -IV	<b>Mycology:</b> Reproduction, vegetative, asexual, sexual) heterothallism, heterokaryosis, Parasexuality, recent account of Mastigomycotina, Zygomycotina, Ascomycotina, Basidiomycotina, Deuteromycotina, Mycorrhiza, Fungi as biocontrol agent.

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**PROPOSED TEACHING PLAN FOR THE SESSION 2018-19**

**DEPARTMENT OF BOTANY**

**SEMESTER I PAPER- IV – Bryophyta, Pteridophyta and Gymnosperm**

**Max.Marks 80**

Month	<b>Bryophyta, Pteridophyta and Gymnosperm</b>
JULY  Unit-I	<b>Bryophyta:</b> General characters, distribution and classification.  General account of following orders: - Marchantiales, Jungernanniales
AUGUST  Unit-I & II	Anthocerotales, Sphagnales, Funariales & Polytrichales. <b>II</b> <b>Pteridophyta:</b> General characters and classification. Evolution of stele in Pteridophytes. General account of – Psilopsida, Lycopsida, Sphenopsida and Pteropsida
SEPTEMBER  Unit – II & III	Sphenopsida and Pteropsida <b>Gymnosperms:</b> General characters and classification.  Resemblances and difference between Gymnosperms, Pteridophyta and Angiosperms.  Distribution of Gymnosperms in India and their economic importance.
OCTOBER  Unit-III	Brief account of following families: Lygnopteridaceae, Medullosaceae, Glossopteridaceae, Caytoniaceae General account of order Pentoxylales.
NOVEMBER  Unit -IV	General account of following orders:  Cycadales, Ginkgoales, Coniferales, Ephedrales, Gnetales, Welwitchchiales.  Note : Life cycle of individual genera is not expected

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**PROPOSED TEACHING PLAN FOR THE SESSION 2018-19**

**DEPARTMENT OF BOTANY**

**M.Sc.BOTANY, SEMESTER -III, PAPER- I**

**Plant Development and Resource Utilization**

<b>MONTH</b>	<b>Course</b>
<b>JULY</b>  <b>UNIT I</b>	Introduction: Unique features of plant development  Seed germination and seedling growth, Metabolism of nucleic acids, proteins and Fat
<b>AUGUST</b>  <b>UNIT I ,UNIT II</b>	Mobilization of food reserves; tropisms; hormonal control of seedling growth; gene expression; use of mutants in understanding seedling growth  Leaf growth and differentiation: Determination, Phyllotaxy; control of leaf form; differentiation of epidermis (with special reference to stomata and trichomes) and mesophyll.
<b>SEPTEMBER</b>  <b>UNIT II UNIT III</b>	Root development, Organization of the Root Apical Meristem (RAM); lateral roots; root hairs; root-microbe interactions.  Shoot development, Organization of the Shoot Apical Meristem (SAM); cytological and molecular analysis of SAM; control of cell division and cell to cell communication; control of tissue differentiation, especially xylem and phloem.
<b>OCTOBER</b>  <b>UNIT III &amp; IV</b>	Secretory ducts and laticifers; wood development in relation to environmental factors.  Origin of Agriculture, Origin, evolution, botany, cultivation and uses of (i) Food, Forage and Fodder crops, (ii) Fiber crops, (iii) Medicinal and Aromatic Plants &
<b>NOVEMBER</b>  <b>UNIT IV</b>	(iv) Vegetable oil-yielding crops. Important fire-wood and timber-yielding plants and Non-wood Forest Products (NFPs) such as bamboos, rattans, raw materials for paper-making, gums, tannins, dyes, resins and fruits.  Practicals done every month as per schedule

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**PROPOSED TEACHING PLAN FOR THE SESSION 2018-19**

**DEPARTMENT OF BOTANY**

**M.Sc. BOTANY, SEMESTER- III, PAPER- II**

MONTH	Course
<b>JULY</b>  <b>UNIT- I</b>	<b>Ecosystem Organization:</b> Structure and functions; primary production (methods of measurement, global pattern, controlling factors); energy dynamics (trophic organization energy flow pathways, ecological efficiencies);
<b>AUGUST</b>  <b>UNIT -I</b>  <b>UNIT- II</b>	<b>Ecosystem Organization:</b> Litter fall and decomposition (mechanism, substrate quality and climatic factors) global biogeochemical cycles of C, N, P and S; mineral cycles (pathways, processes, budgets) in terrestrial and aquatic ecosystems.  <b>Vegetation organization:</b> Concepts of community and continuum; analysis of communities (analytical and synthetic characters); community coefficients, inter-specific association ordination, concept of ecological niche.
<b>SEPTEMBER</b>   <b>UNIT- II</b>  <b>UNIT- III</b>	<b>Vegetation development:</b> Temporal changes (cyclic and non-cyclic); mechanism of ecological succession (relay floristic and initial floristic composition; facilitation, tolerance and inhibition models); changes in ecosystem properties during succession.  <b>Biological diversity:</b> Concept and levels; role of biodiversity in ecosystem functions and stability; speciation and extinction; IUCN categories of threat; distribution and global patterns; terrestrial biodiversity hot spots; inventory.
<b>OCTOBER</b>  <b>UNIT -III</b>  <b>UNIT-IV</b>	<b>World centers of primary diversity of domesticated plants:</b> The Indo-Burmese center, plant introductions and secondary centers.  <b>Climate, Soil and Vegetation patterns of the world:</b> Life zones, major biomes and major vegetation and soil types of the world.
<b>NOVEMBER</b>  <b>UNIT- IV</b>	<b>Climate, Soil and Vegetation patterns of India:</b> Life zones, major biomes and major vegetation and soil types of India.



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**PROPOSED TEACHING PLAN FOR THE SESSION 2018-19**

**DEPARTMENT OF BOTANY**

**SEMESTER III, PAPER III Biotechnology I- Genetic Engineering of Plants and Microbes**

MONTH	Biotechnology I- Genetic Engineering of Plants and Microbes
<b>JANUARY</b>  <b>UNIT I</b>	<b>Biotechnology:</b> Basic concepts, Principles and scope.  <b>Recombinant DNA technology:</b> Gene cloning, Principles and Techniques.  Construction of Genomics/ cDNA libraries, choice of vectors, DNA synthesis and sequencing.
<b>FEBRUARY</b>  <b>UNIT II</b>	Polymerase chain reaction, DNA fingerprinting, Basic concepts of Bioinformatics, Functional Genomic, Micro array, Protein profiling and its significance.
<b>MARCH</b>  <b>UNIT III</b>	<b>Genetics Engineering of plants:</b> Aims, strategies for development of transgenics (with suitable examples).  <b>Agro Bacterium:</b> The Natural Genetic Engineer,  T-DNA and Transposon mediated gene tagging,  Chloroplast transformation and its utility, Intellectual Property Rights (IPR)
<b>APRIL</b>  <b>UNIT III &amp; IV</b>	<b>Microbial Genetic Manipulation:</b> Bacterial transformation, selection of recombinant and transformation, genetic improvement of industrial microbes and nitrogen fixers type and design of fermenters, immobilization of enzymes.
<b>MAY</b>	Revision    Practicals done every month as per schedule

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**PROPOSED TEACHING PLAN FOR THE SESSION 2018-19**

**DEPARTMENT OF BOTANY**

**M.Sc.-BOTANY SEMESTER III, PAPER IV - Ethnobotany**

<b>MONTH</b>	<b>Topic</b>
<b>JULY</b>  <b>UNIT I</b>	<b>Ethnobotany</b> : History, general account and its sub disciplines. Interdisciplinary approaches & aim of ethno botany. Main world centers of Ethnobotanical studies, workers & literature of Ethno botany Ethnobotany with special reference to Chhattisgarh.
<b>AUGUST</b>  <b>UNIT I ,UNIT II</b>	Ethnobotany in relation to national priorities and health care programme. Ethnobotanical Research done in India: Ethnobotany in relation to national priorities and health care programme. Practical application of ethnobotany for tribal development programme. Methods and techniques in ethnobotany. General account of major and minor tribes of Chhattisgarh with special reference to Gond ,Kamar ,Baiga , Abujhmara.
<b>SEPTEMBER</b>  <b>UNIT II UNIT III</b>	Ethnobotanical aspect of Art & literature. Abstract ethnobotany with special reference to folklore, Taboos, Majico-religious beliefs. Ethnobotanical importance of Bacteria, Algae, Fungi, Bryophyta, Pteridophyta and Gymnosperm.
<b>OCTOBER</b>  <b>UNIT III</b>	Ethnoveterinary medicines from plants. Major & Minor Forest Products (NWFPs) of Chhattisgarh. Ethnobotany in relation to livelihood security reference to tribes.
<b>NOVEMBER</b>  <b>UNIT IV</b>	Ethnobotanical study of following plants with special reference to their medicinal importance 1. <i>Azadirachta indica</i> (Neem) 2. <i>Emblica officinalis</i> (Amla) 3. <i>Ricinus communis</i> (Andi) 4. <i>Madhuca indica</i> (Mahuaa) 5. <i>Cassia fistula</i> (Amaltash) 6. <i>Ficus religiosa</i> (Pipal) 7. <i>Oscimum sanctum</i> (Tulsi) 8. <i>Asparagus racemosus</i> (Satavar) 9. <i>Aloe vera</i> (Ghrit kumari) 10. <i>Andographis paniculata</i> (Bhui neem). Practicals done every month as per schedule

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Proposed Teaching Plan ( Session-2018-19)

### DEPARTMENT OF BOTANY

#### SEMESTER-III PAPER- IV Elective Course- ( Microbial Ecology)

MONTH	PAPER- IV ( Microbial Ecology)
<b>JULY</b> <b>UNIT-I</b>	<b>Ecological Groups:</b> ❖ Ecological groups of microorganism. Microbial growth. Effect of the environment on microbial growth.
<b>AUGUST</b> <b>UNIT-I&amp;II</b>	❖ Gram positive and Gram negative bacteria, Cyanobacteria, sulphur and iron oxidizing bacteria, Methanotrophs, Mycobacterium, Spore forming bacteria Unit  <b>❖ Microbial interaction and industrial Microbiology:</b> A. Plant-microbe (Phyllosphere and phylloplane
<b>SEPTEMBER</b> <b>UNIT-II</b>	<b>❖ Microbial interaction and industrial Microbiology:</b> B. Microbe-microbe.  <b>❖ Animal microbe interaction. ❖ Microbes in Industry:</b> • Acid production • Alcohol production • Antibiotic production
<b>OCTOBER</b> <b>UNIT-III</b>	<b>❖ Soil Microbiology:</b> Soil as a habitat for micro-organisms  ❖ Rhizosphere and Rhizoplane microorganisms.  ❖ Organic matter decomposition.  ❖ Role of micro-organisms in Biogeochemical Cycles, Nitrogen fixation by microorganisms
<b>NOVEMBER</b> <b>UNIT-IV</b>	<b>❖ Water Microbiology:</b> Types of water and water micro-organisms  ❖ Microbial Water Pollution, Water Treatment, Bacteriological analysis of water.  ❖ Air Microbiology: Distribution of microbes in air.  ❖ Indoor aero microbiology, Aeroallergens and allergic disorders by air microflora.  ❖ Collection and enumeration of aeroallergen.

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**PROPOSED TEACHING PLAN FOR THE SESSION 2018-19**

**DEPARTMENT OF BOTANY**

**M.Sc.-SEMESTER - II, PAPER 1 – Taxonomy and Diversity of Angiosperms**

<b>MONTH</b>	<b>Course</b>
JANUARY  Unit-I	Origin of Intrapopulation Variations: population and the environment, ecades and ecotypes; Taxonomic hierachy major and minor categories; the species concept. Plant Nomenclature- Salient features of international code of Botanical Nomenclature, Binomial Nomenclature.
FEBRRUARY  Unit II	Taxonomic evidence: Morphology, Anatomy, Palynology, Embryology, Cytology, Photochemistry, Genome analysis and Nucleic acid hybridization.  Taxonomic tools- Herbarium, Flora, Taxonomic Literature  GIS (Geographical information system).
MARCH  Unit III & UNIT-IV	Fossil Angiosperms, Sustainable utilization of Bio- rurces. Systems of Angiosperm classification- Bentham and Hooker, Hutchinson, Takhatjan & Cronquist. Study of following families with particular reference to systematic position, phylogeny, Evolutionary trends and economic importance. Dicot families: Ranunculaceae, Magnoliaceae, Nymphaeaceae, Capparidaceae, Meliaceae, Tiliaceae, Cucurbitaceae, Leguminosae (Fabaceae) (Caesalpinoideae, Mimosoideae, Papileonoideae)
APRIL  Unit IV	,Umbelliferae (Apiaceae), Lythraceae, Mytraceae, Rubiaceae, Apocynaceae, Asclepiadaceae, Solanaceae, Labiateae (Lamiaceae), Verbinaceae, Euphorbiaceae; Compositeae. Monocot families- Orchidaceae, Zingiberaceae, Liliaceae, Cyperaceae, Gramineae (Poaceae).
MAY	Revision & Practical Exam
	Practicals done every month as per schedule

## TEACHING PLAN

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Proposed Teaching Plan ( Session-2018-19)

### DEPARTMENT OF BOTANY

### SEMESTER-II, PAPER- II - Molecular Biology

MONTH	PAPER-II Molecular Biology
<b>JANUARY</b> <b>UNIT-I</b>	RNA and DNA structure A, B and Z Forms, replication, Transcription, Translation, DNA damage and repair mechanism, Inherited human diseases –causes.
<b>FEBRUARY</b> <b>UNIT-II</b>	Molecular cytogenetics : Nuclear DNA concept, C-value paradox, Cot curve and its significance, restriction mapping – concept and techniques, multi-gene families and their evolution, in situ hybridization and techniques, chromosome, microdissection and microcloning.
<b>MARCH</b> <b>UNIT-III</b>	<b>Gene structure and expression:</b> Fine structure of gene, cis-trans test, fine structure analysis of eukaryotes introns and their significance, RNA splicing, regulation of gene expression in prokaryotes and eukaryotes.  ❖ <b>Protein sorting:</b> Targeting of proteins to organelles.
<b>APRIL</b> <b>UNIT-IV</b>	<b>Mutation:</b> Spontaneous and induced mutation, physical and chemical mutagens, molecular basis of gene, transposable elements in prokaryotes and eukaryotes, mutation induced by transposones, site-directed mutagenesis, translocation tester sets, Robertsonian translocation, B-A translocation.

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**PROPOSED TEACHING PLAN FOR THE SESSION 2018-19**

**DEPARTMENT OF BOTANY**

**SEMESTER- II , PAPER- III –Plant Physiology**

**Max.Marks 80**

MONTH	Course- Plant Physiology
<b>July</b> <b>Unit-I</b>	<b>Membrane transport and translocation of water and solutes:</b> Plant-water relation, mechanism of water transport through xylem, root microbe interactions in facilitating nutrient uptake,
<b>August</b> <b>Unit I &amp; II</b>	comparison of xylem and phloem transport, phloem loading and unloading, passive active active solute transport, membrane transport.  Structure and Mechanism of opening & closing of stomata, factors affecting transpiration. <b>Signal transduction:</b> Overview, receptors and G proteins, Phospholipids signaling, role of cyclic nucleotides, calcium
<b>September</b> <b>Unit-II &amp; III</b>	calcium-calmodulin cascade, diversity in protein kinases and phosphatases, specific signaling mechanism, two component sensor regulator system in  <b>Stress Physiology:</b> Plant responses to biotic and a-biotic stress, mechanisms of biotic and abiotic stress tolerance, HR fundamental and SAR, water deficit and drought resistance, salinity stress, metal toxicity, freezing and heat stress
<b>October</b> <b>Unit -III</b>	<b>Fundamentals of enzymology:</b> General aspect, allosteric mechanism regulatory and active sites, isozymes, kinetics of enzymatic catalysis, Michaelis-Menton equation and its significance.
<b>November</b> <b>Unit -IV</b>	<b>Sensory Photobiology:</b> History of discovery of phytochromes and cryptochrome  light induced responses, cellular localization, and molecular mechanism of action of photomorphogenic receptors.

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**PROPOSED TEACHING PLAN FOR THE SESSION 2018-19**

**DEPARTMENT OF BOTANY**

**SEMESTER II, PAPER IV -**

**PLANT METABOLISM**

Month	Course
JAN Unit-I	<b>Photosynthesis:</b> General concepts and historical background, evolution of photosynthetic apparatus, photosynthetic pigments and light harvesting complexes, photo-oxidation of water mechanism of electron and proton transport, carbon assimilation – The Calvin cycle, photorespiration and its significance, the C <sub>4</sub> cycle, the CAM pathway, biosynthesis of starch and sucrose, physiological and ecological considerations.
FEB Unit II	<b>Respiration and Lipid Metabolism:</b> Overview of plant respiration, glycolysis, the TCA cycle, electron transport and ATP synthesis, Pentose phosphate pathway, glyoxylate cycle, alternative oxidase system, structure and function of lipids, fatty acid biosynthesis, synthesis of membrane lipid and storage lipids and their catabolism.
MAR UNIT III	<b>Nitrogen and Sulphur Metabolism:</b> Overview, biological nitrogen fixation, nodule formation and nod factors, mechanism of nitrate uptake and reduction, ammonium assimilation, sulphur uptake, transport and assimilation.
APRIL Unit IV	<b>Plant growth regulator and elicitors:</b> Physiological effect and mechanism of action of auxins, gibberellins cytokinins, ethylenes, abscisic acid, brassinosteroids, polyamines, jasmonic acid and hormone receptors.  <b>The Flowering Process:</b> Photoperiodism and its significance, endogenous clock and its regulation, floral induction and development – Genetic molecular analysis, role of vernalization.
MAY	Practicals done every month as per schedule.  Theory and practical exams.

**PROPOSED TEACHING PLAN FOR THE SESSION 2018-19**

**DEPARTMENT OF BOTANY**

**M.Sc.BOTANY SEMESTER IV, PAPER I**

**Plant Reproduction**

MONTH	Topic
JANUARY UNIT I	Reproduction: Vegetative options and sexual reproduction; flower development; genetics of floral organ differentiation; homeotic mutant in <i>Arabidopsis</i> and <i>Antirrhinum</i> ; sex determination.
FEBRUARY UNIT I ,UNIT II	Male Gametophyte: Structure of anthers; microsporogenesis, role of Tapetum; Pollen development and Gene expression; Male sterility; Sperm dimorphism pollen germination, Pollen storage; Pollen allergy Female Gametophyte: Ovule development; megasporogenesis; organization of the embryo sac, structure of the embryo sac cells.
MARCH UNIT II UNIT III	Pollen-pistil interaction and Fertilization: Global Characteristics, Pollination mechanisms ; breeding systems; commercial considerations; structure of the pistil; Pollen-stigma interactions, Sporophytic and Gametophytic self compatibility (cytological, biochemical and molecular aspects); double fertilization, in-vitro fertilization.
APRIL UNIT III	Seed development and Fruit growth: Endosperm development during early, maturation and desiccation stages; embryogenesis, ultra structure and nuclear cytology; cell lineages during late embryo development; storage proteins of endosperm and embryo; Polyembryony; Apomixis; Embryo culture; Dynamics of fruit growth; Biochemistry and Molecular biology of fruit maturation. Latent life-dormancy: Importance and types of dormancy; Seed dormancy; overcoming seed dormancy; Bud dormancy;
MAY UNIT IV	Senescence and programmed Cell death (PCD): Basic concepts, types of cell death, PCD in the life cycle of plants, metabolic changes associated with senescence and its regulation; influence of hormones and environmental factors on Senescence. Practicals done every month as per schedule



**PROPOSED TEACHING PLAN FOR THE SESSION 2018-19**

**DEPARTMENT OF BOTANY**

**M.Sc.BOTANY SEMESTER IV, PAPER- II**

**Plant Ecology & Conservation**

<b>MONTH</b>	<b>Topic</b>
<b>JANUARY</b>  <b>UNIT- I</b>	<b>Air Pollution:</b> Kinds, sources, quality parameters; Effects on plants and ecosystems. Climate change, Green house gases (CO <sub>2</sub> , CH <sub>4</sub> , NO <sub>2</sub> , CFCs: sources, trends and role) Ozone layer and Ozone hole, consequences of climate change (CO <sub>2</sub> fertilization, Global Warming, Sea level rise, UV radiation).
<b>FEBRUARY</b>  <b>UNIT- II</b>	<b>Water Pollution &amp; Soil Pollution:</b> Kinds, source, quality parameters, effects on plants and ecosystems. Radioactive pollution. Noise Pollution.
<b>MARCH</b>  <b>UNIT- III</b>	<p>Plant used in Social forestry, Agro forestry and in pollution control, Extinction, Environmental status of plants based on International Union for Conservation of Nature (IUCN), Air conditioning by plants.</p> <p><b>Ecosystem Stability:</b> Concept (resistance and resilience), Ecological perturbances (natural and anthropogenic) and their impact on plants and ecosystems, Plant invasion, Environmental impact assessment, Ecosystem restoration.</p>
<b>APRIL</b>  <b>UNIT- IV</b>	<p><b>Ecological Management:</b> Concepts, Conservation and management of natural resources, Principles of Conservation Sustainable development &amp; Sustainability Bio-indicators</p> <p><b>Strategies for conservation, <i>in-situ conservation</i></b> :International efforts and India initiatives; protected areas in India-sanctuaries, national parks, biosphere reserves, wetlands, mangroves and coral reefs for conservation of wild biodiversity.</p> <p><b>Strategies for conservation, <i>Ex-situ conservation</i></b>: Principles and practices, botanical garden, field gene banks, seed banks, in vitro repositories, cryobanks and general account of the activities of botanical survey of India {BSI} National bureau of plant genetic resources {NBPGR} Indian council of agriculture research {ICAR} Council of scientific and industrial research {CSIR} and the department of biotechnology {DBT} for conservation, non formal conservation efforts.</p>

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**PROPOSED TEACHING PLAN FOR THE SESSION 2018-19**

**DEPARTMENT OF BOTANY**

**SEMESTER IV, PAPER III, Plant Cell, Tissue and Organ Culture**

<b>MONTH</b>	<b>Plant Cell, Tissue and Organ Culture</b>
<b>JANUARY</b>  <b>Unit – I</b>	<b>PLANTS CELL AND TISSUE CULTURE:</b> General introduction, history, scope, concept of cellular differentiation totipotency.  <b>TISSUE CULTURE MEDIA:</b> Media constituents, Media selection, Media preparation.  <b>CELL CULTURE:</b> Isolation of single cells, Suspension cultures, Culture of Single cell, Plant cell reactors, application of cell culture.  <b>CLONAL PROPAGATION-</b> Auxillary bud proliferation, Meristem and shoot tip culture, bud culture.
<b>FEBRUARY</b>  <b>UNIT I &amp; II</b>	<b>ORGANOGENESIS AND ADVENTIVE EMBRYOGENESIS:</b> Fundamental aspects of morphogenesis via callus formation, direct adventitive organ formation.  <b>SOMATIC EMBRYOGENESIS AND ANDROGENESIS:</b> Mechanism, techniques and utility.  <b>SOMATIC HYBRIDIZATION:</b> Methods of Protoplast isolation, Spontaneous and induced methods of protoplasm fusion, identification and selection of hybrid cells, Regeneration of hybrid plants, Vertification and Characterization of somatic hybrids, Cybrids, Possibilities achievements and limitation of protoplast research.
<b>MARCH</b>  <b>UNIT – III</b>	<b>CRYOPRESERVATION AND GERMPLASM STORAGE:</b> Raising sterile tissue cultures, Addition of cryoprotectants and pre-treatment, freezing, storage, thawing, determination of survival viability. Plant growth and generation, vertification, encapsulation and dehydration, slow growth method.
<b>APRIL</b>  <b>UNIT IV</b>	<b>APPLICATION OF PLANT TISSUE CULTURE:</b> artificial seeds, Production of hybrids and somaclones.  <b>PRODUCTION OF SECONDARY METABOLITES/ NATURAL PRODUCTS:</b> Morphological and chemical differentiation, medium composition for secondary product formation, Growth production patterns, Environmental factors, Selection of cell lines producing high amounts of a useful metabolite, Problems associated with secondary metabolite production, Immobilized cell system.  <b>TRANSGENICS IN CROP IMPROVEMENT:</b> Transgenic for Resistance of biotic and abiotic stresses, Transgenic for quality modification, Terminator seed technology.
<b>MAY</b>	Revision, Practicals done every month as per schedule

**PROPOSED TEACHING PLAN FOR THE SESSION 2018-19**

**DEPARTMENT OF BOTANY**

**M.Sc.BOTANY SEMESTER IV, PAPER IV**

**Elective Course – Ethnobotany**

MONTH	Topic
<b>JANUARY</b>  <b>UNIT I</b>	Plant Conservation by Tribes & role of Joint Forest Management Programme in Plant Conservation specially People's Protected Area  Ethnobotany and its role in domestication and conservation of native plant and genetic resources.
<b>FEBRUARY</b>  <b>UNIT I ,UNIT II</b>	The protection of plant varieties and Intellectual Properties Rights. General account of conservation of medicinal plants. General role of Aromatic plants. General ideas of various system of medicine using plants. Basic knowledge of Ayurvedic, Homeopathic, Allopathic system of medicine.
<b>MARCH</b>  <b>UNIT II UNIT III</b>	General idea of active principles of Plants. Herbal Cosmetics. General account of toxic plants and Harmful effect of plants on human society with special reference to allergic plants of Chhattisgarh. Endemic plants of Chhattisgarh. Endangered plants of Chhattisgarh
<b>APRIL</b>  <b>UNIT III</b>	Techniques of cultivation and marketing of Aromatic plants –Podina, Lemon grass Kasturibhindi, Palmarosa. Techniques of cultivation ,marketing and importance of mushroom Techniques of cultivation, extraction of juice and importance of wheat grass. Ethnobotanical study of the following plants with special reference to their medicinal importance- 1. <i>Allium sativum</i> (Lahsun) 2. <i>Aegle marmelos</i> (Bel) 3. <i>Terminallia arjuna</i> (Arjun)
<b>MAY</b>  <b>UNIT IV</b>	4 <i>T. bellerica</i> (Bahera) 5. <i>T chebula</i> (Harra) 6. <i>Calendula officianallis</i> (Calendula) 7. <i>Thuja occidentalis</i> (Vidhya) 8 <i>Dhatura alba</i> (Dhatura) 9. <i>Argemone maxicana</i> (Pili kateli) 10. <i>Ephedra</i> sps. ( Ephedra).  Practical's done every month as per schedule

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**PROPOSED TEACHING PLAN FOR THE SESSION 2018-19**

**DEPARTMENT OF BOTANY**

**SEMESTER IV, PAPER IV -**

**ELECTIVE COURSE MICROBIAL ECOLOGY**

Month	Topic
JAN Unit-I	<b>Environmental Microbiology:</b> Waste as a resource, Biogas production. Sewage Treatment. Heavy metal tolerance in microbes & mechanism of heavy metal resistance Biodegradation. Biodeterioration, Bioremediation, Biofertilizers , Biopesticides
FEB Unit II	<b>Diseases:</b> symptoms and types of bacterial disease- citrus canker, bacterial blight of rice, scab of potato, angular leaf spot of cotton, leaf spot of mango. <b>Etiology of Nematodal diseases</b> -ear cockle of wheat, molyar disease of barley, root knot of vegetable crops. <b>Etiology transmission of viral diseases</b> -Leaf curl of papaya, mosaic of bhindi, yellow mosaic of legumes, bunchy top of banana. <b>Etiology mycoplasmal diseases</b> -grassy shoot of sugarcane, mycoplasmal disease of potato, citrus greening, little leaf of brinjal. <b>Etiology of fungal diseases</b> - Downey mildews, powdery mildews, rusts, smuts & wilt.
MAR UNIT III	<b>Medical Microbiology:</b> <b>Protozoan Disease:</b> Name of diseases-Malaria, Giardiasis, Trypanosomiasis, Amoebiasis. <b>Fungal Disease:</b> Phycomycosis, Candidiasis, Actinomycosis, Dermatophytosis, Aspergillosis, Penicilliosis. <b>Bacterial Disease:</b> Tuberculosis, Diphtheria, Cholera, Shigellosis, Typhoid, and Tetanus. <b>Viral Disease:</b> Influenza, Polio
APRIL Unit IV	<b>Instrumentation &amp; Techniques</b> <b>Microscopy:</b> Light microscope, Electron Microscope (Transmission & Scanning), Colorimeter, Spectrophotometry, Chromatography, Electrophoresis, Laminar air flow, Collection sampling and identification of indoor microflora special reference to Library and Class rooms.
MAY	Practicals done every month as per schedule. Theory and practical exams.

## RAIPUR CHHATTISGARH

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### PROPOSED TEACHING PLAN FOR THE SESSION 2018-19

### SEMESTER-I

Month	Paper-I	Paper-II
July  UNIT-I	<b>SYMMETRY AND GROUP THEORY IN CHEMISTRY:</b> Symmetry elements and symmetry operation, definitions of group, subgroup, relation between orders of a finite group and its subgroup. Conjugacy relation and classes. Point symmetry group. Schoenflies symbols, representations of groups by matrices (representation for the $C_n$ , $C_{nv}$ , $C_{nh}$ , $D_{nh}$ , etc. Groups to be worked out explicitly). Character of a representation. The great orthogonality theorem (without proof) and its importance. Character tables and their use; spectroscopy.	A. <b>NATURE OF BONDING IN ORGANIC MOLECULES:</b> Delocalized chemical bonding, conjugation, cross-conjugation bonding in fullerenes. Bonds weaker than covalent, alternant and non-alternant hydrocarbons, Crown ether complexes and cryptands. B. <b>AROMATICITY:</b> Aromaticity in benzenoid and non-benzenoid compounds. Huckel's rule, annulenes, anti-aromaticity, homo-aromaticity. PMO approach for Aromaticity, Annulenes.
August  UNIT-II	A. <b>METAL-LIGAND BONDING:</b> Limitation of crystal field theory, molecular orbital theory, octahedral, tetrahedral and square planar complexes, bonding and molecular orbital theory. B. <b>METAL <math>\pi</math> COMPLEXES:</b> Metal carbonyls, structure and bonding, vibrational spectra of metal carbonyls for bonding and structural elucidation, important reactions of metal carbonyls; preparation, bonding, structure and important reactions of transition metal nitrosyl, di-nitrogen and di-oxygen complexes; tertiary phosphine as ligand.	A. <b>CONFORMATIONAL ANALYSIS:</b> Conformational analysis of cycloalkanes, decalins, effect of conformation on reactivity, conformation of sugars, steric strain due to unavoidable crowding. B. <b>STEREOCHEMISTRY:</b> Elements of symmetry, chirality, molecules with more than one chiral center, methods of resolution, optical purity, stereospecific and stereoselective synthesis. Asymmetric synthesis. Optical activity in the absence of chiral carbon (Biphenyls, allenes and spiranes), chirality due to helical shape.
September	A. <b>METAL-LIGAND EQUILIBRIA IN SOLUTION:</b> stepwise and overall formation constants and their interaction, trends in stepwise	A. <b>REACTION INTERMEDIATES:</b> Generation, structure, stability and reactivity of carbocations, carbanions, free radicals,

UNIT-III	<p>constants, factors affecting the stability of metal complexes with reference to the nature of metal ion and ligand, chelate effect and its thermodynamic origin, determination of binary formation constants by pH-metry and spectrophotometry.</p> <p>B. <b>ISOPOLY ACID AND HETEROPOLY ACID:</b> Isopoly and heteropoly acids of Mo and W. Preparation, properties and structure. Classification, preparation, properties and structures of Borides, Carbides, Nitrides and Silicides, Silicates-classification and structure, Silicones-preparation, properties and application.</p>	<p>carbenes and nitrenes. Sandmeyer reaction, Free radical rearrangement and Hunsdiecker reaction.</p> <p>B. <b>ELIMINATION REACTIONS:</b> THE <math>E_2</math>, <math>E_1</math> and <math>E_{1cB}</math> mechanism. Orientation of the double bond. Reactivity, effects of substrate structures, attacking base, the leaving group and the medium.</p>
October UNIT-IV	<p>A. <b>METAL CLUSTERS:</b> Higher boranes, carboranes, metalloboranes and metallocarboranes, metal carbonyl and halide cluster, compounds with metal-metal multiple bonds.</p> <p>B. <b>CHAINS:</b> Catenation, Heterocatenation, Interactenation.</p> <p>C. <b>RINGS:</b> Borazines, Phosphazines.</p>	<p><b>PERICYCLIC REACTIONS:</b> Classification of pericyclic reactions. Woodward-Hoffmann correlation diagrams. FMO and PMO approach. Electrocyclic reactions conrotatory and disrotatory motions, <math>4n</math>, <math>4n+2</math> and allyl systems. Cycloadditions – antarafacial and suprafacial additions, <math>4n</math> and <math>4n+2</math> system, <math>2+2</math> addition of ketenes, <math>1, 3</math> dipolar cycloadditions and cheletropic reactions. Sigmatropic rearrangements – suprafacial and antarafacial shifts of H, sigmatropic shifts involving carbon moieties, <math>3, 3</math>- and <math>5, 5</math>-sigmatropic rearrangements. Claisen, Cope and Aza-Cope rearrangements. Ene reaction.</p>
November	Revision	
Remark	Practicals done every month as per schedule	

Month	Paper-III	Paper-IV
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July UNIT-I	<p><b>A. MATHEMATICAL CONCEPT IN QUANTUM CHEMISTRY:</b> Vector, Dot Cross and triple products. Complex numbers and co-ordinate transformations (Cartesian to Spherical Polar in Quantum Chemistry). Differential and Integral Calculus, Basis rules of differentiation and Integration Applications.</p> <p><b>B. QUANTUM MECHANICS:</b> The Schrodinger equation and the postulates of quantum mechanics. Discussion of solutions of the Schrodinger equation to some model systems viz., particle in a box, the harmonic oscillator, the rigid rotor, the hydrogen atom.</p>	<b>UNIFYING PRINCIPLES:</b> Electromagnetic radiation, interaction of electromagnetic radiation with matter-absorption, emission, transmission, reflection, refraction, dispersion, polarization and scattering. Uncertainty relation and natural line width and natural line broadening, transition probability, transition moment, selection rules, intensity of spectral lines, Born-Oppenheimer approximation, rotational, vibrational and electronic energy levels. Regions of spectrum, representation of spectra, F.T. spectroscopy, computer averaging, lasers.
August UNIT-II	<b>BASICS OF THERMODYNAMICS:</b> Maxwell's thermodynamic relations and its applications. Reaction isotherm, Vant Hoff hypothesis. Partial molar properties; partial molar free energy, partial molar volume and partial molar heat content. Chemical potential, Gibbs Duhem equation, variation of chemical potential with temperature and pressure. Chemical potential of ideal gases, pure solids, liquids and mixture of ideal gases.	<b>MICROWAVE SPECTROSCOPY:</b> Classification of molecules in term of their internal rotation mechanism, determination of rotation energy of diatomic and polyatomic molecules, intensities of rotational spectral lined, effect of isotopic substitution on diatomic and polyatomic molecules, intensities of rotational spectral lines and parameters of rotational energy of linear and the transition frequencies, non-rigid rotators, spectral lines and parameters of rotational energy of linear and symmetric top polyatomic molecules. Application in determination of bond length.
September UNIT-III	<b>ELECTROCHEMISTRY:</b> Electrochemistry of solution, Debye-Huckel Onsager treatment and its extension, ion solvent interactions. Debye-Huckel-Limiting Law. Debye-Huckel theory for activity coefficient of electrolytic solutions. Determination of activity and activity coefficient, ionic strength, Thermodynamics of electrified interface equations. Derivation of electrocapillarity, Lippmann equation (surface excess), methods of determination.	<b>SCATTERING SPECTROSCOPY:</b> Principle, instrumentations and application of Auger spectroscopy and Scanning Electron Microscopy for chemical characterization, electron diffraction of gases and vapours, The Wierl equation and co-related method, application of electron diffraction. Theory, instrumentation and application of turbidimetry, nephelometry and fluorometry. Fluorescence and phosphorescence and factors affecting them.
October UNIT-IV	<b>CHEMICAL DYNAMICS:</b> Methods of determining rate laws, collision theory of reaction rates, steric factor, Activated complex theory, kinetic salt effects, steady state kinetics, and thermodynamic and Kinetic control	<b>RAMAN SPECTROSCOPY:</b> Classical and quantum theories of Raman effect, pure rotational, vibrational and vibrational rotational Raman spectra, selection rules mutual exclusion principle, Resonance Raman spectroscopy, Coherent anti Stokes Raman

	of reactions. Dynamic chain (Hydrogen-Bromine and Hydrogen-chlorine reactions) and Oscillatory reactions (Belousov-Zabolonsky reaction).	spectroscopy (CARS), Instrumentation, Application of Raman effect in molecular structures, Raman activity of molecular vibration, structure of CO <sub>2</sub> , N <sub>2</sub> O, SO <sub>2</sub> , NO <sub>3</sub> <sup>-</sup> , ClF <sub>3</sub> <b>B. MOSSBAUER SPECTROSCOPY:</b> Basic principles, spectral parameters and spectrum display. Application of the technique to the studies of (1) bonding and structures of Fe <sup>+2</sup> , and Fe <sup>+3</sup> compounds including those of intermediate spin, (2), Sn <sup>+2</sup> and Sn <sup>+4</sup> compounds.
November	Revision	
December	Practicals done every month as per schedule	



## SEMESTER-II

Month	Paper-I	Paper-II
January  UNIT-I	<b>REACTION MECHANISM OF TRANSITION METAL COMPLEXES:</b> Energy profile of a reaction, reactivity of metal complexes inert and labile complexes, kinetic application of valence bond and crystal field theories, kinetics of octahedral substitution, anation reactions, without metal ligand bond cleavage. Substitution reactions in square planar complexes, the trans effect. Redox reactions, electron transfer reactions, mechanism of one electron transfer reactions, outer sphere type reactions, cross reactions and Marcus-hush theory, inner sphere type reactions.	<b>A. ALIPHATIC NUCLEOPHILIC SUBSTITUTION:</b> The SN 2, SN 1 mechanisms. The neighbouring group mechanism, neighbouring group participation by and bond, anchimeric assistance. Reactivity effects of substrate structure, attacking nucleophile, leaving group and reaction medium, phase transfer catalysis, ambident nucleophile and regioselectivity.  <b>B. AROMATIC NUCLEOPHILIC SUBSTITUTION:</b> The S <sub>N</sub> Ar, SN 1 and benzyne mechanisms. Reactivity – effect of substrate structure, leaving group and attacking nucleophile. The von Richter, Sommelet-Hauser, and Smiles rearrangements.
February  UNIT-II	<b>ELECTRONIC SPECTRA AND MAGNETIC PROPERTIES OF TRANSITION METAL COMPLEXES:</b> Spectroscopic ground states, Correlation, Orgel and Tanabe-Sugano diagrams for transition metal complexes (d1-d9 states), Selection rules, mechanism for breakdown of the selection rules. Intensity of absorption, band width, spectra of d-d metal complexes of the type [M (H <sub>2</sub> O)] <sup>n+</sup> spin free and spin paired ML <sub>6</sub> complexes of other geometries, Calculations of Dq, B and parameters, spin forbidden transitions, effect of spin-orbit coupling, Spectrochemical and Nephelouxetic series. Magnetic properties of complexes of various geometries based on crystal field model, spin free-spin paired equilibria in octahedral stereochemistry.	<b>A. ALIPHATIC ELECTROPHILIC SUBSTITUTION:</b> Mechanisms of SE <sub>2</sub> , SE <sub>1</sub> , electrophilic substitution accompanied by double bond shifts. Effect of substrates, leaving group and the solvent polarity on the reactivity.  <b>B. AROMATIC ELECTROPHILIC SUBSTITUTION:</b> The arenium ion mechanism, orientation and reactivity. The ortho/para ratio, ipso attack, orientation in other ring systems. Vilsmeier reaction and Gattermann-Koch reaction
March	<b>A. TRANSITION METAL COMPLEXES:</b> Transition metal complexes with unsaturated organic molecules, alkanes, allyl, diene dienyl, arene and trienyl complex, preparations, properties, nature of bonding and	<b>ADDITION TO CARBON-CARBON MULTIPLE BONDS:</b> Mechanistic and stereochemical aspects of addition reactions involving electrophiles, nucleophiles and free radicals, regio-and

UNIT-III	<p>structure features, important reaction relating to nucleophilic and electrophilic attack on ligands and organic synthesis.</p> <p><b>B. TRANSITION METALS COMPOUND WITH BOND TO HYDROGEN:</b> Transition Metals Compounds with Bond to Hydrogen.</p>	chemoselectivity. Addition to cyclopropane ring. Hydrogenation of double and triple bonds, hydrogenation of aromatic rings Hydroboration, Michael reaction, Sharpless asymmetric epoxidation.
April UNIT-IV	<p><b>A. ALKYL AND ARYL OF TRANSITION METALS:</b> Types, routes of synthesis, stability and decomposition pathways, organocopper in organic synthesis.</p> <p><b>B. COMPOUNDS OF TRANSITION METAL – CARBON MULTIPLE BONDS:</b> Alkylidenes, low valent carbenes nature of bond and Structural characteristics.</p> <p><b>C. FLUXIONAL ORGANOMETALLIC COMPOUNDS:</b> Fluxionality and dynamic equilibria in compounds such as olefin, - allyl and dienyl complexes.</p>	<b>ADDITION TO CARBON-HETERO MULTIPLE BONDS:</b> Mechanism of metal hydride reduction of saturated and unsaturated carbonyl compounds, acids, esters, nitriles. Addition of Grignard Reagent, Organo-Zn, Organo-Li reagent to carbonyls and unsaturated carbonyl compounds, Wittig reaction. Mechanism of condensation reactions involving enolates – Aldol, Knoevenagel and Stobbe reactions. Hydrolysis of esters and amides, ammonolysis of esters.
Remark	Practicals done every month as per schedule	

Month	Paper-III	Paper-IV
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January  UNIT-I	<p><b>A. APPLICATION OF MATRICES IN QUANTUM CHEMISTRY:</b> Addition and multiplication, inverse and transpose of matrices. Determinants, in quantum chemistry.</p> <p><b>B. ANGULAR MOMENTUM IN QUANTUM CHEMISTRY:</b> Angular Momentum, Ordinary Angular Momentum, Generalized Angular Momentum, Eigen-functions for Angular Momentum, Eigen values of Angular Momentum, Operators.</p> <p><b>C. APPROXIMATE METHOD:</b> The variation theorem, linear variation principle. Perturbation theory (first order and nondegenerate). Applications of variation method and perturbation theory to the Helium atom.</p>	<p><b>ULTRAVIOLET AND VISIBLE SPECTROSCOPY:</b> Various electronic transitions (185-800 nm), Beer – Lambert law, effect of solvent on electronic transitions, ultraviolet bands for carbonyl compounds, unsaturated carbonyl compounds, dyes, conjugated polyenes. Fieser-Woodward rules for conjugated dienes and carbonyl compounds, ultraviolet spectra of aromatic and heterocyclic compounds. Steric effect in biphenyls. Intensity of vibrational-electronic spectra and Frank-Condon principle for dissociation energy, rotational fine structure of electronic-vibrational spectra, Shape of some molecular orbitals viz., H<sub>2</sub>, He<sub>2</sub>, N<sub>2</sub>, O<sub>2</sub>. Electronic spectra of organic molecules, chromophores, application of electronic spectroscopy: spectrophotometric studies of complex ions, determination of ligand/metal ratio in a complex, identification of compounds, determination stability constants. Instrumentation.</p>
February  UNIT-II	<p><b>A. THERMODYNAMICS OF NON-IDEAL GASES:</b> Activity and Fugacity, Determination of Fugacity, Variation of Fugacity with Temperature and Pressure.</p> <p><b>B. NON-EQUILIBRIUM THERMODYNAMICS:</b> Fundamental concepts, forces and fluxes, Entropy production, Phenomenological Laws and Onsager's reciprocity relations.</p>	<p><b>A. INFRARED SPECTROSCOPY:</b> Introduction, simple and anharmonic oscillators in vibrational spectroscopy, diatomic-vibrating rotator, Modes of vibration in polyatomic molecules, vibration-coupling, Fourier Transform IR spectroscopy: instrumentation, interferometric spectrophotometer, sample handling, Factors influencing vibrational frequencies, Application of IR spectroscopy: Interpretation of IR spectra of normal alkanes, aromatic hydrocarbons, alcohols and phenols aldehydes and ketones, ethers, esters, carboxylic acids and amines and amides.</p> <p><b>B. FOURIER TRANSFORM INFRARED SPECTROSCOPY:</b> Introduction, instrumentation, Michelson interferometer, slow scan, stepped scan and rapid scan interferometers, sources and detectors, resolution and wave number measurements, sources of error, computation and recording advantages.</p>

March UNIT-III	<b>ELECTROCHEMISTRY – II:</b> Structure of electrified interfaces. Gouy-Chapman, Stern, Over potentials and exchange current density, Derivation of Butler – Volmer equation, Tafel plot. Semiconductor interfaces, Theory of double layer at semiconductor, electrolyte solution interfaces, structure of double layer interfaces. Effect of light at semiconductor solution interfaces. Electro catalysis influence of various parameters. Hydrogen electrode.	<b>MASS SPECTROMETRY:</b> Introduction, basic principles, separation of the ions in the analyzer, resolution, molecular ion peak, mass spectral fragmentation of organic compounds, factors affecting fragmentation, McLafferty rearrangement. Instrumentation, Characteristics of mass spectra of Alkanes, Alkenes, Aromatic hydrocarbons, Alcohols, Amines. Nitrogen rule, ring rule, Molecular weight and formula determination, Gas chromatography-Mass spectrophotometry: Introduction.
April UNIT-IV	<b>CHEMICAL DYNAMICS - II:</b> General features of fast reactions by flow method, relaxation method, flash photolysis and the nuclear magnetic resonance method. Dynamics of molecular motions, probing the transition state, dynamics of barrier less chemical reactions in solutions, dynamics of unimolecular reaction. [Lindemann – Hinshelwood and Rice-Ramsperger-Kassel-Marcus {RRKM}] theories of unimolecular reactions.	<b>A. NUCLEAR MAGNETIC RESONANCE SPECTROSCOPY:</b> Chemical shift values & correlation for protons bonded to carbon (aliphatic, olefinic & aromatic) & other nuclei (Alcohols, Phenol ends Carbonylic acids amines, amides and mercapto) chemical exchange effect of deuteration. Nuclear magnetic double resonance, contact shift reagents, solvent effects. Fourier transform techniques. <b>B. CARBON – 13 NMR SPECTROSCOPY:</b> General considerations, chemical shift (aliphatic, olefinic, alkyne, aromatic, heteroaromatic, and carbonyl carbon) coupling constants.
Remark	Practicals done every month as per schedule	

## SEMESTER-III

Month	Paper-I	Paper-II
July UNIT-I	<p><b>A. ELECTRON SPIN RESONANCE SPECTROSCOPY:</b> Hyperfine coupling, polarization for atoms and transition metal ions, spin-orbit coupling and significance of g-tensors, application to transition metal complexes (having one unpaired electron)</p> <p><b>B. NUCLEAR QUADRUPOLE RESONANCE SPECTROSCOPY:</b> Quadrupole nuclei, quadrupole moments, electric field gradient, coupling constant, splittings, applications.</p>	<p>A. <b>BIOENERGETICS:</b> Standard free energy changes in biochemical reactions, exergonic, endergonic, Hydrolysis of ATP, synthesis of ATP from ADP.</p> <p>B. <b>ELECTRON TRANSFER IN BIOLOGY:</b> Structure and function of metalloproteins in electron transport processes – cytochromes and ion-sulphur proteins, synthetic models.</p> <p>C. <b>TRANSPORT &amp; STORAGE OF DIOXYGEN:</b> Heme proteins and oxygen uptake, structure and function of haemoglobin, myoglobin, haemocyanins and haemerythrin, model synthetic complexes of iron, cobalt and copper.</p>
August UNIT-II	<p>A. <b>PHOTOELECTRON SPECTROSCOPY:</b> Basic principle both for atoms and molecules; Photo-electric effect, ionization process, Koopman's theorem, photoelectron spectra of simple molecules, Debye and Clausius-Mossotti equation, Auger electron spectroscopy, Determination of Dipole moment.</p> <p>B. <b>PHOTOACOUSTIC SPECTROSCOPY:</b> Basic Principle of Photo acoustic Spectroscopy(PAS), PAS – gases and condensed system Chemical and Surface application.</p>	<p>A. <b>METALLOENZYMES:</b> Zinc enzymes – carboxypeptidase and carbonic anhydrase. Iron enzymes – catalase, peroxidase and cytochrome P-450. Copper enzymes – superoxide dismutase. Molybdenum oxatransferase enzymes-xanthine oxidase.</p> <p>B. <b>ENZYME MODELS:</b> Host-guest chemistry, chiral recognition and catalysis, molecular recognition, molecular asymmetry and prochirality. Biomimetic chemistry, Cyclodextrin-based enzyme models, calixarenes, ionophores, synthetic enzymes of synzymes.</p>
September UNIT-III	<p>A. <b>PHOTOCHEMICAL REACTION:</b> Interaction of electromagnetic radiation with matter, types of excitations, fate of excited molecule, quantum yield, transfer of excitation energy, Actinometry.</p> <p>B. <b>DETERMINATION OF REACTION MECHANISM:</b> Classification, rate constants and life times of reactive energy states – determination of rate constants of reactions. Effect of light intensity on the rate of photochemical reactions.</p>	<p>A. <b>ENZYMES:</b> Nomenclature and classification of Enzyme. Fischer's lock and key and Koshland's induced fit hypothesis, concept and identification of active site by the use of inhibitors.</p> <p>B. <b>CO-ENZYME CHEMISTRY:</b> Structure and biological functions of coenzyme A, Thiamine pyrophosphate, pyridoxal phosphate, NAD<sup>+</sup>, NADP<sup>+</sup>, FMN, FAD, lipoic acid, vitamin B<sub>12</sub>.</p>

	C. <b>MISCELLANEOUS PHOTOCHEMICAL REACTIONS:</b> Photo-Fries reactions of anillides, Photo-Fries rearrangement. Barton reaction. Singlet molecular oxygen reactions. Photochemical formation of smog. Photodegradation of polymers, Photochemistry of vision.	C. <b>BIOTECHNOLOGICAL APPLICATION OF ENZYMES:</b> Techniques and methods of immobilization of enzymes, effect of immobilization on enzyme activity, application of immobilization enzymes in medicine and industry. Enzymes and Recombinant DNA Technology.
October  UNIT-IV	<p>A. <b>PHOTOCHEMISTRY OF ALKENES:</b> Intramolecular reaction of the olefinic bond – geometrical isomerism, cyclisation reactions, rearrangement of 1, 4 &amp; 1, 5 dienes.</p> <p>B. <b>PHOTOCHEMISTRY OF CARBONYL COMPOUNDS:</b> Intramolecular reactions of carbonyl compounds, Cyclohexadienones. Intermolecular Cyloaddition reactions – dimerisations and oxetane formation.</p> <p>C. <b>PHOTOCHEMISTRY OF AROMATIC COMPOUNDS:</b> Isomerisations, additions and substitutions.</p>	<p>A. <b>BIOPOLYMER INTERACTIONS:</b> Forces involved in biopolymer interaction. Electrostatic charges and molecular expansion, hydrophobic forces, dispersion force interactions. Multiple equilibria and various types of binding processes in biological systems. Hydrogen ion titration curves.</p> <p>B. <b>THERMODYNAMICS OF BIOPOLYMER SOLUTIONS:</b> Thermodynamics of biopolymer solution, osmotic pressure, membrane equilibrium, muscular contraction and energy generation in mechanochemical system.</p> <p>C. <b>CELL MEMBRANE AND TRANSPORT OF IONS:</b> Structure and functions of cell membrane, ion transport through cell membrane, irreversible thermodynamic treatment of membrane transport and nerve conduction.</p>
November	Revision	
Remark	Practicals done every month as per schedule	

Month	Paper-III	Paper-IV
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July  UNIT-I	<b>STATISTICAL THERMODYNAMICS:</b> Concepts of probability, Maxwell Boltzmann distribution. Different ensembles and Partition functions. Thermodynamic function using appropriate partition function. Fermi-Dirac and Bose-Einstein Statistics and statistical basis of entropy. Heat capacity of Solids Debye and Einstein Models.	<b>SAMPLE PREPARATION, DIGESTION AND STATISTICAL ANALYSIS</b> A. Sampling - Collection, Preservation and preparation of sample, Techniques of sampling solids, liquids and gases, Operation of drying and preparing a solution of the analyte. Principle, methodology and application of different types of digestions such as acid digestion, base digestion, enzymatic and microwave digestion for liquid and solid materials. B. Evolution and procession of Analytical Data, Precision and Accuracy, Types of Errors, Propagation of errors, Normal Distribution Curve, Standard deviation, Confidence limit, Graphical presentation of result-method of average, Method of Linear least square, Significant figures, Statistical aid to hypothesis testing-t-test, F-test, Correlation coefficient, Rejection of data.
August  UNIT-II	<b>POLYMER CHEMISTRY:</b> A. Importance of basics polymers, Basic concept monomers, Degree of polymerization linear branched and network polymers, classification of polymers polymerization, Condensation, addition, radical chain-ionic and co-ordination & copolymerization polymerization conditions and polymer reactions polymerization in homogenous and heterogenous system. B. Polymer structure and physical properties-crystalline melting point, T <sub>m</sub> -melting points of homogenous series, effect of chain flexibility and other steric factors, entropy and heat of fusion. The glass transition temperature T <sub>g</sub> relationship between T <sub>m</sub> & T <sub>g</sub> effect of molecular weight, diluents, chemical structure chain topology, branching & cross-linking property requirements and polymer utilization.	<b>SEPARATION TECHNIQUES</b> A. Efficiency of extraction, Selectivity of extraction, Extraction system, Method of Extraction, applications. B. Principle, classification of chromatographic techniques, Technique and applications of paper chromatographic, Thin-layer chromatographic, HPTLC, Column chromatography.
September	<b>A. SOLID STATE CHEMISTRY:</b> Crystal defects and Non-stoichiometry-Perfect and imperfect crystals, intrinsic and extrinsic defects – point defect, line and plane defects,	<b>THERMAL AND AUTOMATED METHODS</b> A. Principle, Instrumentation, Application of TGA, DTA and DSC methods.

UNIT-III	<p>vacancies – Schottky defects and Frankel defects. Thermodynamics of Schottky and Frenkel defect, formation of color centers, non-stoichiometry and defects.</p> <p><b>B. ELECTRONIC PROPERTIES &amp; BAND THEORY:</b> Metal insulators and semiconductors, electronic structure of solids band theory, band structure metals, insulators and semiconductors intrinsic and extrinsic semiconductors, doping semiconductors P-n junction, super conductors.</p>	B. Automated methods, Principle, instrumentation and application of flow injection analysis.
October UNIT-IV	<p><b>MICELLES AND ADSORPTION:</b> Micelles: Classification of surface-active agents, micellization, hydrophobic interaction, critical micellar concentration (CMC), factors affecting the CMC of Surfactants. Thermodynamics of micellization - phase separation and mass action models. Reverse micells, micro-emulsion. Micellar Catalysis, Surface tension capillary action, pressure difference across curved surface (Laplace equation), vapor pressure of droplets (Kelvin equation), adsorption isotherm.</p>	<p><b>ELECTRO ANALYTICAL TECHNIQUES</b> A. Principles and instrumentation of pH potentiometry, coulometry and conductometry. B. Basic principles, Diffusion current, polarized electrode, Micro electrode, Dropping Mercury Electrode Ilkovic equation, Polarographic wave, Qualitative analysis Stripping methods, Cyclic Voltammetry, Amperometric titration: curves, Differential pulse polarography and Square wave polarography.</p>
November	Revision	
Remark	Practicals done every month as per schedule	



## SEMESTER-IV

Month	Paper-I	Paper-II
January  UNIT-I	<p>A. <b>TERPENOIDS AND CAROTENOIDS:</b> Occurrence, isolation classification, nomenclature, general methods of structure determination of and synthesis Citral, Geraniol, Terpeneol, Menthol, Farnesol, Zingiberene, Santonin, Phytol, Abietic acid and Carotene.</p> <p>B. <b>ALKALOIDS:</b> Occurrence, isolation nomenclature and physiological action stereochemistry of steroids general methods of structure elucidation, degradation, classification, synthesis of the following alkaloids: Ephedrine, (++) Conine, Nicotine, Atropine, Quinine and Morphine</p>	<p><b>ACID BASES, ELECTROPHILES, NUCLEOPHILES AND CATALYSIS:</b> Acid-base dissociation, Electronic and structural effects, acidity and basicity. Acidity functions and their applications. Hard and soft acids and bases. Nucleophilicity scales. Nucleofugacity. The <math>\alpha</math>-effect. Ambivalent nucleophiles. Acid-base catalysis – specific and general catalysis. Bronsted catalysis, Enzyme Catalysis.</p>
February  UNIT-II	<p>A. <b>STEROIDS:</b> Introduction, structural features, structure determination, stereochemistry and synthesis of Cholestrol, Biosynthesis of cholesterol, Bile acids, Androsterone, Testosterone, Estrone, Progesterone, Aldosterone.</p> <p>B. <b>PLANT PIGMENTS:</b> Occurrence, nomenclature and general method of structure determination. Synthesis of Quercetin, Myricetin, Diadzin, Cyanidin, Hisutin.</p>	<p><b>MATERIAL CHEMISTRY:</b> Preparation and Properties of Nanoparticles, Materials-Metals, Semiconductors, Ceramics (Oxide, carbides, sulphides, nitrides). Physical and Chemical methods. Reduction method, size and shape-controlled synthesis, Sol-gel methods, Optical properties, Electrical and Magnetic properties, Application of Nanoparticles.</p>
March  UNIT-III	<p>A. <b>DRUG DESIGN:</b> Development of new drugs, procedures followed in drug design, concept of lead compound and lead modifications, concept of prodrug and soft drug, structure activity relationship (SAR), factors affecting bioactivity, resonance, inductive effect. Theories of Drug Activity – Occupancy theory, rate theory and induced fit theory.</p> <p>B. <b>PHARMACOKINETICS AND PHARMACODYNAMICS:</b> Definition and general introduction.</p>	<p><b>NUCLEAR THEORY:</b> Nuclear cross section and nuclear radii, nuclear shells and magic numbers, theory of nuclear shell model, nuclear potentials, square well and simple harmonic oscillator potentials, application, liquid drop model. Semi-empirical mass equation, application and limitations.</p> <p><b>NUCLEAR FISSION:</b> Mass, energy and charge distribution of fission products, decay chains, prompt and delayed neutrons, liquid drop model of nuclear fission.</p> <p><b>NUCLEAR ENERGY:</b> Nuclear fission, chain reaction, multiplication factor, nuclear reactors.</p>

April  UNIT-IV	<p>A. <b>ANTIBIOTICS:</b> Constitution and synthesis of Penicillins, chloramphenicol, tetracycline and streptomycin, cephalosporin.</p> <p>B. <b>ANTI MALARIALS:</b> Synthesis and properties of the following Antimalarial: 8-amino quinoline derivatives – Pamaquine, Primaquine, Pentaquine, Isopentaquine, 4-amino quinoline derivatives – Santoquine, camaquine, Acridine derivatives – Mepacrine, Azacrin, Pyrimidine and Biguanid derivatives – Paludrine, Pyremethamine.</p>	<p><b>APPLIED RADIOCHEMISTRY:</b> Radioactive isotopes, purity and strength of radioisotopes. Radiochemical principle in the use of tracers, application of tracers in chemical investigations, Physico-chemical methods, Analytical applications, Age determinations, Medical applications, Agricultural application.</p> <p><b>DETECTION OF NUCLEAR RADIATIONS:</b> Techniques, Equipments, G.M&gt; counter, proportional counter, Scintillation counter, Counting Statistics.</p>
Remark	Practicals done every month as per schedule	

Month	Paper-III	Paper-IV
January  UNIT-I	<p><b>ADVANCED CHROMATOGRAPHY:</b></p> <p>A. Ion chromatography: Ion exchange equilibrium, Ion-exchange packing and Inorganic Applications.</p> <p>B. Size exclusion chromatography: Column packing, Theory of size of exclusion chromatography and applications.</p> <p>C. Supercritical fluid chromatography: Properties of supercritical fluid SFC-Instrumentation and operating variables, comparison with other types of chromatography, applications.</p> <p>D. Capillary Electrophoresis and capillary electro chromatography: overviews and applications</p>	<p><b>AIR POLLUTION MONITORING AND ANALYSIS</b></p> <p>Classification of air pollution monitoring levels, air quality, standards and index, monitoring and analysis of selected air borne pollutants: SO<sub>2</sub>, NO<sub>x</sub>, SPM, VOC's, Pb, CO<sub>2</sub>, POP's, Hg, carbon and ozone air pollution control devices Viz ESP, scrubber technique, baghouse filters etc. Atmospheric chemistry of acid rains, photochemical smog, greenhouse effect, global warming, ozone hole.</p>
February  UNIT-II	<p><b>X-RAY AND PROTON INDUCED SPECTROSCOPY</b></p> <p>A. X-Ray fluorescent method: Principles-Characteristics x-ray emission. Instrumentation x-ray tube, Radioactive sources. Wavelength dispersive instruments. Energy dispersive instruments. Analytical Applications-Qualitative Analysis.</p>	<p><b>SOIL AND WATER POLLUTION</b></p> <p>Soil and water quality standards, monitoring and analysis of selected soil water contaminants: COD, pesticides, heavy metals, POP's, fluoride, cyanide, nitrate, phosphate, oil &amp; grease, Geobiochemical</p>

	B. Proton Induced X-Ray Spectroscopy: Theory, instrumentation and application.	impact of municipal solid waste, steel plants effluent, domestic sewage. Control devices of water pollutants.
March  UNIT-III	<b>ATOMIC EMISSION SPECTROSCOPY</b> A. Selectivity, sensitivity and interferences of atomic spectroscopy. B. Theory, instrumentation and application of flame photometer, AES, ICP-AES and AFS.	<b>FOOD ANALYSIS</b> Moisture ash, crude protein, fat, crude fibre, carbohydrate, calcium, potassium, sodium and phosphate. Food adulteration: common adulterants in food, contamination of foodstuffs, microscopic examination of foods for adulterants, pesticides analysis in food products, HPLC, Gas chromatographic technique for analysis of organic phosphates in food products, TLC technique for identification of pesticides in food products.
April  UNIT-IV	<b>ATOMIC ABSORPTION SPECTROSCOPY AND HYPHENATED TECHNIQUES</b> A. Theory instrumentation and application of flame and graphite furnace AAS, cold-vapor and hydride generation AAS. B. Theory, instrumentation and application of hyphenated techniques i.e. GC/HPLC/-MS, GC/IC/HPLC-ICP-MS.	<b>A. DRUG ANALYSIS:</b> Narcotics and dangerous drugs, classification of drugs, Mode of action of narcotics, Sedatives, Hypnotics and tranquilizers, Screening by gas and thin layer chromatography, spectrophotometric measurements. <b>B. CLINICAL ANALYSIS:</b> Concepts and principles of analytic methods commonly used in the clinical species: i.e. ammonia, blood urea Nitrogen, Ca, Cl, Co <sub>2</sub> , Fe, K, Li, Mg, Na, P, urea, glucose. Method for analysis of proteins (i.e. albumin, bilirubin, creatinine, cholesterol, HDL-cholesterol, triglycerides, creatinine) <b>C. FUEL ANALYSIS:</b> Solid, liquid and gas fuels, ultimate and proximate analysis, heating values, grading of coal, liquid fuels, flash and fire point, octane number and carbon residue, gaseous fuels, producer gas and water gas, calorific value.
Remark	Practicals done every month as per schedule	

**M.Sc. I<sup>st</sup> Semester  
Mathematics  
PAPER-I**

**Advanced Abstract Algebra (I)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JULY	<b>Unit-I</b> Groups - Normal and Subnormal series. Composition series
AUGUST	<b>Unit I .</b> Jordan-Holder theorem. Solvable groups. Nilpotent groups. <b>Unit-II</b> Field theory- Extension fields. Algebraic and transcendental extensions. Separable and inseparable extensions. Normal extensions.
SEPTEMBER	<b>Unit-III</b> Perfect fields. Finite fields. Primitive elements. Algebraically closed fields. <b>Internal Test 1</b>
OCTOBER	<b>Unit-IV</b> Automorphisms of extensions. Galois extensions. Fundamental theorem of Galois theory. <b>Internal Test 2</b>
NOVEMBER	<b>Unit-IV</b> Solution of polynomial equations by radicals. Insolvability of the general equation of degree 5 by radicals. <b>Seminar</b>

**M.Sc. I<sup>st</sup> Semester**  
**Mathematics**  
**PAPER-II**  
**Real Analysis (I)**

MONTH	PROPOSED PLAN
JULY	<b>Unit-I</b> Sequences and series of functions, pointwise and uniform convergence, Cauchy criterion for uniform convergence, Weierstrass M-test, Abel's and Dirichlet's tests for uniform convergence, uniform convergence and continuity,
AUGUST	<b>Unit I</b> definition and simple properties of Riemann-Stieltjes integral, uniform convergence and Riemann-Stieltjes integration, uniform convergence and differentiation, Weierstrass approximation theorem. <b>Unit-II</b> Power series, uniqueness theorem for power series, Abel's and Tauber's theorems. Rearrangements of terms of a series, Riemann's theorem.
SEPTEMBER	<b>Unit-III</b> Functions of several variables, linear transformations, Derivatives in an open subset of $\mathbb{R}^n$ , Chain rule, Partial derivatives, interchange of the order of differentiation, Derivatives of higher orders, Taylor's theorem, Inverse function theorem, Implicit function theorem. <b>Internal Test 1</b>
OCTOBER	<b>Unit-IV</b> Jacobians, extremum problems with constraints, Lagrange's multiplier method, Differentiation of integrals. <b>Internal Test 2</b>
NOVEMBER	<b>Unit-IV</b> Partitions of unity, Differential forms, Stoke's theorem. <b>Seminar</b>

**M.Sc. I<sup>st</sup> Semester**  
**Mathematics**  
**PAPER-III**  
**Topology**

MONTH	PROPOSED PLAN
JULY	<b>Unit-I</b> Countable and uncountable sets. Infinite sets and the Axiom of Choice. Cardinal numbers and its arithmetic. Schroeder-Bernstein theorem. Cantor's theorem and the continuum hypothesis. Zorn's lemma, well-ordering theorem. Definition and examples of topological spaces.
AUGUST	<b>Unit I</b> Closed sets. Closure. Dense subsets. Neighbourhoods. Interior, exterior and boundary. Accumulation points and derived sets. Bases and sub-bases. Subspaces and relative topology. <b>Unit-II</b> Alternate methods of defining a topology in terms of Kuratowski Closure Operator and Neighbourhood Systems. Continuous functions and homeomorphism. First and Second Countable spaces. Lindelof's theorems. Separable spaces. Second countability and reparability.
SEPTEMBER	<b>Unit-III</b> Separation axioms; their Characterizations and basic properties. Urysohn's lemma, Tietze extension theorem. <b>Internal Test 1</b>
OCTOBER	<b>Unit-IV</b> Compactness. Continuous functions and compact sets. Basic properties of Compactness. Compactness and finite intersection property. Sequentially and countably compact sets. Lococompactness and one point compactification. Stone-Cech compactification. <b>Internal Test 2</b>
NOVEMBER	<b>Unit-IV</b> Compactness in metric spaces. Equivalence of compactness, countable compactness and sequential compactness in metric space. Connected spaces. Connectedness on the real line. Components. Locally connected spaces. <b>Seminar</b>

**M.Sc. I<sup>st</sup> Semester  
Mathematics  
PAPER-IV**

**Complex Analysis (I)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JULY	<b>Unit-I</b> Complex integration, Cauchy-Goursat. Theorem. Cauchy's integral formula. Higher order derivatives. Morera's Theorem. Cauchy's inequality and Liouville's theorem..
AUGUST	<b>Unit I</b> The fundamental theorem of algebra. Taylor's theorem. Laurent's series. Isolated singularities. Meromorphic functions <b>Unit-II</b> Maximum modulus principle. Schwarz lemma. The argument principle. Rouché's theorem Inverse function theorem
SEPTEMBER	<b>Unit-III</b> Residues. Cauchy's residue theorem. Evaluation of integrals. Branches of many valued functions with special reference to $\arg z$ , $\log z$ and $z^a$ . <b>Internal Test 1</b>
OCTOBER	<b>Unit-IV</b> Bilinear transformations, their properties and classifications. Definitions and examples of Conformal mappings. <b>Internal Test 2</b>
NOVEMBER	<b>Unit-IV</b> Spaces of analytic functions. Hurwitz's theorem. Montel's theorem Riemann mapping theorem.  <b>Seminar</b>

**M.Sc. I<sup>st</sup> Semester**  
**Mathematics**  
**PAPER-V**

**Advanced Discrete Mathematics (I)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JULY	<b>Unit-I</b> Formal Logic-Statements. Symbolic Representation and Tautologies. Quantifiers, Predicates and Validity. Propositional Logic.
AUGUST	<b>Unit I</b> Semigroups & Monoids-Definitions and Examples of Semigroups and monoids (including those pertaining to concatenation operation). <b>Unit-II</b> Homomorphism of semigroups and monoids. Congruence relation and Quotient Semigroups. Subsemigroup and submonoids. Direct Products. Basic Homomorphism Theorem.
SEPTEMBER	<b>Unit-III</b> Lattices-Lattices as partially ordered sets. Their properties. Lattices as Algebraic Systems. sublattices, Direct products, and Homomorphisms. Some Special Lattices e.g., Complete, Complemented and Distributive Lattices. Boolean Algebras-Boolean Algebras as Lattices. Various Boolean Identities. The Switching Algebra example. Subalgebras, <b>Internal Test 1</b>
OCTOBER	<b>Unit-IV</b> Direct Products and Homomorphisms. Join-Irreducible elements, Atoms and Minterms. Boolean Forms and Their Equivalence. Minterm Boolean Forms, Sum of Products Canonical Forms. Minimization of Boolean Functions. Applications of Boolean Algebra to Switching Theory (using AND,OR & NOT gates). The Karnaugh Map Method. <b>Internal Test 2</b>
NOVEMBER	<b>Unit-IV</b> Grammars and Languages-Phrase-Structure Grammars. Rewriting Rules. Derivations. Sentential Forms. Language generated by a Grammar. Regular, Context-Free, and Context Sensitive Grammars and Languages. Regular sets, Regular Expressions and the Pumping Lemma. Kleene's Theorem. Notions of Syntax Analysis, Polish Notations. Conversion of Infix Expressions to Polish Notations. The Reverse Polish Notation. <b>Seminar</b>



**M.Sc. II<sup>nd</sup> Semester**  
**Mathematics**  
**PAPER-I**

**Advanced Abstract Algebra (II)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JANUARY	<b>Unit-I</b> Modules - Cyclic modules. Simple modules. Semi-simple modules. Schuler's Lemma. Free modules. Noetherian and artinian modules and rings-Hilbert basis theorem. Wedderburn Artin theorem. Uniform modules, primary modules, and Noether-Lasker theorem.
FEBRUARY	<b>Unit-II</b> Linear Transformations - Algebra of linear transformation, characteristic roots, matrices and linear transformations. <b>Internal Test 1</b>
MARCH	<b>Unit III</b> Canonical Forms - Similarity of linear transformations. Invariant subspaces. Reduction to triangular forms. Nilpotent transformations. Index of nilpotency. Invariants of a nilpotent transformation. The primary decomposition theorem. Jordan blocks and Jordan forms. <b>Unit-IV</b> Smith normal form over a principal ideal domain and rank. <b>Internal Test 2</b>
APRIL	<b>Unit IV</b> Fundamental structure theorem for finitely generated modules over a Principal ideal domain and its applications to finitely generated abelian groups. Rational canonical form. Generalized Jordan form over any field. <b>Seminar</b>

**M.Sc. II<sup>nd</sup> Semester**  
**Mathematics**  
**PAPER-II**  
**Real Analysis (II)**

MONTH	PROPOSED PLAN
JANUARY	<b>Unit-I</b> Definition and existence of Riemann-Stieltjes integral, Properties of the Integral, integration and differentiation, the fundamental theorem of Calculus, integration of vector-valued functions, Rectifiable curves. <b>Unit-II</b> Lebesgue outer measure. Measurable sets. Regularity.
FEBRUARY	<b>Unit II</b> Measurable functions. Borel and Lebesgue measurability. Non-measurable sets. Integration of Non-negative functions. The General integral. Integration of Series. <b>Unit-III</b> Measures and outer measures, Extension of a measure. <b>Internal Test 1</b>
MARCH	<b>Unit III</b> Uniqueness of Extension. Completion of a measure. Measure spaces. Integration with respect to a measure. Riemann and Lebesgue Integrals.  <b>Unit-IV</b> The Four derivatives. Lebesgue Differentiation Theorem. <b>Internal Test 2</b>
APRIL	<b>Unit IV</b> Differentiation and Integration. Functions of Bounded variation. The $L^p$ -spaces. Convex functions. Jensen's inequality. Holder and Minkowski inequalities. Completeness of $L^p$ , Convergence in Measure, Almost uniform convergence. <b>Seminar</b>

**M.Sc. II<sup>nd</sup> Semester  
Mathematics  
PAPER-III**

**General and Algebraic Topology**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JANUARY	<p><b>Unit-I</b> Tychonoff product topology in terms of standard sub-base and its characterizations. Projection maps. Separation axioms.</p> <p><b>Unit-II</b> Product spaces. Connectedness and product spaces.</p>
FEBRUARY	<p><b>Unit II</b> Compactness and product spaces (Tychonoff's theorem). Countability and product spaces.</p> <p><b>Unit-III</b> Embedding and metrization. Embedding lemma and Tychonoff embedding. The Urysohn metrization theorem. Metrization theorems and Paracompactness-Local finiteness.</p> <p><b>Internal Test 1</b></p>
MARCH	<p><b>Unit III</b> The Nagata-Smirnov metrization theorem. Paracompactness. The Smirnov metrization theorem.</p> <p><b>Unit-IV</b> Nets and filter. Topology and convergence of nets. Hausdorffness and nets. Compactness and nets. Filters and their convergence.</p> <p><b>Internal Test 2</b></p>
APRIL	<p><b>Unit IV</b> Canonical way of converting nets to filters and vice-versa. Ultra-filters and Compactness. The fundamental group and covering spaces-Homotopy of paths. The fundamental group. Covering spaces. The fundamental group of the circle and the fundamental theorem of algebra</p> <p><b>Seminar</b></p>

**M.Sc. II<sup>nd</sup> Semester  
Mathematics  
PAPER-IV**

**Advanced Complex Analysis (II)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<p><b>Unit-I</b> Weierstrass' factorisation theorem. Gamma function and its properties. Riemann Zeta function. Riemann's functional equation. Runge's theorem. Mittag-Leffler's theorem.</p> <p><b>Unit-II</b> Analytic Continuation. Uniqueness of direct analytic continuation.</p>
<b>FEBRUARY</b>	<p><b>Unit II</b> Uniqueness of analytic continuation along a curve. Power series method of analytic continuation Schwarz Reflection Principle. Monodromy theorem and its consequences.</p> <p><b>Unit-III</b> Harmonic functions on a disk. Harnack's inequality and theorem.</p> <p><b>Internal Test 1</b></p>
<b>MARCH</b>	<p><b>Unit III</b> Dirichlet Problem. Green's function.</p> <p><b>Unit-IV</b> Canonical products. Jensen's formula. Poisson-Jensen formula. Hadamard's three circles theorem. Order of an entire function. Exponent of Convergence. Borel's theorem. Hadamard's factorization theorem.</p> <p><b>Internal Test 2</b></p>
<b>APRIL</b>	<p><b>Unit-IV</b> The range of an analytic function. Bloch's theorem. The Little Picard theorem. Schottky's theorem. Montel Caratheodory and the Great picard theorem. Univalent functions. Bieberbach's conjecture (Statement only) and the "1/4-theorem.</p> <p><b>Seminar</b></p>

**M.Sc. II<sup>nd</sup> Semester  
Mathematics  
PAPER-V**

**Advanced Discrete Mathematics (II)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JANUARY	<b>Unit-I</b> Graph Theory-Definition of (Undirected) Graphs, Paths, Circuits, Cycles, & Subgraphs. Induced Subgraphs. Degree of a vertex. Connectivity. Planar Graphs and their properties. Trees. Euler's Formula for connected planar Graphs. Complete & Complete Bipartite Graphs. Kuratowski's Theorem (statement only) and its use.
FEBRUARY	<b>Unit-II</b> Spanning Trees, Cut-sets, Fundamental Cut -sets, and Cycle. Minimal Spanning Trees and Kruskal's Algorithm. Matrix Representations of Graphs. Euler's Theorem on the Existence of Eulerian Paths and Circuits. <b>Unit-III</b> Directed Graphs. In degree and Out degree of a Vertex. Weighted undirected Graphs. <b>Internal Test 1</b>
MARCH	<b>Unit III</b> Dijkstra's Algorithm.. strong Connectivity & Warshall's Algorithm. Directed Trees. Search Trees. Tree Traversals. <b>Unit-IV</b> Introductory Computability Theory-Finite State Machines and their Transition Table Diagrams. Equivalence of finite State Machines <b>Internal Test 2</b>
APRIL	<b>Unit IV</b> Reduced Machines. Homomorphism. Finite Automata. Acceptors. Non-deterministic Finite Automata and equivalence of its power to that of Deterministic Finite Automata. Moore and mealy Machines. Turing Machine and Partial Recursive Functions. <b>Seminar</b>

**M.Sc. III<sup>rd</sup> Semester**  
**Mathematics**  
**PAPER-I**

**Integration Theory and Functional Analysis (I)**

MONTH	PROPOSED PLAN
JULY	<b>UNIT I</b> Signed measure. Hahn decomposition theorem, mutually singular measures. Radon-Nikodym theorem.
AUGUST	<b>UNIT I</b> Labesgue decomposition. Riesz representation theorem. Extension theorem (Caratheodory). <b>UNIT II</b> Lebesgue-Stieltjes integral, product measures, Fubini's theorem. Differentiation and Integration. Decomposition into absolutely continuous and singular parts.
SEPTEMBER	<b>UNIT III</b> Baire sets. Baire measure, continuous functions with compact support. Regularity of measures on locally compact spaces. Integration of continuous functions with compact support, Riesz-Markoff theorem. <b>Internal Test 1</b>
OCTOBER	<b>UNIT IV</b> Normed linear spaces. Banach spaces and examples. Quotient space of normed linear spaces and its completeness, equivalent norms. Riesz Lemma, basic properties of finite dimensional normed linear spaces and compactness.
NOVEMBER	<b>UNIT IV</b> Convergence and bounded linear transformations, normed linear spaces of bounded linear transformations, dual spaces with examples. <b>Seminar</b>

## M.SC.III<sup>rd</sup> SEMESTER

### Mathematics PAPER-II

#### Partial Differential Equations and Mechanics (I)

MONTH	PROPOSED PLAN
JULY	<b>Unit-I</b> Examples of PDE. Classification. Transport Equation-Initial value Problem. Non-homogeneous Equation. Laplace's Equation-Fundamental Solution
AUGUST	<b>UNIT I</b> Mean Value Formulas, Properties of Harmonic Functions, Green's Function, Energy Methods. Heat Equation-Fundamental Solution, Mean Value Formula, Properties of Solutions, Energy Methods. Wave Equation-Solution by Spherical Means, Non-homogeneous Equations, Energy Methods.
SEPTEMBER	<b>Unit-II</b> Generalized coordinates. Holonomic and Non-holonomic systems. Scleronomic and Rheonomic systems. Generalized potential. Lagrange's equations of first kind. Lagrange's equations of second kind. Uniqueness of solution. Energy equation for conservative fields. Hamilton's variables. Donkin's theorem. Hamilton canonical equations. Cyclic coordinates. Routh's equations. <b>Internal Test 1</b>
OCTOBER	<b>Unit-III</b> Poisson's Bracket. Poisson's Identity. Jacobi-Poisson Theorem. Motivating problems of calculus of variations, Shortest distance. Minimum surface of revolution. Brachistochrone problem. Isoperimetric problem. Geodesic. Fundamental lemma of calculus of variations. Euler's equation for one dependent function and its generalization to (i) 'n' dependent functions, (ii) higher order derivatives. Conditional extremum under geometric constraints and under integral constraints. <b>Internal Test 2</b>
NOVEMBER	<b>Unit-IV</b> Attraction and potential of rod, disc, spherical shells and sphere. Surface integral of normal attraction (application & Gauss' theorem). Laplace and Poisson equations. Work done by selfattracting systems. Distributions for a given potential. Equipotential surfaces. Surface and solid harmonics. Surface density in terms of surface harmonics. <b>Seminar</b>

## M.SC.III<sup>rd</sup> SEMESTER

### Mathematics PAPER-III

#### Fundamentals of Computer Science-Theory and Practical (Object Oriented Programming and Data Structure)

MONTH	PROPOSED PLAN
JULY	<b>Unit-I</b> Object Oriented Programming-Classes and Scope, nested classes, pointer class members; Class initialization, assignment and destruction. <b>Practical:-</b> Practical based on class and constructor
AUGUST	<b>Unit-II</b> Overloaded functions and operators; Templates including class templates; class inheritance and virtual functions. <b>Practical :-</b> Practical based on function and operator overloading Inheritance, virtual function
SEPTEMBER	<b>Unit-III</b> Data Structures-Analysis of algorithms, q, W, O, o, w notations ; Sequential and linked representations, Lists, <b>Practical :-</b> Practical based on array
OCTOBER	<b>UNIT III</b> Stacks, and queues; <b>Unit-IV</b> Trees: Binary tree- search tree implementation, B-tree (concept only); <b>Practical :-</b> Practical based on stack ,queue and tree
NOVEMBER	<b>Unit-IV</b>  Sorting: Insertion sort, shell sort, quick-sort, heap sort  and their analysis; Hashing-open and closed.  <b>Practical :-</b> practical based on searching and sorting .



## M.SC.III<sup>rd</sup> SEMESTER

### Mathematics PAPER-IV

#### Operations Research (I)

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>Unit-I</b> Operations Research and its Scope. Necessity of Operations Research in Industry. Linear Programming-Simplex Method. Theory of the Simplex Method. Duality and Sensitivity Analysis.
<b>AUGUST</b>	<b>Unit-II</b> Other Algorithms for Linear Programming-Dual Simplex Method.
<b>SEPTEMBER</b>	<b>Unit-II</b> Parametric Linear Programming. Upper Bound Technique. Interior Point Algorithm. Linear Goal Programming. <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>Unit-IV</b>  Transportation and Assignment Problems.  <b>Internal Test 2</b>
<b>NOVEMBER</b>	<b>Unit-IV</b> Network Analysis-Shortest Path Problem. Minimum Spanning Tree Problem. Maximum Flow I Problem. Minimum Cost Flow Problem. Network Simplex Method. Project Planning and Control I with PERT-CPM. <b>Seminar</b>

## M.SC.III<sup>rd</sup> SEMESTER

### Mathematics PAPER-V

#### Programming in C (with ANSI features) Theory and Practical

MONTH	PROPOSED PLAN
JULY	<b>Unit-I</b> An overview of programming. Programming language, Classification .C Essentials-Program Development. Functions. Anatomy of a C Function. Variables and Constants. Expressions. Assignment Statements. Formatting Source Files. Continuation Character. The Preprocessor. <b>Practical:-</b> Practical based on Arithmetic operator
AUGUST	<b>Unit-II</b> Scalar Data Types-Declarations, Different Types of Integers. Different kinds of Integer Constants. Floating-Point Types. Initialization. Mixing Types. Explicit Conversions-Casts. Enumeration Types. The Void Data Type. Typedefs. Finding the Address of an object. Pointers. <b>Practical :-</b> Practical based on working of different datatypes
SEPTEMBER	<b>Unit-III</b> Operators and Expressions-Precedence and Associativity. Unary Plus and Minus operators. Binary Arithmetic Operators. Arithmetic Assignment Operators. Increment and Decrement Operators. Comma Operator. Relational Operators. Logical Operators. Bit - Manipulation Operators. Bitwise Assignment Operators. Cast Operator. Size of Operators. Conditional Operator. Memory Operators. <b>Practical :-</b> Practical based on different operator
OCTOBER	<b>Unit-III</b> Control Flow-Conditional Branching. The Switch Statement. Looping. Nested Loops. The break and continue Statements. The goto statement. Infinite Loops. <b>Practical :-</b> Practical based control statement
NOVEMBER	<b>Unit-IV</b> Arrays -Declaring an Array. Arrays and Memory. Initializing Arrays. Encryption and Decryption. <b>Practical :-</b> practical based on Array .

**M.Sc. IV<sup>th</sup> Semester  
Mathematics  
PAPER-I**

**Functional Analysis (II)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JANUARY	<b>Unit-I</b> Uniform boundedness theorem and some of its consequences. Open mapping and closed graph theorems. Hahn-Banach theorem for real linear spaces, complex linear spaces and normed linear spaces. Reflexive spaces. Weak Sequential Compactness. Compact Operators.
FEBRUARY	<b>Unit I</b> Solvability of linear equations in Banach spaces. The closed Range Theorem. <b>Unit-II</b> Inner product spaces. Hilbert spaces. Orthonormal Sets. Bessel's inequality. Complete orthonormal sets and Parseval's identity.  <b>Internal Test 1</b>
MARCH	<b>Unit-III</b> Structure of Hilbert spaces. Projection theorem. Riesz representation theorem. Adjoint of an operator on a Hilbert space. Reflexivity of Hilbert spaces. <b>Internal Test 1</b>
APRIL	<b>Unit-IV</b> Self-adjoint operators, Positive, projection, normal and unitary operators. Abstract variational boundary-value problem. The generalized Lax-Milgram theorem. <b>Seminar</b>

**M.Sc. IV<sup>th</sup> Semester**  
**Mathematics**  
**PAPER-II**  
**Partial Differential Equations and Mechanics (II)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<b>Unit-I</b> Nonlinear First Order PDE-Complete Integrals, Envelopes, Characteristics, HamiltonJacobi Equations (Calculus of Variations, Hamilton's ODE, Legendre Transform, Hopf-Lax Formula, Weak Solutions, Uniqueness), Conservation Laws (Shocks, Entropy Condition, LaxOleinik formula, Weak Solutions, Uniqueness, Riemann's Problem, Long Time Behaviour)
<b>FEBRUARY</b>	<b>Unit-II</b> Representation of Solutions-Separation of Variables, Similarity Solutions (Plane and Travelling Waves, Solitons, Similarity under Scaling), Fourier and Laplace Transform, Hopf-Cole Transform, Hodograph and Legendre Transforms, Potential Functions. Asymptotics (Singular Perturbations, Laplace's Method, Geometric Optics, Stationary Phase, Homogenization), <b>Internal Test 1</b>
<b>MARCH</b>	<b>Unit-II</b> Power Series (Non-characteristic Surfaces, Real Analytic Functions, Cauchy-Kovalevskaya Theorem) <b>Unit-III</b> Hamilton's Principle. Principle of least action. Poincare Cartan Integral invariant. Whittaker's equations. Jacobi's equations. Lee Hwa Chung's theorem, canonical transformations and properties of generating functions. <b>Internal Test 2</b>
<b>APRIL</b>	<b>Unit-IV</b> Hamilton-Jacobi equation. Jacobi theorem. Method of separation of variables. Lagrange Brackets. Condition of canonical character of a transformation in terms of Lagrange brackets and Poisson brackets, invariance of Lagrange brackets and Poisson brackets under canonical transformations. <b>Seminar</b>

**M.Sc. IV<sup>th</sup> Semester**  
**Mathematics**  
**PAPER-III**  
**Operating System and Database Management System**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JANUARY	<b>Unit-I</b> Database Systems-Role of database systems, database system architecture and data modeling. Introduction to relational algebra and relational calculus.
FEBRUARY	<b>Unit-II</b> Introduction to SQL: Basic features including views; Integrity constraints; Database design-normalization up to BCNF. <b>Practical :-Practical based on SQL</b>
MARCH	<b>Unit-III</b> Operating Systems- Overview of operating system, user interface, processor management, memory management.
APRIL	<b>Unit-IV</b> I/O management, concurrency and Security, network and distributed systems.

**M.Sc. IV<sup>th</sup> Semester  
Mathematics  
PAPER-IV**

**Operations Research (II)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JANUARY	<b>Unit-I</b>  Dynamic Programming-Deterministic and Probabilistic Dynamic programming.
FEBRUARY	<b>Unit-II</b> Game Theory-Two-Person, Zero-Sum Games. Games with Mixed Strategies.Graphical . Solution. Solution by Linear Programming. <b>Internal Test 1</b>
MARCH	<b>Unit-III</b> Integer Programming-Branch and Bound Technique.  <b>Internal Test 2</b>
APRIL	<b>Unit-IV</b> Nonlinear Programming-One/and Multi-Variable Unconstrained Optimization. Kuhn-Tucker Conditions for Constrained Optimization. Quadratic Programming. Separable Programming. I Convex Programming. Non-convex Programming. <b>Seminar</b>

**M.Sc. IV<sup>th</sup> Semester**  
**Mathematics**  
**PAPER-V**

**Programming in C (with ANSI features) (II)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JANUARY	<p><b>Unit-I</b>  Storage Classes-Fixed vs. Automatic Duration. Scope. Global variables. The register Specifier. ANSI rules for the syntax and Semantics of the storage-class keywords.</p> <p><b>Unit-II</b>  Pointers Pointer Arithmetic. Passing Pointers as Function Arguments.</p> <p><b>Practical :-</b>practical based on storage classes and pointer</p>
FEBRUARY	<p><b>Unit II</b>  Accessing Array Elements through Pointers. Passing Arrays as Function Arguments. Sorting Algorithms. Strings. Multidimensional Arrays. Arrays of Pointers. Pointers to Pointers.</p> <p><b>Unit-III</b>  Functions-Passing Arguments. Declarations and Calls. Pointers to Functions. Recursion. The main Function. Complex Declarations.</p> <p><b>Practical :-</b> practical based on Array and Function</p>
MARCH	<p><b>Unit III</b>  The C Preprocessor-Macro Substitution. Conditional Compilation. Include Facility. Line Control.</p> <p><b>Unit-IV</b>  Structures and Unions-Structures. Dynamic Memory Allocation. Linked Lists. Unions, enum Declarations.</p> <p><b>Practical :-</b> practical based on Macro, Structure and Union</p>
APRIL	<p><b>Unit-IV</b>  Input and Output-Streams, Buffering. The &lt;Stdio.h&gt; Header File. Error Handling. Opening and Closing a File. Reading and Writing Data. Selecting an I/O Method. Unbuffered I/O Random Access. The standard library for Input/Output.</p> <p><b>Practical :-</b> practical based on File handling</p>

**M. Sc. I Semester**  
**Zoology**  
**Paper I**  
**BIOSYSTEMATICS, TAXONOMY AND BIODIVERSITY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>Unit-I</b> Definition and basic concepts of biosystematics and taxonomy. Historical resume of systematics. Importance and applications of biosystematics in biology
<b>AUGUST</b>	<b>Unit I</b> Trends in biosystematics concepts of different conventional and newer aspects, Chemotaxonomy, Cyto taxonomy, Molecular taxonomy  <b>Unit-II</b> Dimensions of speciation and taxonomic characters, Mechanisms of speciation in panmictic and apomictic species, Species concepts and species category, Theories of biological classification, Taxonomic characters and different kinds.
<b>SEPTEMBER</b>	<b>Unit-III</b> Procedure keys in taxonomy, Taxonomic procedures-taxonomic collections, preservation, curation, Taxonomic keys-different kinds of taxonomic keys, their merits and demerits, Process of typification and different Zoological types, International code of Zoological Nomenclature (ICZN) <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>Unit-IV</b> Procedure keys in taxonomy, Taxonomic procedures-taxonomic collections, preservation, curation, Taxonomic keys-different kinds of taxonomic keys, their merits and demerits. <b>Internal Test 2</b>
<b>NOVEMBER</b>	<b>Unit-IV</b> Process of typification and different Zoological types, International code of Zoological Nomenclature (ICZN) <b>Seminar</b>



**M. Sc. I Semester**  
**Zoology**  
**Paper II**  
**GENERAL PHYSIOLOGY AND ENDOCRINOLOGY**

MONTH	PROPOSED PLAN
JULY	<b>Unit-I 1.Digestion</b> 1.1Nutrition 1.2 Histology and function of digestive tract 1.3Digestive juices [i Saliva ii Gastric juice iii Pancreatic juice iv Bile juice v Succus entericus] Composition, function and mechanism of various digestive juice 1.4 Mechanism and physiology of digestion 1.5 Mechanism of absorption 2. Circulation of body fluid and its regulation 2.1Structure of heart and properties of cardiac muscle 2.2 Structure, function, synthesis and composition of blood 2.3Blood group, cardiac cycle and blood fibrinization and defibrinization
AUGUST	<b>Unit I 3. Gas exchange and physiology of respiratory tract</b> 3.1 Structure of respiratory tract 3.2 Breathing physiology and aerodynamic pulmonary volume 3.3 Transport of gases [Oxygen and carbon dioxide]  <b>Unit-II Nervous System</b> 3.1Histological structure of neurons and neuroglia and physiological properties of nerve fibre 3.2 Neurotrophins, cerebrospinal fluid and its function 3.3Mechanism of conduction of nerve impulses in non medullated and medullated nerve fibres 3.4 Synapse- structure, properties and its re uptake mechanism 3.5 Neurotransmitters- classification, receptors function and metabolism 4. Muscle function and movements 4.1 Anatomy, structure and properties of muscle 4.2 Theories and physiology of muscle contraction mechanism 4.3 Changes during muscle contraction 1. Mechanical 2. Chemical 3. Thermal 4. Electrical 4.4 Enzyme uses in muscle contraction mechanism 5. Sensory transduction 5.1 Auditory receptors 5.2 Chemoreceptors, taste and smell 5.3 Vision and photo receptors

SEPTEMBER	<b>Unit-III</b> Patterns of nitrogen excretion and its physiology 6.1 Excretory substance and physiology of liver for excretion 6.2 Excretory physiology of kidney and micturition 6.3 Regulation of acid-base balance [ Acidemia and alkalaemia] 6.4 Detoxication 7. Thermoregulation and Cold Tolerance 7.1 Heat balance and exchange 7.2 Endotherms Vs Ectotherms 7.3 Torpor, hibernation and aestivation 7.4 Pyrexia and hypothermia 8. Aims and scope of endocrinology 8.1 Discovery of hormones 8.2 Experimental methods of hormone research 8.3 Classification of endocrine glands and hormones  <b>Internal Test 1</b>
OCTOBER	<b>Unit-IV</b> 9.1 Structure and functions of endocrine glands (Pituitary, pineal, pancreas, adrenal, thyroid etc.) 9.2 Biosynthesis of hormones (adrenal, thyroid and gonadal) 9.3 Releasing mechanism, transport mechanism and metabolism of Hormones  <b>Internal Test 2</b>
NOVEMBER	<b>Unit-IV</b> 9.4 Receptors and action mechanism of hormones 9.5 Neurohormone [releasing stimulating factor of hypothalamus and endorphin]  <b>Seminar</b>

**M. Sc. I Semester**  
**Zoology**  
**Paper III**  
**STRUCTURE AND FUNCTION OF INVERTEBRATES**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JULY	<b>Unit-I</b> 1. Organization of coelom 1.1 Acoelomates and Pseudo coelomates 1.2 Coelomates: Protostomia and Deuterostomia. 2. Locomotion 2.1 Flagellar and ciliary movement in Protozoa.
AUGUST	<b>Unit I</b> 2.2 Hydrostatic movement in Coelenterata, Annelida and Echinodermata <b>Unit-II</b> 3. Nutrition and Digestion 3.1 Patterns of feeding and digestion in Protozoa 3.2 Filter feeding in polychaeta. 4. Respiration 4.1 Organs of respiration Gills, lungs and trachea. 4.2 Respiratory pigments.
SEPTEMBER	<b>Unit-III</b> 5. Excretion 5.1 Organs of excretion. 5.2 Excretion and osmoregulation 6. Nervous System 6.1 Primitive nervous system: Coelenterata and Echinodermata. 6.2 Advanced Nervous system: Annelida, Arthropoda (Crustacea and insecta) and Mollusca (Cephalopoda) <b>Internal Test 1</b>
OCTOBER	<b>Unit-IV</b> 7. Invertebrate larvae 7.1 Larval forms of free-living and parasitic invertebrates  <b>Internal Test 2</b>
NOVEMBER	<b>Unit-IV</b> 8. Minor Phyla 8.1 Organization and general characters of (Ctenophore, Rotifera, Ectoprocta, Endoprocta)  <b>Seminar</b>

**M. Sc. I Semester**  
**Zoology**  
**Paper IV**  
**MOLECULAR BIOLOGY AND BIOTECHNOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JULY	<b>Unit-I</b> Biomembranes Molecular composition and arrangement Transport across membrane 2. Structure and function Mitochondria Golgi complex
AUGUST	<b>Unit I</b> Lysosome Ribosome <b>Unit-II</b> 3. DNA replication 4. Transcription 5. Translation 5.1 Genetic code 5.2 Mechanisms of initiation, elongation and termination 5.3 Regulation of translation
SEPTEMBER	<b>Unit-III</b> 6. Genome organization 6.1 Chromosomal organization: morphological and structural types. 7. Molecular mapping of genome 7.1 Genetic and physical maps 7.2 Polymerase Chain Reaction (PCR) and blotting techniques 7.3 Introduction to Human Genome. <b>Internal Test 1</b>
OCTOBER	<b>Unit-IV</b> 8. Transgenic animals and knock-outs 8.1 Production and applications 8.2 Embryonic stem cells <b>Internal Test 2</b>
NOVEMBER	<b>Unit-IV</b> 9. Application of genetic engineering 9.1 Medicine 9.2 Agriculture 9.3 Industry <b>Seminar</b>

**M. Sc. II Semester**  
**Zoology**  
**Paper-I**  
**QUANTITATIVE BIOLOGY AND COMPUTER APPLICATION**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<b>Unit-I</b> 1. Introduction to digital computer and application 1.1 Basic knowledge of hardware and software 1.2 CPU (Central Processing Unit) 1.3 Input and Output devices 1.4 Auxiliary storage system 1.5 Operating system and Binary number system
<b>FEBRUARY</b>	<b>Unit-II</b> 2. Computer application 2.1 Introduction to MS office 2.1.1 Word 2.1.2 Excel 2.1.3 Power point 3. Computer application in biostatistics 4. Simple computation and elementary knowledge of flow chart <b>Internal Test 1</b>
<b>MARCH</b>	<b>Unit III</b> 5. Types of biological data 6. Representation of data 7. Sample and sampling 8. Measures of central tendency 9. Measures of dispersion 10. Hypothesis testing: Null and alternate hypothesis <b>Unit-IV</b> 11. Tests of significance 11.1 Chi-square test 11.2. Student's t-test 12. Analysis of Variance <b>Internal Test 2</b>
<b>APRIL</b>	<b>Unit IV</b> 13. Simple linear regression 14. Correlation 15. Probability distribution: normal and binomial <b>Seminar</b>

**M. Sc. II Semester**  
**Zoology**  
**Paper-II**  
**GAMETE BIOLOGY AND DEVELOPMENT BIOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<b>Unit-I</b> 1. Sex differentiation and development 1.1 Chromosomal (genetic) basis of sex determination 1.2 Gonadal differential 1.3 Phenotype (internal) 1.4 Brain sex differentiation 2. Spermatogenesis 2.1 Spermatogenesis and development of spermatozoa 2.2 ultra structure of sperm 2.3 Capacitation 3. Oogenesis 3.1 Differentiation and growth of oocytes. 3.2 Organization of egg cytoplasm and egg cortex. 3.3 Vitellogenesis <b>Unit-II</b> 4. Fertilization 4.1 Biological role of fertilization. 4.2 Basic requirements of fertilization. 4.3 Mechanism of fertilization
<b>FEBRUARY</b>	<b>Unit II</b> 4.4 Biochemistry of fertilization 4.5 Post fertilization event 5. Parturition, lactation and hormonal contraception 6. Cleavage -Characteristics and mechanisms of cleavages <b>Unit-III</b> 7. Formative movements 8. Fate maps <b>Internal Test 1</b>
<b>MARCH</b>	<b>Unit III</b> 8.1 Utility and comparative topographical relationship of the Presumptive areas in early embryos of 8.1.1 Amphioxus 8.1.2 Fishes 8.1.3 Amphibian 8.1.4 Birds 9. Differentiation <b>Unit-IV</b> 10. Cell and tissue interactions in development 10.1 Primary embryonic induction 10.2 Competence <b>Internal Test 2</b>
<b>APRIL</b>	<b>Unit IV</b> 10.3 Concept of organizer 11. Metamorphosis 12. Teratology <b>Seminar</b>

**M. Sc. II Semester**  
**Zoology**  
**Paper-III**  
**POPULATION GENETICS AND EVOLUTION**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JANUARY	<b>Unit-I</b> 1. Concepts of evolution and theories of organic evolution: Lamarckism, Darwinism and Synthetic theory of evolution 2. Evidences of evolution: anatomical, embryological, palaeontological, physiological and Bio-chemical <b>Unit-II</b> 3. Hardy-Weinberg law of genetic equilibrium 4. Detailed account of destabilizing forces. 4.1 Natural selection
FEBRUARY	<b>Unit II</b> 4.2 Mutation 4.3 Genetic drift 4.4 Meiotic drive 5. Phenotypic variation  <b>Unit-III</b> 6. Patterns and mechanisms of reproductive isolation 7. Phylogenetic and biological concepts of species <b>Internal Test 1</b>
MARCH	<b>Unit III</b> 8. Gene Evolution, Evolution of gene families 9. Factors affecting human disease frequency  <b>Unit-IV</b> 10. Origin of higher categories 11. Micro-and Macro-evolution <b>Internal Test 2</b>
APRIL	<b>Unit IV</b> 12. Evolution of horse, elephant, camel, man  <b>Seminar</b>

**M. Sc. II Semester**  
**Zoology**  
**Paper-IV**  
**TOOLS AND TECHNIQUES IN BIOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JANUARY	<b>Unit-I</b> 1.Principles and application of 1.1 Ultracentrifugation 1.2 Electrophoresis 1.3 Chromatography (various types) 1.4 Lambert-Beers Law and colorimetry and spectrophotometry 1.5 Flow cytometry. <b>Unit-II</b> 2. Principles and Application of 2.1 Light Microscopy and micrometry 2.2 Phase Contrast microscopy 2.3 Interference microscopy
FEBRUARY	<b>Unit II</b> 2.4 Fluorescence microscopy 2.5 Transmission Electron microscopy. 2.6 Scanning Electron microscopy.  <b>Unit-III</b> 3. Assay 3.1 Chemical assays 3.2 Biological assays-in vivo and in vitro 4. Principles of cytological and cytochemical techniques <b>Internal Test 1</b>
MARCH	<b>Unit III</b> 4.1 Fixation: chemical basis of fixation by formaldehyde, gluteraldehyde, chromium salts, mercury salts, osmium salts, alcohol and acetone 4.2 Chemical basis of staining of carbohydrate, protein lipids and nucleic acids.  <b>Unit-IV</b> 5. Principle and techniques of 5.1 Nucleic acid hybridization and cot curve 5.2 Sequencing of proteins and nucleic acids  <b>Internal Test 2</b>
APRIL	<b>Unit-IV</b> 6. Freeze techniques 7. Media preparation and sterilization 8. Inoculation and growth monitoring  <b>Seminar</b>



**M. Sc. III Semester**  
**Zoology**  
**Paper-I**  
**COMPARATIVE ANATOMY OF VERTEBRATES**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>Unit-I</b> 1. Origin of Chordates 1.1 Amphibians, Reptiles, Birds and Mammals. 2. Classification of Vertebrates 2.1 Amphibians 2.2 Reptiles 2.3 Birds 2.4 Mammals.
<b>AUGUST</b>	<b>Unit-II</b> 3. Vertebrate integument and its derivatives. 3.1 General structure and functions of Integument. 3.2 Structure and functions of glands, scales, horns, claws, nails, hoof, feather and hair. 4. Skeletal system in vertebrates. 4.1 Comparative account of (i) Jaw suspensorium, (ii) Limbs and Girdles
<b>SEPTEMBER</b>	<b>Unit-III</b> 5. Respiration in Vertebrates. 5.1 Comparative account of respiratory organs (structure and functions) 6. Circulation in Vertebrates. 6.1 Structure and function of blood. 6.2 Evolution of heart. 6.3 Evolution of aortic arches. <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>Unit IV</b> 7. Nervous System – Central, Peripheral and Autonomic. <b>Internal Test 2</b>
<b>NOVEMBER</b>	8. Sense organs. 8.1 Comparative account of Sensory Receptors. 9. Evolution of Urinogenital system in vertebrates. <b>Seminar</b>

**M. Sc. III Semester**  
**Zoology**  
**Paper-II**  
**BIOLOGICAL CHEMISTRY**

MONTH	PROPOSED PLAN
JULY	<b>UNIT I</b> 1. Properties of Proteins 1.1 Structure and properties of amino acids. 1.2 Classification of proteins. 1.3 Structure of proteins.
AUGUST	<b>UNIT I</b> 1.4 Biological Functions of Proteins. 1.5 Protein Metabolism. <b>UNIT II</b> 2. Carbohydrates 2.1 Classification of carbohydrates. 2.2 Structure and Functions of Carbohydrates. 2.3 Carbohydrate metabolism. 2.4 Utilization of Krebs cycle 3. Lipid 3.1 Lipid structure and functions 3.2 Lipid metabolism.
SEPTEMBER	<b>UNIT III</b> 4. Vitamins 4.1 Water and Fat soluble vitamins, 4.2 Chemistry, occurrence and physiological role. 5. Enzymes 5.1 Classification and nomenclature. 5.2 Mechanism of action 5.3 Regulation of enzyme activity and functions of Co-enzymes. <b>Internal Test 1</b>
OCTOBER	<b>UNIT IV</b> 6. Nucleic acid 6.1 Chemistry of DNA. 6.2 Chemistry of RNA
NOVEMBER	<b>UNIT IV</b> 6.3 Biological importance of nucleic acids. 6.4 Nucleoproteins. 6.5 Metabolism of nucleic acids. <b>Seminar</b>

**M. Sc. III Semester**  
**Zoology**  
**Paper-III**

**ENVIRONMENTAL BIOLOGY AND POPULATION ECOLOGY**

MONTH	PROPOSED PLAN
JULY	<b>Unit-I</b> 1. Ecology 1.1 Definition, concept and scope of ecology. 2. Structure and components of ecosystem.
AUGUST	<b>UNIT I</b> 1. Types and functions of ecosystem. 4. Ecological modeling. <b>Unit-II</b> 1. 5. Limiting factors 5.1 Energy flow, food chain, food web and trophic levels, ecological pyramids. 5.2 Ecological succession
SEPTEMBER	<b>UNIT II</b> 5.3 Biogeochemical cycles: water cycle, carbon, oxygen and nitrogen cycles. <b>Unit-III</b> 6. Population dynamics 6.1 Dynamics of population growth. 6.2 Factors that increase or decrease population. <b>Internal Test 1</b>
OCTOBER	<b>Unit-III</b> 7. Community dynamics 7.1 Characteristics and composition 7.2 Development and classification of communities. <b>Internal Test 2</b>
NOVEMBER	<b>Unit-IV</b> 8. Renewable and non-renewable resources: Forest, water and mineral resources. 9. Conservation of energy sources. 10. National Parks, Wild life sanctuaries and biosphere reserves <b>Seminar</b>

**M. Sc. III Semester**  
**Zoology**  
**Paper-IV**  
**ANIMAL BEHAVIOUR**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>Unit-I</b> 1. Historical perspectives- Ethology 2. Behavioral patterns 3. Innate behavior 4. Biological rhythms 4.1 Types of biological rhythm 4.2 Biological clock
<b>AUGUST</b>	<b>Unit-II</b> 5. Communications 5.1 Auditory 5.2 Visual 5.3 Chemical 6. Learning and Memory 6.1 Conditioning 6.2 Habituation 7. Reasoning 8. Reproductive behaviour.
<b>SEPTEMBER</b>	<b>Unit-III</b> 9. Orientation 10. Echolocation in bats 11. Bird migration and navigation. 12. Fish migration. <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>UNIT III</b> 13. Neural and hormonal control of behaviour <b>Unit-IV</b> 14. Hormonal effect on behavioural patterns. 15. Social behaviour 15.1 Social organization in insects and primates 15.2 Schooling in fishes and Flocking in birds <b>Internal Test 2</b>
<b>NOVEMBER</b>	<b>Unit-IV</b> 15.3 Homing, territoriality, dispersal 15.4 Altruism 15.5 Host–parasite relation <b>Seminar</b>

**M. Sc. IV Semester**  
**Zoology**  
**Paper-I**  
**ENVIRONMENTAL PHYSIOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<b>Unit-I</b> 1. Adaptations 1.1 Levels of adaptation. 1.2 Mechanisms of adaptation. 2. Adaptations to different environments. 2.1 Marine, shores and estuaries. 2.2 Freshwater. 2.3 Terrestrial Life.
<b>FEBRUARY</b>	<b>Unit-II</b> 2. Adaptations to different environments. 3.1 Aerial 3.2 Polar 3.3 Deep sea environment 3.4 Desert, Cave 3.5 Wet land 3.6 Parasitic habitats. <b>Unit-III</b> 1. 4. Stress Physiology 4.1 Basic concepts of environmental stress and strain, Concept of elastic and plastic strain. <b>Internal Test 1</b>
<b>MARCH</b>	<b>Unit-III</b> 4.2. Stress avoidance, stress tolerance and stress resistance. 4.3. Acclimatization, acclimation and adaptation. 4.4. Endothermic and physiological mechanism of regulation of body temperature <b>Internal Test 2</b>
<b>APRIL</b>	<b>Unit-IV</b> 5. Stress physiology in different conditions 5.1 Osmoregulation in aqueous and terrestrial habitats. 5.2 Physiological response to oxygen deficient stress. <b>Seminar</b>

**M. Sc. IV Semester**  
**Zoology**  
**Paper-II**  
**IMMUNOLOGY AND PARASITISM**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<b>Unit-I</b> 1. Cells of immune system 1.1 B-Lymphocytes, T-lymphocytes, Null Cells 1.2 Mononuclear cells 1.3 Granulocytic cells (Neutrophils, Eosinophils and Basophils) 1.4 Mast cells 1.5 Dendritic cells 2. Organs of immune system 2.1 Primary lymphoid organs (Thymus, bone marrow) 2.2 Secondary lymphoid organs (Lymph nodes, spleen, mucosal associated lymphoid tissue, cutaneous associated lymphoid tissue)
<b>FEBRUARY</b>	<b>Unit-II</b> 2. Immunoglobulin structure and function 3.1 Molecular structure of Ig, Light chain and Heavy chain 3.2 Immunoglobulin classes 3.2.1 IgG 3.2.2 IgM 3.2.3 IgE 3.2.4 IgD 3.3 Monoclonal antibodies <b>Unit-III</b> 1. 4. Antigens 4.1 Immunogenicity 4.2.1 Complement System: Classical & Alternative Pathways 4.2.2 Contribution of the immunogens. 4.2.3 Contribution of Biological system. 5. Antigen - Antibody Interaction <b>Internal Test 1</b>
<b>MARCH</b>	<b>Unit-III</b> 6. Vaccine 6.1 Active and passive immunization 6.2 Whole organism vaccine 6.4 Recombinant vector vaccines 6.5 DNA vaccines <b>UNIT IV</b> 7. Immune system in Health disease 7.1 Immune response to infectious disease 7.2 Immune response in cancer <b>Internal Test 2</b>
<b>APRIL</b>	<b>UNIT IV</b> 8. Pathophysiology of parasitic infection 8.1 Viral infections 8.2 Bacterial infection 8.3 Helminths infection 9. AIDS <b>Seminar</b>

**M. Sc. IV Semester**  
**Zoology**  
**Paper-III**  
**ICHTHYOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<b>Unit-I</b> 1. Skin and its derivatives in fishes. 2. Skeleton in fishes. 3. Fins-Types, structure, modification, functions 4. Locomotion in fishes. 5. Food, feeding habit and alimentary canal of fishes.
<b>FEBRUARY</b>	<b>Unit-II</b> 6. Respiration and accessory respiratory organs. 7. Swim bladder and Weberian ossicles. 8. Blood, heart and blood vascular system of fishes. 9. Excretion and Osmoregulation in fishes.  <b>Internal Test 1</b>
<b>MARCH</b>	<b>Unit-III</b> 10. Nervous system and sense organs in fishes 11. Specialized organs in fishes (organs of sound production & electric organs). 12. Reproduction in fishes 13. Development in fishes 14. Endocrine glands  <b>Internal Test 1</b>
<b>APRIL</b>	<b>Unit-IV</b> 15. Adaptation: 15.1 Colouration 15.2 Deep sea fishes 15.3 Hill stream fishes 16. Larvivorous fishes 17. Exotic fishes 18. Fish products and by-products 19. Setting and maintenance of an aquarium <b>Seminar</b>

**M. Sc. IV Semester**  
**Zoology**  
**Paper-IV**  
**AQUACULTURE AND FISHERIES**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<b>Unit-I</b> 1. General characteristics, classification, evolution and phylogeny of the following: Placoderms Elasmobranchs Holocephali Dipnoi. Teleostomi.
<b>FEBRUARY</b>	<b>Unit-II</b> 2. Fish culture in fresh water Physicochemical condition of water and its effect on fishes. Construction and maintenance of fish farm, management of ponds Fresh water fish breeding (dry and wet bundh breeding, induced breeding) Stocking and transport of fish seed and brood fish. Intensive culture of air breathing fishes. Fish cum paddy culture.  <b>Internal Test 1</b>
<b>MARCH</b>	<b>Unit-III</b> 3. Composite fish culture 4. Integrated fish farming 5. Sewage fisheries 6. Prawn fishery 7. Inland fisheries 8. Marine fisheries  <b>Internal Test 2</b>
<b>APRIL</b>	<b>Unit-IV</b> 9. Fish diseases 9.1 Viral diseases 9.2 Bacterial and protozoan diseases 9.3 Helminth parasites of fishes 9.4 Prophylaxis and treatment of fish diseases  <b>Seminar</b>



**GOVT. D.B. GIRLS P.G.COLLEGE, RAIPUR(C.G)**

**TEACHING PLAN 2018-19**

**M.Sc Ist SEMESTER Resource management**

**PAPER - I**

**TITLE OF PAPER- RESEARCH METHODOLOGY**

<b>Month</b>	<b>Plan</b>
<b>October</b>	<b>Science, Scientific methods and approach</b>  <b>Social research &amp; survey: Meaning, definition, nature, scope, objects, types, distinction between social survey and research</b>
<b>November</b>	<b>Pretesting &amp; pilot survey</b>  <b>Hypothesis: Definition, Source, characteristics, importance, main difficulties in the formation of hypothesis, disadvantage</b>  <b>Source of data: primary &amp; secondary sources</b>
<b>December</b>	<b>Methods or techniques of data collection</b>  <b>a. Observation</b>  <b>b. Interview</b>  <b>c. Schedule</b>  <b>d. Questionnaire</b>  <b>e. Case-study</b>  <b>Sampling: Meaning, characteristics, advantages, and disadvantages</b>  <b>Types:</b>  <b>Random sampling</b>  <b>Purposive sampling</b>  <b>Stratified sampling</b>  <b>Other sampling method</b>
<b>January</b>	<b>Classification and tabulation of data analysis and interpretation of data</b>  <b>Research design steps and process of its formulation</b>  <b>Types of research design- exploratory, descriptive, diagnostic and experimental</b>
<b>February</b>	<b>Diagrammatic presentation of data</b>  <b>Revision &amp; SEMINAR</b>

# TEACHING PLAN - HOME SCIENCE - RESOURCE MANAGEMENT

CLASS: M.Sc. I SEMESTER PAPER – II

## THEORY OF MANAGEMENT

2018-19

No.	MONTH		TEACHING PLAN
1	July	Unit-I	<p>-History and development of management in India and 2 in ancient civilization, the management in medieval period. Importance of Management in India.</p> <p><b>Management Function and Process:</b> Definition, what is management, Process of management, Characteristics of management, Types of management</p> <p><b>-Advantages and limitations of management</b></p> <p><b>-Management functions and process</b></p> <p>- Factors Effecting Decision making</p> <p>-making of effective decision</p> <p><b>Planning:</b> Objectives, principles and Types</p> <p><b>Organizing:</b> Purpose, principles, processes, delegations of authority</p> <p><b>-Controlling :</b> Tools for management control,</p> <p><b>-Evaluation :</b> Tool and Techniques</p>
2	August	Unit-II	<p><b>Resources in family :</b> Definitions of resources, Types, Characteristics of resources, Factors affecting Management</p> <p><b>- Guiding, directing</b></p> <p><b>- Leadership :</b> Definitions and Characteristics, Qualities of Leader, Functions of Leader</p>
3	September	Unit-III	<p><b>- Management abilities.</b></p> <p><b>- Ends sought through management :</b></p> <p><b>Goals:</b> Factors affecting endless chain, classification</p> <p><b>Values:</b> Sources of value patterns, status security</p> <p><b>Standards:</b> meaning, types, factors affecting it.</p> <p><b>- Communication:</b> Meaning and definition, characteristics and process, importance of communication in management</p>
4	October	Unit-IV	<p><b>Decision making:</b> Meaning and types, Process of decision making, Consequences of each alternative, Chain decisions, decision conflict, Factors affecting decision making, Making of effective decision, Conflict management.</p> <p><b>Motivation :</b> Meaning and definition, Characteristics and importance, Elements of motivation, Evaluation tools &amp; techniques</p>
5	November		Semester Exam & Project Work

# TEACHING PLAN - HOME SCIENCE - RESOURCE MANAGEMENT

CLASS: M.Sc. I SEMESTER PAPER – III

## CONSUMER ECONOMICS

2018-19

No.	MONTH		TEACHING PLAN
1	July	Unit-I	<b>Consumer and the Indian economic environment.</b> A. Definition and characteristics of consumers B. Definition role types and how does an economy function, problems of economy. C. Role of consumer in the economy of the nation <b>Contemporary economic environment.</b>
2	August	Unit-II	<b>Introduction of market Meaning, definition, characteristics, types.</b> <b>Consumer behavior :</b> A. Understanding consumer and their wants B. Determinants of consumer behavior-Opinion, leadership, group influence, social class and culture, consumer dissatisfaction. C. Market strategies influencing consumer behavior D. Guidelines for wise purchasing.
3	September	Unit-III	<b>Market practices that exploit consumers</b> A. <b>Type of exploitation :</b> Adulteration, packaging, label, weights and measures, advertising and sale gimmicks. B. <b>Causes of exploitation :</b> Consumer problem and their solutions
4	October	Unit-IV	<b>Consumer protections: Need and rationale</b> A. <b>History of consumer movement in India:</b> Origin, growth, causes for slow growth. B. <b>Role of consumer organizations:</b> National, regional and international. C. Role of government agencies, legislation. D. Empowerment of consumers. <b>Consumer credit :</b> A. Definition and types of credit B. Factors affecting consumer credit decisions.
5	November		Project Work & Semester Exam

## **M.SC I SEM RESOURCE MANAGEMENT**

### **PAPER IV**

#### **LAND SCAPING**

JULY- INTRODUCTION, HISTORY OF LAND SCAPING, GARDEN ESTABLISHMENT, ORNAMENTAL GARDENS MANAGEMENT, MAINTENANCE

AUG- LAND PROFILE, SOIL TYPES, TEXTURE, ORNAMENTAL GARDENS CHART, PRINCIPLES OF LAYOUTS GARDEN STYLE, FURNITURE, TOOLS, EQUIPMENT

SEPT- FARM SHED, GREEN HOUSE, BONSAI, STYLE MATERIAL. METHODS, PEDESTAL, MONUMENT STATUES, ABSTRACT, PERGOAL, MANURE, WEED, TYPES, DISTRIBUTION

OCT- INDOOR OUTDOOR PLANTS NATURAL ARTIFICIAL, SHRUBS, CREEPERS, GRASS, POT CULTURE TERRACE GARDEN, IRRIGATION, NEED, SOURCES, METHODS, WASTE MANAGEMENT, TYPES

NOV- PRACTICAL LAND SCAPING AND SEMINAR

DEC- SEMESTER EXAMINATION

PROPOSED TEACHING PLAN FOR THE SESSION OF **2018-19**

## **M.SC II SEM RESOURCE MANAGEMENT**

### **PAPER II**

#### **HOSPITALITY ADMINISTRATION**

JAN- HOSPITALITY MEANING, TYPES, DEFINITION, NATURE, SCOPE SIGNIFICANCE, HISTORY ROLE OF HOUSEKEEPING, RELATION TO COMMERCIAL AND WELFARE SECTORS, MANAGEMENT

FEB- SCOPE, IMPORTANCE OF HOUSEKEEPING, LAYOUT OF HOUSEKEEPING DEPARTMENT, SERVICE MANAGEMENT MAINTENANCE, REPAIR, REDECORATING

MAR- ADMINISTRATIVE POLICIES PERSONNEL MANAGEMENT, BUDGET, HUMAN BEHAVIOUR, PERSONALITY, ATTITUDE

APR- SAFETY, SECURITY, SANITATION, FIRE FIGHTING, FIRST AID, SAFETY IN USE OF EQUIPMENT PEST CONTROL, UNIFORM TYPES, SELECTION, DISTRIBUTION, CONTROL, HOSTESS TRAINING BANQUET MANAGEMENT, STRESS MANAGEMENT DEFINITION, TYPES, METHODS OF STRESS REDUCTION, TEAM MANAGEMENT

MAY- SEMINAR

JUNE- SEMESTER EXAMINATION

# TEACHING PLAN - HOME SCIENCE - RESOURCE MANAGEMENT

CLASS: M.Sc. II SEMESTER PAPER – III

## PUBLIC FINANCE

2018-19

No.	MONTH		TEACHING PLAN
1	January	Unit-I	<b>National income:</b> Income distribution, per capita income, Inequalities of income, Consumer price index, Inflation v/s Deflation, Wages and earning principles of wage determination, Wages differentials
2	February	Unit-II	<b>Financial planning and implementation:</b> <b>Budgeting:</b> Allocation of resources, identifying aspiration, expectations and goals, objectives and advantages of budgeting, control. Planning a budget for a Family of fixed income, Restaurant/hostel/any selected organization, Boutique, Small industry
3	March	Unit-III	<b>Tax planning:</b> Types of taxes, Principles and procedures of income tax, Preparation of statement of income and filling of income tax in case of returns, Individuals (Salary class), Knowledge of various exemptions and deductions <b>Saving and investments:</b> Importance of savings components, Saving facilities and investment opportunities, Evaluations of savings components, Economics security and components, Economics security and financial alternatives.
4	April	Unit-IV	<b>Impact of globalization and direct foreign investment on business opportunities in India.</b> a. Income and property rights- Will, trusts and legal aspects of economics insecurity. b. Unemployment, its nature and causes. Government programs designed to increase family financial security. <b>Markets and Marketing:</b> a. Basic concept of market and marketing b. Types of markets: Wholesale, retail, specialty, local, residential. c. Changing nature of the business world i.e. e-business and e-commerce. d. Marketing environment, marketing theories, models. <b>Markets and prices:</b> a. Definition and types of marketing prices. b. Pricing under perfect and imperfect competition and monopoly. <b>International Marketing management</b> a. Meaning, need, organization for international marketing b. scope, elements of international marketing c. analysis product planning for world marketing.

5	May		Semester Exam & Project Work

## TEACHING PLAN - HOME SCIENCE - RESOURCE MANAGEMENT

**CLASS: M.Sc. II SEMESTER      PAPER – IV**

### ENVIRONMENT MANAGEMENT

**2018-19**

No.	MONTH		TEACHING PLAN
1	January	Unit-I	<b>Fundamentals of environment:</b> <ol style="list-style-type: none"> <li>Environment definition. Scope of environmental studies.</li> <li>Life and environment. Physical, chemical factors in the environment, changes in the environment.</li> <li>Environment hazards and risks.</li> </ol>
2	February	Unit-II	<b>Eco-system:</b> <ol style="list-style-type: none"> <li>Ecology: Definition, objectives and concept of Eco-system, scope of Ecology.</li> <li>Tropic structure of Ecosystem</li> <li>Ecological pyramid</li> <li>Energy flow in Ecosystem</li> </ol>
3	March	Unit-III	<b>Environmental pollution:</b> <ol style="list-style-type: none"> <li>Concept of pollution, meaning, definition, causes and classification of pollution.</li> <li>Effect of Environmental pollution</li> </ol> <b>Urban pollution :</b> Pollution and environment with reference to soil and noise.
4	April	Unit-IV	<b>Sources of pollution :</b> <ol style="list-style-type: none"> <li>Effect of pollution.</li> <li>Remedies of control pollution.</li> <li>Air pollution control</li> </ol> <b>Environment legislation:</b> <ol style="list-style-type: none"> <li>Environment policies</li> <li>Human rights issues relating to environment</li> <li>Environment movements</li> <li>Environment ethics</li> </ol>
5	May		Semester Exam & Project Work

PROPOSED TEACHING PLAN FOR THE SESSION OF 2018-19

**M.SC.IIISEM RESOURCE MANAGEMENT**

**PAPER I**

**ERGONOMICS**

JULY- MEANING, SCOPE, DEFINITION OF ERGONOMICS, NATURE OF WORK, MAN  
MACHINE ENVIRONMENT SYSTEM, STRUCTURE AND FUNCTION OF MUSCLE,  
BIOCHEMISTRY OF MUSCLE WORK

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AUG- SOURCES OF ENERGY, ATP,CP,FOOD ,ENERGY REQUIREMENTS, DEFINITION OF  
ANTHROPOMETRY, HUMAN BODY AS A LEVER PRINCIPLES OF MOTION ECONOMY  
SEPT- IDENTIFICATION, ANALYSIS, TYPES OF POSTURE, EFFECTS OF WRONG POSTURE, CORRECT  
TECHNIQUES OF CARRYING AND LIFTING WEIGHTS, PHYSICAL ENVIRONMENT  
OCT- HEAT, THERMAL REGULATION, HEAT BALANCE, EXCHANGE OF HEAT, LIGHTING, COLOUR, NISE

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NOV- PRACTICAL ERGONOMICS, SEMINAR

DEC- SEMESTER EXAMINATION

# TEACHING PLAN - HOME SCIENCE - RESOURCE MANAGEMENT

CLASS: M.Sc. III SEMESTER PAPER – II

## ENTREPRENEURSHIP

2018-19

No.	MONTH		TEACHING PLAN
1	July	Unit-I	<b>- Conceptual Framework :</b> Entrepreneurship ,Concept, nature & type of Entrepreneurship a. Development of Entrepreneurship. b. Entrepreneurship& socio-economic development <b>- Entrepreneurship :</b> Institutional finance and Entrepreneurship Organization, Concept, nature process and importance of Organization
2	August	Unit-II	<b>- The Entrepreneur :</b> i. Meaning , definition characteristics and function ii. Effectiveness of Entrepreneurs. iii. Social responsibility of an Entrepreneur <b>- The Entrepreneurs.</b> <b>- Organization Supporting Entrepreneurs.</b>
3	September	Unit-III	<b>- Licensing &amp; regulation of industries.</b> <b>- Infrastructure facilities.</b> <b>- Launching &amp; organizing Entrepreneurship :</b> Economic and sociological view points. Entrepreneurial development programs.
4	October	Unit-IV	<b>- Preparation of a new project.</b> <b>- Project report.</b> <b>- Start and expansion of a new business.</b>
5	November		Semester Exam & Project Work



# TEACHING PLAN - HOME SCIENCE - RESOURCE MANAGEMENT

CLASS: M.Sc. III SEMESTER PAPER – III

## HOUSING

2018-19

No.	MONTH		TEACHING PLAN
1	July	Unit-I	<ul style="list-style-type: none"><li>- <b>History of Housing.</b></li><li>- <b>Housing –Needs definition and importance.</b></li><li>- <b>Changes in Housing need &amp; standards.</b></li><li>- <b>Housing In India As Affected by Trends In :</b> Population, Establishment of Households, Level of Income per Households, Occupation, Family Mobil, Technological Development.</li></ul>
2	August	Unit-II	<ul style="list-style-type: none"><li>- <b>Present Housing Condition In India :</b> Rural &amp; Urban, Cost of Housing, Quality of Housing Available.</li><li>- <b>Private and Public Housing :</b> Various Housing Schemes &amp; Local Government Programs, Industrial Housing,</li><li>- <b>Housing finance.</b></li></ul>
3	September	Unit-III	<ul style="list-style-type: none"><li>- <b>Factors to be Considered While Designing :</b> Orientation, Grouping of users area, Circulation between &amp; within users area, Light &amp; Ventilation, Flexibility, Privacy, Roominess, Services, Aesthetics, Cost.</li><li>- <b>Type of Floor.</b></li><li>- <b>Study of building materials.</b></li></ul>
4	October	Unit-IV	<ul style="list-style-type: none"><li>- <b>False Ceilings :</b> Different types in various materials.</li><li>- <b>Kitchen Platform and type.</b></li><li>- <b>Storage areas :</b> Need and Rules for storage, Storage arrangements in different rooms.</li><li>- <b>Environmental Issues :</b> Human &amp; Environment.</li><li>- <b>Housing Research</b><ul style="list-style-type: none"><li>a. Agencies for research &amp; Development</li><li>b. Methods &amp; Techniques</li></ul></li></ul>
5	November		Semester Exam & Project Work

PROPOSED TEACHING PLAN FOR THE SESSION OF **2018-19**

**M.SC IIISEM,RESOURCE MANAGEMENT**

**PAPER IV**

**FUEL TECHNOLOGY**

JULY- SOURCES OF ENERGY, ENERGY CONSUMPTION PATTERNS,

AUG- FOSSIL FUEL, FUEL CLASSIFICATION SOLID, LIQUID, GAS, ARTIFICIAL FUEL LIQUID GAS SOLID

SEPT- SOLAR ENERGY, SOLAR TREE, AIR ENERGY, ENERGY FROM BIOMASS

OCT- ENERGY CONSERVATION, PRINCIPLES OF IMPROVING EFFICIENCY, PROPER USE OF ENERGY

NOV- SEMINAR

DEC- SEMESTER EXAMINATION

PROPOSED TEACHING PLAN FOR THE SESSION OF **2018-19**

**M.SC.IV SEM RESOURCE MANAGEMENT**

**PAPER I**

**RESIDENTIAL AND ESTABLISHMENT**

JAN- WATER SUPPLY SYSTEM TO BUILDING, WATER PIPES, VALVES, TYPES OF WATER SUPPLY

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FEB- WATER SUPPLY TO BATH ROOM, WC, TOILET AND KITCHEN, DRAINAGE SYSTEM, SEPTIC TANK,  
DRAINAGE USING SEPTIC TANK AND SOAKPI, DRAIN PIPES, TRAPS, PIPE

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MAR- ELECTRIC LAYOUTS AND WIRING SYSTEMS, AIR CONDITIONING BUILDING DISASTER  
MANAGEMENT

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APR- TERMITE PROOFING, DEMP PREVENTION, HEAT INSULATION, FIRE FIGHTING

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MAY- SEMINAR

JUNE- SEMESTER EXAMINATION

# TEACHING PLAN - HOME SCIENCE - RESOURCE MANAGEMENT

CLASS: M.Sc. IV SEMESTER PAPER – II

## CONSUMER EDUCATION

2018-19

No.	MONTH		TEACHING PLAN
1	January	Unit-I	<b>- Consumer Education :</b> a. Brief History b. Definition, Concept and Significance/need. c. Objectives <b>- Approach to consumer education :</b> Economic, environment, socio cultural, health & safety and legal. <b>- Action line for consumer education :</b> a. <b>Action plan :</b> knowing situation, formulating plan of action, implementing, evaluation and follow up. b. <b>Methods for imparting education :</b> Role-plays and games, project testing and evaluation.
2	February	Unit-II	<b>- Contents:</b> Resource management, decision-making, sound purchasing habits, learning skills, conservation and protection of environment. <b>- Resources:</b> Media-Written, audio and visual. Market place, government agencies consumer organizations. <b>- Problems faced and remedial measures.</b>
3	March	Unit-III	<b>- Teaching Consumerism :</b> a. Plans for teaching better consumption practices, factors b. Consumer aids : Meaning, Classification types. c. Consumer Rights and responsibilities.
4	April	Unit-IV	<b>- Consumer Protection :</b> a. Need, measures and methods. b. Role of consumer organizations: National and International. c. Consumers International regional Office at Pune India. d. Consumer laws: Role and Provisions of the acts-Implications.
5	May		Semester Exam & Project Work

# TEACHING PLAN - HOME SCIENCE - RESOURCE MANAGEMENT

## CLASS: M.Sc. IV SEMESTER

### PAPER – III

### SPACE DESIGN

2018-19

No.	MONTH		TEACHING PLAN
1	January	Unit-I	Analysis of Housing Design 1. Selection of site 2. Analysis of Plan – Needs and definition importance 3. Process of Map making. 4. Site plan & floor plan Types of Designs 1. Structural design decorative design Styles of Interior Designs: Traditional style, cottage style, modern style. 2. Design and Color: Color theory, dimensions of Color, Classification of Colors, Psycho-social and physical effects of colors, types of color schemes.
2	February	Unit-II	Decoration: History of development of decoration. Object of decoration. 1. Furniture Design – Fundamentals of Furniture arrangement in various rooms. 2. Classification selection. 3. Residential Furniture – Sketch, form and sizes of all and details of any 6 items, such as sofa, diwan, chairs, puffed centre table, wall unit, dining table, side board, kitchen unit, bed, wardrobe, dressing table etc.
3	March	Unit-III	1. The Special Need .Division of Rooms and their arrangement. - Circulation in building. - Space needs in relation to furniture and fittings - Space in room and passage. 2. Layout and dimensions of rooms Entrance wall & front door. Living & drawing Room Bedroom & Children Room Guest Room a. The Kitchen Dining Room,Bathroom & W.C.
4	April	Unit-IV	Current Trends in Interior Design 1. Place of Art in the Home 2. Use of Principle of Art in the decoration Uses of color in Home decoration. 3. Current trends of Indian decorative regional art.
5	May		Semester Exam & Project Work

## **M.SC IV SEM RESOURCE MANAGEMENT**

### **PAPER IV**

#### **MANAGEMENT OF HUMAN RESOURCES**

JAN- PRINCIPLES OF HUMAN RESOURCES USE,FATIGUE TYPES CAUSES

FEB- FACTORS, CONCEPT AND TYPES OF EFFICIENCY AND EFFECTIVENESS, MEANING FACTORS OF PRODUCTIVITY ,EFFECT OF MOTIVATION ON PRODUCTIVITY

MAR- MEANING NATURE, CHARACTERISTICS, PROCESS,METHODS, IMPORTANCE, FACTORS OF MOTIVATION, METHODS AND TECHNIQUES OF IMPROVING RESOURCE USE

APR- PERSONALITY AND DEVELOPMENT OF MANAGER TYPES IMPORTANCE, METHODS ,TRAINING, LEADERSHIP, TRAINING FOR PERSONALITY DEVELOPMENT AND LEADERSHIP, GOALS OF TRAINING AND DEVELOPMENT

MAY- SEMINAR

JUNE- SEMESTER EXAMINATION

## **PROPOSED TEACHING PLAN FOR THE SESSION OF 2018-19**

### **M.SC I SEM RESOURCE MANAGEMENT PAPER IV LAND SCAPING**

JULY- INTRODUCTION, HISTORY OF LAND SCAPING, GARDEN ESTABLISHMENT, ORNAMENTAL GARDENS MANAGEMENT, MAINTENANCE

AUG- LAND PROFILE, SOIL TYPES, TEXTURE, ORNAMENTAL GARDENS CHART, PRINCIPLES OF LAYOUTS GARDEN STYLE, FURNITURE, TOOLS, EQUIPMENT

SEPT- FARM SHED, GREEN HOUSE, BONSAI, STYLE MATERIAL. METHODS, PEDESTAL, MONUMENT STATUES, ABSTRACT, PERGOAL, MANURE, WEED, TYPES, DISTRIBUTION

OCT- INDOOR OUTDOOR PLANTS NATURAL ARTIFICIAL, SHRUBS, CREEPERS, GRASS, POT CULTURE TERRACE GARDEN, IRRIGATION, NEED, SOURCES, METHODS, WASTE MANAGEMENT, TYPES

NOV- PRACTICAL LAND SCAPING AND SEMINAR

DEC- SEMESTER EXAMINATION

PROPOSED TEACHING PLAN FOR THE SESSION OF **2018-19**

**M.SC II SEM RESOURCE MANAGEMENT PAPER II HOSPITALITY ADMINISTRATION**

JAN- HOSPITALITY MEANING, TYPES, DEFINITION, NATURE, SCOPE SIGNIFICANCE, HISTORY ROLE OF HOUSEKEEPING, RELATION TO COMMERCIAL AND WELFARE SECTORS, MANAGEMENT

FEB- SCOPE, IMPORTANCE OF HOUSEKEEPING, LAYOUT OF HOUSEKEEPING DEPARTMENT, SERVICE MANAGEMENT MAINTENANCE, REPAIR, REDECORATING

MAR- ADMINISTRATIVE POLICIES PERSONNEL MANAGEMENT, BUDGET, HUMAN BEHAVIOUR, PERSONALITY, ATTITUDE

APR- SAFETY, SECURITY, SANITATION, FIRE FIGHTING, FIRST AID, SAFETY IN USE OF EQUIPMENT PEST CONTROL, UNIFORM TYPES, SELECTION, DISTRIBUTION, CONTROL, HOSTESS TRAINING BANQUET MANAGEMENT, STRESS MANAGEMENT DEFINITION, TYPES, METHODS OF STRESS REDUCTION, TEAM MANAGEMENT

MAY- SEMINAR

JUNE- SEMESTER EXAMINATION

PROPOSED TEACHING PLAN FOR THE SESSION OF **2018-19**

**M.SC III SEM, RESOURCE MANAGEMENT PAPER IV FUEL TECHNOLOGY**

JULY- SOURCES OF ENERGY, ENERGY CONSUMPTION PATTERNS,

AUG- FOSSIL FUEL, FUEL CLASSIFICATION SOLID, LIQUID, GAS, ARTIFICIAL FUEL LIQUID GAS SOLID

SEPT- SOLAR ENERGY, SOLAR TREE, AIR ENERGY, ENERGY FROM BIOMASS

OCT- ENERGY CONSERVATION, PRINCIPLES OF IMPROVING EFFICIENCY, PROPER USE OF ENERGY

NOV- SEMINAR

DEC- SEMESTER EXAMINATION

PROPOSED TEACHING PLAN FOR THE SESSION OF **2018-19**

**M.SC IV SEM RESOURCE MANAGEMENT PAPER IV MANAGEMENT OF HUMAN RESOURCES**

JAN- PRINCIPLES OF HUMAN RESOURCES USE, FATIGUE TYPES CAUSES

FEB- FACTORS, CONCEPT AND TYPES OF EFFICIENCY AND EFFECTIVENESS, MEANING FACTORS OF PRODUCTIVITY, EFFECT OF MOTIVATION ON PRODUCTIVITY

MAR- MEANING NATURE, CHARACTERISTICS, PROCESS, METHODS, IMPORTANCE, FACTORS OF MOTIVATION, METHODS AND TECHNIQUES OF IMPROVING RESOURCE USE

APR- PERSONALITY AND DEVELOPMENT OF MANAGER TYPES IMPORTANCE, METHODS , TRAINING, LEADERSHIP, TRAINING FOR PERSONALITY DEVELOPMENT AND LEADERSHIP, GOALS OF TRAINING AND DEVELOPMENT

MAY- SEMINAR

JUNE- SEMESTER EXAMINATION

**GOVT. D.B. GIRLS P.G.COLLEGE, RAIPUR(C.G)**  
**TEACHING PLAN 2018-19**  
**M.Sc Ist SEMESTER (FOOD & NUTRITION)**  
**PAPER - I**  
**TITLE OF PAPER- RESEARCH METHODOLOGY**

<b>Month</b>	<b>Plan</b>
<b>July</b>	<b>Science, Scientific methods and approach</b>  <b>Social research &amp; survey: Meaning, definition, nature, scope, objects, types, distinction between social survey and research</b>
<b>August</b>	<b>Pretesting &amp; pilot survey</b>  <b>Hypothesis: Definition, Source, characteristics, importance, main difficulties in the formation of hypothesis, disadvantage</b>  <b>Source of data: primary &amp; secondary sources</b>
<b>September</b>	<b>Methods or techniques of data collection</b>  <b>a. Observation</b>  <b>b. Interview</b>  <b>c. Schedule</b>  <b>d. Questionnaire</b>  <b>e. Case-study</b>  <b>Sampling: Meaning, characteristics, advantages, and disadvantages</b>  <b>Types:</b>  <b>Random sampling</b>  <b>Purposive sampling</b>  <b>Stratified sampling</b>  <b>Other sampling method</b>
<b>October</b>	<b>Classification and tabulation of data analysis and interpretation of data</b>  <b>Research design steps and process of its formulation</b>  <b>Types of research design- exploratory, descriptive, diagnostic and experimental</b>
<b>November</b>	<b>Diagrammatic presentation of data</b>



	<b>Revision &amp; SEMINAR</b>
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**PAPER - II**  
**TITLE OF PAPER- NUTRITIONAL BIOCHEMISTRY**

<b>Month</b>	<b>Plan</b>
<b>July</b>	<p><b>Hetropolysaccharides</b> – Definition, classification, structure and properties of glycoprotein and proteoglycans.</p> <p><b>Plasma proteins</b> – Nature, properties and function.</p> <p><b>Intermediately metabolism</b> – Reactions, standard for energy changes and regulation, carbohydrates – glycolysis, glyconeogenesis, citric acid cycle, hexose-mono-phosphate pathway.</p> <p><b>Lipids</b> – Beta-oxidation, denovo synthesis of fatty acids, synthesis and breakdown of unsaturated fatty acids, cholesterol, phospholipids and triglycerol.</p>
<b>August</b>	<p><b>Purines and pyrimidines</b> –Source and Biosynthesis of purines and pyrimidines.</p> <p><b>Nucleic acids</b> – DNA replication and transcription.</p> <p>DNA Transcription and recombinant –  Bio medical importance, restriction enzymes, cloning, libraries and library construction.</p> <p>Gene Mutation – Codon, characteristics of genetic code, WOBBLE, Single base changes, transition transversion.</p> <p><b>rotein biosynthesis</b> – Initiation, formation of 40s initiation complex, formation of 80s initiation complex, elongation, steps of elongation.</p>
<b>September</b>	<p><b>Hormones</b> – General Characteristics , Classification &amp; Mechanism of action, assay of hormones. Chemistry and functions of different hormones – Thyroxine, TSH, LH, ACTH And Insulin.</p> <p><b>Minerals</b> – Trace elements, their physiological functions, sources, absorption, excretion and deficiency of iron, copper, iodine, zinc and selenium.</p>
<b>October</b>	<p>Detoxification in the body – Metabolism of foreign compounds, oxidation, conjugation, reduction, hydrolysis.</p> <p>Major alteration in carbohydrates, protein and fat metabolism in chronic nutrition relate degenerative disease. (Diabetes, Heart diseases).</p>
<b>November</b>	<b>REVISION &amp; SEMINAR</b>

### PAPER - III

#### TITLE OF PAPER- CLINICAL NUTRITION

Month	Plan
<b>July</b>	<p>Etiopathophysiology, clinical symptoms, Complications, prevention and recent advances in nutritional management of GIT Disorders</p> <p>(i) <b>Peptic ulcer</b> – Aetiology, symptoms, dietary modification. Intervals of feeding, bland diet, four stage diet therapy, prevention of recurrence.</p> <p>(ii) <b>Diarrhoea</b>- Classification, modification of diet with special emphasis to fibre and fluids.</p> <p>(iii) <b>Constipation</b> – Classification, dietary consideration.</p> <p>(iv) <b>Ulcerative colitis</b> – Symptoms, dietary treatment</p> <p>(v) <b>Sprue</b> – Types, dietary consideration.</p> <p><b>Pancreatic disorders</b> – Etiology, Pathogenesis and nutritional care.</p>
<b>August</b>	<p>Diseases of <b>liver and gall bladder</b> :</p> <p>(vi) <b>Infective Hepatitis</b> – Types and dietetic management.</p> <p>(vii) <b>Cirrhosis</b> – Types and dietary management.</p> <p>(viii) <b>Cholecystitis</b> and <b>Cholelithiasis</b> –dietetic management.</p> <p><b>Cardio Vascular Diseases</b> –</p> <p>(i) Familial Hypercholesterolemia –nutritional care.</p> <p>(ii) Atherosclerosis–Etiological,factors,pathogenesis,dietetic management.</p> <p>(iii) Hypertension – Classification, etiology, nutritional care.</p>
<b>September</b>	<p><b>Renal Diseases</b> :</p> <p>Basic renal functions, Classification of renal diseases.</p> <p>(i) Glomerulonephritis – Acute and chronic – Symptoms and dietetic treatment</p> <p>(ii) Nephrosis – Symptoms and principles of nutritional care.</p> <p>(iii) Renal failure – Acute and chronic renal failure, dialysis.</p> <p>(iv) Renal Calculi – Etiology, types of stones and nutritional Care. Acid and alkaline ash diet.</p> <p><b>Fevers and infections-</b> Types of fever Tuberculosis, typhoid and malaria -Dietetic management</p>
<b>October</b>	<p>Historical background, prevalence, etiology, biochemical and clinical manifestations, preventive and therapeutic measures for metabolic disorders.</p> <p>Diabetes mellitus</p>

	<p>(i) Incidence and predisposing factors.  (ii) Symptoms, types and diagnosis  (iii) Metabolism in diabetes  (iv) Dietary management  (v) Hypoglycemic agents and insulin  (vi) Complication of diabetes.</p> <p>Disorders of thyroid gland :</p> <p>Normal Thyroid Function</p> <p>(vii) Hyperthyroidism – Symptoms and care.  Hypothyroidism – Symptoms and care</p>
<b>November</b>	<b>REVISION &amp; SEMINAR</b>

#### PAPER - IV

##### TITLE OF PAPER- FOOD SCIENCE

<b>Month</b>	<b>Plan</b>
<b>July</b>	<p><b>Water-</b> structure and Physical properties of water and ice and chemical nature, adsorption phenomena, types of water solution and colligative properties.</p> <ul style="list-style-type: none"> <li>- Free bound water</li> <li>- Water activity and food spoilage.</li> <li>-</li> </ul> <p><b>Food dispersion</b> – Colloidal sol, stabilization of colloidal systems, Rheology of food dispersion.</p> <ul style="list-style-type: none"> <li>- Gels : Structure, formation, strength, types and permanence.</li> <li>- Emulsion : Formation, stability, surfactants and emulsifiers.</li> </ul> <p>- Foams : Structure, formation and stabilization.</p>
<b>August</b>	<p><b>Polysaccharides, sugars and sweeteners:</b></p> <p><b>Starch:</b> Structure, Gelatinization, Characteristics of some food starches, modified food starches. Non starch polysaccharides : Cellulose, hemicelluloses, pectin, gum, animal polysaccharides.</p> <p><b>Sugars and sweeteners:</b> Sugars, syrups, potent sweeteners, sugar product.</p> <ul style="list-style-type: none"> <li>- Sweetener chemistry related to usage in food products : Structural relationships to sweetness perception, hydrolytic reactions, solubility and crystallization, hygroscopicity, fermentation, non-enzymatic browning.</li> </ul>

	<b>Cereals and cereals products:</b> <ul style="list-style-type: none"> <li>- Cereals grains : Structure and composition</li> <li>- Flours and flour quality</li> <li>- Extruded foods, breakfast cereals, wheat germ, bulger, puffed and flaked cereals</li> </ul>
<b>September</b>	<b>Fats, oils and related products:</b>  Sources, Composition, effect of composition on fat properties. Functional properties of fat and uses in food preparation. Fat substitutes, fat deterioration (Rancidity) and antioxidants.
<b>October</b>	<b>Dairy products: Milk</b> Composition, physical and functional properties. Denaturation effects of processing and storage.  <b>Milk products:</b> Cultured milk, yogurt, butter, whey, cheese, concentrated and dried products, frozen desserts, dairy product substitutes.  <b>Enzymes:</b> Nature of enzymes, stability and action. Proteolytic enzymes, oxidase, lipases, enzymes decomposing carbohydrates, immobilised enzymes  Protein denaturation, non enzymatic browning
<b>November</b>	<b>REVISION &amp; SEMINAR</b>

**M.Sc IInd SEMESTER (FOOD & NUTRITION)**

**PAPER - I**

**TITLE OF PAPER- STATISTICS & COMPUTER APPLICATION**

<b>Month</b>	<b>Plan</b>
<b>January</b>	<b>Statistics: Meaning, definition, scope, importance, characteristics, distrust of statistics</b>  <b>Measurement of central tendency:</b>  <b>Mean</b>  <b>Median</b>  <b>Mode</b>
<b>February</b>	<b>Graphic presentation of Data: Importance, types</b>  <b>-Histogram</b>  <b>-Fequency Polygon</b>  <b>-Frequency Curve</b>  <b>Correlation: Definition, Meaning and types</b>  <b>Methods of determining coefficientof correlation</b>  <b>-Product moment method</b>  <b>-Rank correlation</b>  <b>Methods of dispersion and variation</b>  <b>Mean deviation</b> <b>Standard deviation</b> <b>Quartile deviation</b>
<b>March</b>	<b>Introduction to computers</b>  <b>What is computer? Characteristics, components of computer system, CPU, I/O devices and memory (RAM and ROM), secondary storage devices (Hard disk, floppy disk, magnetic tape etc.)</b>  <b>Analysis of variance</b>

	<b>One way method: Direct and Shortcut</b>
<b>April</b>	<b>Computer generations</b> <b>Classification of computer: Analog, digital, hybrid, general and special purpose computer</b> <b>Types of computer: Micro, mini, mainframe and super computer</b> <b>Chi-square test and goodness of fit</b> <b>Application of student 't' test for small samples</b> <b>Working with MS-word:</b> <b>Getting started with word, formatting text and paragraph. Applying text and language tools. Designing pages with columns and tables, using graphics.</b>
<b>May</b>	<b>REVISION &amp; SEMINAR</b>

## PAPER - II

### TITLE OF PAPER- METHODS OF INVESTIGATION

<b>Month</b>	<b>Plan</b>
<b>January</b>	<p>Electrolytic dissociation : Principle, technique and theory of electrolytic dissociation.</p> <p>Hydrogen ion concentration : Principle and measurement of PH, indicators, buffers.</p> <p>Physiochemical techniques: Principles and methodology of the following-</p> <ul style="list-style-type: none"> <li>(a) Diffusion</li> <li>(b) Osmosis</li> <li>(c) Filtration</li> </ul>

	<p>(d) Surface tension</p> <p>(e) Adsorption</p> <p>(f) Centrifugation</p>
<b>February</b>	<p>Chromatography: Principles, techniques and application of the following-</p> <p>(a) Paper chromatography- Circular, ascending and descending.</p> <p>(b) Ion exchange chromatography</p> <p>(c) Column chromatography</p> <p>(d) Thin layer chromatography</p> <p>(e) Gas liquid chromatography</p> <p>(f) High performance liquid chromatography</p>
<b>March</b>	<p>Electrophoresis: Principles and techniques of paper and gel electrophoresis.</p> <p>Microbiological assay : Principle and methodology of the following-</p> <p>(a) Vitamins</p> <p>(b) Amino acids</p> <p>Colorimetry : Principles, applications.</p>
<b>April</b>	<p>Radioactive isotopes: Properties, detection and uses of radioactive isotopes in medical science.</p> <p>Immunological methods: Principle and technique of the following-</p> <p>(c) Radio Immuno Assay (RIA)</p> <p>(d) Enzyme Linked Immuno sorbent Assay (ELISA)</p> <p>Collection of biological samples.</p>
<b>May</b>	<b>REVISION &amp; SEMINAR</b>

### PAPER - III

#### TITLE OF PAPER- PROBLEMS IN NUTRITION

Month	Plan
January	<p>Nutritional screening and assessment of nutritional status of hospitalized</p> <p>Identification of high risk patients. Assessment of patient need based on interpretation of patient data (Clinical, biochemical, biophysical, personal etc.)</p> <p>Nutritional support service: Recent advances in techniques and feeding methods. (enteral nutrition, parental nutrition) pre and post operative diets, Diet in burns.</p>
February	<p><b>Weight imbalance—</b></p> <p><b>Obesity</b> – Types, etiology, assessment, treatment, diet and other measures, complications of obesity.</p> <p><b>Under weight</b> – Causes, dietetic management</p> <p><b>Neurological disorders :</b></p> <ul style="list-style-type: none"> <li>(i) Neuritis – Etiology, nutritional care.</li> <li>(ii) Migraine – Symptoms &amp; Dietary management</li> <li>(iii) Anorexia Nervosa – Etiology, treatment.</li> </ul>
March	<p><b>Diet in genetic disorders:</b></p> <p>Fructosuria, Galactosemia, Phenylketonuria.</p> <p><b>Musculoskeletal disorders:</b></p> <p>Gout – Characteristics, nutritional care</p> <p><b>Cancer:</b></p> <ul style="list-style-type: none"> <li>- Types of cancer, Nutritional effect of cancer, Nutritional disorders related to treatment,</li> <li>Nutritional care in cancer.</li> </ul>



<b>April</b>	<p>Prevalence , etiology, clinical manifestation, preventive and therapeutic measures for the following-</p> <p>Vitamin A deficiency</p> <p>IDD</p> <p>Rickets</p> <p>Dental caries : Etiology, nursing bottle caries.</p> <p>Nutrition in AIDS.</p>
<b>May</b>	<b>REVISION &amp; SEMINAR</b>

## **PAPER - IV**

### **TITLE OF PAPER- FOOD CHEMISTRY**

<b>Month</b>	<b>Plan</b>
<b>January</b>	<p>Meat and Poultry : Muscle composition, characteristics and structure. Post mortem changes during processing, preservation and their effects. Heat induced changes in meat variables in meat preparation, Tenderizing treatments, meat products.</p> <p>Eggs : Structure and composition, changes during storage. Functional properties of eggs, use in cookery. Egg processing, low cholesterol egg substitutes.</p>
<b>February</b>	<p>Fish and sea foods : Types and composition, storage and changes during storage, changes during processing, by- product and newer products.</p> <p>Pulses and Legumes : Structure, composition, processing, toxic constituents.</p> <p>Nuts and oil seeds : Composition, oil extraction and by-products.</p>
<b>March</b>	<p>Fruits and vegetables: Plant, anatomy, gross composition, structure, features and activities of living systems. Enzymes in fruits and vegetables. Flavour constituents, plant phenolics, pigments, post harvest changes. Texture of fruits and vegetables. Effects of storage, processing and preservation.</p> <p>Spices and condiments: Composition, flavouring extracts – Natural and synthetic.</p> <p>Beverages : Synthetic and natural, alcoholic and non-alcoholic, carbonated and non- carbonated, coffee, tea, cocoa, malted drinks.</p>
<b>April</b>	<p>Traditional processed products : jam, jellies &amp; squash.</p> <p>Protein concentrates : Hydrolysates and textured vegetable proteins, milk substitutes.</p> <p>Fermented food-cereal based, pulse based, fruit/vegetables based like vinegar, pickle and alcoholic beverages.</p>

	Leavened products: Leavened agents biologically leavened and chemically leavened products. Batters and dough, bakery products.  Salt and salt substitutes
<b>May</b>	<b>REVISION &amp; SEMINAR</b>

M.Sc IIIrd SEMESTER (FOOD & NUTRITION)

PAPER - I

TITLE OF PAPER- FOOD MICROBIOLOGY

Month	Plan
July	<p>Bacterial morphology, structure, structure, staining, culture media, culture method and identification of Bacteria.</p> <p>Growth and Nutrition of Bacteria :</p> <p>Microbial Criteria of Food.</p> <p>Microbial Standards and food safety.</p> <p>Microorganism important in food microbiology – Mold, Yeast, Bacteria.</p> <p>Controlling the microbial quality of foods –</p> <p>Quality control using microbial crities</p> <p>The HACCP – (Hazard Analysis and Critical Control Point) SYSTEM.</p> <p>Spoilage of different groups of foods :</p> <p>Cereals and cereal products</p> <p>Vegetables and fruits</p> <p>Fish and meat</p> <p>Eggs and poultry</p> <p>Milk and milk products</p> <p>Canned foods</p>
August	<p>Contamination of foods</p> <p>Food Preservation:</p> <p>General principles of food preservation:</p> <p>Asepsis, removal of micro-organism, maintenance of anaerobic conditions.</p> <p>Preservation by use of high temperature</p> <p>Preservation by use of low temperature</p> <p>Preservation by drying</p> <p>Preservation by food additives</p> <p>Preservation by radiation.</p>
September	<p>Preservation by radiation.</p> <p>(i) Food borne illness: Bacterial and viral food borne disorders. Food borne important animal parasites, mycotoxins.</p>
October	Fermented foods:

	Role of microbes in fermented foods - Fermented dairy products Fermented vegetables Fermented meat Fermented fish Beverage and distilled products. Anti Microbial Therapy Food laws.
November	REVISION & SEMINAR

## PAPER - II

### TITLE OF PAPER- NUTRITION FOR HEALTH OF WOMEN AND CHILDREN

Month	Plan
July	<p>Women in family and community : Demographic changes menarche, marriage, fertility, morbidity, mortality, life expectancy, sex ratio, aging, widowhood.</p> <p>Women and Health : Health facilities. Disease pattern and reproductive health.</p> <p>Policies and programs for promoting maternal and child nutrition and health.</p> <p>Concept of small family. Methods of family planning merits and demerits.</p>
August	<p>Importance of nutrition prior to and during pregnancy-prerequisites for successful outcome.</p> <p>Effect of under nutrition on mother and child including pregnancy outcome and maternal and child health - short term and long term effect.</p> <p>Physiology and endocrinology of pregnancy, embryonic and foetal growth and development.</p> <p>Nutritional requirements during pregnancy: Adolescent pregnancy, pregnancy and T.B., IUGE, gestational diabetes.</p>
September	<p>Lactation – Development of mammary tissue and role of hormones – Physiology and endocrinology of lactation. Synthesis of milk component, let down reflex, role of hormones. Lactational amenorrhea, effect of breast feeding on maternal health.</p> <p>Human milk composition and factors affecting breast feeding. Human milk banking.</p> <p>Management of Lactation : Prenatal breast feeding, skill education. Rooming in problems - sore nipples, engorged breast, inverted breast.</p> <p>Exclusive breast feeding.</p>

October	<p>Infant physiology : Preterm and low birth weight infant – Implication for feeding and management.</p> <p>Growth and development during infancy, childhood and adolescents.</p> <p>Feeding of infants and children and dietary management.</p> <p>Malnutrition – Etiology and management.</p>
November	REVISION & SEMINAR

### PAPER - III

#### TITLE OF PAPER- NUTRITION FOR HEALTH AND FITNESS

Month	Plan
<b>July</b>	<p><b>Definition, components of fitness</b></p> <p>Anatomical fitness</p> <p>Physiological fitness</p> <p>Psychological Fitness Physiological fitness :</p> <p>(a) Growth and development, (b) Strength, (c) Speed, (d) Skill, (e) Stamina or endurance, specific fitness, general fitness and health status.</p> <p>Holistic approach to the management of fitness and health</p>
<b>August</b>	<p><b>Review of different energy systems for endurance and power activity:</b></p> <p>Endurance : Definition, classification of endurance, factors affecting endurance.</p> <p>Fuels and nutrients to support physical activity : Shifts in carbohydrates and fat metabolism, mobilization of fat stores during exercise.</p> <p>Nutrition in Sports : Sports specific requirement.</p> <p>Pregame and post game meals. Assessment of different nutrigenic aids. Commercial supplements.</p>

<b>September</b>	<p>Diets for persons with high energy requirements, stress, fracture and injury.</p> <p>Water and electrolyte balance: Losses and their replenishment during exercise and sports. Effect of dehydration.</p> <p>Alternative systems for health and fitness like ayurveda, yoga, Meditation, Vegetarianism.</p>
<b>October</b>	<p>(A) Significance of physical fitness in the prevention and management of : Diabetes mellitus, (ii) Cardiovascular disorders, (iii) Bone health and obesity. Nutrition and exercise regimes for pre and post natal fitness.</p> <p>A Defining nutritional goals/guidelines appropriate to health and prevention and management of the chronic degenerative disorder - (a) Cardiovascular disorders, (b) Diabetic mellitus (c) Cancer, (d) Bone health and obesity B. Various dietary regimes for weight reduction.</p>
<b>November</b>	<b>REVISION &amp; SEMINAR</b>

#### **PAPER - IV**

#### **TITLE OF PAPER- ADVANCED NUTRITION**

<b>Month</b>	<b>Plan</b>
<b>July</b>	<p>Energy :</p> <p>Energy content of foods, physiological fuel values.</p> <p>Measurement of energy expenditure – BMR, RMR, Thermal effect of feeding and</p>

	<p>physical activity. Methods of measurement of basal metabolism.</p> <p>Estimating energy requirements of individuals.</p> <p>Carbohydrates:</p> <p>Classification, general functions of carbohydrates</p> <p>Dietary fiber</p> <p>fructo - oligosaccharids</p> <p>Starch : chemical composition and physiological effects.</p> <p>Glycemic index of foods</p>
<b>August</b>	<p>Proteins :</p> <p>Classification &amp; general functions of Protein</p> <p>Role of liver and gastro intestinal tract in protein metabolism</p> <p>Protein quality – Methods of evaluating Quality</p> <p>Protein and amino acid requirements, specific functions of amino acids.</p> <p>Lipids :</p> <p>Classification &amp; functions of Lipids</p> <p>EFA: Role of N-3, N-6 fatty acids in health and diseases requirement of total fat and fatty acid.</p> <p>Prostaglandins, phospholipids, cholesterol.</p>
<b>September</b>	<p>Water : Water balance and its regulation.</p> <p>Minerals :</p> <p>(For each nutrient sources, bioavailability, metabolism, function, requirements, RDI, deficiency and toxicity to be discussed)</p> <p>Macro Minerals : Calcium, Phosphorus, Magnesium, sodium, potassium and chlorides.</p> <p>Micro Minerals : Iron, copper, zinc, manganese, iodine, fluoride.</p> <p>Trace Minerals : Selenium, Cobalt, chromium, vanadium, boron, nickel.</p>

<b>October</b>	<p>Vitamins:</p> <p>Structure, food sources, absorption and transport, metabolism, biochemical functions, assessment of status physiological and therapeutic effect. The toxicity and deficiency with respect to the following:</p> <p>Fat soluble vitamin - A, D, E and K</p> <p>Water soluble vitamin – Thiamin, riboflavin, niacin, biotin, pyridoxine, folic acid, pantothenic acid, chlorine, cyanocobalamin, inositol, ascorbic acid.</p>
<b>November</b>	<b>REVISION &amp; SEMINAR</b>



**M.Sc IVth SEMESTER (FOOD & NUTRITION)**

**PAPER - I**

**TITLE OF PAPER- PHYSIOLOGY**

<b>Month</b>	<b>Plan</b>
<b>January</b>	<p>Cell Structure and Functions:</p> <p>Levels of cellular organizations and function - Brief review. Cell Membrane, transport across cell membrane and intercellular communication, Regulations of cell multiplication.</p> <p>Nervous System:</p> <p>Review of structure and function of neuron. Conduction of nerve impulse, synapses, role of neurotransmitters.</p> <p>Organisation of central nervous system, structure and functions of brain and spinal cord, afferent and efferent nerves. Hypothalamus and its role in various body functions – Obesity, sleep, memory.</p> <p>Immune system:</p> <p>Humoral immunity. Development of lymphocytes. Role of inflammation and defence.</p>
<b>February</b>	<p>Endocrine System:</p> <p>Endocrine glands – Structure, function, role of hormones, regulation of hormonal secretion. Disorders of endocrine glands.</p> <p>Sense organs:</p> <p>Review of structure and function. Role of skin, eye, ear, nose and tongue in perception of stimuli.</p>

	<p>Reproduction:</p> <p>Menstrual cycle, spermatogenesis, physiological changes in pregnancy.</p>
<b>March</b>	<p>Digestive System:</p> <p>Review of structure, secretory, digestive and absorptive functions. Role of liver, pancreas and gall bladder and their dysfunction.</p> <p>Respiratory Function:</p> <p>Review of structure and function. Role of lungs in the exchange of gases. Transport of oxygen and carbon dioxide, respiratory quotient, hypoxia and asthma.</p> <p>Excretory System:</p> <p>Structure and function of nephron. Urine formation. Water, electrolyte and acid base balance, diuretics.</p>
<b>April</b>	<p>Circulating System:</p> <p>Structure and function of heart and blood vessels. Regulation cardiac output and blood pressure, heart failure, hypertension.</p> <p>Blood:</p> <p>Formation and function of plasma protein and blood erythropoiesis, blood Clotting, blood group and histocompatibility, blood indices, use of blood for investigation and diagnosis of specific disorders, anaemia.</p> <p>Musculo-Skeletal System:</p> <p>Structure and function of bone, cartilage and connective tissue. Disorders of skeletal system.</p> <p>Types of muscles, Structure and Function.</p>
<b>May</b>	<b>REVISION &amp; SEMINAR</b>

## **PAPER - II**

### **TITLE OF PAPER- PUBLIC NUTRITION**

<b>Month</b>	<b>Plan</b>
<b>January</b>	<p>Concept of Public Health Nutrition:</p> <ul style="list-style-type: none"><li>- Relationship between health and nutrition.</li></ul> <p>Role of public nutritionist in the Health care delivery system.</p> <p>Health Care of the community. National health care delivery system.</p>
<b>February</b>	<p>Population dynamics:</p> <p>Demography, demographic cycle, world population trend, birth rates, death rates, growth rates, demographic trends in India, age pyramid, sex ratio.</p> <p>Environment and Health:</p> <p>Water: Water pollution, surveillance of drinking water quality. Air: Air pollution</p>
<b>March</b>	<p>Nutritional Status:</p> <p>Determinants of nutritional status of individual and populations.</p> <p>Major Nutritional Problems:</p> <p>Etiology, prevalence, clinical manifestations. Preventive and therapeutic measures of- Macro and micro deficiencies – LBW, PEM, xerophthalmia, nutritional anemia.</p>

<b>April</b>	<p>Other nutritional problems like lathyrism, aflatoxicosis, alcoholism and fluorosis.</p> <p>National Nutrition Policy.</p> <p>Health Planning in India.</p> <p>Occupational Health.</p>
<b>May</b>	<b>REVISION &amp; SEMINAR</b>

### **PAPER - III**

#### **TITLE OF PAPER- GERIATRIC NUTRITION**

<b>Month</b>	<b>Plan</b>
<b>January</b>	<p>Aging: Definition</p> <p>Molecular changes during aging – (i) Changes in proteins, (ii)Chromatin, (iii) Cross linkers, (iv)Immune response, (v) Hormones, (vi) Ageing of cells in culture,</p> <p>(vii) Age pigment.</p> <p>Mechanism of Aging-</p> <p>Somatic Mutation,</p> <p>Errors in proteins</p> <p>Gene regulation</p> <p>Socio-Psychological aspects of aging- Especially problems of elderly women.</p>
<b>February</b>	<p>Nutritional and Food requirement during old age- Process of aging, nutritional requirements</p> <p>Nutrition related problems of old age-</p> <p>- (i) Osteoporosis, (ii) Obesity, (iii) Neurological dysfunction, (iv) Anemia, (v) Malnutrition, (vii)Constipation.</p> <p>Policies and program of the government to the elderly.</p>

	Policies and program of the NGO sector pertaining to the elderly.
<b>March</b>	<p>Degenerative diseases in old age-</p> <p>(i) Atherosclerosis, (ii) Hypertension, (iii) Cancer, (iv) Diabetes mellitus, (v) Arthritis</p> <p>Common complaints during oldage.</p> <p>Dietary guidelines</p>
<b>April</b>	<p>Drug – Food and nutrient reaction in elderly.</p> <p>Effect of drugs on food intake and absorption.</p> <p>Effect of various foods and beverages on drug action.</p> <p>Drug nutritional interaction.</p> <p>Aging and Immunity.</p> <p>Aging and Nutrition, nutrition and longevity, food habits of elderly people, stress during oldage.</p>
<b>May</b>	<b>REVISION &amp; SEMINAR</b>

#### **PAPER - IV**

##### **TITLE OF PAPER- RESEARCH METHODS IN FOOD &NUTRITION**

<b>Month</b>	<b>Plan</b>
<b>January</b>	<p>Body Composition:-</p> <p>Normal Body Composition</p> <p>Changes through the lifecycle</p> <p>Methods of Assessing body composition</p> <p>Diet Surveys-Following factors to be considered in conducting diet surveys:-</p>

	<p>Trained personnel</p> <p>Population sampling</p> <p>Methods of diet surveys</p> <p>Calculation of the nutritive value of the diet in terms of adult consumption unit and interpretation.</p> <p>Nutrition Education:-</p> <p>Training in Nutrition</p> <p>Channels of nutrition education of the community</p> <p>Nutrition education methods</p>
<b>February</b>	<p>Principles of Epidemiology – Definition, aims, uses, epidemiological approach</p> <p>Screening for Disease – Concept of screening, aims and objective,</p> <p>-Types of screening ,Uses of screening,</p> <p>Design Strategies in research. (Descriptive Studies):-</p> <p>- Issues in the design and conduct of descriptive studies–</p> <p>Defining the population, defining the disease, measurement of disease, comparing with known indices, formulation of hypothesis, uses of descriptive studies.</p>
<b>March</b>	<p>Design strategies in Research – (Analytical Studies I):-</p> <p>- Issues in the design and conduct of case control studies – Selection of cases. selection of controls, matching, exposure status, analysis, advantages and disadvantages.</p> <p>Design Strategies in Research – ( Analytical Studies II):-</p> <p>- Issues in the design of cohort studies – Selection of exposed population, selection of comparison group, obtaining data on exposure, follow-up, analysis, advantages, disadvantages.</p> <p>Health Information – Component of health information system,</p> <p>Sources of health information, Uses of Health information</p>
<b>April</b>	<p>Experimental Studies:-</p> <p>Randomized controlled trials (Clinical trials) -- Protocol, selection of reference and experimental population, randomization, manipulation, follow-up, assessment. Brief Overview of Case Study and Cross Sectional</p>

	<p>Survey</p> <p>Brief Overview of Case Study and Cross Sectional Survey</p> <p>Qualitative Research-</p> <p>PRA - (a) Concept of PRA</p> <p>Tools and Techniques</p> <p>Evaluation</p>
May	<p><b>REVISION &amp; SEMINAR</b></p>

**M.Sc. FOODS AND NUTRITION**

**I<sup>st</sup> SEMESTER**

**SESSION: 2018-2019**

**PAPER:III**

**NAME OF PAPER: CLINICAL NUTRITION**

August	<p>Etiopathophysiology, clinical symptoms, Complications, prevention and recent advances in nutritional management of GIT Disorders</p> <ul style="list-style-type: none"><li>(i) <b>Peptic ulcer</b> – Aetiology, symptoms, dietary modification. Intervals of feeding, bland diet, four stage diet therapy, prevention of recurrence.</li><li>(ii) <b>Diarrhoea</b>- Classification, modification of diet with special emphasis to fibre and fluids.</li><li>(iii) <b>Constipation</b> – Classification, dietary consideration.</li><li>(iv) <b>Ulcerative colitis</b> – Symptoms, dietary treatment</li><li>(v) <b>Sprue</b> – Types, dietary consideration.</li></ul> <p><b>Pancreatic disorders</b> – Etiology, Pathogenesis and nutritional care.</p>
September	<p>Diseases of <b>liver and gall bladder</b> :</p> <ul style="list-style-type: none"><li>(i) <b>Infective Hepatitis</b> – Types and dietetic management.</li><li>(ii) <b>Cirrhosis</b> – Types and dietary management.</li></ul> <p><b>Cholecystitis and Cholelithiasis</b> –dietetic management.</p> <p><b>Cardio Vascular Diseases</b> –</p> <ul style="list-style-type: none"><li>(i) Familial Hypercholesterolemia –nutritional care.</li><li>(ii) Atherosclerosis–Etiological,factors,pathogenesis,dietetic management.</li><li>(iii) Hypertension – Classification, etiology, nutritional care.</li></ul>
October	<p><b>Renal Diseases</b></p> <p>Basic renal functions, Classification of renal diseases.</p> <ul style="list-style-type: none"><li>a. Glomerulonephritis – Acute and chronic – Symptoms and dietetic treatment</li><li>b. Nephrosis – Symptoms and principles of nutritional care.</li><li>c. Renal failure – Acute and chronic renal failure, dialysis.</li><li>d. Renal Calculi – Etiology, types of stones and nutritional Care. Acid and alkaline ash diet.</li></ul>



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**M.Sc. FOOD AND NUTRITION**

**III<sup>rd</sup> SEMESTER**

**SESSION: 2018-19**

**PAPER: IV**

**NAME OF PAPER: ADVANCED NUTRITION**

July	<p><b>Energy:</b></p> <ul style="list-style-type: none"> <li>(a) Review of Energy content of foods, physiological fuel values-.</li> <li>(b) Measurement of energy expenditure – BMR, RMR. Thermal effect of feeding and physical activity. Methods of measurement of basal metabolism.</li> <li>(c) Estimating energy requirements of individuals.</li> <li>(d) Regulation of energy metabolism – Control of food intake, digestion, absorption and body weight.</li> </ul>
August	<p><b>Carbohydrates:</b></p> <ul style="list-style-type: none"> <li>(a) Review of Types, classification, digestion and transport of carbohydrates</li> <li>(b) Dietary fiber, fructo-oligosaccharides Starch :chemical composition and physiological effects.</li> <li>(c) Glycemic index of foods,sweeteners – Nutritive and non-nutritive.</li> </ul>
September	<p><b>Proteins:</b></p> <ul style="list-style-type: none"> <li>(a) Review of Classification, Digestion, absorption and transport of Proteins</li> <li>(b) Role of liver and gastro intestinal tract in protein metabolism.</li> <li>(c) Protein quality – Methods of evaluating Quality.</li> </ul>

	<p>(d) Protein and amino acid requirements, specific functions of amino acids.</p> <p><b>Lipids:</b></p> <p>(a) Review of Classification, digestion, absorption and transport of Lipids</p> <p>(b) Functions of fat, EFA: Role of N-3, N-6 fatty acids in health and diseases requirement of total fat and fatty acid.</p> <p>(c) Prostaglandins, phospholipids, cholesterol.</p>
October	<p><b>Water:</b> Water balance and its regulation</p> <p><b>Minerals :</b></p> <p>(For each nutrient sources, bioavailability, metabolism, function, requirements, RDI, deficiency and toxicity to be discussed)</p> <p>(a) Macro minerals : Calcium, Phosphorous, Magnesium, sodium, potassium and chlorides.</p> <p>(b) Micro Minerals: Iron, copper, zinc, manganese, iodine, fluoride.</p> <p>(c) Trace minerals: Selenium, Cobalt, chromium, vanadium, boron, nickel</p>

**M.Sc.FOOD AND NUTRITION**

**IV<sup>th</sup> SEMESTER**

**SESSION: 2018-19**

**PAPER: IV**

**NAME OF PAPER: RESEARCH METHODS IN FOOD &NUTRITION**

January	<p>Body Composition :-</p> <ul style="list-style-type: none"><li>(a) Normal Body Composition</li><li>(b) Changes through the life cycle</li><li>(c) Methods of Assessing body composition</li></ul> <p>Diet Surveys-Following factors to be considered in conducting diet surveys:-</p> <ul style="list-style-type: none"><li>(a) Trained personnel</li><li>(b) Population sampling</li><li>(c) Methods of diet surveys</li><li>(d) Calculation of the nutritive value of the diet in terms of adult consumption unit and interpretation.</li></ul> <p>Nutrition Education:-</p> <ul style="list-style-type: none"><li>(a) Training in Nutrition</li><li>(b) Channels of nutrition education of the community</li><li>(c) Nutrition education methods</li></ul>
February	<p>Design strategies in Research – (Analytical Studies I):-</p> <p>Brief overview – Case control, clinical trials.</p> <p>Issues in the design and conduct of case control studies –</p> <p>Selection of cases. selection of controls, matching, exposure status, analysis, advantages and disadvantages</p> <p>Screening for Disease – Concept of screening, aims and objective,</p> <p>-Types of screening ,Uses of screening</p>

	<p>Design Strategies in research. (Descriptive Studies):-</p> <p>(a) Brief Overview of Case study, Cross sectional surveys.</p> <p>(b) Issues in the design and conduct of descriptive studies –  Defining the population, defining the disease, measurement of disease, comparing with known indices, formulation of hypothesis, uses of descriptive studies.</p> <p>Principles of Epidemiology – Definition, aims, uses, epidemiological approach</p>
March	<p>Design Strategies in Research –( Analytical Studies II):-</p> <p>(a) Overview of types of cohort studies.</p> <p>(b) Issues in the design of cohort studies –  Selection of exposed population, selection of comparison group, obtaining data on exposure, follow-up, analysis, advantages, disadvantages.</p> <p>Health Information – Component of health information system,  Sources of health information, Uses of Health information</p> <p>Experimental Studies:-  Randomized controlled trials (Clinical trials) --  Protocol, selection of reference and experimental population, randomization, manipulation, follow-up, assessment.</p> <p>Qualitative Research-</p> <p>PRA - (a) Concept of PRA</p> <p>(b) Tools and Techniques</p> <p>(c) Evaluation</p>

**Govt. D.B. Girls P.G. Autonomous College , Raipur (C.G.)**  
**Proposed Teaching Plan For the Session 2018-19**  
**M.Com. Part - I Semester**

Month	Managerial Economics	Advanced Accounting	Management Accounting	Statistical Analysis	Corporate Legal Framework
July	UNIT-1 Nature and Scope of Managerial, Economics: Objective of a firm; Economics theory and managerial theory; Managerial economist's role and responsibilities. UNIT-2 Fundamental economic concepts-incremental principle, opportunity cost principle, discounting principle. equi-marginal principle.	UNIT-1 Accounting for issue, Forfeited and redemption of shares and debentures. UNIT-2 Final accounts and financial statements of companies.	UNIT 1 Introduction of Accounting: Management accounting as a area accounting; Objectives, nature and scope of management accounting, techniques of management accounting, difference between financial accounting, cost accounting and management accounting, Management accounting and managerial decisions; Management accountant's position, role and responsibilities.	UNIT-1 Statistics - Definitions, Characteristics, Scope and Nature, Functions, limitations, Distrust and misuse importance & Statistical Investigations, Classification & Tabulation, UNIT-2 Data Sources: Primary and Secondary, Primary data collection techniques, Schedule, Questionnaire and interview & Sources' of Secondary data.	UNIT-1 The Companies Act, 1956 (Relevant Provisions) : Definition, types of companies Memorandum of association; Articles of association; Prospectus; Share capital and membership.
August	UNIT-3 Demand Analysis: Individual and Market demand functions Law of demand; determinants of demand; Elasticity of demand-its meaning and importance, Price elasticity; income elasticity and cross elasticity; Using elasticity 'in managerial decisions.	UNIT-3 Accounting issues relative to amalgamation and reconstruction of companies.	UNIT-2 Accounting Plan and Responsibility Centers: Meaning and significance of responsibility accounting; Responsibility centers-cost centre, profit centre and investment centre, Problems in transfer pricing, Objectives and determinates of responsibility centers.	UNIT-3 Dispersion, Co-efficient of variance and skewness, correlation - Karl-Pearsons and spearman's ranking method and Regression analysis, Two variables case.	UNIT-2 Meetings and resolutions - Company management; Managerial remuneration; Winding up and dissolution of companies.

September	UNIT-4 Theory of consumer Choice: Cardinal utility approach, indifference approach, revealed preference and theory of consumer choice under risk; Demand estimation for major consumer durable and non-durable products; Demand forecasting tech. technique.	UNIT-4 Accounting for holding and subsidiary companies.	UNIT-3 Budgeting. Definition of Budget; Essentials of budgeting; Types of budgets functional, master etc. .Fixed and flexible budget, Budgetary control, Zero-base budgeting; Performance budgeting. UNIT-4 Standard Costing and Variance Analysis:, Standard costing as a control technique; Setting of standards and their revision; Variance analysis- meaning and importance; Kinds of variances and their uses-material, labour and overhead variances; Disposal: of variances ; Relevance of variance analysis to budgeting and standard costing.	UNIT-4 Probability Theory: Probability classical, relative and subjective probability, Addition and multiplication probability models - Conditional probability and Baye's Theorem.	UNIT-3 The Negotiable Instruments Act, 1881 - Definition, types of negotiable instruments; Negotiation; Holder and holder in due course; payment in due course;  UNIT-4 Endorsement and crossing of cheque; Presentation of negotiable instruments.
October	UNIT-5 Production Theory: Production function- production with one and two variable inputs, Stages of production; Economics of scale; Estimation of production function.	UNIT-5 Accounts relating to Liquidation of companies.	UNIT-5 Marginal Costing: Concept of marginal cost; Marginal costing and absorption, costing, Marginal costing versus direct, costing; Cost-volume- profit analysis.	UNIT-5 Probability Distributions - Binomial, Poisson and Normal Distributions, Their characteristics and applications.	UNIT-5 Legal Environment for Security Markets: SEBI Act. 1992- organisation and objectives of SEBI.
November	Seminar And Internal Examination				
December	Semester Examination				

**Govt. D.B. Girls P.G. Autonomous College , Raipur (C.G.)**  
**Proposed Teaching Plan For the Session 2018-19**  
**M.Com. Part - II Semester**

Month	Business Economics	Advanced Accounting	Accounting For Managerial Decision	Advanced Statistics	Business Law
January	UNIT-I Cost Theory and Estimation, economic value analysis, Short and long run cost function s- their nature, shape and inter-relationship; Law of variable proportions;-Law of returns to scale.	UNIT-1 Accounts of General Insurance Companies. UNIT-2 Accounts of Banking Companies.	UNIT-I Break-even-analysis; Assumptions and practical applications of break- even- analysis; Decisions regarding sales- mix, make or buy decisions and discontinuation of a product line etc.	UNIT-1 Statistical Decision Theory: Decision environment, Expected profit under uncertainty and assigning probabilities and utility theory.	UNIT-I SEBI Act-1992: Organisation and objectives of SEBI, Functions and Role of SEB Rights and Power of SEBI. UNIT-II Competition Act 2002: Introduction, features, objects; Prohibition of certain agreements, Abuse of Dominant position and Regulation of combinations; Competition commission of India- duties, powers and functions, Competition Appellate Tribunal.
February	UNIT-II Price Determination under Different Market Conditions: Characteristics of different market structures; Price determination and firm's equilibrium in short-run and long-run under perfect competition, monopolistic competition, oligopoly and monopoly,	UNIT-3 Accounts of Public Utility concerns: Double Accounts System.	UNIT-2 Analyzing financial Statements: Method, objects and ratio analysis.  UNIT-3 Cash flow analysis and Fund flow analysis.	UNIT-2 Statistical Estimations. and Testory: Point and interval estimation of population mean, proportion and variance Statistical Testing - Hypothesis and Errors, Sample size – Large and Small Sampling test Z tests, T Tests & F Tests..	UNIT-III Consumer Protection Act 1986: Needs of Act, Rights of consumers, Objectives of Act.,Grievance redressal Machinery, District Forum, State Commission, National Commission.

March	UNIT-III Pricing Practices: Methods of price determination in practice, pricing of multiple products; price discrimination; International price discrimination and dumping; Transfer pricing.	Accounts of Public Utility concerns: Double Accounts System.	UNIT-4 Contemporary Issues in Management Accounting: Value chain analysis; Activity bases costing, Quality costing, Target and life cycle costing.	UNIT-3 Association of Attributes: Two Attributes, consistency of data, measurement of Association of Attributes - Percentage method, Co-efficient of Association, Comparison of Actual and (youle method) Expected frequency's & illusory Association.	UNIT-IV FEMA Act 1999: Objectives; Regulation and Management of FEMA, Penalties Appeal.
April	UNIT-IV Business Cycles: Nature and phases of la business .cycle; Theories of business cycles psychological, profit, monetary, innovation, cobweb, Samuelson and Hicks theories. UNIT-V Inflation: Definition, Characteristics and types; Inflation in terms of demand- pull and cost-push factors; Effects of inflation.	UNIT-4 Royalty accounts.  UNIT-5 Investment accounts.	UNIT-5 Reporting to Management: Objectives of reporting, reporting needs at different managerial levels; Types of ,reports," modes of reporting; reporting at different levels of management.	UNIT-4 Statistical Quality Control: Causes of Variations in quality characteristics, Quality Control charts-purpose and logic, Process under control and out of control, warning limits, control charts for attributes-fraction defectives and number of defects, Acceptance sampling. UNIT-5 Interpolation and Extrapolation - Parabolic Binomial, Newton and long rages method.	UNIT-V W.T.O.: Brief History of WTO, Objectives and Functions, Organisation, W.T.O. and India, Regional groupings, anti-dumping duties and other NTBs, Doha declaration , Dispute settlement system, TRIP, TRIMS and GATS.
May	Seminar And Internal Examination				
June	Semester Examination				



**Govt. D.B. Girls P.G. Autonomous College , Raipur (C.G.)**  
**Proposed Teaching Plan For the Session 2018-19**  
**M.Com. Part - III Semester**

Month	Management Concept	Organizational Behaviour	Advanced Cost Accounting	Income Tax Law and Accounts	Tax Planning and Management
July	Unit – I Schools of Management Thought : Scientific, process, human behaviour and social system school; Decision theory school; Quantitative and system school; Contingency theory of management; Functions of a manager.	Unit – I Organizational Behaviour : concept and significance ; Relationship between management and organizational behaviour; Emergence and ethical perspective; Attitudes; Perception; Learning; Personality; Transactional analysis.	Unit – I Introduction – Cost Analysis, concepts and classification, Materials control– Techniques of Materials control. Unit – II Labour cost – Computation and control, Overheads – Accounting and Control.	Unit – I Law relating to Income tax :Brief study of the main provisions of the Indian Income Tax Act. Important definitions. Income exempted from tax, Residence and Tax liability. Unit – II Calculation of taxable income under the head :Salary and House property.	Unit – I Calculation of taxable Income and tax of Firm and Companies.  Unit – II Return of Income, Provisional Regular, Expert and emergency assessment, Re-opening of assessment.
August	Unit – II Managerial Functions : Planning - concept, significance, types; Organizing - concept, principles of authority, theories, types of organizations, authority, responsibility, power, delegation, decentralization;  Unit – III Staffing; Directing; Coordinating; Control - nature, process, and techniques.	Unit – II Leadership : Concept; Leadership styles; Theories - trait theory, behavioural theory, Fielder's contingency theory; Harsey and Blanchard's situational theory; Managerial grid; Likert's four systems of leadership. Unit – III Organizational Conflict: Dynamics and management; Sources, patterns, levels, and types of conflict; Traditional and modern approaches to conflict; Functional and dysfunctional organizational conflicts; Resolution of conflict.	Unit – III Job, Batch, Contract Costing and operating costing.	Unit – III Depreciation and Development allowance, Calculation of taxable Income under the head :Business and Profession, capital gains, income from other sources.	Unit – III Concept of tax Planning; Tax avoidance and tax evasions; Tax planning with reference of location, nature and form of organization of new business.

September	Unit – IV Motivation : Process of motivation; Theories of motivation – need hierarchy theory, theory X and theory Y, two factor theory, Alderfer's ERG theory, McClelland's learned need theory, Victor Vroom's expectancy theory, Stacy Adams equity theory.	Unit – IV Interpersonal and Organizational Communication : Concept of two-way communication; Communication process; Barriers to effective communication; Types of organizational communication; Improving communication; Transactional analysis in communication.	Unit –IV Process Costing, Joint products & By – products costing. Uniform costing and Estimate costing.	Unit – IV Set off and carry forward of losses, Deduction from gross total Income Calculation of taxable Income and tax of an individual, and Hindu undivided Families.	Unit – IV Tax planning to capital structure, decision dividend policy ; Inter corporate dividends and bonus shares.
October	Unit – V Group Dynamics and Team Development : Group dynamics -Definition and importance, types of groups, group formation, group development, group composition, group performance factors; Principle-cantered approach to team development.	Unit – V Organizational Development: Concept; Need for change, resistance to change; Theories of planned change; Organizational diagnosis; Organizational Development intervention.	Unit – V Budgetary control – Importance of budgets in accounting. Nature of budgetary control, Organization for budgetary control preparation of fixed and variable budgets. Cash Budget, Production and sales Budget	Unit – V Appeals & Revisions Reference of High Court and Supreme court, offences & penalties, Income tax authorities.	Unit – V Preparation of income tax returns, Computation of Income tax, Tax deduction at source; Advance payment of tax.
November	Seminar And Internal Examination				
December	Semester Examination				

**Govt. D.B. Girls P.G. Autonomous College , Raipur (C.G.)**  
**Proposed Teaching Plan For the Session 2018-19**  
**M.Com. Part - IV Semester**

Month	Financial Management	Personnel Management	Production management	Strategic Management	Project
January	Unit – I Financial Management: Meaning, nature and scope of finance; Finance functions - investment, financing and dividend decisions. Capital Budgeting : Nature of investment decisions; Investment evaluation criteria - net present value, internal rate of return, profitability index, payback period, accounting rate of return; NPV and IRR comparison; Capital rationing; Risk analysis in capital budgeting.	Unit – I Concept, Definition, Importance & Objectives of Personnel Management, Historical Development of Personnel Management, Nature, scope planning, Philosophy and Principles of personnel Management and its relation with behavioural sciences.	Unit – I Fundamentals of production management, Nature, Scope, Functions; Problems, Production and Productivity organizing for production. Types of manufacturing systems.	Unit – I Concept of Strategy :Defining strategy, levels at which strategy operates; Approaches to strategic decision making; Mission and purpose, objectives and goals; Strategic business unit (SBU);Functional level strategies. Environmental Analysis and Diagnosis :Concept of environment and its components; Environment scanning and appraisal; Organisational appraisal; Strategic advantage analysis and diagnosis, SWOT analysis.	
February	Unit – II Cost of Capital :Meaning and significance of cost of capital; Calculation of cost of debt, preference capital, equity capital and retained earnings; Combined cost of capital (weighted); Cost of equity and CAPM. Unit – III Operating and Financial Leverage: Measurement of leverages; Effects of operating and financial leverage on profit; Analysing alternate financial plans; Combined financial and operating leverage. Capital structure Theories: Traditional and M.M. hypotheses -without taxes and with taxes; Determining	Unit – II Personnel policies, programmes & procedures. Personnel Department; Personnel Functions, Position of personnel Department & Organization of Personnel Management.	Unit – II Production planning, Objectives, Factors affecting Production Planning. Planning future activities, forecasting. Qualitative & Quantitative forecasting Methods, long range forecasts, project planning method Process planning System. Techniques of process planning: Assembly charts, process charts make or buy analysis. Unit – III Process design, Factors affecting design Relation with types of manufacturing plant location and layout : Factors affecting location. Types of plans layout, evaluation of alternative layout.	Unit – II Strategy Formulation and Choice of Alternatives : Strategies - modernisation, diversification, integration, Merger, take-over and joint strategies; Turnaround, divestment and liquidation strategies; Process of strategic choice-industry, competitor and SWOT analysis; Factors affecting strategic choice; Generic competitive strategies- cost leadership, differentiation focus, value chain analysis, benchmarking, service blue printing.	

March	Unit – IV Dividend Policies : Issues in dividend decisions, Walter’s model, Gordon’s model, M-M hypothesis, dividend and uncertainty, relevance of dividend; Dividend policy in practice; Forms of dividends; Stability in dividend policy; Corporate dividend Behaviour.	Unit – III Man power planning Recruitment and Selection, Training & Development of Employees & Executives. Promotion, Demotion, Transfers, Absenteeism & Turnover.  Unit – IV Performance Appraisal and Merit Routing, Discipline. Job-evaluation Wage & Salary Administration, plans of Remuneration & Financial Rewards/Incentive payments.	Unit – IV Work measurement and work standards Uses of work measurement data procedure for work measurement. Direct work measurement. Time study, activity sampling, Indirect work measurement: Synthetic timing, Predetermined motion time system, analytical estimating. Methods analysis: Areas of application, Approaches to methods design, Tools for methods analysis, work simplification programme.	Unit – III Functional Strategies: Marketing, production / operations and R & D plans and policies. Functional Strategies: Personnel and financial plans and policies. Unit – IV Strategy Implementation: Inter-relationship between formulation and implementation; Issues in strategy implementation; Resource allocation. Strategy and Structure : Structural considerations, structures for strategies; Organisational design	
April	Unit – V Management of Working Capital : Meaning, significance and types of working capital; Calculating operating cycle period and estimation of working capital requirements; Financing of working capital and norms of bank finance; Sources of working capital; Factoring services; Various committee reports on bank finance ;Dimensions of working capital management. Management of cash, and inventory.	Unit – V Employees Fringe Benefits & Services - Safety, Health & Security programme and welfare. Motivation and Moral.	Unit – V Production Control – Control functions: Routing Loading, Scheduling, and Dispatching, Follow up. Quality control & inspection: place of quality control in modern enterprises, organization of quality control. Statistical quality control, inspection location for inspection, inspection procedure and records, Inspection devices.	Unit – V Strategy Evaluation: Overview of strategic evaluation; Strategic control; Techniques of strategic evaluation and control. Techniques of strategic evaluation and control.	
May	Seminar And Internal Examination				
June	Semester Examination				

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**PROPOSED TEACHING PLAN FOR THE SESSION 2017-18**

**B.A. I ECONOMICS**  
**PAPER- I**  
**MICRO ECONOMICS**

MONTH/DAYS	UNIT	TOPIC
JULY /26	UNIT –I	Introduction-Definitions, Nature and scope of Economics, Methodology in Economics.
AUGUST/25	UNIT-I	Utility–Cardinal and Ordinal Approaches, Indifference Curve, Consumer's equilibrium, Giffin goods, compensated demand. Demand- Law of Demand, Elasticity of demand, Price, income and cross elasticity, Consumer's surplus.
SEPTEMBER/23	UNIT-II	Theory of Production and Cost– Production decision, Production function, Iso-quant, Factor substitution, Law of variable proportions, Returns to scale, Economies of scale. Different concepts of cost and their interrelation, Equilibrium of the firm.
OCTOBER/21	UNIT-III	Market structure-perfect and imperfect markets, Equilibrium of a firm-perfect competition.
NOVEMBER/25	UNIT-III	Monopoly and price discrimination. Monopolistic competition- Duopoly, Oligopoly, controlled and administered prices.
DECEMBER/21	UNIT –IV	Factor Pricing-Marginal productivity theory of distribution. Theories of wage determination- wages and collective bargaining wage differentials.
JANUARY/26	UNIT –IV	Rent – Scarcity Rent, differential rent, Quasi rent, Modern Rent Theory. Interest -Classical and Keynesian Theories, Modern Theory. Profits – Innovation, Risk bearing and Uncertainty theories.
FREBRUARY/24	UNIT –V	Welfare economics – What welfare economics is about? Role of value judgments in welfare economics, Pigou's contribution in the field of welfare economics. Parato's optimality. New welfare economics – Kaldor, Hicks welfare criterion, Scitovsky paradox, Social welfare function and social choice. Bergson's –Samuelsson social welfare function, Prof. Amartya Sens critique, Arrow impossibility theorem

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**PROPOSED TEACHING PLAN FOR THE SESSION 2017-18**

**B.A. I ECONOMICS**

**PAPER- II**

**INDIAN ECONOMY**

<b>MONTH/DAYS</b>	<b>UNIT</b>	<b>TOPIC</b>
JULY /26	UNIT –I	Towards a Market Economy – Changes in the land system. Commercialization of agriculture, Policy of discriminating protection and Industrial development, Monetary and currency developments, Central and Commercial Banking Developments.
AUGUST/25	UNIT-I	Indian Economy at the Time of Independence, Backward economy, Stagnant economy, other salient features, Planning exercises in India – National Planning Committee, Bombay Plan, People's Plan. Gandhian Plan, The Planning Commission
SEPTEMBER/23	UNIT-II	Structure of Indian Economy – Basic features, Natural resources – land, water and forest resources, Broad demographic features – Population size and growth rates, Sex composition, Rural – Urban migration, Occupational distribution, Problem of over population, Population policy, Infra – structure development, National Income.
OCTOBER/21	UNIT-III	Planning in India – Objectives, Strategy; Broad achievements and failures, Current Five Year Plan – Objectives, Allocation and targets, New economic Reforms – Liberalization, Privatization and Globalization..
NOVEMBER/25	UNIT-III	Agriculture – Nature and importance, Trends in agricultural production and productivity, Factors determining productivity, Land reforms, New agricultural strategies and green revolution, Rural credit, Agricultural Marketing
DECEMBER/21	UNIT –IV	Industry – Industrial Development during the planning period, Industrial policy. Industrial licensing policy – MRTP Act, FERA and FEMA,
JANUARY/26	UNIT –IV	Growth and problems of small scale industries, Role of public sector enterprises in India's industrialization
FREBRUARY/24	UNIT –V	External Sector – Role of foreign trade, trends in exports and imports, Composition and direction of India's foreign trade, Balance of payments crisis and the new economic reforms – Export promotion measures and the new trade policies. Important areas of concern- Poverty, inequality and unemployment, Rising Prices.

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**PROPOSED TEACHING PLAN FOR THE SESSION 2017-18**

**B.A. II ECONOMICS**

**PAPER- I**

**MACRO ECONOMICS**

MONTH/DAYS	UNIT	TOPIC
JULY /26	UNIT –I	National Income:-Concept and Measurement of National Income; Economic welfare and national income, Social accounting. Circular flow of income. National Income accounting, Green accounting.
AUGUST/25	UNIT-I	Classical theory of employment, Say's Law of Markets, Keynesian theory of employment
SEPTEMBER/23	UNIT-II	Consumption function – Average and marginal propensity to consume; Keynes's psychological law of consumption, determinants of the consumption function. The saving function. The investment multiplier and its effectiveness. , The investment function – marginal efficiency of capital, autonomous and induced investment. Saving and investment equality
OCTOBER/21	UNIT-III	Nature and characteristics of trade cycle; theories of trade cycle , Hawtrey's monetary theory; Hayek's over investment theory
NOVEMBER/25	UNIT-III	Keynes' view on trade cycle; Schumpeter's theory of innovation. Samuelson and Hicks multiplier- accelerator model, Control of trade cycles.
DECEMBER/21	UNIT –IV	International Trade – Inter-regional and international trade, Comparative advantage cost theory, opportunity Cost theory and Hecksher-Ohlin theory.
JANUARY/26	UNIT –IV	International trade and economic development, Tariffs & import Quotas. Concept of optimum tariff. Balance of trade & Balance of Payment- Concept & Components of BOP, Equilibrium & Disequilibrium in BOP. Relative merits & demerits of devaluation. Foreign Trade Multiplier.
FREBRUARY/24	UNIT –V	Functions and objective of international monetary fund, World Bank and world trade organization, international monetary reform and India, Foreign Trade in India- recent Changes in the Composition and direction of foreign trade. India's balance of payment, export promotion and import substitution in India, multinational corporation and India.

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**PROPOSED TEACHING PLAN FOR THE SESSION 2017-18**

**B.A. II ECONOMICS**

**PAPER- II**

**MONEY BANKING AND PUBLIC FINANCE**

<b>MONTH/DAYS</b>	<b>UNIT</b>	<b>TOPIC</b>
JULY /26	UNIT –I	Basic concepts: Money – Meaning and functions, Gresham's law; Quantity theory of money – Cash transaction and cash balance approaches;
AUGUST/25	UNIT-I	Value of Money- Inflation, deflation and reflation, definition, types, causes and effects of inflation on different sectors of the economy; Demand pull and cost push inflation; Measures to control inflation. Phillips curve, concept
SEPTEMBER/23	UNIT-II	Commercial banking- meaning and types; Functions of commercial banks, The process of credit creation purpose and limitations; Liabilities and assets of banks; Functions of a central bank, Role and functions of the Reserve bank of India; Objectives and limitations of monetary policy with special reference to India.
OCTOBER/21	UNIT-III	Meaning and scope of public finance; Distinction between private and public finance; public goods v/s private goods; The principle of maximum social advantage; Role of the government in economic activities;
NOVEMBER/25	UNIT-III	Public expenditure – Meaning, classification and principles of public expenditure, Trends in public expenditure and causes of growth of public expenditure in India.
DECEMBER/21	UNIT –IV	Sources of Public revenue- Taxation – Meaning, Canons and classification of taxes; Division of tax burden. The benefit and ability to pay approaches; Impact and incidence of taxes;
JANUARY/26	UNIT –IV	Taxable capacity; Effects of taxation; Characteristics of a good tax system, equity and justice in taxation Major trends in tax revenue of the Central and state Government in India
FREBRUARY/24	UNIT –V	Public debt and financial administration- Sources of public borrowing effects of public debt. Methods of debt redemption.  The public budget- Kinds of budget, Economic and functional classification of the budget; Preparation and passing of budget in India.



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**PROPOSED TEACHING PLAN FOR THE SESSION 2017-18**

**B.A. III ECONOMICS**

**PAPER- I**

**DEVELOPMENT AND ENVIRONMENTAL ECONOMICS**

<b>MONTH/DAYS</b>	<b>UNIT</b>	<b>TOPIC</b>
JULY /26	UNIT –I	Economic Growth and Development – Factors affecting economic growth, Capital and Technology Development & under development, Population of Under-developed Countries,
AUGUST/25	UNIT-I	Poverty-Absolut & Relative, Measuring development and Under development, Gap per capita income, Inequity of income and wealth. Human Development index GDI, GEM, Poverty Index of development & Quality of life.
SEPTEMBER/23	UNIT-II	Population problem and growth, pattern of population. Theory of demographic transition. Population poverty & Environment. Theory of Social Change, Immutable laws of Capitalist Development-Crisis in capitalism. Karl Marx, Mahalonobis Model. Schumpeter, Big-Push, Balance and unbalanced Growth, Critical Minimum Effort thesis, Low-Income Equilibrium Trap, Dualism: technical, behavioural & social
OCTOBER/21	UNIT-III	Harrod and Domar Growth Model, Neo Classical models, Solow
NOVEMBER/25	UNIT-III	Meade & Mrs. Joan Robinson's Growth model, Unlimited supply of Labour.
DECEMBER/21	UNIT –IV	Environment and Ecology: Economic linkage, Environment as a necessary and luxury, Population environment linkage, Environmental use & environmental disruption as an allocation problem. Market Failure for environmental goods, environment as a public good, the Common Property problem.
JANUARY/26	UNIT –IV	Human Right approach to environmental problem, valuation of environmental damages; land, water, air & forest pollution Control-Prevention. Control and abetment of pollution, Choice of policy instrument
FREBRUARY/24	UNIT –V	Concept of Intellectual Capital – Food Security, Education Health & Nutrition, Efficiency & Productivity in Agriculture, New Technology & Sustainable Agriculture, Globalization & Agriculture growth, the Choice of Technique & appropriate technology & employment, Role of Monetary & Fiscal policies in developing Countries

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**PROPOSED TEACHING PLAN FOR THE SESSION 2017-18**

**B.A. III ECONOMICS**

**PAPER- II**

**STATISTICAL METHODS**

MONTH/DAYS	UNIT	TOPIC
JULY /26	UNIT –I	Statistical Methods Statistics – Definition Statistical Data, Statistical Methods, Functions of Statistics. Importance of Statistics, Limitations of Statistics, Statistical Survey & Report writing.
AUGUST/25	UNIT-I	Collection of Data, Primary & Secondary Data, Sampling & Sampling Designs. Sampling Errors, Frequency Distribution, Diagrammatic & Graphic Presentation
SEPTEMBER/23	UNIT-II	Central Tendency. Measurement of Mean, Median, Mode, Geometric Mean & Harmonic Mean and their uses.
OCTOBER/21	UNIT-III	Dispersion : Meaning of Dispersion, Properties, good measure of Variation – Methods of Dispersion Range, Quartiles Deviation – Mean Deviation,
NOVEMBER/25	UNIT-III	Standard Deviation, Coefficients of Variation, Lorenz Curve, Skewness & Kurtosis.
DECEMBER/21	UNIT–IV	Coefficient of Correlation – Karl Pearson's Method, Probable Error, Spearman's Rank Correlation Coefficient.
JANUARY/26	UNIT–V	Index Number – Construction of Index Numbers, Simple & weighted Index Number's- Fisher's Ideal Index Number & Reversal Test. Consumer Price Index Numbers and Time Series Analysis – Components of Time-Series.
FREBRUARY/24	UNIT –V	Measurement of Trend – Graphic Method, Semi Average Method. Moving averages, Least Square Method, Measuring Trend by logarithms.

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**DEPARTMENT OF ENGLISH**  
**BA/B.SC /B.COM– I**  
**ENGLISH LANGUAGE (FOUNDATION COURSE)**  
**TEACHING PLAN SESSION: 2017-18**  
**PAPER – II-**

MONTH	PROPOSED PLAN
JULY	Unit – 1-Basic language skills: Grammar and Usage- Grammar and Vocabulary based on the prescribed text-Article –Lesson 1,2
AUGUST	<b>Unit – 2-Comprehension of an unseen passage</b> Lesson 3 ,4,5
SEPTEMBER	<b>Unit – 3-Composition:</b> Paragraph writing. Lesson 6,7
OCTOBER	<b>Unit – 4-Letter writing</b> Lesson 8,9
NOVEMBER	<b>Unit – 5-Texts:</b> Lesson 10 11, Grammar- Tenses
DECEMBER	<b>Unit – 5-Texts:</b> Lesson 12.13 Grammar-Direct & indirect Speech
JANUARY	<b>Unit – 5-Texts:</b> Lesson 14.15 Grammar-Active & Passive Voice
FEBRUARY	Grammar-Preposition/Modals etc. REVISION

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**DEPARTMENT OF ENGLISH**  
**B.A. – I ENGLISH LITERATURE**  
**TEACHING PLAN SESSION: 2017-18**  
**Paper – I Literature in English**  
**(1550 – 1750)**

MONTH	PROPOSED PLAN
July	Introduction to Literature, Definition and characteristics of poetry. Forms of Poetry: Lyric, Ode, Elegy, Sonnet, Epic. Unit – 2 Poetry – a. William Shakespeare – Sonnet Number 1 <i>From Fairest Creatures</i> , Sonnet Number 154 <i>The Little Love God</i>
August	Unit – 2 Poetry Milton – <i>How Soon Hath Time the Subtle Thief of Youth</i> John Donne – <i>Sweetest Love I don't Go, This is my Place Last Scene</i>
September	Unit – 3 Poetry a. John Dryden – <i>Portrait of Shadwell</i> b. Alexander Pope – <i>From 'An Essay on Criticism'</i>
October	Unit – 4 Prose a. Francis Bacon – ' <i>Of Studies</i> ', ' <i>Of Regiment Of health</i> ', ' <i>Of Friendship</i> ' b. Joseph Addison – ' <i>Sir Roger at Home</i> ' c. Richard Steele – ' <i>Of the Club</i> '
November	Unit – 5 Drama William Shakespeare – ' <i>The Merchant of Venice</i> ' Unit – 6 Fiction Johnathan Swift – <i>The Battle of the Books</i>
December	Unit – 7 Historical and Literary Topics <i>The Renaissance, Humanism, Re-Formation, The Civil War and Protectorate, The Restoration, The Rise of Colonialism.</i>
January	Unit – 7 Earlier Drama, Petrarchism and the Sonnet Cycle, The Influence of Seneca and Classical Dramatic Theory, The Elizabethan and Jacobean stage. English Renaissance Drama, Restoration drama, The Rise of Periodical Essay.
February	Revision

GOVERNMENT D. B. GIRLS P. G. AUTONOMOUS COLLEGE RAIPUR,  
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**DEPARTMENT OF ENGLISH**  
**B.A. – I ENGLISH LITERATURE**  
**TEACHING PLAN SESSION: 2017-18**  
**PAPER – II- Literature in English from 1750 – 1900**

MONTH	PROPOSED PLAN
JULY	History and background of English Literature UNIT – II <b>POETRY</b> Blake – Tiger, Tiger Burning Bright.
AUGUST	UNIT – II <b>POETRY</b> Wordsworth – Daffodils and Solitary Reaper Coleridge – Frost at Midnight UNIT – III <b>POETRY</b> Shelley – Ode to Skylark Keats – Ode to Autumn
SEPTEMBER	UNIT – III <b>POETRY</b> Tennyson – Crossing the Bar Browning - Prospice UNIT – IV-PROSE Lamb – Dream Children : A Reverie Hazlitt – On Actors and Acting
OCTOBER	UNIT – V-FICTION Jane Austen – Pride and Prejudice
NOVEMBER	UNIT – VI-FICTION Charles Dickens – David Copperfield
DECEMBER	UNIT – VII Historical and Literary Topics The Reform Act, The Impact of Industrialization, Colonialism and Imperialism ,Scientific thoughts and Discoveries
JANUARY	UNIT – VII Historical and Literary Topics Faith and Doubt Classical and Romantic Concepts of Imagination Varieties of Romantic and Victorian Poetry The Victorian Novel ,Realism and the Novel, Aestheticism
FEBRUARY	UNIT – VII Historical and Literary Topics The Victorian Novel Realism and the Novel Aestheticism REVISION

GOVERNMENT D. B. GIRLS P. G. AUTONOMOUS COLLEGE RAIPUR,  
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**DEPARTMENT OF ENGLISH**  
**BA/B.SC /B.COM– II**  
**ENGLISH LANGUAGE (FOUNDATION COURSE)**  
**TEACHING PLAN SESSION: 2017-18**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
July	Unit – 1 Basic Language Skills, Grammar and Usage – Grammar and Vocabulary based on the prescribed text, Lesson 1 & 2 Articles, Auxiliary Verbs
August	Unit – 2 Lesson 3 & 4, Comprehension of unseen Passage
September	Unit – 3 Lesson 5 & 6, Report Writing
October	Unit – 4 Lesson 7 & 8, Expansion of Idea
November	Unit – 5 Lesson 9 & 10 Nouns and Pronouns, Adjectives and Adverb, Pre-positions
December	Unit – 6 Lesson 11 & 12, Non- Finite Verbs, Tenses
January	Unit – 7 Lesson 13 & 14 Tenses
February	Conditional Tenses, Modal Verbs, Active and Passive Voice Revision

**DEPARTMENT OF ENGLISH**  
**B.A. – II ENGLISH LITERATURE**  
**TEACHING PLAN SESSION: 2017-18**  
**Paper – I Modern English Literatures**

MONTH	PROPOSED PLAN
July	Introduction to syllabus, Characteristics of Modern Literature, Modern Novel, Modern Drama, Modern Poetry
August	Unit – 2 Poetry a. W. B. Yeats – <i>A Prayer for my Daughter, Byzantium.</i> b. T. S. Eliot – <i>Love Song of J. Alfred Prufrock</i>
September	Unit – 3 Poetry a. Dylan Thomas – <i>Lament, A Refusal to Mourn the Death.</i> b. Philip Larkin – <i>Toads, At Grass</i>
October	Unit – 4 Prose a. Bertrand Russel – <i>On the Value of Scepticism</i> b. Oscar Wilde – <i>The Happy Prince</i>
November	Unit – 5 Drama G. B. Shaw – <i>Pygmalion</i>
December	Unit – 6 Fiction and short stories a. Rudyard Kipling – <i>Kim</i> b. Catherine Mansfield – <i>A Cup of Tea</i>
January	Unit – 7 1. Elegy 2. Sonnet 3. Ode 4. Morality and Miracle Play 5. One Act Play 6. Interlude
February	Revision

GOVERNMENT D. B. GIRLS P. G. AUTONOMOUS COLLEGE RAIPUR,

CHHATTISGARH

**DEPARTMENT OF ENGLISH**

**B.A. – II ENGLISH LITERATURE**

**TEACHING PLAN SESSION: 2017-18**

**Paper – II Modern English Literatures (Paper Code - 0176)**

MONTH	PROPOSED PLAN
JULY	Unit – 1- W.H.Auden-Seascape <b>Unit – 2- POETRY</b> Sassoon-At the Grave of Henry Vaughan Owen, W. H.-Strange Meeting
AUGUST	<b>Unit – 3 POETRY</b> Ted Hughes-The Howling of the Wolves
SEPTEMBER	<b>UNIT –IV</b> <b>PROSE</b> Robert Lynd- Forgetting H.Belloc-A conversation with a Reader
OCTOBER	<b>UNIT –V DRAMA</b> John Galsworthy-Strife
NOVEMBER	<b>Unit – V- DRAMA</b> J.M. Synge-Rider to the Sea.
DECEMBER	<b>UNIT –VI</b> FICTION William Golding-Lord of the Flies
JANUARY	<b>UNIT –VII</b> Simile, Metaphor, Alliteration , Onomatopoeia, Ballad, Epic, Dramatic Monologue
FEBRUARY	REVISION



GOVERNMENT D. B. GIRLS P. G. AUTONOMOUS COLLEGE RAIPUR,  
CHHATTISGARH  
**DEPARTMENT OF ENGLISH**

**BA/B.SC /B.COM– III**  
**ENGLISH LANGUAGE (FOUNDATION COURSE)**  
**TEACHING PLAN SESSION: 2017-18**  
**PAPER – II-**

MONTH	PROPOSED PLAN
JULY	Unit – 1- Grammar and Vocabulary based on the prescribed text-Articles, Preposition –Lesson 1,2
AUGUST	<b>Unit – 2-</b> Essay writing Lesson 3 ,4,5
SEPTEMBER	<b>Unit – 3</b> Precis writing Lesson 6,7
OCTOBER	<b>Unit – 4-Comprehension of an unseen passage</b> Lesson 8,9
NOVEMBER	<b>Unit – 5-</b> Grammar- Tenses Lesson 10 11
DECEMBER	Grammar-Direct & indirect Speech Lesson 12.13
JANUARY	Lesson 14.15 Grammar-Active & Passive Voice
FEBRUARY	Grammar- Modals/Question Tags etc. REVISION

GOVERNMENT D. B. GIRLS P. G. AUTONOMOUS COLLEGE RAIPUR,  
CHHATTISGARH  
**DEPARTMENT OF ENGLISH**

**B.A. – III ENGLISH LITERATURE**  
**TEACHING PLAN SESSION: 2017-18**  
**PAPER – I INDIAN WRITING IN ENGLISH**

MONTH	PROPOSED PLAN
JULY	History and background of Indian Writing in English UNIT – II POETRY Toru Dutt - Our Casuarina Tree Tagore - Songs 1 and 103 from ‘Gitanjali’
AUGUST	UNIT – III Kamala Das - The Old Playhouse Gauri Deshpandey - The Female of the species , Jayant Mahapatra - Dawn at Puri K. N. Daruwala - Death by Burial , Shiv K. Kumar - Indian Women
SEPTEMBER	UNIT – IV-PROSE Nirad C. Chaudhary - My Birth Place Dr. S. Radhakrishnan - The call of the Suffering
OCTOBER	UNIT – V -DRAMA Girish Karnad Hayavadana Tendulkar Silence! The Court is in Session.
NOVEMBER	UNIT – V -DRAMA Girish Karnad Hayavadana Tendulkar Silence! The Court is in Session.
DECEMBER	UNIT – VI FICTION- R.K.Narayan -Guide
JANUARY	UNIT – VII Lyric, Subjective Poetry, Couplet, Fable, Hymn, Allegory ,Autobiography
FEBRUARY	REVISION

GOVERNMENT D. B. GIRLS P. G. AUTONOMOUS COLLEGE RAIPUR,  
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**DEPARTMENT OF ENGLISH**

**B.A. – III ENGLISH LITERATURE**  
**TEACHING PLAN SESSION: 2017-18**  
**Paper – II American Literature**

MONTH	PROPOSED PLAN
JULY	Unit – 1- POETRY Walt Whitman-Oh Captain! My Captain,
AUGUST	<b>Unit – 2- POETRY</b> Walt Whitman - When the Lilacs lasts in the Dooryard Bloomed. Carl Sandberg-Who Am I? 'I am the People, the Mob'
SEPTEMBER	<b>Unit – 3 POETRY</b> Emily Dickinson-Hope is the Thing with feather, I felt a Funeral in my Brain' E.E. Cummings-The Cambridge Ladies As Freedom is a Breakfast Food
OCTOBER	<b>Unit – 4- PROSE</b> William Faulkner-Nobel Award acceptance Speech, W. Carlos Williams-In the American Grain
NOVEMBER	<b>Unit – 4 – PROSE</b> Walt Whitman-Preface to 'Leaves of Grass'
DECEMBER	<b>UNIT-V DRAMA</b> Eugene O' Neil-The Hairy Ape
JANUARY	<b>UNIT-VI FICTION</b> Ernest Hemingway- A Farewell to Arms, W.Faulkner- The Sound and the Fury
FEBRUARY	<b>UNIT-VII</b> Naturalism, Realism, Art for Art's Sake, Poetic Drama, Symbolism, American Renaissance, Existentialism REVISION

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2017-18  
TEACHING PLAN  
B. A. I GEOGRAPHY  
PAPER-I**

**TITLE OF THE PAPER: ELEMENTS OF PHYSICAL GEOGRAPHY**

MONTH	PROPOSED PLAN
JULY	<b>The nature and scope of Physical Geography; Inter relation of Physical Geography with other branches of earth science. The place of Geomorphology in Physical Geography,</b>
AUGUST	<b>Geological Time scale. Earth's interior, Wegner's theory of Continental Drift, Plate Tectonics. Earth movements: - orogenic and epeirogenic</b>
SEPTEMBER	<b>Earthquakes and Volcanoes.</b>  <b>Rocks - Origin and composition of rocks, weathering, formation of regolith and soils, rocks and relief.</b>
OCTOBER	Geomorphic agents and processes-erosion, transportation and deposition, mass wasting. Evolution of Land scape, concept of cycle of erosion, interruption of cycle of erosion.
NOVEMBER	<b>Fluvial, Arid, Glacial, Karst and Coastal Landscapes.</b>
DECEMBER	<b>Application of Geomorphology to Hydrology, Mining, Engineering works.</b>
JANUARY	<b>Hazard management and urbanization.</b>
FEBURARY	Revision

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2017-18  
TEACHING PLAN  
B. A. I GEOGRAPHY  
PAPER-II**

**TITLE OF THE PAPER: INTRODUCTION TO GEOGRAPHY & HUMAN GEOGRAPHY**

<b>MONTH</b>	<b>PRAPOSED PLAN</b>
<b>JULY</b>	The Nature of Geography, objectives and relevance, Place of Geography in the classification of Sciences,
<b>AUGUST</b>	Geography and other disciplines. Geography as the study of environment, man - environment relationship; ecology and ecosystems.
<b>SEPTEMBER</b>	Environmental determinism possibilism Neo - determinism; Dualism in Geography - Systematic / Regional, Physical/Human, Complementarity.
<b>OCTOBER</b>	Definition and scope of Human Geography. Human Races - Their characteristics and distribution. Human adaptation - To the environment; Eskimos, Bushman, Pigmy, Gond, Masai, and Naga
<b>NOVEMBER</b>	Growth of Population; Distribution of Population, world distribution pattern - physical, economic and social factors influencing spatial distribution,
<b>DECEMBER</b>	concept of overpopulation under population and optimum population. Migration - internal and international Settlements - Types and patterns of settlements.
<b>JANUARY</b>	A brief historical overview of Geography as a discipline, recent trends in geography with special reference to India, imperatives for the future, career opportunities for geographers.
<b>FEBURARY</b>	Revision

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2017-18  
TEACHING PLAN  
B.A. I GEOGRAPHY  
PRACTICAL**

MONTH	PRAPOSED PLAN
JULY	
AUGUST	Scale - Plain, Time, Diagonal and Comparative. Methods of showing relief - hachures, contours; Representation of different land forms by contours
SEPTEMBER	Line graph & Bar graph (Simple & Compound), Circle Diagram, wind rose.
OCTOBER	Mean, Median and Mode
NOVEMBER	Chain and tape Survey.
DECEMBER	Chain and tape Survey.
JANUARY	Chain and tape Survey.
FEBURARY	

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2017-18**

**TEACHING PLAN**

**B. A.II GEOGRAPHY**

**PAPER-I**

**TITLE OF THE PAPER: CLIMATOLOGY AND OCEANOGRAPHY**

MONTH	PRAPOSED PLAN
JULY	Weathers and climate; definition and significance of climatology. Elements of weather and climate; their causes. Composition and structure of the atmosphere.
AUGUST	Atmospheric Temperature: Insolation and Global energy budget, vertical, horizontal and seasonal distribution of temperature. : Vertical and horizontal distribution of pressure; planetary, periodic and local winds.
SEPTEMBER	Atmospheric moisture: humidity, evaporation; and condensation; hydrological cycle; types of precipitation, world patterns of rainfall: regional and seasonal distribution
OCTOBER	Atmospheric moisture: humidity, evaporation; and condensation; hydrological cycle; types of precipitation, world patterns of rainfall: regional and seasonal distribution
NOVEMBER	Relevance of oceanography in earth and atmospheric science. Definition of oceanography, Surface configuration of the ocean floor, continental shelf, continental slope, abyssal plain, mid-oceanic ridges and oceanic trenches. Relief of Atlantic, pacific and Indian oceans.
DECEMBER	Distribution of temperature and salinity of oceans and seas Circulation of oceanic waters ; Waves, tides and currents, currents of the Atlantic, Pacific and Indian ocean
JANUARY	storehouse of resources for the future
FEBURARY	Revision

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2017-18**

**TEACHING PLAN**

**B. A.II GEOGRAPHY**

**PAPER-II**

**TITLE OF THE PAPER: REGIONAL GEOGRAPHY WITH SPECIAL REFERENCE TO NORTH AMERICA**

MONTH	PRAPOSED PLAN
JULY	Regional concept, bases of regionalization NORTH AMERICA: Structure, Relief Climate.
AUGUST	Soil, Forest, Mineral and Energy resources
SEPTEMBER	Agriculture - Major crops, Agricultural belts Livestock, Dairy farming
OCTOBER	Industries Localization, development & production - Iron and steel, Cotton Textile, Heavy Engineering,
NOVEMBER	Transport, Trade. Industrial region. Population
DECEMBER	Detailed study of regions: California valley, new England Region, Alaska
JANUARY	Prairie Region, St. Lawrence Valley
FEBURARY	Revision



**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2017-18  
TEACHING PLAN  
B. A.II GEOGRAPHY  
PRACTICAL**

MONTH	PROPOSED PLAN
JULY	
AUGUST	Distribution Maps: Dot, Choropleth & Isopleth
SEPTEMBER	Map Projections: Definition and classification, Cylindrical projections- simple, equal area, Gall's, Mercator's
OCTOBER	Interpretation of weather maps : Use of meteorological instruments.
NOVEMBER	Statistical Methods: Quartile: Mean deviation, standard deviation and Quartile deviation; Relative variability and co-efficient of variation.
DECEMBER	Surveying-Prismatic Compass Survey: open and closed traverse, correction of bearing, calculation of interior angles.
JANUARY	Surveying-Prismatic Compass Survey: open and closed traverse, correction of bearing, calculation of interior angles.
FEBURARY	

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2017-18**

**TEACHING PLAN**

**B.A. III GEOGRAPHY**

**PAPER-I**

**TITLE OF THE PAPER: RESOURCE AND ENVIRONMENT**

MONTH	PRAPOSED PLAN
JULY	Meaning, nature and components of resources and environment. Resources and environment interface. Classification of resources: renewable and nonrenewable: biotic (forests, wild-life, live-stock, fisheries, agricultural crops)
AUGUST	abiotic (land, water, mineral) Distribution and utilization of water mineral and energy resources, their economic and environmental significance and conservation. Types and distribution of forests, fauna and fisheries, their economic, and environmental significance and conservation. Major soil types and their distribution; problems of soil erosion and soil conservation
SEPTEMBER	Number, density, growth and distribution of population; population pressure and resource utilization.
OCTOBER	Classification of environment: Natural and Human. Man, environment interrelations with respect to population size, types of economy and technology;
NOVEMBER	exploitation of natural resources and environmental hazards. Emerging environmental issues - population explosion; food security
DECEMBER	deforestation; global warming, conservation of bio-diversity; sustainable development.
JANUARY	deforestation; global warming, conservation of bio-diversity; sustainable development.
FEBURARY	Revision

# GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

SESSION 2017-18

TEACHING PLAN

B. A. III GEOGRAPHY

PAPER-II

TITLE OF THE PAPER: GEOGRAPHY OF INDIA WITH REFERENCE TO CHHATTISGARHS

MONTH	PRAPOSED PLAN
JULY	Physical features: Structure, Relief, climate and soils. Physiographic regions, Drainage, Climate-origin and mechanism of monsoon, and regional and seasonal variation
AUGUST	Natural resources: Soils - types, their distribution and characteristics. Water resources (major irrigation and hydel power projects); Forests-types, distribution, economic significance and conservation. Mineral and Power Resources-Iron-ore, Manganese, Copper, Coal, Petroleum and Natural gas, Non-conventional sources of energy
SEPTEMBER	Cultural Features: Agriculture - Major crops, impact of green revolution and agricultural regions
OCTOBER	Industries Localization, development & production - Iron and steel, Cotton Textile, Cement, Sugar, Population - growth, density and distribution. Transport, Foreign Trade.
NOVEMBER	Physical features: Structure, Physiography, Drainage, Climate.  Soils. Forest resources, Water resources hydel power projects. Mineral resources-power resources
DECEMBER	Cultural Features: Agriculture . Population : Density distribution, Tribal Population. Industries, Trade and Transport, Tourism, Socio Economic development.
JANUARY	Revision
FEBURARY	Revision

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2017-18**

**TEACHING PLAN**

**B. A.III GEOGRAPHY**

**PRACTICAL**

MONTH	PROPOSED PLAN
JULY	
AUGUST	Band graph, Hythergraph and Climograph. Square root, cube-root and vernier scales
SEPTEMBER	Map Projection: Conical Projection: one standard parallel, two standard parallels, Bonne's, Polyconic, Polar Zenithal Projections; Gnomonic, Stereographic and Orthographic
OCTOBER	Study and Interpretation of Indian topographical sheets: classification and numbering system, Interpretation of topographical sheets with respect to cultural and physical features.
NOVEMBER	Importance of field work in Geography. Field work and field report: physical, social and economic survey of a micro-region.
DECEMBER	Surveying - Plane Table Survey, Basic Principles of plane table surveying, Plane table survey including intersection and resection.
JANUARY	Surveying - Plane Table Survey, Basic Principles of plane table surveying, Plane table survey including intersection and resection.
FEBURARY	

**प्राचार्य शास. दू.ब. महिला स्नात.(स्वशासी) महाविद्यालय**  
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टीचिंग प्लान "हिन्दी" सत्र 2017-18

प्रस्तावित पाठ्यक्रम बी.ए. प्रथम वर्ष

क्र.	माह/दिन	स्नातक हिन्दी साहित्य	बी.ए./बी.एस.सी./बी.कॉम. बी.एच.एस.सी. I वर्ष
1	जुलाई/26	इकाई, प्रश्न पत्र I, II	(क) पल्लवन, पत्रचार, अनुवाद, परिभाषिक शब्दावली
2	अगस्त/25	इकाई II जायसी, गबन	इकाई I (क) हिंदी के पदनाम (ख) ईदगाह कहानी
3	सितम्बर/23	इकाई III सूर, कफन, कहानी	इकाई II (क) शब्द शुद्धि, वाक्य शुद्धि, पर्यायवाची शब्द, अनेकार्थी शब्द, समश्रुत शब्द
4	अक्टूबर/21	इकाई IV तुलसी, आकाशदीप, परदा	इकाई II (क) अनेक शब्दों के लिए एक शब्द, मुहावरे, लोकोक्ति (ख) भारत वंदना
5	नवम्बर/25	इकाई V तुलसी, धनानंद सेठ, मलवे का मालिक, चीफ की दावत	इकाई III (क) देवनागरी लिपि, नामकरण, स्वरूप एवं देवनागरी लिपि की विशेषता
6	दिसम्बर/21	इकाई V विद्यापति, रहीम, जली हुई रस्सी, गदल	इकाई III (क) अपठित गद्यांश, संक्षेपण (ख) भोलाराम का जीव
7	जनवरी/26	इकाई V रसखान, अश्क, रेड्डी, शिवानी	इकाई V (क) कम्प्यूटर का परिचय एवं कम्प्यूटर का अनुप्रयोग (ख) शिकागो से स्वामी विवेकानंद का पत्र
8	फरवरी/24	पुनरावृत्ति	(क) मानक हिंदी (ख) सामाजिक गतिशीलता पुनरावृत्ति

**प्राचार्य शास. दू.ब. महिला स्नात.(स्वशासी) महाविद्यालय**  
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सत्र 2017-18

प्रस्तावित पाठ्यक्रम बी.ए. द्वितीय वर्ष

क्र.	माह/दिन	स्नातक हिन्दी साहित्य	बी.ए./बी.कॉम./बी.एस.सी. बी.एच.एस.सी./हिन्दी भाषा
1	जुलाई/26	इकाई I प्रश्न पत्र I, II मैथिलीशरण गुप्त	खण्ड (क) महात्मा गांधी, विनोबा भावे, (ख) हिंदी भाषा के विविध रूप
2	अगस्त/25	इकाई II प्रश्न पत्र I, II सूर्यकांत त्रिपाठी निराला अंधेर नगरी	(क) आचार्य नरेन्द्र देव वर्मा (ख) कार्यालयीन भाषा, मीडिया की भाषा
3	सितंबर/23	इकाई II प्रश्न पत्र I, II पंत, निबंध-क्रोध, बसंत	(क) वासुदेव शरण अग्रवाल (ख) वित्त एवं वाणिज्य की भाषा
4	अक्टूबर/21	इकाई III प्रश्न पत्र I, II चतुर्वेदी, उस अमराई ने राम-राम कही है	खण्ड ग- अनुवाद व्यवहार, अंग्रेजी से हिंदी में अनुवाद
5	नवम्बर/25	इकाई IV प्रश्न पत्र I, II अज्ञेय, एकांकी, स्ट्राईक, एक दिन	खण्ड ग- हिंदी की व्याकरणिक कोटियाँ
6	दिसंबर/21	इकाई V प्रश्न पत्र I, II हरिऔध, सुभद्रा कुमारी चौहान, दस हजार	खण्ड क- हिमालय की व्युत्पत्ति खण्ड ग- संज्ञा, सर्वनाम
7	जनवरी/26	इकाई V प्रश्न पत्र I, II श्रीकांत वर्मा, मम्मी ठकुराइन, राहुल सांकृत्यायन	खण्ड क- डॉ. खूबचंद बघेल खण्ड ग- विशेषण, क्रिया, विशेषण
8	फरवरी/24	पुनरावृत्ति	पुनरावृत्ति

**प्राचार्य शास. दू.ब. महिला स्नात.(स्वशासी) महाविद्यालय**  
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सत्र 2017-18

प्रस्तावित पाठ्यक्रम बी.ए. तृतीय वर्ष

क्र.	माह/दिन	स्नातक हिन्दी साहित्य	बी.ए./बी.कॉम./बी.एस.सी. बी.एच.एस.सी./टि.या.
1	जुलाई/26	इकाई I प्रश्न पत्र I, II छत्तीसगढ़ी भाषा का इतिहास हिंदी भाषा का स्वरूप	इकाई I (क) भारत माता, परशुराम की प्रतीज्ञा (ख) कथन की शैलियाँ
2	अगस्त/25	इकाई II प्रश्न पत्र I, II संत धर्मदास, हिन्दी साहित्य का इतिहास, भाषा के विभिन्न रूप	इकाई I (क) बहुत बड़ा सक इकाई II (ख) विकासशील देशों की समस्याएँ
3	सितंबर/23	इकाई II प्रश्न पत्र I, II लखनलाल गुप्त, हिन्दी का शब्द भण्डार— तत्सम, तद्भव, देशज, आगत	इकाई II (क) विकासात्मक पुनर्विचार और प्रौद्योगिकी, (ख) विभिन्न संरचनाएँ
4	अक्टूबर/21	इकाई III प्रश्न पत्र I, II अर्वाचीन रचनाकार, युग प्रवृत्तियाँ	इकाई III (क) आधुनिक तकनीकी सभ्यता, पर्यावरण प्रदूषण (ख) कार्यालयीन पत्र और आलेख
5	नवम्बर/25	इकाई III प्रश्न पत्र I, II डॉ. सत्यभामा आड़िल काव्यांग— रस के भेद	इकाई IV (क) जनसंख्या भारत के संदर्भ में और गरीबी तथा बेरोजगारी (ख) अनुवाद
6	दिसंबर/21	इकाई IV प्रश्न पत्र I, II डॉ. विनय पाठक, छंद, अर्थालंकार	इकाई V (क) ऊर्जा और शक्तिमानता का अर्थशास्त्र
7	जनवरी/26	इकाई V प्रश्न पत्र I, II मुकुंद कौशल, द्रुतपाठ, शब्दालंकार	इकाई V (ख) घटनाओं, समारोहों आदि का प्रतिवेदन और विभिन्न प्रकार के निमंत्रण पत्र
8	फरवरी/24	पुनरावृत्ति	पुनरावृत्ति

B A I HISTORY -I PAPER- HISTORY OF INDIA [up to 1206]

SESSION -2017-18

S N	MONTH	PLAN
1	JULY	Survey of sources of Indian history Geographical features of India Pre historic age – Early stone age ,Neolithic age Harappan civilization
2	AUGUST	Salient features of Harappan civilization Political, social and economic life of the Harappan age Pre Vedic age [Rigvedic period] Later Vedic period – social ,political and economic life. Civilization and culture of Epic era
3	SEPTEMBER	India of the 6 <sup>th</sup> century B C – Buddhism and Jainism Rise of the Magadha empire Alexander’s invasion of India and their effects
4	OCTOBER	Establishment of Maurya empire- Chandra Gupta Maurya Ashoka- Ashoka’s dharma Maurya administration ,economical arrangement Art and culture
5	NOVEMBER	Post Maurya period -Shunga, Satavahana Kushan dynasty -Kanishka Sangam period- literature and culture Chol dynasty



6	DECEMBER	<p>Chol administration</p> <p>Pandya dynasty</p> <p>Gupta empire – administration.</p> <p>Economic social and cultural condition</p> <p>Rajput period – Pallava and chalukya</p>
7	JANUARY	<p>Vardhan ,Vakataka ,Pratihara</p> <p>Pal ,Sen ,Rashtrakut dynasty</p> <p>India's relations with south east Asia and Shree Lanka</p> <p>Muhammad bin Qasim</p>
8	FEBRUARY	<p>Invasion of Mahmud Gaznabi and Muhammad Gori</p> <p>Status of woman</p> <p>Rivision</p>

**B.A 1<sup>ST</sup> YEAR HISTORY**  
**2<sup>ND</sup> PAPER-WORLD HISTORY (1453 – 1789)**  
**SESSION (2017-18)**

S NO.	MONTH	PLAN
1	JULY	<p>Introduction- General introduction of second paper</p> <p>Feudalism in the medieval world, fall of the Feudalism</p> <p>The beginning of the modern Era, Characteristics of modern era</p> <p>Renaissance (What do you mean by Renaissance) causes and characteristics.</p>
2	AUGUST	<p>Reformation-what do you understand by reformation.</p> <p>Causes of the reformation, form of reformation-reformation in Germany- role of Martin Luther.</p> <p>Reformation in England.</p> <p>Consequences of the reformation movement.</p>
3	SEPTEMBER	<p>Counter reformation.</p> <p>Thirty years war (1618-1648)</p> <p>Causes, events &amp; results.</p> <p>Rise of the Nation states-</p> <p>Nation states in Spain and France.</p> <p>Nation states in England &amp; Russia-Peter the great and Catherine ii.</p>
4	OCTOBER	<p>Partition of Poland (1773-1795)</p> <p>Causes &amp; partition.</p> <p>Economical base of the modern western world-</p> <p>Mercantilism.</p> <p>Commercial Revolution and their impacts.</p>
5	NOVEMBER	<p>Industrial revolution – Causes, nature and their effects.</p> <p>Colonialism and their results.</p>

		<p>Civil war in England – struggle between parliament and monarchy.</p> <p>Causes of the civil war, incidents and their results.</p>
6	DECEMBER	<p>Glorious revolution in England – 1688.</p> <p>Background, causes, incidents and their results.</p> <p>Period of Cromwell's in England.</p> <p>Louise 14<sup>th</sup> (1668-1730) – Home policy, foreign policy.</p>
7	JANUARY	<p>Independence war of America (1776 – 1783 AD) – Causes, incidents and results.</p> <p>French revolution (1789)- Causes, immediate cause, incidents and results.</p> <p>National Assembly (1789 – 1791).</p>
8	FEBRURARY	REVISION

**B.A 2<sup>nd</sup> YEAR HISTORY**  
**1<sup>st</sup>PAPER- HISTORY OF INDIA (1206-1761)**  
**SESSION (2017-18)**

<b>S NO</b>	<b>MONTH</b>	<b>PLAN</b>
1	<b>JULY</b>	<p>General introduction of the first paper (medieval India)</p> <p>Sources of Sultanate Period.</p> <p>Sources of Mughal Period.</p> <p>Establishment of Delhi Sultanate – Slave dynasty.</p> <p>QutubuddinAibak</p> <p>Ilututmish (1211 – 1236) – works of Ilututmish.</p>
2	<b>AUGUST</b>	<p>Razia Sultana (1236 – 1240)</p> <p>Balban (1266 – 1288) – administrative principles of Balban, Achievements and estimate of Balban.</p> <p>The Khilzi dynasty – conquest and reforms of AlauddinKhilzi.</p> <p>Administrative arrangements of Khilzi.</p>
3	<b>SEPTEMBER</b>	<p>Tughlaq dynasty – Mohammad - bin – Tughlaq (1325 – 1351) - home policy – Mohammad Tughlaq’s schemes of reforms and their failure.</p> <p>Firoz Shah Tughlaq (1351 – 1388)</p> <p>Reforms of Firoz Shah Tughlaq</p> <p>Foreign policy of Firoz Shah</p> <p>Invasion of Timur in India and its effects</p>
4	<b>OCTOBER</b>	<p>Foundation of the Mughal Empire –</p> <p>Babur – political condition of India at the time of Babur invasion.</p> <p>The Battle of Panipat (1526 A.D), Battle of Khanwa,</p>

		<p>Chanderi and Ghaggar.</p> <p>Sher Shah Suri and his administration.</p> <p>Rajput policy of Akbar.</p>
5	<b>NOVEMBER</b>	<p>Religious policy of the Mughal Emperors (Akbar – Aurangzeb).</p> <p>Religious policy of Akbar- Din - e – Illahi.</p> <p>Religious policy of Jahangir, Shahjahan and Aurangzeb.</p> <p>Political institutions and administration.</p> <p>Social and economical condition of sultanate period.</p> <p>Social and economical condition of Mughal period.</p> <p>Religious and cultural condition of Mughal period.</p>
6	<b>DECEMBER</b>	<p>Bhakti movement – Causes and saints.</p> <p>Peculiarities of Bhakti movement.</p> <p>Sufism in India.</p> <p>Art and architecture of Sultanate period.</p> <p>Art and architecture of Mughal period.</p> <p>Education and literature of Sultanate period.</p> <p>Education and literature of Mughal period.</p>
7	<b>JANUARY</b>	<p>Vijayanagar Kingdom – King Krishnadev Rai – Battle of Talikot.</p> <p>Bahmani Kingdom – achievements of the Mahmood Gava.</p> <p>Rise of the Maratha power.</p> <p>Shivaji and his administration.</p> <p>3<sup>rd</sup> Battle of Panipat – causes, incidents and results.</p>
8	<b>FEBRURARY</b>	<p>Revision.</p>

**B A SECOND .HISTORY II PAPER-WORLD HISTORY-1789 TO 1870****SESSION- 2017-18**

S N.	MONTH	PLAN
1	JULY	French revolution – national convention to region of terror Administration of directory -problem and works Rise of Napoleon and his achievements Napoleon as a emperor – 1804 – 1815 A D.
2	AUGUST	Downfall of Napoleon. Venna congress – 1815 A D -Problems ,principles and works United system of Europe – 1815 -1825 A D Metternich – foreign policy
3	SEPTEMBER	July revolution – 1830 – causes ,incidents and results February revolution – 1848 – causes, ,incidents and results Industrial revolution in England – cause ,nature and results Liberalism in England -
4	OCTOBER	First reform act 1832 – provisions and results Second reform act- 1867 Chartist movement -1838 to1848 and their failure
5	NOVEMBER	Achievements of Napoleon third – 1852 to 1870 Eastern problem – because of the rise Greek freedom struggle – 1821 to 1829.
6	DECEMBER	Crimean war – 1854 to 1856 cause s incidents and results Russia – Jar Alexander second

		Unification of Italy –contribution of the Mazzini ,Cavour and Garibaldi.
7	January	Bismarck ,unification of Germany – background, Problems Bismarck contribution of unification of Germany Meiji restoration – 1868
8	FEBRUARY	RIVISION

**B.A FINAL YEAR HISTORY**  
**1<sup>st</sup>PAPER- HISTORY OF INDIA (1761-1950)**  
**SESSION (2017-18]**

S.NO	MONTH	PLAN
1.	JULY	<p>General introduction of first paper.</p> <p>Expansion of the British Empire – Anglo – French conflict (Karnataka war), reasons for the success of Britishers.</p> <p>Battle of Plassey (1757) – Background, causes, incident and results.</p> <p>Battle of Buxar (1763) – causes, incidents and results</p>
2.	AUGUST	<p>Subsidiary alliance of Lord Wellesley.</p> <p>Provisions of subsidiary alliance, Merit and demerits of subsidiary alliance.</p> <p>Doctrine of lapse (policy of the Lord Dalhousie).</p> <p>Principal and nature of doctrine of lapse.</p> <p>Administrative reforms in British period -</p>
3.	SEPTEMBER	<p>Reforms of Lord William Bentinck, Lord Lytton, Lord Rippon, Lord Curzon.</p> <p>Commercialism – downfall of Indian industries, downfall of trades, downfall of Indian Agriculture, Peasants movements.</p> <p>Land revenue system in British Period – background.</p>
4.	OCTOBER	<p>Permanent settlement, Raiyat Wadi, Mahal Wadi.</p> <p>Indian renaissance – Brahma Samaj – Raja Ram Mohan Roy.</p> <p>Arya Samaj – Swami Dayanand Saraswati, PrathnaSamaj – Mahadev Govind Ranade, Ramakrishna Mission – Swami Vivekananda, Theosophical Society – Smt. Annie Besant, Aligadh movement – Sir Sayyed Ahmed Khan.</p>
5.	NOVEMBER	<p>Western education and praise.</p> <p>Different Social class – Farmer, lebor , middle class, women's.</p>



		<p>Rise of Nationalism – causes of nationalism, incidents of nationalism.</p> <p>Establishment of Indian National Congress – causes, concepts.</p> <p>Liberalism (1885 – 1904).</p> <p>Extremism (1905 – 1919).</p>
6.	DECEMBER	<p>Revolutionary movements.</p> <p>Gandhian movements – A. Non – cooperation movement (1920 -22), B. Civil disobedience movement (1930-34)</p> <p>C. Quit India movement (1942).</p> <p>Communalism – causes, rise and development.</p>
7.	JANUARY	<p>Subhash Chandra Bose and Azad Hind Fouze.</p> <p>Constitutional development of India – Indian government act 1919(Dyarchy), Indian government act 1935(Provincial Autonomy), Indian Independence act 1947.</p> <p>Independence of India and peculiarities of Indian constitution.</p>
8.	FEBRURARY	REVISION

## **B. A. Final ,History second -1871 – 1945**

### **Session -2017-18**

S NO	MONTH	PLAN
1	JULY	Introduction of second paper Third republican of France and their achievements Home and foreign policy of Bismarck Kaiser William second -1890 -1918.
2	AUGUST	World politics of Kaiser William second Partition of Africa (New imperialism) Modernization of Japan
3	SEPTEMBER	Japanese imperialism – Russia Japan war 1904-5 Causes results Chinas revolution – 1911 -causes and results
4	OCTOBER	DR. San-yat-sen ,his contribution Eastern problem – Berlin congress-1878 A D Young Turkish movement- 1908
5	NOVEMBER	Balkan war- 1912-1913-causes and results First world war – 1914- 1918 – causes ,incidents and results. Paris peace conference – 1919 . Russian revolution – 1917 -causes and results .
6	DECEMBER	Treaty of Versailles – provisions and their review Fascism – Mussolini . Nazism – Hitler . Militarism in Japan
7	JANUARY	Establishment of the league of Nation -14 point of Wilsons Second world war -1939 -45 -causes and results

		United nations organization – foundation . Achievements .
8	FEBRUARY	Rivision

**B. A.I POLITICAL SCIENCE (2017-18)**  
**PAPER-I**  
**Political Theory**

MONTH	PLAN
JULY	Political Science :- Definition, Nature, Scope, Study Methods :- Traditional and Behavioral. Political Theory :- Importance, Authority, Meaning, Definition, Characteristics and Relations
AUGUST	State :- Meaning, Essential Elements of state various Theories of the origin of state, State in an effective Perspective
SEPTEMBER	Sovereignty: – Meaning, Characteristics, Theory, Importance, Citizenship, Rights, Liberty: – Meaning Definition, Characteristics and theory
OCTOBER	Equality And Justice: – Meaning, Definition, Characteristics, Relations. Democracy: – Meaning, Definition, Characteristics,
NOVEMBER	Essential Circumstances of democracy/ Challenges before democracy.
DECEMBER	Concept of development and welfare state: – Characteristics, Function, Achievement, Challenges, Theory of Social Change :- Meaning, Definition, Characteristics.
JANUARU	State in an effective , Citizenship, Rights Challenges before democracy
FREBRUARY	RIVISION

**B.A. – I POLITICAL SCIENCE**  
**SESSION: (2017-18)**  
**PAPER-II**  
**Indian Government & Politics**

MONTH	PRAPOSED PLAN
JULY	Composition and sources of the Indian constitution. Features of the India constitution preamble. Fundamental rights, fundamental duties and Directive principle of state policy.
AUGUST	Union Government: – The President, Parliament, council of ministers and Prime Minister –Organization / Appointing, Functions, Rights and Real position
SEPTEMBER	The State Government: – Governor, council of ministers and chief minister formation, power and functions and position. <del>Center-state relations – Administrative – Judicial and financial</del>
OCTOBER	Supreme court and the constitutional process: – Organization, power and function – changes in today. Political parties: – National and regional Meaning, Characteristics and kinds
NOVEMBER	Election commission and Electoral – Reforms – Organization, Functions and rights and the study of Electoral reforms.
DECEMBER	Major issues in Indian Politics –Caste, Religion, Language, Regions, Poverty – Alleviation.
JANUARU	Governor, council of ministers and chief minister formation, power and functions and position. Political parties: – National and regional Meaning, Characteristics and kinds
FREBRUARY	REVISION

## **B.A. – II POLITICAL SCIENCE**

**SESSION: (2017-18)**

### **PAPER-I**

MONTH	PRAPOSED PLAN
JULY	Plato - In the Context of Ideal state: Justice. Education, Communism & Philosopher King
AUGUST	Aristote – State, Classification of constitutions, slavery, view on Revolution
SEPTEMBER	Machiavelli - Machiavelli's views on State and Government, views on Religion. Morality & contribution to Political Philosophy. Hobbes - Social Contract Theory
OCTOBER	Locke -Locke's views on social contract Theory. Rousseau -Rousseau's views on social contract Theory, Theory of General will.
NOVEMBER	Bentham -Bentham's Utilitarianism. J.S. Mill -J.S. Mill's views on state, Liberty, Rights & Representative Government
DECEMBER	Hegel -Hegel's views on state, Dialectical method. T.H. Green -Green's view's on state & Government, Liberty & contribution to Political Philosophy. s
JANUARU	Karl-Marx- Marx's Dialectical materialism, Theory of class Struggle. Theory of surplus value, Economic interpretation of History, Contribution of Marx.
FREBRUARY	REVISION

**B.A. – II POLITICAL SCIENCE**  
**SESSION: (2017-18)**  
**PAPER-II**  
**Comparative Government and politics (Britain, America, China, Switzerland)**

MONTH	PRAPOSED PLAN
JULY	Meaning of Comparative Politics, Nature, Scope and Problems
AUGUST	Political system approach (David Eastan, Almond and Pawell) Constitutional Traditions and salient feature of the constitution.
SEPTEMBER	Constitutional Structure - Meaning of Chief Executive, Kinds, Centure of power and functions, Comparative study.
OCTOBER	Constitutional structure: - Legislature organization, Functions, Agreements in favour of second Chamber, comparative study.
NOVEMBER	Constitutional structure :- Judiciary, Organization, Functions, Independence Rule of Law Judicial Review
DECEMBER	Political Culture and Political Socialization Political Parties- Importance, Characteristics
JANUARU	Pressure Groups, Meaning, Kinds, Definition and importance, Role of women in the political process.
FREBRUARY	REVISION

**B.A. – III POLITICAL SCIENCE**  
**SESSION: (2017-18)**  
**PAPER-I**  
**International Politics**

MONTH	PRAPOSED PLAN
JULY	Meaning, Nature and Scope of International politics. Approaches to the study of international Politics.
AUGUST	Various theories of international Politics,
SEPTEMBER	Power: - Definition, Elements, Struggle for Power, Accumulation of Power, Increase of <del>power and exhibition of power</del>
OCTOBER	The concept of balance of power: – Theoretical advantage and evaluation.  The concept of the peace and security: – Theory of collective security
NOVEMBER	Diplomacy: – Definition, Kinds, functions, aims and means. Disarmament: – Meaning, definition and development.
DECEMBER	Disarmament: – Meaning, definition and development. Solution and hindrances in the path of Disarmament.
JANUARU	New paradigm of International Politics:- (1) Environmentalism (2) Globalization (3) Human Rights.
FREBRUARY	REVISION



## **B.A. – III POLITICAL SCIENCE**

**SESSION: (2017-18)**

### **PAPER-II**

#### **Public Administration**

<b>MONTH</b>	<b>PRAPOSED PLAN</b>
JULY	Public administration: – Meaning, nature and scope, importance. Evaluation of public administration as a discipline
AUGUST	Differences and similarities between public administration and personal administration.
SEPTEMBER	Public administration: – Methods of study and approaches, the new public administration.
OCTOBER	Politics and public administration: - Administrative, Behavior, Leadership, Decision making, Communication accountability.
NOVEMBER	The bureaucracy and the budget process, the new trends in public administration in the age of globalization & liberalization.
DECEMBER	Legislative control over administration, judicial, control on administration
JANUARU	Decision making, Communication accountability Evaluation of public administration as a discipline
FREBRUARY	REVISION

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PROPOSED TEACHING PLAN FOR THE SESSION 2017-18

Class B.A.I (Psychology)

Paper -I Title of the Paper -Basic Psychological Processes

MONTH/DAYS	Proposed Plan
JULY /26	UNIT-I Introduction-definition and goals of psychology, perspectives-behaviouristic, cognitive, humanistic and cross-cultural,
AUGUST/25	UNIT-I Methods- experimental, observational, interview, questionnaire and case study.
SEPTEMBER/23	UNIT-II Biological basis of behaviour: genes and behaviour, the nervous system-the central nervous system , the autonomic nervous system and the peripheral nervous system, Emotions- types and bodily changes( internal and external).
OCTOBER/21	UNIT-III Perceptual processes: nature and types of sensation and perception, Attention -process, definition, type and determinants, Practical-introduction, test and experiment.
NOVEMBER/25	UNIT-III Principles of perceptual organization, Illusion- nature and types Practical- test and experiment.
DECEMBER/21	UNIT –IV Learning and Memory: classical and operant conditioning- basic processes, Verbal and Observational learning Practical- test and experiment
JANUARY/26	UNIT –IV Memory- sensory, short term and long term, Forgetting -process and theory. Practical- test and experiment
FREBRUARY/24	UNIT –V Cognitive and Non- cognitive process: Intelligence- nature and types, Motivation- biogenic and social motives, Thinking process- nature and types, Personality- nature and determinants, approaches to study personality-trait and type, Assessment of personality. Practical exam

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### PROPOSED TEACHING PLAN FOR THE SESSION 2017-18

Class B.A.I (Psychology)  
Paper –II Psychopathology

MONTH/DAYS	Proposed Plan
JULY /26	UNIT –I Introduction; concept of Normality and Abnormality.
AUGUST/25	UNIT-I Models of Psychopathology- psychodynamic, behavioral and cognitive.
SEPTEMBER/23	UNIT-II Assessment of psychopathology; Diagnostic tests, Rating scales, Clinical interview and Projective tests. Practical –Introduction, Test& Experiment
OCTOBER/21	UNIT-III Unit-II Projective tests. UNIT-III Anxiety disorders, Panic disorder, Phobias, Obsessive-Compulsive disorder. Practical –Test& Experiment
NOVEMBER/25	UNIT-III Generalized Anxiety disorder UNIT –IV Mood disorders; Manic Depressive episode and Dysthymia. Practical –Test& Experiment
DECEMBER/21	UNIT –IV Personality disorder, Paranoid, Schizoid and Dependent Personality disorder. Dissociative disorder and Obesity. Practical –Test& Experiment
JANUARY/26	UNIT –V Management of Psychopathology; Stress management, Medico and Psychosocial Therapy, Shock Therapy, Psychoanalysis, Group Therapy, and Behavior Therapy.
FREBRUARY/24	Revision and Practical Exam

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PROPOSED TEACHING PLAN FOR THE SESSION 2017-18

Class B.A.II (Psychology)  
PAPER-I  
Title of the paper -Social Psychology

MONTH/DAYS	Proposed Plan
JULY /26	UNIT-I Introduction of social psychology – nature, scope and goals , Methods of social psychology – experimental, survey, interview, observational and Sociometry
AUGUST/25	UNIT-I Approaches to study social behavior – psychoanalytical cognitive and behavioral UNIT- II Social perception – perception of self and others , Impression formation and its determinants
SEPTEMBER/23	UNIT-II Prosocial behavior– co-operation and helping behavior, determinants of prosocial behavior–personal, situational and socio-cultural Practical- Introduction, test & experiment
OCTOBER/21	UNIT-III Stereotype and Prejudice– nature and determinants, Interpersonal Attraction- nature and determinants Practical- test & experiment
NOVEMBER/25	UNIT-III Attitude- nature and measurements UNIT –IV Group Structure Practical- test & experiment
DECEMBER/21	UNIT –IV Group Function – social facilitation, cohesiveness , conformity and group norms, Leadership – nature, types, characteristics and functions Practical- test & experiment
JANUARY/26	UNIT –V Social Issues – Aggression –nature, determinants, prevention and control , Mob Behavior , Population Explosion- nature and consequences , Pollution and corruption, Gender discrimination Practical- report writing and checking
FREBRUARY/24	UNIT –V Social Issues - Child labor Practical Exam &Revision

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PROPOSED TEACHING PLAN FOR THE SESSION 2017-18

Class -B.A. II  
Paper-II Psychological Assessment

MONTH/DAYS	Proposed Plan
JULY /26	UNIT–I Psychological Assessment; concept, difference between physical and psychological assessment, levels of assessment.
AUGUST/25	UNIT-I Barriers in psychological assessment, unidimensional and multidimensional assessment
SEPTEMBER/23	UNIT-II Psychological test; concept, characteristics and types- standardized and non-standardized, group, performance and verbal, uses of psychological test.
OCTOBER/21	UNIT-III Test construction; steps in test construction and reliability- test-retest split-half, factors affecting reliability. Practical –Test& Experiment
NOVEMBER/25	UNIT-III Validity- content and predictive, factors affecting the validity, norms-age and grade. Practical –Test& Experiment
DECEMBER/21	UNIT –IV Cognitive and non-cognitive test; introduction to intelligence, aptitude, and achievement testing, introduction to the personality, interest and value testing Practical –Test& Experiment
JANUARY/26	UNIT –IV Psychological testing in an applied aspect of life; Education, Occupation, Social, Health, and Organization, Social-Cultural factors in Psychological Assessment. Practical –Test& Experiment
FREBRUARY/24	Revision and Practical Exam

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PROPOSED TEACHING PLAN FOR THE SESSION 2017-18

Class-B.A.III

Paper I Title of the paper -Psychological Statistics

MONTH/DAYS	Proposed Plan
JULY /26	UNIT –I Statistics: meaning and application in psychology, Nature of score, categorical and continuous variable, Frequency distribution.
AUGUST/25	UNIT-I Graphical representation of data. UNIT-II Measures of central tendency- mean, median and mode of ungrouped and grouped data
SEPTEMBER/23	UNIT-II Measures of variability-range, standard deviation, quartile deviation and average deviation, Applications of measures of central tendency and variability.
OCTOBER/21	UNIT-III Nature and characteristic is of normal probability curve(NPC), the concept of skewness and kurtosis. Practical – Introduction, Tests and Experiments.
NOVEMBER/25	UNIT-III Correlation- concept, types and methods-rank difference and product moment (ungrouped data). UNIT –IV Inferential statistics- concept of null hypothesis Practical – Tests and Experiments.
DECEMBER/21	UNIT –IV Inferential statistics- level of significance, type-I error and type-II error, t-test for uncorrelated data. Practical – Tests and Experiments.
JANUARY/26	UNIT –V Distribution free statistics- chi-square, median and sign test. Application of computer in psychological statistics. Practical – Tests and Experiments.
FREBRUARY/24	Revision Practical examination

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PROPOSED TEACHING PLAN FOR THE SESSION 2017-18

Class B.A.II (Psychology)

PAPER-II

Title of the paper – Human Development

MONTH/DAYS	Proposed Plan
JULY /26	UNIT-I Concept of Human Development, Theories of Human Development: Psychoanalytical and Maslow, Determinants of Human Development - Biological, social, cultural factors, Approaches to study human developments: Longitudinal and cross - sectional.
AUGUST/25	UNIT-I Approaches to study human developments : Longitudinal and cross - sectional UNIT-II Socialization : Role of family, peers and school, Media and socialization
SEPTEMBER/23	UNIT-II Cognitive Development : Theoretical Perspectives Piaget, Information Processing, Vyogotsky
OCTOBER/21	UNIT-III Self and Identity : Emergence of self, Development of personal identity, identity crises, Physical and sexual maturation, Sequential development of emotions
NOVEMBER/25	UNIT-IV Development of morality and self concept, Development of gender differences and gender roles. Role of marriage, family and occupation in Human Development.
DECEMBER/21	UNIT-V Problems of Aging - Cognitive, conative, affective, Developmental Disabilities.
JANUARY/26	Psychological Experiments and Tests
FREBRUARY/24	Practical Exam & Revision

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**PROPOSED TEACHING PLAN FOR THE SESSION 2017-18**

Class - M.A. Psychology (I<sup>st</sup> & II<sup>nd</sup> Semester)

Paper- I– Basic Psychological process-I & Basic Psychological processes-II

MONTH/DAYS	PROPOSED PLAN
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**TEACHING PLAN**  
**B.A. PART - I (SOCIOLOGY)**  
**PAPER - I**  
**INTRODUCTION TO SOCIOLOGY**  
**2017-18**

<b>NO.</b>	<b>MONTHS</b>	<b>TEACHING PLAN</b>
1	JULY	UNIT-I- Sociology: Meaning, Natures, Scope subject matter and significance
2	AUGUST	UNIT-II- Social Institution: - Marriage family and kinship.
3	SEPTEMBER	UNIT-II- Culture and Society: - Culture, Socialization, The individual and Society, Social control, Norms & Value.
4	OCTOBER	UNIT-III- Social Stratification: - Meaning, forms and theories.
5	NOVEMBER	UNIT-III- Social Mobility: - Meaning, forms and theories.
6	DECEMBER	UNIT-IV- Social Change:- Meaning and Patterns, Types, Tractors
7	JANUARY	UNIT-IV- Social Change: - Evolution & Progress UNIT-V- Social System: Social system, Meaning Characteristics and Elements.
8	FEBRUARY	UNIT-V- Social Progress: - Meaning, Element, Characteristics and types.



**TEACHING PLAN**  
**B.A. PART - I**  
**PAPER – II**  
**FOUNDATIONS OF SOCIOLOGICAL THOUGHT**  
**2017-18**

<b>MONTH</b>	<b>PLAN</b>
<b>JULY</b>	<b>Unit-I: Emergence of Sociology</b> – Europe before 19 <sup>th</sup> Century; Rise and Development of Sociology in West; <b>Auguste Comte</b> - Theory of Positivism.
<b>AUGUST</b>	<b>Unit-I: Herbert Spencer</b> – Social Darwinism; Social Organicism; <b>Unit-II: Emile Durkheim</b> – Theory of Social Solidarity; Theory of Suicide.
<b>SEPTEMBER</b>	<b>Unit-II: Max Weber</b> – Concept of Authority; Protestant Ethics and the Spirit of Capitalism.
<b>OCTOBER</b>	<b>Unit-III: Karl Marx</b> – Historical Materialism; Theory of Class Struggle
<b>NOVEMBER</b>	<b>Unit-IV: Vilfredo Pareto</b> – Logical and Non-Logical Actions; Circulation of Elites.
<b>DECEMBER</b>	<b>Unit-V: Development of Sociological Thought in India</b>
<b>JANUARY</b>	<b>Unit-V: Mahatma Gandhi</b> – Ahimsa; Satyagraha;
<b>FEBRUARY</b>	<b>Unit-V: Radhakamal Mukerjee</b> – Theory of Social Values.

**TEACHING PLAN**  
**B.A. PART – II**  
**PAPER - I**  
**SOCIETY IN INDIA**  
**2017-18**

NO.	MONTHS		TEACHING PLAN
1	JULY	UNIT – I	<b>Views About Indian Society :</b> The Classical Views, Varna, Ashram, karma & Dharma.
2	AUGUST	UNIT – I	<b>Field Views :</b> M.N. Srinivas & S.C. Dubey. Significance & Interface of Classical & Field Views.
3	SEPTEMBER	UNIT-II	<b>The Structure &amp; Composition of Indian Society :</b> Structure : Villages, Towns, Cities & Rural Urban Linkage.
4	OCTOBER	UNIT-II	<b>Composition :</b> Tribes, Dalits, Woman & Minorities.
5	NOVEMBER	UNIT-III	<b>Basic Institutions of Indian Society :</b> Caste System, Kinship, Family, Marriage.
6	DECEMBER	UNIT-III UNIT-IV	Class, Changing Dimension. <b>Familial Problems :</b> Dowry Domestic Violence & Divorce.
7	JANUARY	UNIT-IV UNIT-V	Intra-Intergenerational Conflict, Problems of Elderly. <b>Social problems :</b> Casteism, Regionalism,
8	FEBRUARY	UNIT-V	Communalism, Youth Unrest. Revision

**TEACHING PLAN**  
**B.A. PART – II**  
**PAPER - II**  
**CRIME & SOCIETY**  
**2017-18**

NO.	MONTHS		TEACHING PLAN
1	JULY	UNIT – I	<b>Conception &amp; Types of Crime:</b> Early Explanation- Classical Positives, Psychological.
2	AUGUST	UNIT – II	<b>Social Structure &amp; Anomie :</b> Criminality- Suicide, Organized Crime.
3	SEPTEMBER	UNIT-II	<b>White Collar Crime :</b> Terrorism : Causes, Effects & Remedies.
4	OCTOBER	UNIT-III	<b>Indian Social Problem :</b> Social Change in India & Crime, Social Disorganization.
5	NOVEMBER	UNIT-III	Alcoholism & Drug Addiction, Begary
6	DECEMBER	UNIT-IV	<b>Punishment :</b> Objectives & Forms – Theories of Punishment, Probation, Parole & Open Prison
7	JANUARY	UNIT-V	<b>Correctional Process:</b> Role of Police & Judiciary in India. Development of Jail Reform in India
8	FEBRUARY	UNIT-V	Sociology of Prison. Revision

**TEACHING PLAN**  
**B.A. PART - III**

**PAPER – I**

**SOCIOLOGY OF TRIBAL SOCIETY**

**2017-18**

<b>MONTH</b>	<b>PLAN</b>
JULY	<b>Unit-I:</b> Sociology of Tribal Society; Concept of Tribe, Tribe and Caste.
AUGUST	<b>Unit-II:</b> Classification of Tribal People; Tribal Economy and Economic Classification of Tribes.
SEPTEMBER	<b>Unit-III:</b> Socio Cultural Profile of Tribe; Kinship System amongst Tribes.
OCTOBER	<b>Unit-III:</b> Tribal Marriage; Tribal Family; Religious Beliefs and Cultural Traditions amongst Tribes.
NOVEMBER	<b>Unit-IV:</b> Social Mobility and Change Sensitization among Tribes; Schemes of Tribal Development.
DECEMBER	<b>Unit-IV:</b> Various Tribal Movements; <b>Unit-V:</b> Tribal Problems: Poverty, Illiteracy, Indebtedness.
JANUARY	<b>Unit-V:</b> Tribal Problems: Agrarian Issues and Exploitation;
FEBRUARY	<b>Unit-V:</b> Tribal Communities in Chhattisgarh: Oraon, Kanwar and Gond.

**TEACHING PLAN**  
**B.A. PART - III**  
**PAPER - II**  
**METHODS OF SOCIAL RESEARCH**  
**2017-18**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>
1	JULY	Unit-I	Meaning And Significance Of Social Research, Meaning And Nature Of Social Research Hypothesis, Formulation Of Hypothesis, Scientific Method And Its Applicability
2	AUGUST	Unit II	Positivism And Ethnography, Observation, Case Study Method
3	SEPTEMBER	Unit II	Case Study Method, Content Analysis
		Unit-III	Types Of Research: Historical, Descriptive, Exploratory, Experimental
4	OCTOBER	Unit-IV	Comparative, Exploratory and Experimental
5	NOVEMBER	Unit-IV	Methods And Techniques Of Data Collection : Survey method
6	DECEMBER	Unit-IV	Questionnaire, Interview, Schedule, Interview Guide
7	JANNUARY	Unit -V	Meaning Of Social Statistics: Importance And Limitations, Graphs And Diagrams
8	FEBRUARY	Unit -V	Measures Of Central Tendency: Mean, Median, Mode, Co-Relation

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PROPOSED TEACHING PLAN FOR THE SESSION 2017-18

KATHAK DANCE DEPARTMENT

THEORY and PRACTICAL OF KATHAK DANCE

BAI,BAII and BAIII

H/DAYS	Graduation (Timeline: Start/End)  BAI	Graduation (Timeline: Start/End)  BAII	Graduation (Timeline: Start/End)  BAIII
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JULY /26	<p><b>PAPER – I (THEORY)</b></p> <p>The Dance related stories of Uma-Shankar and Natwar Shri Krishna according to the Puranas.</p> <p><b>practical</b></p> <p>Tatkar in Teental and its Tah,Dugun and Chougun</p> <p>Practical demonstration of gestures.</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Definition of Abhinaya and brief study of its kinds.</p> <p><b>PRACTICAL</b></p> <p>Tatkar in Teental – practice</p> <p>Hastak      Sanchalan      (hand movements)</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Study of the history of Dance.</p> <p>Brief knowledge of the following classical dances:-</p> <p style="text-align: center;">Kuchipudi Kathak</p> <p><b>PRACTICAL</b></p> <p>Tatkar and its variations in T – practice</p> <p>Hastak      Sanchalan movements)</p>
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AUGUST/25	<p><b>PAPER – I (THEORY)</b></p> <p>The importance of Guru-Vandana in Indian theatre tradition.</p> <p>Description of Sangeet.</p> <p>The place of Dance in Sangeet.</p> <p><b>Practical</b></p> <p>Hastak Sanchalan (hand movements)</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Lakshan and Viniyog of Asamyukta Hasta Mudra according to “Abhinaya Darpan”</p> <p>Study of “Drishti-Bheda” described in Abhinaya Darpan.</p> <p><b>Practical</b></p> <p>Bhav Pradarshan on Krishna Vandana.</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Brief knowledge of the following classical dances:-</p> <p>(a) Odissi (b) Mohini Attam</p> <p>Definition of Rasa and study of its types.</p> <p><b>Practical</b></p> <p>Bhav Pradarshan on Vishnu Vandana or Shiv Vandana.</p>
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MBER/23	<p><b>PAPER – II (THEORY)</b></p> <p>The stories of origin of Natya (described in the first chapter of Natya- Shashtra of Bharat Muni).</p> <p>History of Dance – Sindhu-sabhyata,vedik period,Ramayan and Mahabharat period.</p> <p><b>Practical</b></p> <p>Guru-Vandana Greeva – sanchalan Asamyukta hand gestures</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Study of “Shiro-Bheda”with shloka described in Abhinaya Darpan.</p> <p>Study of Lokadharmi and Natyadharmi.</p> <p><b>Practical</b></p> <p>Presentation on Teentaal (other than learnt in the first year)</p> <p>Aamad,Chakkardar Toda,Chakkardar Paran,Tishra jati Toda or Paran,types of Tatkar.</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Definition of Bhava and stud types.</p> <p>Lakshan and Viniyog of Sar Hasta Mudra according “Abhinaya Darpan”.</p> <p><b>Practical</b></p> <p>Thaat (in detail)</p> <p>Presentation on Teentaal (ot than learnt in the previous ye</p> <p>Aamad,two Tode, Chakkarda</p>
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OBER/21	<p><b>PAPER – II (THEORY)</b> Physical and mental benefits of practicing Dance</p> <p>General introduction of of any two folk dances of Chhattisgarh (based on the festivals -Parva).</p> <p><b>Practical</b> Anchit-Kunchit</p> <p>Teental – Thaat,Aamad,Paran,Tode</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Brief knowledge of the following classical dances:-</p> <p>(a) Kathak (b) Bharata Natyam (c) Kathakali (d) Manipuri</p> <p><b>Practical</b></p> <p>Presentation on Teentaal (other than learnt in the first year)Aamad,Chakkardar Toda,Chakkardar Paran,Tishra jati Toda or Paran,types of Tatkar.</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Study of Bhrikuti Bheda according to “Abhinaya Darpan”.</p> <p>Knowledge of Nritya,Nritya.</p> <p><b>Practical</b></p> <p>Presentation on Teentaal (other than learnt in the previous years)Chakkardar Paran,Primelu,Tihaiya,Kavittas of Tatkar.</p>
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	<p><b>PAPER – I (THEORY)</b> Short description of any two folk theatre tradition:-</p> <p>1-Ramleela    2-Rasleela    3-Bhawai    4-Raai    5-Maach    6-Mahabharat Nacha</p> <p><b>PRACTICAL</b></p> <p>Teental – Chakkardar Tode,Kavitta,Gatnikas (any five),Tatkar and its types.</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Position of Dance in the modern society.</p> <p><b>PAPER –II (THEORY)</b></p> <p>Notation of the Theka in Thah,Dugun,Tigun and Chougung of Choutaal and Ektaal.</p> <p>Notation of the compositions learnt in practical (Choutaal and Ektaal).</p> <p><b>PRACTICAL</b></p> <p>Practise of dance presentation on Choutaal or Ektaal – Aamad,Tode,Paran and Kavitta.</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Study of Guru-Shishya-Parampara and institutional education system in the education of Kathak Dance.</p> <p><b>PAPER – II (THEORY)</b></p> <p>Study of the Ten Pranas of Tala.</p> <p><b>PRACTICAL</b></p> <p>Practise of dance presentation on Dhamar or Rupak Taal – Thaat,Aamad,Tode,Paran, Kajari and Tihaiya.</p>
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MBER/21	<p><b>PAPER – II (THEORY)</b></p> <p>Definiton – Hastak,Toda,Salami,Namaskar,Aamad,Paran ,Chakkardar,TatkarTihai,Tukde,Kavitta ,Matra,Sam and Khali.</p> <p><b>PRACTICAL</b></p> <p>Jhaptal – Thaata,Namaskriya,Aamad,Paran,Tode,</p>	<p><b>PAPER – II (THEORY)</b></p> <p>Life sketch and contribution to Kathak Dance of Pt.Bindadin Maharaj,Jaylalji Maharaj,Achchan Maharaj and Lachchu Maharaj.</p> <p>Study of essential aspects of Kathak presentation.</p> <p><b>PRACTICAL</b></p> <p>Gatnikas – Murli and Ghunghat.</p>	<p><b>PAPER – II (THEORY)</b></p> <p>Study of the various Gharas of Kathak Dance.</p> <p>A brief study of Ashta Nayika A brief study of Nayaka</p> <p><b>PRACTICAL</b></p> <p>Gatnikas – Revision of all Gatnikas of previous years and Bindis Rukhsar ki Gat.</p>
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<p>UARY/26</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Introduction of Taal.</p> <p>Importance of Taal in Sangeet.</p> <p>Description of Taal.</p> <p><b>PRACTICAL</b></p> <p>Jhaptal – Thaat,Chakkardar Tode,Tihai,Kavitta, Tatkar and its types</p> <p>Description of Laya and its types.</p>	<p><b>PAPER – II (THEORY)</b></p> <p>Definition – Gatnikas,Gatbhav,Thumri,Tandav and Lasya.</p> <p>Corelation of Dance with other fine arts.</p> <p>Place of literature in Dance.</p> <p><b>PRACTICAL</b></p> <p>Bhav Pradarshan on Thumri or Bhajan.</p>	<p><b>PAPER – II (THEORY)</b></p> <p>Life sketch and contributi Kathak Dance of Narayan Pr and Sundar Prasad ji</p> <p>Notation of the Theka in Thah,Dugun,Tigun and Choug Dhamar and Rupak Taal.</p> <p>Notation of the compo learnt in practical (Dhama Rupak Taal)</p> <p><b>PRACTICAL</b></p> <p>Presentation of Panghat and Gatbhav.</p>
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UARY/24	<p><b>PAPER I THEORY</b></p> <p>Notations of the compositions learnt in practical</p> <p><b>PAPER II THEORY</b></p> <p>Life sketch and contribution – Shri Shambhu Maharaj, Shri Kalika Prasad Maharaj, Sitara Devi, Damyanti Joshi.</p> <p><b>PRACTICAL</b></p> <p>Ability to dance on any song or Bhajan and knowledge of folk dance.</p>	<p><b>PAPER – II (THEORY)</b></p> <p>Study of folkdances of India.</p> <p>Study of folk dances of Chhattisgarh region.</p> <p><b>PRACTICAL</b></p> <p>Practical demonstration of the single hand gestures according to the Abhinaya Darpana.</p>	<p><b>PAPER – II (THEORY)</b></p> <p>Essay writing on the topics related to Dance:-</p> <p>(a) Kathak and other classical dances</p> <p>(b) Kathak and religion</p> <p>(c) Kathak and Yoga</p> <p>(d) Classical and folk dance</p> <p>Kathak dance and Navrasa</p> <p><b>PRACTICAL</b></p> <p>Bhav Pradarshan on Thumri and Bhajan.</p> <p>Practical demonstration of double hand gestures according to the Abhinaya Darpana.</p>
MARCH			
APRIL			
MAY			
JUNE			

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**RAIPUR CHHATTISGARH**

**TEACHING PLAN FOR THE SESSION 2017-18**

**B.Sc. Part-I**

**Subject –Biotechnology**

**Paper -1**

**Title of the Paper: Biochemistry, Biostatistics and Computer**

MONTH/DAYS	PROPOSED PLAN
JULY /26	<b>Unit1</b> Introduction to biochemistry: History, Scope and Development. Carbohydrates: Classification, Structure and function of Mono, Oligo & Polysaccharides
AUGUST/25	<b>Unit I</b> Amino acids and Proteins: Classification, Structure and Properties of amino acids, types of Proteins and their Classification and Function.
SEPTEMBER/23	<b>Unit II</b> Lipids: Structure, Classification and Function Enzyme: Nomenclature and classification of enzyme, Mechanism of enzyme action, Enzyme Kinetics and factors affecting the enzyme action. Immobilization of enzymes and their application Hormones: Plant Hormones- Auxin and Gibberellins and Animal Hormone-Pancreas and Thyroid.
OCTOBER/21	<b>Unit III</b> Carbohydrates, Proteins and Lipid Metabolism- Glycol sis, Glycogenesis, Glyconeogenesis and Krebs cycle. Electron Transport Chain Metabolism of protein tansamination and deamination Lipid metabolism and $\beta$ -oxidation of Fatty acids.
NOVEMBER/25	<b>Unit IV</b> Binominal theorem ,logarithm, integration and differentiation
DECEMBER/21	<b>Unit IV</b> Measures of Central Tendency: Mean Median and Mode and Standard Deviation. Probability Calculation: Definition of probability, problems related probability.
JANUARY/26	<b>Unit V</b> Computer –General Introduction. Organization of computer, digital and analogue computers, computers algorithm. Concept of Hardware and software, Input and output Devices. Application of computer in co-ordination of solute concentration, pH and Temperature etc. of a fermenter in operation and Internet application.
FREBRUARY/24	Revision

**TEACHING PLAN FOR THE SESSION 2017-18**  
**B.Sc. Part-I**  
**Subject –Biotechnology**  
**Paper -II**  
**Title of the Paper: Cell Biology, Genetics and Microbiology**

MONTH/DAYS	PROPOSED PLAN
JULY /26	<b>Unit1</b> Concept of life, Cell as a basic unit of living system and Cell theory. Diversity of Cell shape and size. Prokaryotic cell structure: Function and ultra structure of cell (Gram positive and Gram negative Bacteria), Plasma membrane, Flagella, Pili, Endospore and Capsule. Eukaryotic Cell: Plant cell wall and Plasma membrane.
AUGUST/25	<b>Unit 2</b> Cytoplasm: Structure and functions of Endoplasmic reticulum, Ribosome, Golgi complex, Lysosomes, Nucleus, Mitochondria and Chloroplast. Cytoskeleton: Microtubules, Microfilaments and Intermediate filaments. Cell division: Mitosis and Meiosis. Programmed Cell Death.
SEPTEMBER/23	<b>Unit 3</b> Mendel's Laws of Inheritance. Linkage and Crossing over. Chromosome variation in number and structures: Deletion, Duplication,
OCTOBER/22	<b>Unit3</b> Translocation, Inversion and Aneuploidy, Euploidy (Monoploidy and Polyploidy and its importance).
NOVEMBER/19	<b>Unit 4</b> History, Scope and Development of Microbiology. Basic techniques of Microbial Culture.
DECEMBER/21	<b>Unit 4</b> Microbial growth & Nutrition of Bacteria: Isolation, media sterilization physical and chemical agents, pure culture pour plate method, streak plate method and spread plate method. General features and Economic importance of Fungi, Algae and Protozoa etc.
JANUARY/26	<b>Unit 5</b> Bacterial Reproduction: Conjugation, Transduction and Transformation. Mycoplasma- History, Classification, Structure, reproduction & Diseases Viruses- Basic features Structure, Classification, and Multiplication, Bacteriophages (Morphology, life cycle, infection and medicinal importance). Revision
FEBRUARY/24	Revision and Practical Exam



**TEACHING PLAN FOR THE SESSION 2017-18**  
**B.Sc. Part-I**  
**Subject –Biotechnology**  
**Paper -II**  
**Title of the Paper: Molecular Biology and Biophysics**

MONTH/DAYS	PROPOSED PLAN
JULY /26	<b>Unit I</b> <b>DNA</b> :Structure, types and replication <b>RNA</b> : Structure, types and Function Replication of DNA, Structure of gene ,old and new concept
AUGUST/25	<b>Unit II</b> Genetic code : Properties, Codon assignment, Secondary genetic code Protein Synthesis Mitochondrial genome Chloroplast genome
SEPTEMBER/23	<b>Unit III</b> Gene therapy Transposable elements DNA damage and repair Tissue engineering :General concept
OCTOBER/21	<b>Unit IV</b> Law of Thermodynamics Beer Lambert's law, Radioisotopes techniques Autoradiography
NOVEMBER/25	<b>Unit V</b> Biophysics introduction, scope and application.
DECEMBER/21	<b>Unit V</b> Principle, structure, function of the following : a. Spectroscopy                      b. Electrophoresis c. Centrifugation
JANUARY/26	<b>Unit V</b> Principle, structure, function of the following d. Colorimeter e. Chromatography      f. ELISA Revision
FEBRUARY/24	Practical Exam and Revision

**TEACHING PLAN FOR THE SESSION 2017-18****B.Sc. Part-II****Subject –Biotechnology****Paper -II****Title of the Paper: Recombinant DNA technology**

MONTH/DAYS	PROPOSED PLAN
JULY /26	<b>Unit-I</b> Scope and aim of the Biotechnology Recombinant DNA Technology: General Concept and Application, Strategies of recombinant DNA Technology in prokaryotes. Restriction enzymes: Endonuclease (type, Nomenclature, Restriction, Sequence and Cleavage Pattern).Modifications of cut ends. Steps in gene cloning. Isolation of the desired gene.
AUGUST/25	<b>Unit I&amp;-II</b> cDNA Library, Genomic Library Vectors (Animal and Plant vectors) Bacteriophage vectors Introduction of vectors into appropriate host.
SEPTEMBER/23	<b>Unit-III</b> Types of PCR,Applications Advantages and Limitation of PCR,PCR: Procedure ( denaturation , annealing, extension)
OCTOBER/21	<b>Unit-III</b> Monoclonal Antibodies: Structure, production, Application.
NOVEMBER/25	<b>Unit-IV</b> In vitro fertilization and embryo transfer Genome map and Genome project,Apoptosis
DECEMBER/21	<b>Unit-V</b> Stem cell technology Targeted Gene Transfer DNA fingerprinting,
JANUARY/26	<b>Unit-V</b> Transgenic animals and plants and Revision
FREBRUARY/24	Practical Exam and Revision

## TEACHING PLAN FOR THE SESSION 2017-18

### B.Sc. Part-III

### Subject –Biotechnology

### Paper -1

#### Title of the Paper: Plant, Environment and Industrial Biotechnology

MONTH/DAYS	PROPOSED PLAN
JULY /26	<b>Unit-I</b> Plant cell and tissue culture: General introduction, history, scope. Application of tissue culture. Concept of cellular differentiation, Agro bacterium. Ti and Ri-plasmid. Bt gene, Molecular marker (RFLP, RAPD), edible vaccines.
AUGUST/25	<b>Unit-II</b> Organogenesis, Embryogenesis, protoplast isolation and fusion. Germplasm storage and Cryopreservation. Anther and ovary culture.
SEPTEMBER/23	<b>Unit-III</b> General introduction and scope of Environmental Biotechnology. Environmental pollution and its types.
OCTOBER/21	<b>Unit-III</b> Control of pollution through biotechnology. Wastewater treatment: - Physical, Chemical and Biological.
NOVEMBER/25	<b>Unit-IV</b> Bio fertilizer, Biopesticides, IPR. Global environmental problem-general introduction, Ozone depletion, Acid rain. Green house effect.
DECEMBER/21	<b>Unit V</b> Bioreactors and its types. Fermentation (Lactic acid, alcohol). Maintenance of Industrial micro-organisms
JANUARY/26	<b>Unit-V</b> Food technology – Introduction, canning, packing and food preservation. and Revision
FEBRUARY/24	Practical Exam and Revision

**TEACHING PLAN FOR THE SESSION 2017-18****B.Sc. Part-III****Subject –Biotechnology****Paper -II****Title of the Paper: Immunology**

MONTH/DAYS	PROPOSED PLAN
JULY /26	<b>Unit-I</b> Immunology- general concept, history and development of Immune system and Immunity, organization of immune system
AUGUST/25	<b>Unit I</b> Antigen and antibody and its types <b>Unit-II</b> Cell involved in immune system, type and cells, basic structure and function, Cytokines. Cell mediated immunity interferons, hypersensitivity.
SEPTEMBER/23	<b>Unit-III</b> Antigen- Antibody interaction, principles and types.
OCTOBER/21	<b>Unit –III</b> Immunohaematology – general concept blood group system Rh factor Medical application of blood groups.
NOVEMBER/25	<b>Unit -IV</b> Origin and diversity in immune system. Effectors mechanism.
DECEMBER/21	<b>Unit- V</b> Immunity of infection disease, monoclonal antibodies.
JANUARY/26	<b>Unit- V</b> Autoimmune disease, haemolytic anemia, Rheumatoid arthritis, insulin depend diabetes, Myasthenia gravis, organ transplantation, immune deficient disease, cancer, AIDS. and Revision
FEBRUARY/24	Practical Exam and Revision

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**PROPOSED TEACHING PLAN FOR THE SESSION 2017-18**

**DEPARTMENT OF BOTANY**

**B.Sc. Part-I**

**Paper- I ,General Diversity of Microbes and Cryptogams**

Month	Course
<b>July</b> <b>Unit I</b>	<b>Viruses and Bacteria:</b> General account of viruses and mycoplasma; bacteria-structure, nutrition,
<b>August</b> <b>Unit II&amp;III</b>	Reproduction and economic importance of Bacteria, general account of cyanobacteria. <b>Algae:</b> General characters, classification and economic importance; important features and life history of Chlorophyceae - Volvox, Oedogonium, Coleochaete Xanthophyceae - Vaucheria;
<b>September</b> <b>Unit II&amp;III</b>	Algae- Phaeophyceae - Ectocarpus, Sargassum; Rhodophyceae - Polysiphonia. <b>Fungi:</b> General characters, classification and economic importance; important features and life history of Mastigomycotina – Pythium, Phytophthora; Zygomycotina – Mucor,
<b>October</b> <b>Unit III&amp;IV</b>	Fungi- Ascomycotina – Saccharomyces, Aspergillus, Chaetomium, Peziza; Basidiomycotina – Puccinia, Agaricus; Deuteromycotina – Cercospora, Colletotrichum; general account of Lichens.
<b>November</b>	<b>Bryophyta: Amphibians of plant kingdom displaying</b> Alternation of generations; structure, reproduction and classification of Hepaticopsida (e.g. Riccia, Marchantia)
<b>December</b>	Bryophyta – structure and Reproduction Of Anthocerotopsida (e.g. Anthoceros) Bryopsida (e.g. Funaria) Pteridophyta -characteristics of Psilopsida
<b>January</b>	Pteridophyta -characteristics of Lycopsida, Sphenopsida
<b>February</b>	Gymnosperms; Pteris and Marsilea Structure and reproduction

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PROPOSED TEACHING PLAN FOR THE SESSION 2017-18

DEPARTMENT OF BOTANY

B.Sc.I BOTANY PAPER II M.M.50

MONTH	Cell Biology and Genetics
July Unit I	<b>The Cell envelopes:</b> Plasma membrane; bilayer lipid structure; functions; the cell wall, ultra structure and function of nucleus, nuclear membrane, nucleolus and other cell organelles; Golgi bodies, ER, peroxisomes, vacuoles.
August Unit I & II	nucleolus and other cell organelles; Golgi bodies, ER, peroxisomes, vacuoles. <b>Chromosome Organization:</b> Morphology, centromere and telomeres, Chromosome alternations: deletions, duplications, translocations, inversions
September Unit II & III	variations in chromosome number, aneuploidy, polyploidy, sex chromosomes. Mitosis, Meiosis. <b>DNA the genetic material:</b> DNA structure; replication; DNA-protein interaction, the nucleosome model; genetic code; satellite and repetitive DNA.
October Unit III	<b>Extra nuclear genome:</b> Presence and function of mitochondrial and plastid DNA, Plasmids.
November Unit IV	<b>Gene expression;</b> Structure of gene; transfer of genetic information; transcription, translation protein synthesis;
December Unit IV & V	tRNA, ribosome, regulation of gene expression in prokaryotes and eukaryotes; proteins 1D, 2D and 3D structure. <b>Genetic variations:</b> Mutations, spontaneous and induced.
January Unit V	transposable genetic elements; DNA damage and repair. <b>Genetic inheritance:</b> Mendel's laws of segregation and independent assortment, linkage analysis, allelic and non-allelic interactions.

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**PROPOSED TEACHING PLAN FOR THE SESSION 2017-18**

**DEPARTMENT OF BOTANY**

**B.Sc.- II, PAPER -I**

**DIVERSITY OF SEED PLANTS AND THEIR SYSTEMATICS**

Month	Proposed Topic
JUL Unit-I	Characteristics of seed plants- Evolution of seed habits; seed plants with (angiosperms) & without (gymnosperms) fruits; fossils & living seed plants.  General features of gymnosperms & their classification- Evolution & diversity of gymnosperms, geological time scale, fossilization & fossil gymnosperms.
AUG Unit II	Morphology of vegetative & reproductive parts; anatomy of roots, stem & leaf, reproduction & life cycle of Pinus, Cycas & Ephedra.
SEP Unit III	Angiosperms origin & evolution. Some examples of primitive angiosperms.  Angiosperms taxonomy: brief history, aims & fundamental components; identification, keys taxonomic literature.
OCT Unit III & IV	Botanical nomenclature: Principles & rules; taxonomic ranks; type concept; principle of priority.  Classification of angiosperms; salient features of the systems proposed by Bentham & Hooker, Engler & Prantl.
NOV Unit IV	Major contributions of cytology, phytochemistry & taxometrics to taxonomy.
DEC Unit V	Diversity of flowering plants: general account of families:- Ranunculaceae, Brassicaceae, Malvaceae, Rutaceae, Fabaceae, Apiaceae, Acanthaceae
JAN Unit V	Apocynaceae, Asclepiadaceae, Solanaceae, Lamiaceae, Chenopodiaceae, Euphorbiaceae, Liliaceae & Poaceae.

FEB	Practical exam Practicals done every month as per schedule
MAR	Theory exam
APR	

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**PROPOSED TEACHING PLAN FOR THE SESSION 2017-18**

**DEPARTMENT OF BOTANY**

**B.Sc.-II, PAPER-II**

**STRUCTURE DEVELOPMENT & REPRODUCTION IN FLOWER PLANTS**

Month	Proposed Topic
JULY	The basic body plan of a flowering plant: modular type of growth.
Unit-I	Diversity in plant form in annuals, biennials & perennials: convergence of evolution of tree hab in gymnosperms, monocotyledons & dicotyledons ; trees- largest & longest- lived organisms.
AUG	The shoot system: the shoot apical meristem & its histological organization; vascularization of primary shoot in monocotyledons & dicotyledons; formation of internodes, branching pattern; monopodial & sympodial growth, canopy architecture, cambium & its functions, formation of secondary xylem, a general account of wood structure in relation to conduction of water & minerals, characteristics of growth rings, sapwood & heart wood, role of woody skeleton secondary phloem – structure- function relationships, periderm.
Unit II	
SEP	<b>Leaf:</b> origin, development, arrangement & diversity in size & shape, internal structure in relation to photosynthesis & water loss, adaptations to water stress, senescence & abscission.
Unit III	<b>The root system;</b> the root apical meristem, differentiation of primary & secondary tissues & their roles, structural modifications for storage, respiration, reproduction & interaction with microbe
OCT	Flower: a modified shoot; structure, development & verities of flower, functions, structure of anther & pistil, the male & female gametophytes, types of pollination, attractions & rewards for pollinators, pollen- pistil interaction, self incompatibility, double fertilization, formation of seed- endosperm & embryo, fruit development & maturation.
IV	
NOV	Flower: Types of pollination, attractions & rewards for pollinators, pollen- pistil interaction, self incompatibility, double fertilization, formation of seed- endosperm & embryo, fruit development & maturation.
Unit IV	



DEC Unit V	Significance of seed; suspended animation, ecological adaption: unit of genetic recombination & replenishment, dispersal strategies.
JAN Unit V	Vegetative reproduction: vegetative propagation, grafting & economic aspects.
FEB	Practical exam
MAR APR	Theory exam

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Proposed Teaching Plan ( Session-2017-18)

**DEPARTMENT OF BOTANY**

**B.Sc. –III BOTANY, Paper -I PLANT PHYSIOLOGY, BIOCHEMISTRY AND BIOTECHNOLOGY**

MONTH	PAPER-I-PLANT PHYSIOLOGY, BIOCHEMISTRY AND BIOTECHNOLOGY
<b>JULY</b> <b>UNIT-I</b>	<b>Plant water relations:</b> importance of water to plant life; physical properties of water
<b>AUGUST</b> <b>UNIT-I</b>	<b>Plant water relations:</b> diffusion & osmosis; absorption, transport of water, transpiration; physiology of stomata. <b>Mineral nutrition:</b> Essential macro and micro elements and their role; mineral uptake; Deficiency and toxicity symptoms.
<b>SEPTEMBER</b> <b>UNIT-II</b>	<b>Transport of organic substances:</b> Mechanism of phloem transport; source- sink relationship; factors affecting translocation. <b>Basic of enzymology:</b> Discovery and nomenclature; characteristics of enzymes; concepts of holoenzyme, Apoenzyme, coenzyme and cofactor; regulation of enzyme activity, mechanism of action.
<b>OCTOBER</b> <b>UNIT- II &amp;III</b>	<b>Photosynthesis:</b> Significance; historical aspects; photosynthetic pigments, action spectra and enhancement effects, concept of 2 photosystem, Z- scheme, photophosphorylation; Calvin cycle; C4 pathway, CAM plants, photorespiration. <b>Respiration:</b> ATP- The biological energy currency; aerobic and anaerobic respiration;
<b>NOVEMBER</b> <b>UNIT- III</b>	<b>Respiration:</b> Kreb's cycle, electron transport mechanism (Chemio-Osmotic theory); redox potential, Oxidative phosphorylation, pentose phosphate pathway. <b>Nitrogen and lipid metabolism:</b> biology of nitrogen fixation; importance of nitrate reductase and its regulation; ammonium assimilation; saturated and unsaturated fatty acids; storage and mobilization of fatty acids.
<b>DECEMBER</b>	<b>Growth and development:</b> Definitions; phases of growth and development; kinetics of growth, seed dormancy, seed germination and factors of their regulation; plant movements; the concept of

<b>UNIT-IV</b>	photoperiodism; physiology of flowering; florigen concept; biological clocks; physiology of senescence, fruit ripening; plant hormones: Auxins, gibberellins, cytokinins, abscisic acid, ethylene, history of their discovery, biosynthesis and mechanism of action, photomorphogenesis, phytochromes and cryptochromes, their discovery, physiological role and mechanism of action.
<b>JANUARY</b>	<p><b>Genetic engineering:</b> tools and techniques of recombinant DNA technology; Cloning vectors; Genomic and cDNA library; transposable elements; techniques of gene mapping and chromosome walking.</p> <p><b>Biotechnology:</b> functional definition; basic aspects of plant tissue culture; cellular totipotency, differentiation and morphogenesis; biology of agrobacterium; vectors for gene delivery and marker genes; salient achievements in crop biotechnology.</p>

## PROPOSED TEACHING PLAN FOR THE SESSION 2017-18

### DEPARTMENT OF BOTANY

#### B.Sc.- III, PAPER –II

#### ECOLOGY AND UTILIZATION OF PLANTS

Month	Proposed Topic
JULY Unit-I	<p>Plants and environment: Atmosphere (gaseous composition), water (properties &amp; water cycle), light (global radiation, photosynthetically active radiation), temperature, soil (development of soil profiles, physico-chemical properties), and biota.</p> <p>Morphological, anatomical and physiological responses of plants to water (hydrophytes &amp; xerophytes), temperature (thermoperiodicity), light (photoperiodism, heliophytes &amp; sciophytes) &amp; salinity.</p>
AUG Unit II	<p>Community Ecology: Community characteristics, frequency, density; cover, life forms biological spectrum; ecological succession.</p> <p>Ecosystems: Structure, abiotic &amp; biotic components; food chain, food web, ecological pyramids, energy flow; biogeochemical cycles of carbon, nitrogen and phosphorus.</p>

SEP  Unit III	Population ecology: Growth curves; ecotypes; ecades.  Biogeographical regions of India.  Vegetation types of India: Forests & grasslands.p
OCT  III	Vegetation types of India: Forests & grasslands.
NOV  Unit  IV	Utilization of plants  Food plants: rice, wheat, maize, potato, sugarcane.  Fibers: Cotton & Jute  Vegetable oils: groundnut, mustard and coconut  General account of sources of firewood, timber & bamboos.
DEC  Unit V	Spices: General account.  Medicinal plants: :General account  Beverages :Tea & coffee  Rubber.
JAN	Practical Exam

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PROPOSED TEACHING PLAN FOR THE SESSION 2017-18

B.Sc. PART – ONE (CHEMISTRY)

MONTH	PROPOSED WORK	PAPER - ONE	PAPER – TWO	PAPER - THREE
July	UNIT – I	<b>A. ATOMIC STRUCTURE</b> Idea of de-Broglie matter-waves, Heisenberg Uncertainty principle, Schrodinger wave equation, significance of $\Psi$ and $\Psi^2$ , radial & angular wave functions and probability distribution curves, Atomic orbital and shapes of s, p, d orbital's, Aufbau and Pauli exclusion principles, Hund's Multiplicity rule, electronic configuration of the elements, Effective nuclear charge	<b>STRUCTURE &amp; BONDING</b> <b>A.</b> Resonance. Hyper conjugation, Inductive and other field effects, Aromaticity, hydrogen bonding. <b>B. MECHANISM OF ORGANIC REACTIONS</b> Homolytic & heterolytic bond breaking, types of reagents-electrophiles & nucleophiles	<b>MATHEMATICAL CONCEPTS FOR CHEMIST AND COMPUTER</b> <b>A.</b> Logarithmic relations, curve sketching linear graphs. Properties of straight line, slope and intercept. Differentiation of functions. Partial differentiation. Integration of some useful and relevant functions, Maxima and minima. Permutation and combination. Probability.
August	UNIT – I	<b>B. PERIODIC PROPERTIES</b> Ionization energy, Electron gain enthalpy and Electronegativity,	<b>B. MECHANISM OF ORGANIC REACTIONS</b>	<b>MATHEMATICAL CONCEPTS FOR CHEMIST AND COMPUTER</b> <b>B.</b> General introduction to computers, components of computer, hardware and

		trend in periodic table and applications in predicting and explaining the chemical behavior.	Structure and reactivity of reaction intermediates-Carbocation, carbanions, free radicals, carbenes and nitrenes.	software, input and output devices: binary numbers. Introduction to computer languages. Programming. Operation systems.
<b>September</b>	<b>UNIT – II</b>	<b>CHEMICAL BONDING</b> Valence bond theory and its limitations. Directional character of covalent bond, various types of hybridization and shape of simple inorganic molecules and ions. Valence shell electron pair repulsion theory (VSEPR) to $\text{H}_2\text{O}$ , $\text{NH}_3$ , $\text{SF}_4$ , $\text{H}_3\text{O}^+$ , $\text{ClF}_3$ and $\text{ICl}_2^-$ . Homonuclear and heteronuclear bond strength and bond energy, percentage ionic character from dipole moment and electronegativity difference.	<b>STEREOCHEMISTRY OF ORGANIC COMPOUNDS</b> <b>A.</b> Optical. Isomerism - enantiomers, diastereomers, threo and erythro, meso compound, resolution of enantiomers. inversion, retention and racemization, Relative and absolute configuration. Sequence rules. D and L and R & S systems of nomenclature. <b>B.</b> Geometrical isomerism - Syn and anti-forms, E & Z system of nomenclature, properties of cis-trans isomers.	<b>A. MOLECULAR VELOCITIES</b> Root mean square velocity average and most probable velocities. Maxwell's law of distribution of molecular velocities of gases, (Graphical interpretation), effect of temperature on distribution of molecular velocities, collision frequency, mean free path, Joule-Thompson effect, Liquification of gases. <b>B.</b> Deviation from ideal behaviour, Real gases, Vander Waal's equation of state. Relationship. Vander Waal's constant and critical constants, Law of corresponding state.
<b>October</b>	<b>UNIT – III</b>	<b>CHEMICAL BONDING</b> <b>Ionic solids-</b> Ionic structure, Radius ratio and coordination numbers, limitations of radius ratio rule, lattice defects,	<b>ALIPHATIC AND AROMATIC RING COMPOUNDS</b> <b>A.</b> Cycloalkanes- Nomenclature, methods of formation, chemical reactions, Bayer's strain theory	<b>A. LIQUID STATE</b> Inter molecular forces, magnitude of intermolecular force, structure of liquids. Properties of liquids, viscosity and surface tension.

		semiconductors, lattice energy Born-Haber cycle, Solvation energy and solubility of ionic solids, polarizing power and polarisability of ions, Fajan's rule, Metallic bond, band free electrons, Valence bond and Band theory. ,	and its limitations. Ring's strain in small rings (cyclopropane and cyclobutane), theory of strain less rings. The case of cyclopropane ring: banana bonds. <b>B.</b> Mono-nuclear and polynuclear aromatic ring. Structure of benzene & naphthalene. Molecular formula and Kekule structure.	<b>B.</b> Ideal and non-ideal solutions, modes of representing concentration of solutions, activity and activity coefficient.
<b>November</b>	<b>UNIT – III &amp; IV</b>	<b>UNIT-IV A. s-BLOCK ELEMENTS</b> Comparative study, Saliient features of hydrides, solvation and complexation tendencies including their function in biosystems and introduction to alky & aryl, Derivative of alkali and alkaline earth metals	<b>UNIT- III ALIPHATIC AND AROMATIC RING COMPOUNDS</b> Aromatic electrophilic substitution. General pattern of the mechanism, role of $\sigma$ and $\pi$ complexes. Electrophilic substitution in naphthalene. <b>UNIT- IV ALKENES, DIENES AND ALKYNES</b> <b>A.</b> Mechanism of dehydration of alcohols. <b>B.</b> Chemical reactions of alkenes- Mechanisms involved in electrophilic and free radical additions,	<b>UNIT- III A. LIQUID STATE</b> Dilute solution: Colligative Properties, lowering of vapour pressure of solvent, Raoult's law, Osmosis, van Hoff Theory of dilute solutions, measurements of Osmotic pressure, relationship between lowering of vapour pressure and osmotic pressure. Elevation of boiling point. Depression in freezing point, abnormal molar masses, Depression of dissociation and association of solutes, Vant Hoff factor. <b>UNIT- IV A. LIQUID CRYSTALS</b> Difference between liquid Crystal, solids and liquids, Classification. Structure "of

			hydroboration-oxidation, oxymercuration-reduction, epoxidation. Substitution at the allylic and vinylic positions of alkenes. Structure of allenes and butadiene, chemical Reaction- 1,2 and 1,4 addition.	nematic and cholestric phases, Thermography. Seven segment cell, applications of liquid Crystals.
<b>December</b>	<b>UNIT –IV</b>	<b>UNIT-IV B: CHEMISTRY OF NOBLE GASES</b> Chemical properties of the noble gases, Chemistry of xenon, structure, bonding in xenon compounds.	<b>UNIT- IV ALKENES, DIENES AND ALKYNES</b> Diel-Alder reaction. Chemical reactions of alkynes and acidity of alkynes. Electrophilic and nucleophilic addition reactions, hydroboration and oxidation with ozone and $\text{KMnO}_4$ .	<b>UNIT- IV B. COLLOIDAL STATE</b> Classification, Optical. Kinetic, and Electrical Properties of colloid. Coagulation, Hardy Schulze law, flocculation value. Protection, Gold number, Emulsion, micelle. Gel. Syneresis and thixotrophy. Application of colloid. <b>C. SOLID STATE</b> Space lattices, unit cells. Elements of Symmetry in crystallize solids, X-rays diffraction, Miller's indices, identification of unit cell by Braggs Spectrometer, Powder method, Neutron and electron diffraction (Elementary idea only)



January	UNIT – V	<p><b>UNIT-V p-BLOCK ELEMENTS</b></p> <p>Halides, hydrides, oxides and oxoacids of Boron, Aluminum, Nitrogen and Phosphorus, Boranes, Borazine, fullerenes, and silicates, interhalogens and pseudo halides.</p> <p><b>B. INORGANIC CHEMICAL ANALYSIS</b></p> <p>Chemical principles involved in the detection acids and basic radicals including interfering radicals.</p>	<p><b>UNIT- V ARENES AND AROMATICITY</b></p> <p><b>A. ALKYL HALIDES AND ARYL HALIDES</b></p> <p>Mechanism and stereochemistry of nucleophilic substitution reactions and alkyl halides and aryl halides with energy profile diagrams. <math>SN_1</math>, <math>SN_2</math>, <math>SN_i</math> mechanisms.</p> <p><b>B. Mechanisms and stereochemistry of elimination reaction and alkyl halides.</b></p> <p>Elimination Vs Substitution.</p>	<p><b>UNIT- V A. CHEMICAL KINETICS</b></p> <p>Rate of reaction, Factors influencing rate of reaction, rate constant. Order and molecularity of reactions. Zero, first and second order reaction, methods of determining order of reaction. Complex reactions: Consecutive, opposing and side reactions, Chain reactions. Temperature dependence of reaction rate, Arrhenius theory, Physical significance of Activation energy, collision theory, demerits of collision theory, non-mathematical concept of transition state theory.</p> <p><b>B. CATALYSIS</b></p> <p>Homogeneous and Heterogeneous Catalysis, types of catalyst, characteristics of catalyst. Enzyme Catalysed reactions. Micellar catalysed reactions. Industrial applications of Catalysis</p>
February	DOUBT CLASS	REVISION AND PRACTICAL EXAM.	REVISION AND PRACTICAL EXAM.	REVISION AND PRACTICAL EXAM.

GOVT.D.B. GIRL'S P.G. (AUTONOMOUS) COLLEGE

**TEACHING PLAN COMPUTER SCIENCE SESSION 2017-18**

**B.SC I COMPUTER SCIENCE  
PAPER-I  
COMPUTER HARDWARE**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<p><b>UNIT I- General Overview Of Computer Hardware :</b>  <b>(a) introduction to computer :</b> computer vs-calculator &amp; typewriter ; parts of a computer ; the system unit/inside the system unit, cpu; ram-keyboard storage media floppy &amp; hard disk; monitor, mouse; printer; types of computer, evolution of personal computer from pc-xt,pc-at (286) to Pentium pc . hardware &amp; software, types of software : system software, application software, introduction to programming languages, procedural oriented languages, structured programming, object oriented programming, languages [ex. basic, Cobol, Pascal, c, c++,visual basic, java &amp; c#]. type of operating system “ introduction to dos, Unix, windows, simple dos commands and features of Unix &amp; working of windows.</p>
<b>AUGUST</b>	<p><b>UNIT I- computer system operation</b> number system: unary system, decimal system, binary system conversions, addition, subtraction by 9's and 10's complements and by 1's and 2's complements. binary multiplication &amp; division ; octal number system &amp; hexadecimal number system and use.</p> <p><b>UNIT II- computer digital electronics - part a :</b>  <b>(a) computer communication code-</b> ' binary code, 8421 code; excess 3 code; parity code-, grey code ascii &amp; ebcdic codes.</p>
<b>SEPTEMBER</b>	<p><b>UNIT II- computer logic system logic gates :</b> diode and bjt as switch; response of bjt to square waves, new logic, mathematical logic, basic logic operators/gates,and, or, not operator./ gate, positive and negative logic, nor &amp; nand gates, boolean, equations by logic symbol.</p> <p><b>UNIT III- computer digital electronic - part b :</b>  <b>(A) integrated circuits for computer logic family :</b> electrical characteristics, propagation delay noise immunity,types of load rtl,dttl,ttl &amp; como bipolar &amp; mos integration circuits, ttl circuits.</p>

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<b>OCTOBER</b>	<p><b>UNIT III-</b></p> <p>(b)<b>basic done of digital circuitry, boolean algebra:</b> laws of boolean algebra,demorgans theorem,dual nature of boolean laws, boolean expression and logic diagram. the karnaugh map, truth table to 'k-map, simplification of k-map.</p> <p><b>(c) computer logic circuits :</b> ex-or, ex-nor circuitary, half and full adder, half and full subtractor, subtraction by 1's &amp; 2's compliments</p>
<b>NOVEMBER</b>	<p><b>UNIT IV-</b></p> <p>computer digital electronics-part c :</p> <p>(a) more computer logic circuit combinational logic circuits : encoder &amp; decoder, four bit binary, decoder, bcd to 7 segment, decoder encoder, multiplexers &amp; demultiplexers, data transmission, logic function generator.</p>
<b>DECEMBER</b>	<p><b>UNIT IV-(b) multivibrator circuits :</b> monostable, astable &amp; bistable circuits, smitt trigger,rs flip-flop, rs flip-flop using nor gate and nand gate, ' clocked-rs flip-flop,d flip-flop or latch, edge triggered flip-flop, preset and clear, propagation delay-set-up time, hold time master-slave flip flop.</p>
<b>JANUARY</b>	<p><b>UNIT V- computer digital electronics-part d:</b></p> <p><b>(a) computer counters-and shift registers:</b> binary counter, down counter, parallel or synchronous counter, counter with feedback, code-7 precision time interval,monitor horizontal to vertical generator, shift registers in brief, application of shift registers.</p> <p><b>(b) computer memories :</b>types of memory, ram, rom, prom, eprom, dram, sram.</p>
<b>FEBRUARY</b>	<b>REVISION</b>

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**B.SC I COMPUTER SCIENCE  
PAPER-II  
COMPUTER SOFTWARE**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<p><b>UNIT I- fundamentals for using the computer :</b></p> <p><b>(a) driving the computer</b></p> <p>(1) computer operating system &amp; other software : (i) windows &amp; unix system software &amp; their versions. (ii) hll software : basic, cobol, pascal,c,c++, visual basic, java &amp; c# (iii) package software's - ms-office &amp; foxpro.</p> <p>(2) introduction to dos ver 6.22 &amp; windows-95, windows-98 &amp; windows-2000.</p> <p>(3) windows concept, various features &amp; advantages, windows structure, desktop,taskbar, start menu, my computer, recyclebin.</p> <p>(4) accessories : calculator notepad , paint, wordpad, character map, explorer : creating folders and other explorer facilities.</p> <p>(5) object linking &amp; embedding. communication- dialup networking, phone dialer.</p>
<b>AUGUST</b>	<p><b>UNIT I-</b></p> <p><b>(b) general idea of problem solving with computers</b> problem analysis &amp; solving scheme, computational procedure, program outline, algorithm pseudo codes, flow chart, testing of flow chart, branching and looping,writing executing &amp; testing the program with examples.</p> <p><b>(c) programming constants and variables</b>-character set, constants (numeric string), variables(numeric &amp; string),rules for arithmetic expression and hierarchy of operations, relational expressions, logical expressions and operator, library functions.</p> <p><b>UNIT II-working with ms-office</b></p> <p><b>introduction to word</b> : basic of wordproccessing ; features and advantages of word processing ; creating, editing, formating &amp; previewing documents ; advanced features; using thesaurus, mail merge, table &amp; charts, implementing ole concept.</p> <p><b>Practical-</b> Giving the general idea of how to start computer. Basic knowledge of computer. How to open ms office and then introduction of ms word and its usage and some practical on ms word.</p>

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<b>SEPTEMBER</b>	<p><b>UNIT II- introduction to excel</b> : worksheet basics, creating, opening &amp; moving in worksheet, working with formula &amp; cell referencing, absolute &amp; relative addressing, working with ranges, formatting of worksheet, graphs &amp; charts, database, function and macros.</p> <p><b>introduction to power point</b> : creating a presentation, modifying visual elements adding objects, applying transitions, animations and linking, preparing, handouts, presenting a slide show</p> <p><b>working on internet</b>  <b>introduction to internet</b> : concept of internet, application of internet, services on internet, world wide web(www) &amp; web browsers, working with internet explorer, introduction to internet search engines, yahoo, alta vista, google etc. surfing the internet, chatting on internet electronic mail (e-mail), working with outlook express; overview of telnet &amp; ftp (file transfer protocol) services. internet security, web security firewalls, type of firewalls.</p> <p><b>Practical-</b> basic skills on ms excel,how to use it and practicing on calculations and how to use formula.  After excel learning about powerpoint presentation, how to make presentation ,usage of transition, animation and many more about presentation.</p>
<b>OCTOBER</b>	<p><b>UNIT III- programming with c : part -a</b>  introduction character set, identifiers and keywords, variables, displaying variables, reading variables, character and character string, qualifiers, type define statements, value initialized variables, constants, constants qualifier, operators and expressions, operator precedence and associativity  basic input output : single character i/o general outputs, types of characters in format string, scanf with specifier,searchset arrangements and supression character, format specifier for scanf control structure : if-statement, if else statement, multiway decision compound statement.</p> <p><b>Practical</b> – learn how to use c environment ,basic of c software and how to write program, compiling and running a program.</p>

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<b>NOVEMBER</b>	<p><b>UNIT III-</b> loops : for-loop, while loop do-while loop, break statement, switch statement continue statement, goto statement, functions function main, function accepting more than one parameter, user defined and library function, concept associatively with functions, function parameter, return value, recursion comparisons, of iteration and recursion variable length argument list.</p> <p><b>UNIT IV- programming with c : part-b</b> scope operator, arrays, strings, multidimensional arrays, strings, array of strings, function in string, pointers: definition and use of pointer, address operator, pointer variable, referencing pointer, void pointers, pointer arithmetic, pointer to pointer.</p> <p><b>Practical-</b>learning about how to deal with error in program ,practicing program on various control structure,looping and arrays.</p>
<b>DECEMBER</b>	<p><b>UNIT IV-</b> pointer and arrays, passing arrays to functions. pointer and functions, accessing array inside functions, pointers and two dimensional arrays, array of pointers, pointer constants, pointer and strings.</p> <p><b>UNIT V- programming with c : part-c</b> structure and union, declaring and using structure, structure initialization, structure within structure.</p> <p><b>Practical-</b> program on pointers and its types ,function, strings.</p>
<b>JANUARY</b>	<p><b>UNIT V-</b> operations of structure, array of structure, array within structure, creating user defined data type, pointer to structure and function. union, difference between union and structure, operation on union, scope of union.dynamic memory allocation, library function for dynamic memory allocation, dynamic multi dimensional arrays, self-referential structure, file:- introduction, structure, file handling, functions file types, unbuffered and buffered file, error handling, low level file input-output.</p> <p><b>Practical-</b> practice on program based on structures and union.</p>
<b>FEBRUARY</b>	<b>REVISION</b>

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**B.Sc – II COMPUTER SCIENCE  
PAPER –I  
COMPUTER HARDWARE**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>Unit I- classification and organization of computers</b> -digital and analog computers and its evolution. major components of digital computers; memory addressing capability of cpu; word length and processing speed of computers; microprocessors single chip microcomputers; large and small computers.
<b>AUGUST</b>	<b>UNIT I-</b> users interface hardware, software and firmware. multiprogramming, multiuser system. dumb smart and intelligent terminals computer network and multi processing, lan parallel processing, flinn"s classification of computers. control flow and data flow computers.  <b>UNIT II- central processing unit</b> -cpu organization, alu, control unit.
<b>SEPTEMBER</b>	<b>UNIT II-</b> registers. instructions of intel 8085. instruction word size, various addressing mode interrupts and exceptions, some special control signals and i/o devices, instruction cycles, fetch and execution operation, time diagram, data flow.  <b>UNIT III- memory of computers</b> -main memory, secondary memory, back up memory, cache memory.
<b>OCTOBER</b>	<b>UNIT III-</b> real and virtual memory. semiconductor memory, memory controller and magnetic memory.ram disks, optical disks, magnetic bubble memory, dasd, destructive and nondestructive readout ,program of data memory and mmu.
<b>NOVEMBER</b>	<b>UNIT IV-</b> i/o devices of microcontroller; processors, i/o devices, printer . other output devices; i/o port, serial data transfer scheme, micro controller, signal processors, i/o processor, arithmetic processors.
<b>DECEMBER</b>	<b>UNIT V- system software and programming technique</b> ml, al, hll, stac subroutine ,debugging of programs, macro micro programming, program design, software development.
<b>JANUARY</b>	<b>UNIT V-</b> flow & chart multi programming, multiuser, multitasking protection, operating system and utility program, application packages.
<b>FEBRUARY</b>	<b>REVISION</b>

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**B.Sc – II COMPUTER SCIENCE  
PAPER –II  
COMPUTER SOFTWARE**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<p><b>UNIT I-</b> html basics &amp; website design principles concept of website, web standards, what is html? html versions, naming scheme for html documents, html document /file, html editor, explanation of the structure of the home page, elements in the html documents, html tags, basic html tags, comment tag in html, viewing the source of a webpage, how to download the web page source? xhtml, css, extensible markup language (xml) extensible style sheet language (xsl), some tips of designing webpages, html document structure. html document structure- head section, illustration of document structure, &lt;base&gt; element, &lt;isindex&gt; element,&lt;link&gt; element, meta, &lt;title&gt; element, &lt;script&gt;. element, practical applications, html document structures- body section:- body elements and its attributes: back ground: back ground color; text: link; active link (alink); visited link (vlink).</p> <p><b>Practical-</b> introduction to html program editor ,how to write html programs, running html program and running html programs.</p>
<b>AUGUST</b>	<p><b>UNIT I-</b> left margin; top margin, organization of elements in the body of the document; text block elements; text emphasis elements; special elements- hyper text anchors, character- level elements; character references, text block elements; hr (horizontal line); hn (headings); p (paragraph); lists; address: blockquote; table; div(html 3.2 and up); pre (preformatted; form, text emphasis elements, special; elements- hypertext anchors, character- level elements; line breaks (bra) and images (img), lists, address element, blockquote elements, table elements, comments in html, character emphasis modes, logical and physical styles, net scape, microsoft and advanced standard elements list, font, basefont, and center.</p> <p><b>Practical-</b> html programs on various tags like body and its elements,using table tag,address tag,image tag,font tag,list tag.</p>



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<b>SEPTEMBER</b>	<p><b>UNIT II-</b> image, internal and external linking between webpages netscape, microsoft and advanced standard elements list, font ,basefont and center ,insertion of images using the element img (attributes; src (source), width, heighth, alt (alternative), align, image (in line images), element and attributes, illustration of img alignment, images as hyper text anchors,internal .</p> <p><b>Practical-</b> practicing program on anchor tag, paragraph tag, heading tag ,links frames and many more.</p>
<b>OCTOBER</b>	<p><b>UNIT II-</b> external linking between web pages hyper text anchor, href in anchors, links to a particular place in a document, name attribute in an anchor, targeting name anchors, title attribute, practical it application designing web pages links with each other, designing frames in html. practical examples.</p> <p><b>UNIT III-</b> introduction to oop advantages of oop, the object oriented approach, characteristics of object oriented languages- object, classes, inheritance, reusability, polymorphism and c++. function: function declaration, calling function.</p> <p><b>Practical-</b> how to use cpp environment ,writing program,running and compiling a program.</p>
<b>NOVEMBER</b>	<p><b>UNIT III-</b> function defines, passing arguments to function, passing constant, passing value, reference argument, returning by reference, inline function, function overloading, default arguments in function.</p> <p><b>UNIT IV-</b> object classes and inheritance object and class, using the class, class constructor, class destructors, object as function argument, copy constructor.</p> <p><b>Practical-</b> programs on inheritance,constructor,class and objects.</p>
<b>DECEMBER</b>	<p><b>UNIT IV-</b>struct and classes, array as class member, static class data, static member functions, friend function, friend class, operator overloading, type of inheritance, base class, derive class, access specifier protected, function overloading, member function, string, template function.</p> <p><b>UNIT V-</b>pointers and virtual function pointers: &amp; and * operator pointer variables, pointer to pointer.</p> <p><b>Practical-</b> programs on array,function,friend class,operator overloading,strings,templates.</p>

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<b>JANUARY</b>	<b>UNIT V</b> -void pointer , pointer and array, pointer and function, pointer and string, memory management, new and delete, pointer to object, this pointer virtual function: virtual function, virtual member function, accesses with pointer, pure virtual function. file and stream: c++ streams, c++ manipulators, stream class, string i/o ,char i/o, object i/o, i/o with multiple object, disk i/o.  <b>Practical-</b> programs on various logics,pointers and many more.
<b>FEBRUARY</b>	<b>REVISION</b>

**B.Sc – III COMPUTER SCIENCE  
PAPER –I  
COMPUTER HARDWARE**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT I- ORGANISATION OF MICRO-PROCESSOR &amp; MICRO COMPUTER:-</b>  <b>1. INTRODUCTION &amp; ORGANIZATION OF MICRO COMPUTER:</b> (a) basic components of micro computer: basic block; prom ram memory;data memory; i/o ports; clock generator; integration of functional blocks. (b) interconnecting components in a micro computer: necessary functional block; bussed architecture for microcomputer; memory addressing; addressing i/o ports; comparison of i/o mapped and memory mapped i/o. (c) input output techniques: non-cpu devices, program & interrupt controlled i/o; hardware controlled i/o or dma.  <b>2. AN INTRODUCTION TO THE VARIOUS AS:</b> (a) general understanding of different $\mu$ p or cpu: intel 8088, 286, 386, 486, 586 pentium, p54c, mmx p55c; motorola 6800 & 88100 series; cyrix & amd cpus.

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<b>AUGUST</b>	<p><b>UNIT I-</b> (b) the registers of cpu: (give example of p-8088) register organization of 8088, scratch pad segment, pointer, index and flag, registers.</p> <p>(c) memory addressing modes of p-8088: segment offset; data addressing modes; addressing for branch instructions.</p> <p>(d) i/o addressing with p-8088: memory mapped i/o &amp; i/o mapped i/o.</p> <p><b>UNIT II- SYSTEM HARDWARE ORGANISATION OF COMPUTERS:</b></p> <p>1. Hardware Organization Of The Personal Computer :</p> <p>(a) block diagram with various parts of pc.</p> <p>(b) the mother board of general p.c.: 8088 cpu; rom &amp; ram; keyboard &amp; its interface; system timer/counters; hardware interrupt vectoring; dma controller &amp; channels; interfacing to audio speaker; bus slots &amp; factory cards.</p> <p>(c) the serial i/o ports, com-1 &amp; com-2.</p> <p>(d) the parallel port for printer.</p> <p>(e) expansion slots for ram.</p> <p>(f) disk controllers: for floppy, hard disk, cd-rom &amp; cassette drives.</p>
<b>SEPTEMBER</b>	<p><b>UNIT II- THE VIDEO DISPLAY OF PCS:</b></p> <p>(a) video monitors ; monochrome and colour.</p> <p>(b) video display adapters &amp; their video modes; monochrome &amp; colour graphics adapters.</p> <p>(c) video control through ansi-sys.</p> <p>(d) video control through rom-bios :int 10h.</p> <p>(e) direct video control; monochrome &amp; colour graphics adapters.</p> <p>(f) installing customized character sets.</p> <p><b>UNIT III- ORGANISATION OF OPERATING SYSTEM WITH SYSTEM HARDWARE:</b></p> <p><b>1. THE ROM-BIOS SERVICES:</b></p> <p>(a) introduction to unix, enix, sun, solaris, dos &amp; mac with special reference to dos &amp; windows it's ver., as dos becomes more popular than others in pcs.</p> <p>(b) the rom-bios diskette services, int 13h.</p> <p>(c) the rom-bios serial port services, int 14h.</p> <p>(d) the rom-bios keyboard services, int 16h.</p> <p>(e) the rom-bios printer services, int 17h.</p> <p>(f) miscellaneous service provided by the rom-bios: int 05h, int 11h, int 12h, int 18h, int 19h, int 1ah.</p>

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<b>OCTOBER</b>	<p><b>UNIT III- 2. the fundamental of operating system viz. dos/windows:</b></p> <p>(a) the loading of dos &amp; its basic structure ; rom bootstrap, io.sys, dos.sys &amp; command.com.</p> <p>(b) the execution of the programs under dos; exec functions , program segment prefix; features of com &amp; exe program files.</p> <p>(c) device handling by dos; fdd,hdd,con, keyboard, prn, aux, clock and nul devices; block devices; character devices; driver installation sequence.</p> <p>(d) file structures of dos;</p> <p>(e) the dos interrupts: int 20h-2fh</p> <p>(f) the dos functions through int 21h; discuss only the understanding part of various other dos function to handle hard &amp; softwares.</p> <p>(g) installation of windows: important system files in windows.</p>
<b>NOVEMBER</b>	<p><b>UNIT IV-ORGANIZATION &amp; HANDLING BY OPERATING SYSTEMS:</b></p> <p><b>1. disk and files under dos;</b></p> <p>(a) logical structure of a disk; organization of disk for use ; boot record; fat files; disk or root directory.</p> <p>(b) file organization on a dos disk; logical volumes; sub directories; volume lables.</p> <p>(c) manipulating files under dos: file attributes; date and time, file access; fcb functions.</p> <p><b>2. memory allocation, program loading and execution;</b></p> <p>(a) memory management under dos; exec loader: memory management and its functions; modifying a program's memory allocation.</p>
<b>DECEMBER</b>	<p><b>UNIT IV- (b) loading and executing programs under dos: the exec function; memory considerations; parameter blocks; calling &amp; returning from exec.</b></p> <p>(c) loading the program overlays through exec.</p>

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<b>JANUARY</b>	<b>UNIT V-organization of hardware by operating systems</b> 1. <b>interrupt handling through dos;</b> (a) types of interrupts. (b) interrupt vector table in pc. (c) interrupt service routines. (d) special interrupts in pc: clock interrupt; the c or break interrupt; dos reserved interrupt int 28h; patching memory resident routines. 2. <b>filters for dos:</b> (a) filters in operating systems. (b) redirection of i/o under dos. (c) the filters supplied with dos. (d) writing filters to run under dos. 3. <b>handling of various versions of windows o.s.:</b> (a) setup installation. (b) troubleshooting. (c) networking features.
<b>FEBRUARY</b>	<b>REVISION</b>

**B.Sc – III COMPUTER SCIENCE  
PAPER –II  
COMPUTER SOFTWARE**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT I-concept of d.b.m.s and data models</b>  (a) introduction of dbms: - purpose of data base systems, views of data , data modeling, database languages, transaction management, storage management, database administrator and user, database system structure.  (b) e-r model: basic concepts, constraints, keys , mapping constraint, e-r diagram, weak and strong entity sets, e-r database schema, reduction of an e-r schema to table.

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<b>AUGUST</b>	<p><b>UNIT II-relational database management system</b></p> <p>(a) relational model: structure of relational database, relational algebra, domain relational calculus, extended relational-algebra operation, modification of database, views.</p> <p>(b) relational database design: pitfalls in relational database design, decomposition functional dependencies, normalization: 1nf, 2nf, bcnf, 3nf, 4nf, 5nf.</p> <p><b>Practical-</b> learning about oracle environment. how to open software, running and debugging a simple program.</p>
<b>SEPTEMBER</b>	<p><b>UNIT III-introduction to rdbms software-oracle</b></p> <p>(a)introduction : introduction to personal and enterprises oracle , data types, commercial query language, sql, sql *plus.</p> <p>(b) ddl and dml: creating table, specifying integrity constraint, modifying existing table, dropping table, inserting deleting and updating rows in as table. where clause, operators, order by, group function, sql function, join, set operation, sql sub queries. views: what is views, create, drop and retrieving data from views.</p> <p>(c) security : management of roles, changing password, granting roles &amp; privilege, with drawing privileges.</p> <p><b>Practical-</b> making tables and performing various operations on table like updating a table,altering a table,deleting a table etc.</p>
<b>OCTOBER</b>	<p><b>UNIT III-</b> pl/sql: block structure in pl/sql, variable and constants, running pl/sql in the sql *plus, data base access with pl/sql, exception handling, record data type in pl/sql, triggers in pl/sql.</p> <p><b>UNIT IV- g.u.i programmimg</b></p> <p>(a) introduction to visual basic: event driven programming, ide, introduction to object , controlling objects, models and events, working with forms, mdi form working with standard controls.</p> <p><b>Practical-</b> practicing on pl sql programs and vb environment.</p>

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<b>NOVEMBER</b>	<p><b>UNIT IV-</b> overview of variables, declaring, scope, arrays, user defined data types, constants, working with procedures: function, subroutine and property. working with data, time, format, string and math's function. controlling program execution: comparison and logical operators , if..then statements, select case statement. looping structures, exiting a loop error trapping and debugging.</p> <p>file organization : saving data to file, sequential and random access file. the designing and coding.</p> <p><b>Practical-</b> practicing vb programs based on conditions ,looping, mdi forms, functions, strings.</p>
<b>DECEMBER</b>	<p><b>UNIT V-DATA BASE PROGRAMMING IN VB:</b></p> <p>(a) introduction :- concept of dao,rdo,ado, input validation : field &amp; form level validation, ado object model: the ado object hierarchy, the connection object, the command object, record set object, parameter object, field object, record object, stream object, error object parameter object.</p> <p>(b) <u>Using</u> bound control to present ado data; using the ado data control, ado data control properties, binding simple controls: data list, data combo, data grid, data form wizard: single form wizard, grid form, master/detail form. programming the ado data control: refresh method, event, hierarchical flex grid control.</p> <p><b>Practical</b> –programs on various logics using different controls of vb.</p>
<b>JANUARY</b>	<p><b>UNIT V-</b> data environment &amp; data report: creating connection, using command object in the data environment, data environment option and operation, binding form to the data environment, ado events in the data report, print preview, print, export, data report in code: data reports events, binding data reports directly.</p> <p><b>Practical-</b> learning how to use various connectivity ,events and using database through vb programs.</p>
<b>FEBRUARY</b>	<p><b>REVISION</b></p>

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**PGDCA I<sup>ST</sup> SEMESTER**

**PAPER I-INTRODUCTION TO SOFTWARE ORGANISATION**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>AUGUST</b>	<p><b>UNIT I- Introduction to Computers</b></p> <p>Computers – Introduction, Computer System Characteristics, Strength and Limitations of Computer, Development of Computers, Types of Computers, Generations of Computers. Introduction to Personnel Computers – Uses of PC"s, Components of PC"s, Evolution of PC"s, Developments of Processors, Architecture of Pentium IV, Configuration of PC"s; Input Device; Output Devices.</p> <p><b>UNIT II- Computer Organization</b> Central Processing Unit – Arithmetic Logic Unit, Control Unit, Registers, Instruction Set.</p>
<b>SEPTEMBER</b>	<p><b>UNIT II- Storage Devices</b> – Storage and its need, Storage Evaluation Units, Primary Storage, Secondary Storage, Data Storage and Retrieval Systems, SIMM, DIMM, Types of Storage Devices.</p> <p><b>UNIT III-: Computer Software</b> Basics of Software – needs of Software, Types of Software; Free Domain Software; Open Source Software; Compiler, Interpreter and Assembler; Linker and Loader; Debugger; Integrated Development Environment;</p>
<b>OCTOBER</b>	<p><b>UNIT III- Operating System</b> – Introduction, Uses of OS, Functions of OS, Booting process, Types of Reboot, Booting from different OS, Types of OS, DOS, Windows, Linux.</p> <p><b>UNIT – IV : Programming Languages</b> – Introduction, Comparison between Human and Computer Language; Program; Data, Information and Knowledge; Characteristics of Information; Types of Programming Languages; Generations of Languages; Program Development Steps; Programming Paradigms; Object-Oriented Programming; Structured Programming, Functional Programming, Process Oriented Programming</p>



## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>NOVEMBER</b>	<b>UNIT – V : Communication, Networks and Internet</b>  Communication – Introduction, Communication process, Communication Types, Communication Protocols, Communication Channels/Media. Networks – Introduction; Types of Network; Topology; Media - NIC, NOS, Bridges, HUB, Routers, Gateways. Internet –Introduction, Growth of Internet, Owner of Internet, Internet Service Provider, Anatomy of Internet, ARPANET and Internet History of World Wide Web, Services Available on Internet -File Transfer Protocol, Gopher, E-mail, Telnet, Newsgroups, WWW, Applications of Internet.
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### **PAPER II- PROGRAMMING IN 'C'**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>AUGUST</b>	<b>UNIT I : Introduction :</b>  Introduction Character set, Identifiers and Keywords, Variables, Displaying variables, Reading Variables, Character and Character String, Qualifiers, Type define Statements, Value initialized variables, Constants, Constant Qualifier, Operators and Expressions, Operator Precedence and Associativity, Basic input output: Single Character I/O, Types of Characters in format string, Scanf with specifier.  <b>UNIT II : Control Structures :</b> Control Structure: If - statement, If -else statement, Multi decision, Compound Statement,  <b>Practical-</b> how to use c software, how to run and compile a c program.
<b>SEPTEMBER</b>	<b>UNIT II- Loops:</b> For - loop, While -loop, Do-While loop, Break statement, Switch statement, Continue statement, Go to statement.  <b>UNIT III- Functions &amp; Arrays :</b> Functions : Function main , Functions accepting more than one parameter, User defined and library functions, Concept associatively with functions, function parameter, Return value, recursion comparisons of Iteration and recursion variable length argument list.  <b>Practical-</b> basic c programs like addition of numbers, swapping numbers etc., programs based on control structure and looping.

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<b>OCTOBER</b>	<p><b>UNIT III- Arrays :</b> Scope and Extent, Multidimensional Arrays, Array of Strings, Function in String, passing arrays to functions, accessing array inside functions.</p> <p><b>UNIT IV- Pointers :</b></p> <p>Pointers: Definition and use of pointer, address operator, pointer variable, referencing pointer, void pointers, pointer arithmetic, pointer to pointer, pointer and arrays, pointer and functions, pointers and two dimensional arrays, array of pointers, pointers constants, pointer and strings.</p> <p><b>Practical-</b> programs based on array and its types, pointers, function, strings.</p>
<b>NOVEMBER</b>	<p><b>UNIT V- Structure and Union :</b></p> <p>Declaring and using Structure, Structure initialization, Structure within Structure, Operations on Structures, Array of Structure, Array within Structure, Creating user defined data type, pointer to Structure and function. Union, difference between Union and Structure, Operations on Union, Scope of Union.</p> <p><b>Practical-</b> programs based on structure and union.</p>

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**PAPER III- OFFICE AUTOMATION & TALLY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>AUGUST</b>	<p><b>UNIT – I : Windows Concept</b></p> <p>Windows Concepts, Features, Structure, Desktop, Icons, Taskbar, Start Menu, My Computer, Recycle Bin, My document, creating shortcut. Accessories : Calculator, Notepad, Paint, WordPad, Character Map. Windows Explorer : Creating files &amp; folders and other Explorer facilities, Object Linking &amp; Embedding. Communication : Dialup Networking, Phone Dialer. Difference among windows versions.</p> <p><b>UNIT – II : Word Processing &amp; Spreadsheet</b></p> <p><b>Word</b> : Creating, Editing, &amp; Previewing Documents, Formatting, Advanced Features, Using Thesaurus, Mail Merge, Table &amp; Charts, Handling Graphics, Converting Word Documents into other Formats.</p> <p><b>Practical</b>- basic computer knowledge, using of wordpad, notepad. Various program based on microsoft word .</p>
<b>SEPTEMBER</b>	<p><b>UNIT II-Excel</b> : Worksheet Basics, Creating, Opening, &amp; Moving in Worksheet, Working with Formula &amp; Cell referencing, Absolute &amp; Relative addressing, Working with Ranges, Formatting of Worksheet, Graphs &amp; Charts, Database, Function, and Macros</p> <p><b>UNIT – III : Power Point &amp; FoxPro</b> <b>Power Point</b> : Creating a presentation, Modifying visual Elements, Adding objects, Applying Transitions, animations and linking, Preparing handouts, presenting a slide show.</p> <p><b>FoxPro</b> : Preparing Database files, access &amp; retrieval of records in a data base file, inserting &amp; deleting of records. Programming preliminaries. Sorting &amp; Indexing. Development of programs. LOOPING, Branching, report making.</p> <p><b>Practical</b>- programs on ms excel ,how to various functionalities of ms excel, powerpoint and foxpro.</p>

## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>OCTOBER</b>	<p><b>UNIT – VI : Access</b></p> <p>Introduction to MS Access, The Tables of a Database, Introduction to the Record of a Table, Introduction to Controls Design, Details on Controls Design, The Characteristics of a Table, The Characteristics of a Form, The Characteristics of a Window Control, Data Controls, Introduction to Data Expressions, Getting Assistance With Data Entry, Database Strings, Database Numeric Values, Database Conditional Values, Database Date and Time Values, Creating Reports, Characteristics of Reports.</p> <p><b>Practical-</b> learning about basics of database, how to create table in ms access and performing various operations on table.</p>
<b>NOVEMBER</b>	<p><b>UNIT – V : Tally</b></p> <p>Setting up Ledger &amp; Groups. Study of recording of transactions in the *Voucher*. (According to Golden rules). Study of „Final A/C preparation &amp; displaying in different mode/format“. Study of alteration &amp; Deletion of ledger/Groups. Study of cash &amp; fund flow, day book, sales register, purchase register, bills receivable/Payable etc. Study of data security &amp; backing up data. Outline of entry for Income Tax, ED, VAT, ST/CST, PF, Gratuity, Bonus, Loans &amp; Depreciation etc.</p> <p><b>Practical-</b> about tally software and how to use it.</p>

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**PGDCA II<sup>2ND</sup> SEMESTER**

**PAPER I- PROGRAMMING IN VISUAL BASIC**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<p><b>UNIT I- Introduction to visual Basic</b> - Editions of Visual Basic, Event Driven Programming, Terminology, Working environment, project and executable files ,Understanding modules, Using the code editor window, Other code navigation features, Code documentation and formatting, environment options, code formatting option, Automatic code completion features.</p> <p><b>Creating Programs</b> - Introduction to objects, Controlling objects, Properties, methods and events, Working with forms,Interacting with the user: MsgBox function, InputBox function, Code statements, Managing forms, Creating a program in Visual Basic, Printing.</p> <p><b>Practical-</b> learning about vb environment and various controls of vb.</p>
<b>FEBRUARY</b>	<p><b>UNIT II- Variable and Procedures</b> - Overview of variables, Declaring, Scope, arrays, User-defined data types, constants working with procedures, Working with dates and times, Using the Format function, Manipulating text strings.</p> <p><b>Controlling Program Execution</b> - Comparison and logical operators, If...Then statements, Select Case Statements looping structures, Using Do...Loop structures, For...Next statement, Exiting a loop.</p> <p><b>UNIT III- Working with Controls</b> - Types of controls, Overview of standard controls, ComboBox and ListBox, OptionButton and Frame controls Menu, Status bars, Toolbars, Advanced standard controls, ActiveX controls, Insertable objects, Validation.</p> <p><b>Practical-</b> practicing vb programs based on conditions ,looping,mdi forms,programs on different controls.</p>

## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>MARCH</b>	<p><b>UNIT III- Error Trapping &amp; Debugging</b> - Overview of run-time errors, error handling process, The Err object, Errors and calling chain, Errors in an error-handling routine, Inline error handling, Error-handling styles, General error-trapping options Type of errors, Break mode Debug toolbar, Watch window, Immediate window, Local window, Tracing program flow with the Call Stack.</p> <p><b>UNIT IV-Sequential and Random Files</b> - Saving data to file,basic filling, data analysis and file, the extended text editor, Random access file,The design and codeing.<b>Data Access Using the ADO Data Control</b> - Overview of ActiveX data Objects, Visual Basic data access features, Relational database concepts Using the ADO Data control to access data.</p> <p><b>Practical-</b> programs on error handling ,connectivity and making database.using different data access controls through vb programs.</p>
<b>APRIL</b>	<p><b>UNIT IV-</b> Overview of DAO, RDO, Data Control, structured query language (SQL), Manipulating data Using Data Form Wizard.</p> <p><b>UNIT V- Report Generation</b> - Overview of Report, Data Report, Add groups, Data Environment, Connection to database Introduction to Crystal Report Generator.</p> <p><b>Advances Tools</b> - Overview of drag and drop, Mouse events, Drag-and drop basics, Date Time Control, Calendar, Print Dialog, MDI(Multiple Document Interface).</p> <p><b>Practical-</b> various vb programs on dao,rdo etc There is one vb project in 2<sup>nd</sup> sem which is done by student and guided by a subject teacher.</p>

## PAPER II- DATABASE MANAGEMENT SYSTEM

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<p><b>UNIT I:- Introduction To DBMS</b></p> <p>Data, Information and knowledge, concept of DBMS, Advantages of DBMS, data independence, database administration roles, DBMS architecture, different kinds of DBMS users, importance of data dictionary, contents of data dictionary, types of database languages. Data models: network, hierarchical, relational, Introduction to ODBC concept.</p>

## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>FEBRUARY</b>	<p><b>UNIT II- E-R Model</b> Entity - Relationship model as a tool for conceptual design- entities, attributes and relationships.</p> <p>ER diagrams; Concept of keys; Case studies of ER modelling Generalization; specialization and aggregation.</p> <p><b>UNIT III- Relational Model</b> Structure to Relational Database, Relational Algebra, Extended Relational- Algebra Operation, Simple and complex queries using relational algebra.</p>
<b>MARCH</b>	<p><b>UNIT III-</b> The Domain Relational Calculus, Tuple relational calculus.</p> <p><b>UNIT IV- Relational Database Design</b></p> <p>Pitfalls in Relational Database Design, Decomposition, Functional Dependencies, Normalization: 1NF, 2NF, BCNF, 3NF, 4NF, 5NF.</p> <p><b>Practical-</b> basic knowledge of oracle software and how to make database.How to make table and running a oracle program.</p>
<b>APRIL</b>	<p><b>UNIT V- Structured Query Language :</b></p> <p><b>DDL and DML:</b> Creating Table, Specify Integrity Constraint, Modifying Existing Table, Dropping Table, Inserting, Deleting and Updating Rows in as Table, Where Clause, Operators, ORDER BY, GROUP Function, SQL Function, JOIN, Set Operation, SQL Sub Queries. Views: What is Views, Create, Drop and Retrieving data from views.</p> <p><b>Security:</b> -Management of Roles, Changing Password, Granting Roles &amp; Privilege, with drawing privileges.</p> <p><b>Practical-</b> performing various command on table like updating a table,modifying,applying different functions on table.</p>

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**PAPER III- ESSENTIALS OF E -COMMERCE & HTML**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<b>UNIT I- Introduction to Electronic Commerce</b> –The scope of E-commerce; Size, growth and future projection of E-commerce market Worldwide and in India; Internet and its impact on traditional businesses; Definition of E-commerce; Business models in E – Commerce environment; Case studies. <i>Emergence of E-commerce</i> - Ecommerce on private networks, Electronic Data Interchange (EDI), What is EDI, EDI in action, EDI basics, EDI standards, financial EDI, FEDI for international trade transaction, FEDI payment system within the US, ACH credit transfer payment system FEDI, application of EDI, benefits of EDI, Electronics Payment system,E-commerce on the web, E-commerce in India.
<b>FEBRUARY</b>	<b>UNIT II- Internet, Security and E-Commerce:</b> Security of Data/Information in Internet/web environment; Client security, Network security; Virus protection and Hacking; Security Measures: Authentication, Integrity, Privacy, Non-repudiation; Public information, Private information, firewall tunnels, encryption, secret key encryption, public key encryption, digital signature. Business–to-Business (B2B), Business-to-Consumer (B2C); Business-to-Business-to-Consumer (B2B2C) and Consumer-to-Consumer (C2C) ECommerce  <b>UNIT III- HTML Basics &amp; Web Site Design Principles</b> –Concept of a Web Site, Web Standards, What is HTML? HTML Versions, Naming Scheme for HTML Documents , HTML document/file, HTML Editor , Explanation of the Structure of the homepage , Elements in HTML Documents ,HTML Tags, Basic HTML Tags, Comment tag in HTML, Viewing the Source of a web page, How to download the web page source? XHTML, CSS, Extensible Markup Language (XML), Extensible Style sheet language (XSL), Some tips for designing web pages, HTML Document Structure. HTML Document Structure- Head Section, Illustration of Document Structure,<BASE> Element,<ISINDEX>.  <b>Practical-</b> learning about how to use html editor,making programs on it and running a html programs.Making html programs using body tag.



## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>MARCH</b>	<p><b>UNIT III-</b> Element,&lt;LINK&gt; Element ,META ,&lt;TITLE&gt; Element,&lt;SCRIPT&gt; Element ,Practical Applications, <i>HTML Document Structure-Body Section</i>:-Body elements and its attributes: Background; Background Color; Text; Link; Active Link (ALINK); Visited Link (VLINK); Left margin; Top margin ,Organization of Elements in the BODY of the document: Text Block Elements; Text Emphasis Elements; Special Elements -- Hypertext Anchors; Character-Level Elements; Character References ,Text Block Elements: HR (Horizontal Line); Hn (Headings) ; P (Paragraph); Lists; ADDRESS ; BLOCKQUOTE; TABLE; DIV (HTML 3.2 and up) ; PRE (Preformatted); FORM ,Text Emphasis Elements, Special Elements -- Hypertext Anchors ,Character-Level Elements: line breaks (BR) and Images (IMG),Lists ,ADDRESS Element, BLOCKQUOTE Element, TABLE Element ,COMMENTS in HTML ,CHARACTER Emphasis Modes, Logical &amp; Physical Styles ,Netscape, Microsoft and Advanced Standard Elements List, FONT, BASEFONT and CENTER.</p> <p><b>UNIT IV- Image, Internal and External Linking between WebPages</b> - Netscape, Microsoft and Advanced Standard Elements List, FONT, BASEFONT and CENTER. Insertion of images using the element</p> <p><b>Practical-</b> html programs based on various tag like heading tag,paragraph tag,address tag,anchor tag,pre tag etc.</p>
<b>APRIL</b>	<p><b>UNIT IV-</b> IMG (Attributes: SRC (Source), WIDTH, HEIGHT, ALT (Alternative), ALIGN),IMG (In-line Images) Element and Attributes; Illustrations of IMG Alignment, Image as Hypertext Anchor, Internal and External Linking between Web Pages. Hypertext Anchors ,HREF in Anchors ,Links to a Particular Place in a Document ,NAME attribute in an Anchor ,Targeting NAME Anchors ,TITLE attribute, Designing Frames in HTML.</p> <p><b>UNIT V-Creating Business Websites with Dynamic Web Pages</b> – Concept of static web pages and dynamic web pages. Hosting &amp; promotion of the web site, Domain Name Registration, Web Space allocation, Uploading / Downloading the website- FTP, cute FTP. Web Site Promotion Search Engines, Banner Advertisements.</p> <p><b>Practical-</b> html programs based on anchor tag,list tag,form tag,table tag,frame tag etc.</p>

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**ADD ON (CERTIFICATE COURSE)**

**PAPER –I**

**COMPUTER FUNDAMENTALS & OFFICE AUTOMATION**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>AUGUST</b>	<p><b><u>UNIT I-Introduction to Computer</u></b></p> <p>1. What is Computer? Block diagram of computer. CPU, I/O Devices and Memory (RAM &amp; ROM). Secondary storage devices (Hard disk, Floppy, Magnetic tap etc.). Computer generations, Types of Computer- Analog, Digital, Hybrid &amp; general &amp; special purpose computer. Classification of computer – Micro, Mini, Mainframe &amp; Super computer</p>
<b>SEPTEMBER</b>	<p><b><u>UNIT II--Computer Software &amp; Application</u></b> What is Software? Type of Software. Introduction of System software &amp; application s/w.Generation of languages, Languages Vs Package. Type of Operating System- Single User &amp; Multi User Operating System Function of operating system. DOS software, Internal &amp; External DOS Command.</p> <p><b>Practical-</b> basic knowledge of computer,how to start and shut down the computer.Learning about desktop,icon,files,folders,recycle bin,how to do cut,copy,paste etc.</p>
<b>OCTOBER</b>	<p><b><u>UNIT II- DOS editor. Window Concept , Multitasking , Desktop, start menu, task bar, My Computer, Accessories, Creating folders, files, Deleting, Hiding , Recycle Bin &amp; Network Neighborhood. Booting Process &amp; File System Structure, Booting Sequences, File Creation and Deletion concept for File System.</u></b></p> <p><b><u>UNIT III- Office Software: Word-Processing, Spreadsheets</u></b></p> <p><b>Word:</b> Creating ,Editing &amp; Preview Documents, Formatting ,Advanced Features, Using Thesaurus , Mail Merge, Table &amp; Charts Handling Graphics</p> <p><b>Practical-</b>making program using various ms word functionalities like using table</p>

## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>NOVEMBER</b>	<p><b>UNIT III- Excel:</b> Worksheet Basics, Creating, Opening &amp; moving in worksheet, working with Formula &amp; cell referencing, Absolute &amp; Relative addressing, working with ranges, formatting of worksheet, Graphic &amp; Charts, Database, Function and Macros.</p> <p><b>UNIT IV-<u>MS-Access</u></b></p> <p><b>Creating and working with databases:</b> Designing databases, Working with database objects, Working with Access files.</p> <p><b>Practical-</b> programs on ms excel, learning about how to use formula, different</p>
<b>DECEMBER</b>	<p><b>UNIT IV-</b> retrieval of records in a data base file, modification, insertion &amp; deletion of records, Sorting and Indexing, Working with controls &amp; charts</p> <p><b>UNIT V-<u>Introduction to Internet Application</u></b></p> <p>Concept of Internet, Application of Internet, Services on Internet, World Wide Web (www), Web Browser .</p> <p><b>Practical-</b> how to make tables in ms access and performing various operations on tables in ms access. Also learning about powerpoint presentation and its various functionalities.</p>
<b>JANUARY</b>	<p><b>UNIT V-</b> Internet search Engines: Gopher, Yahoo etc., Surfing the Internet, Electronic mail (e- mail), Internet Security Fire Walls, Type of Firewalls</p>
<b>FEBRUARY</b>	<b>REVISION</b>

### ADD ON (CERTIFICATE COURSE)

#### PAPER –II

#### Programming With “C “& Introduction to OOPs

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>AUGUST</b>	<p><b>UNIT I-</b>Introduction to “C “, Character set, Identifiers &amp; Keywords, Variables, Variable initialization, Constants, Characters, Strings, Qualifiers, Program structure.</p>

## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>SEPTEMBER</b>	<p><b>UNIT II-Control Structure:</b> - If-Statement, If-else, Nested If statements, Select case, Loops – For-loop, While-loop, Do-while loop, Nested loops, Break Statement, Continue Statement, Go to Statement.</p> <p><b>Practical-</b> how to use c software,making basic c programs ,running and compiling a c program.programs based on control structure</p>
<b>OCTOBER</b>	<p><b>UNIT III- Function:</b> - User define &amp; library function, Function Parameter, Recursive Function.</p> <p>Array: - Array, Array initialization, One dimensional Array, Two &amp; Three dimensional array, Array of Structure .</p> <p><b>Practical-</b> programs based on looping ,functions,array.</p>
<b>NOVEMBER</b>	<p><b>UNIT III- Pointer:</b> - definition &amp; Use of Pointer, Address Operator, Array of Pointers.</p> <p><b>UNIT IV-Structure &amp; Union:</b> - What is structure, declaring &amp; using structure, structure initialization.</p> <p><b>Practical-</b>programs based on pointer,array of pointer,pointer to pointer etc.</p>
<b>DECEMBER</b>	<p><b>UNIT IV- Structure within structure, Union , difference b/w Union &amp; Structure.</b></p> <p><b>UNIT V-</b> Introduction of C++, OOPs Concepts, Objects, Class, Polymorphism, inheritance,function &amp; Operator Overloading.</p> <p><b>Practical-</b>program based on structure and union.</p>
<b>JANUARY</b>	<p><b>UNIT V-</b> Characteristics of Object Oriented Programming language, benefits of OOPs.</p> <p><b>Practical-</b>programs based on various logics used in c and basic knowledge of cpp environment.</p>
<b>FEBRUARY</b>	<b>REVISION</b>

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**ADD ON (DIPLOMA COURSE)  
PAPER –I  
PROGRAMMING IN VISUAL BASIC**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>AUGUST</b>	<p><b>UNIT I- <u>Introduction to Visual Basic</u></b></p> <p>Editions of Visual Basic, Event Driven Programming , Terminology, Working environment, Project &amp; executable files, Understand Modules, Working Screen, Using code editor windows, Code documentation and formatting environment options, code formatting option .</p> <p>Introduction to object, Controlling objects, Properties, Methods &amp; Events, Working with forms. Interacting with user, MsgBox function, Input Box Function, Code statements, Managing forms, Creating a program in VB, Printing.</p> <p><b>Practical-</b> about vb environment and introduction of vb controls like command box,text box,labels etc.</p>
<b>SEPTEMBER</b>	<p><b>UNIT II-<u>Variable and Procedures and Controlling Program Execution</u></b></p> <p>Overview of Variables, Declaring Variable, Scope of Variables, Arrays, User Defined data type, Constants working with procedure, Working with date &amp; time, using the Format function, Manipulation text strings.</p> <p>Comparison &amp; logical Operators, if.... Then Statement, if .... Then ... Else Statements, Select Case Statement.</p> <p><b>Practical-</b> vb programs based on various control struture,scope of variables and using timer.</p>
<b>OCTOBER</b>	<p><b><u>UNIT II-</u></b>, Looping Structure, Using Do... Loop Structure, for...Next Statement, Exiting a loop.</p> <p><b><u>UNIT III- Working with Controls &amp; Controlling Program Execution</u></b></p> <p>Type of Control, Overview of standard Controls, Combo Box &amp; List Box, Option Button &amp; Check Button, Frame Control, Menus, Status bar, Tool bar, Advanced standard Controls, Active X Controls.</p> <p><b>Practical-</b> vb program based on looping and controls like list box,making menus,combo box etc.</p>

## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>NOVEMBER</b>	<p><b>UNIT III-</b> Overview of Run Time Errors, Error Handling Process, The Error Object, Error handling in routine, Inline Error handling ,Error handling style, General Window, Local Window.</p> <p><b>UNIT IV- <u>Sequential &amp; Random Files &amp; Data Access Using the ADO Data Control</u></b></p> <p>Record Structure, Random Access File, The design and coding, saving data to file.</p>
<b>DECEMBER</b>	<p><b>UNIT IV-</b>Overview of Active X Objects, VB data access features, Relational Database Concepts using the ADO Data Control to access data, Overview of ADO,RDO, Data Control, Structure Query Language (SQL), Manipulating data Using Data Form Wizard.</p> <p><b>Practical-</b> learning about various connectivity methods like ado,dao,rdo and its</p>
<b>JANUARY</b>	<p><b>UNIT V- <u>Report Generation and Advance Tools</u></b></p> <p>Overview of Report, Data Report, Add Groups, Data Environments, Connection to Database, Introduction to Crystal Reports Generator.</p> <p>Overview of drag and drop , Mouse Events, Date- Time Control, Calendar, Print Dialogue, MDI (Multiple Document Interface.)</p> <p><b>Practical-</b> programs on report making and mdi forms.</p>
<b>FEBRUARY</b>	<b>REVISION</b>

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**ADD ON (DIPLOMA COURSE)  
PAPER –II  
DBMS (SQL/Oracle)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>AUGUST</b>	<b>UNIT I- <u>Introduction To DBMS:</u></b> -Purpose of database systems, Views of data, Data Modeling, Database Languages, Transaction Management, Storage Management, Database Administrator and User, Database System Structure.
<b>SEPTEMBER</b>	<b>UNIT II- <u>E-R Model:</u></b> - Basic concepts, Constraints, Keys, Mapping Constraint, E-R Diagram, Weak and Strong Entity sets, E-R Database Schema, Reduction of an E-Schema to Table.  <b>Practical-</b> how to use oracle software.making table and running a program.
<b>OCTOBER</b>	<b>UNIT III-</b> Relational Model: Structure to Relational Database, Relational Algebra, The Domain Relational Calculus, Extended Relational- Algebra Operation, Modification of database, Views. <b>Relational <u>Database Design:</u></b> - Pitfalls in Relational Database Design, Decomposition.  <b>Practical-</b> making table and using various commands like insert,update etc.
<b>NOVEMBER</b>	<b>UNIT III-</b> Functional Dependencies, and Normalization: 1NF, 2NF, BCNF, 3NF, 4NF, 5NF  <b>UNIT IV- <u>Introduction to RDBMS Software - Oracle</u></b> <b><u>Introduction:</u></b> - Introduction to personnel and Enterprises Oracle, Data Types, Commercial Query Language, SQL, SQL* PLUS.  <b>Practical-</b> performing various operations on tables like where clause,like
<b>DECEMBER</b>	<b>UNIT IV-<u>DDL and DML:</u></b> Creating Table, Specify Integrity Constraint, Modifying Existing Table, Dropping Table, Inserting, Deleting and Updating Rows in as Table, Where Clause, Operators, ORDER BY, GROUP Function, SQL Function, JOIN, Set Operation, SQL Sub Queries.  <b>Practical-</b> performing sql function on table like group function,using operators on table,applying different constraints on table.

## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>JANUARY</b>	<b>UNIT V-Views:</b> What is Views, Create, Drop and Retrieving data from Views. <b>PL-SQL/TSQL:</b> Block Structure in PL-SQL/TSQL, Variable and Constraints, Running PL- SQL/TSQL in the SQL *PLUS, Data base Access with PL-SQL/TSQL, Exception Handling, Record Data type in PL-SQL/TSQL Triggers in PL-SQL/TSQL.  <b>Practical-</b> how to create views,dropping views,some pl sql programs.
<b>FEBRUARY</b>	<b>REVISION</b>

### ADD ON (ADVANCE DIPLOMA) PAPER –I PROGRAMMING IN JAVA

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>AUGUST</b>	<b>UNIT I- Introduction :</b> Genesis of java, importance to the Internet, overview of features.  <b>OOP :</b> OOP features, data types, control structures, arrays, methods and classes, nested & inner classes, string and String Buffer class, Wrapper Class, vectors.  <b>Practical-</b> introduction to basic java environment. How to use programming tool
<b>SEPTEMBER</b>	<b>UNIT II- Inheritance :</b> Basics type, method Override, using abstract and final classes, using super.  <b>Packages and Interfaces :</b> Defined CLASSPATH, importing packages, implementing interface.  <b>Practical –</b> practice on basic program based on classes ,objects.inheritance.
<b>OCTOBER</b>	<b>UNIT III- Exception Handling :</b> Fundamental: exception types, using try and catch, throwing exceptions, defined exceptions.  <b>Multithreaded Programming :</b> Java spread model, creating threads, thread priorities, synchronization. Suspending resuming and stopping threads.  <b>Practical-</b> programming based on abstract class,uses of interface and packages.



## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>NOVEMBER</b>	<p><b>UNIT IV- Input/Output:</b> Basic Streams, Byte and Character Stream, predefined streams, reading and writing from console and files. Using standard Java Packages (lang, util, io)</p> <p><b>JDBC:</b> Setting the JDBC connectivity with backend database.</p> <p><b>Practical-</b> programming on exception handling, steps for doing various connectivity methods like jdbc.</p>
<b>DECEMBER</b>	<p><b>UNIT V- Applets :</b>Fundamentals, life cycle, overriding update, HTML APPLET tag, passing parameters. Developing single applets.</p> <p><b>Introduction to AWT :</b> Window fundamentals, creating windowed, programs wating with graphics, using AWT controls, menus. Delegation event model, handling mouse and keyboard events.</p> <p><b>Practical-</b>practicing in various programs .</p>
<b>JANUARY</b>	<p><b>JAVA PROJECT</b></p> <p><b>Practicals</b></p>
<b>FEBRUARY</b>	<p><b>REVISION</b></p>

# **TEACHING PLAN OF MATHEMATICS FOR SESSION 2017-18**

**B.Sc. I**

**Mathematics**

**PAPER-I**

## **ALGEBRA AND TRIGONOMETRY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>Unit 1 -</b> Symmetric, Skew Symmetric, Hermitian and Skew Hermitian matrices. Elementary operations on Matrices. Inverse of a matrix, Linear independence of row and column matrices. Cayley Hamilton theorem and its use in finding inverse of a matrix.
<b>AUGUST</b>	<b>Unit 1-</b> Row rank, column rank and rank of a matrix. Equivalence of column and row ranks. Eigenvalues, Eigenvectors and the characteristic equation of matrix.
<b>SEPTEMBER</b>	<b>Unit II-</b> Applications of matrices to a system of linear (both homogeneous and non-homogeneous) equations. Theorems on consistency of a system of linear equations. Relations between the roots and coefficients of general polynomial equation in one variable. Transformation of equations. Descartes's rule of signs, solution of cubic equations (Cardan's method). Biquadratic equations.
<b>OCTOBER</b>	<b>Unit III</b> Mappings, Equivalence relations and partitions. Congruence modulo $n$ . Definition of a group with examples and simple properties. Cyclic groups generators.
<b>NOVEMBER</b>	<b>Unit III</b> Cayley's theorem, Coset decomposition, Lagrange's theorem and its consequences. Fermat's and Euler's theorems, Normal subgroups, Quotient groups. Permutation Groups, even and odd permutations. The alternating groups
<b>DECEMBER</b>	<b>UNIT – IV</b> Homomorphism and Isomorphism The fundamental theorems of homomorphism. Introduction, properties and examples of rings, subrings, Integral domains and Fields. Characteristic of a Ring and field.
<b>JANUARY</b>	<b>UNIT – V</b> ( Trigonometry ) De Moivre's theorem and its applications. Direct and inverse circular and hyperbolic functions. Logarithm of a complex quantity. Expansion of Trigonometrically functions. Gregory's series. Summation of series.
<b>FEBRUARY</b>	<b>REVISION</b>

**B.Sc. I**  
**Mathematics**  
**PAPER-II**  
**CALCULUS**

MONTH	PROPOSED PLAN
JULY	<b>UNIT – I</b> $\epsilon - \delta$ definition of the limit of a function. Basic properties of limits. Continuous functions and classification of Discontinuities. Differentiability, Successive differentiation. Leibnitz's theorem, Maclaurin and Taylor series expansions
AUGUST	<b>Unit I-</b> Differentiability, Successive differentiation. Leibnitz's theorem, Maclaurin and Taylor series expansions
SEPTEMBER	<b>UNIT – II</b> Asymptotes, Curvature, Tests for concavity and convexity. Points of inflexion, Multiple points. Tracing of curves in Cartesian and polar coordinates.
OCTOBER	<b>UNIT – III</b> Integration of irrational algebraic functions and transcendental functions. Reduction formulae, Definite integrals, Quadrature, Rectification, Volumes and surfaces of solids of revolution.
NOVEMBER	<b>UNIT – IV</b> Degree and order of a differential equation. Equations of first order and first degree, equations in which the variables are separable. Homogeneous equations, Linear equations and equations reducible to the linear form. Exact differential equations, First order higher degree equations solvable for $x, y, p$ . Clairaut's form and singular solutions.
DECEMBER	<b>UNIT – IV</b> Geometrical meaning of a differential equation. Orthogonal trajectories. Linear differential equations with constant coefficients. Homogeneous linear ordinary differential equations.
JANUARY	<b>UNIT – V</b> Linear differential equations of second order. Transformation of the equation by changing the Dependent variable / the Independent variable. Method of variation of parameters. Ordinary simultaneous differential equations.
FEBRUARY	REVISION

**B.Sc. I**  
**Mathematics**  
**PAPER-III**  
**VECTOR ANALYSIS AND GEOMETRY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT I –</b> Scalar and vector product of three vectors, Product of four vectors,
<b>AUGUST</b>	<b>Unit I-</b> Reciprocal vectors, Vector differentiation, Gradient, Divergence and Curl.
<b>SEPTEMBER</b>	<b>UNIT II-</b> Vector Integration, Theorems of Gauss, Green, Stokes and problems based on these.
<b>OCTOBER</b>	<b>UNIT III-</b> General equation of second degree. Tracing of conics
<b>NOVEMBER</b>	<b>Unit III –</b> System of conics, Confocal Conics, Polar equation of a Conic.
<b>DECEMBER</b>	<b>UNIT – IV</b> Plane, The Straight line and the plane, Sphere, Cone and Cylinder.
<b>JANUARY</b>	<b>UNIT –V</b> Central Conicoids, Paraboloids, Plane section of Conicoids, Generating lines, Confocal Conicoids, Reduction of second degree equations.
<b>FEBRUARY</b>	<b>REVISION</b>

**B.Sc. II**  
**Mathematics**  
**PAPER-I**  
**ADVANCED CALCULUS**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT – I</b> Definition of a sequence. Theorems on limits of sequences. Bounded and monotonic sequences. Cauchy’s convergence criterion. Series of non-negative terms. Comparison test,
<b>AUGUST</b>	<b>Unit I-</b> Cauchy’s integral test, Ratio test, Raabe’s test, Logarithmic test, De Morgan and Bertrand’s tests. Alternating series, Liebnitz’s theorem, absolute and conditional convergence.
<b>SEPTEMBER</b>	<b>UNIT – II</b> Continuity, sequential continuity, properties of continuous functions, uniform continuity. Chain rule of differentiability, Mean value theorems and their geometrical interpretations, Darboux’s intermediate value theorem for derivatives. Taylor’s theorem with various forms of remainders.
<b>OCTOBER</b>	<b>UNIT – III</b> Limit and continuity of functions of two variables, Partial differentiation, Change of variables,
<b>NOVEMBER</b>	<b>UNIT –III</b> <b>Euler’s</b> theorem on homogeneous functions. Taylor’s theorem for functions of two variables. Jacobians.
<b>DECEMBER</b>	<b>UNIT –IV</b> <b>Envelopes</b> , Evolutes, Maxima, Minima and saddle points of functions of two variables, Lagrange’s multiplier method.
<b>JANUARY</b>	<b>UNIT –V</b> <b>Beta</b> and Gamma functions, Double and triple integrals, Dirichlet’s integrals, change of order of integration in double integrals.
<b>FEBRUARY</b>	REVISION

**B.Sc. II**  
**Mathematics**  
**PAPER-II**  
**DIFFERENTIAL EQUATIONS**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT – I</b> Series solutions of differential equations - Power series method. Bessel and Legendre functions and their properties - convergence, recurrence and generating relations.
<b>AUGUST</b>	<b>Unit I –</b> Orthogonality of functions. Sturm-Liouville problem, Orthogonality of Eigen-functions, Reality of Eigen-values, Orthogonality of Bessel functions and Legendre polynomials.
<b>SEPTEMBER</b>	<b>UNIT – II</b> Laplace Transformation - Linearity of the Laplace transformation. Existence theorem for Laplace transforms. Laplace transforms of derivatives and integrals. Shifting theorems.
<b>OCTOBER</b>	<b>Unit II-</b> Differentiation and integration of transforms. Convolution theorem. Solution of integral equations and systems of differential equations using the Laplace transformation.
<b>NOVEMBER</b>	<b>UNIT – III</b> Partial differential equations of the first order. Lagrange's solution. Some special types of equations which can be solved easily by methods other than the general method, Charpit's general method of solution.
<b>DECEMBER</b>	<b>UNIT – IV</b> Partial differential equations of second and higher orders. Classification of linear partial differential equations of second order. Homogeneous and non-homogeneous equations with constant coefficients. Partial differential equations reducible to equations with constant coefficients. Monge's methods.
<b>JANUARY</b>	<b>UNIT – V</b> Calculus of Variations - Variational problems with fixed boundaries - Euler's equation for functional containing first order derivative and one independent variable. External. Functional dependent on higher order derivatives. Functional dependent on more than one independent variable. Variational problems in parametric form. Invariance of Euler's equation under coordinates transformation. Variational problems with moving boundaries - Functional dependent on one and two functions. One sided variations. Sufficient conditions for an Extremum - Jacobi and Legendre conditions. Second Variation. Variational principle of least action.
<b>FEBRUARY</b>	<b>REVISION</b>

**B.Sc. II**  
**Mathematics**  
**PAPER-III**  
**MECHANICS**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT – I</b> Analytical conditions of equilibrium. Stable and unstable equilibrium.
<b>AUGUST</b>	<b>UNIT - I</b> Virtual work. Catenary.
<b>SEPTEMBER</b>	<b>UNIT –II</b> Forces in three dimensions. Poinso't's central axis. Null lines and planes.
<b>OCTOBER</b>	<b>UNIT – III</b> Simple harmonic motion. Elastic strings
<b>NOVEMBER</b>	<b>UNIT III –</b> Velocities and accelerations along radial and transverse directions, Projectile, Central orbits.
<b>DECEMBER</b>	<b>UNIT – IV</b> Kepler's laws of motion, Velocities and acceleration in tangential and normal directions. Motion on smooth and rough plane curves.
<b>JANUARY</b>	<b>UNIT – V</b> Motion in a resisting medium. Motion of particles of varying mass. Motion of a particle in three dimensions. Acceleration in terms of different co-ordinate systems.
<b>FEBRUARY</b>	<b>REVISION</b>

**B.Sc. III**  
**Mathematics**  
**PAPER-I**  
**ANALYSIS**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT I-</b> Series of arbitrary terms, Convergence, Divergence and Oscillation. Abel's and Dirichlet's test. Multiplication of series. Double series. Partial derivation and differentiability of real valued functions of two variables. Schwarz's and Young's theorem. Implicit function theorem. Fourier series. Fourier expansion of piecewise monotonic functions.
<b>AUGUST</b>	<b>UNIT II –</b> Riemann integral. Integrability of continuous and monotonic functions. The fundamental theorem of Integral Calculus. Mean value theorems of integral calculus. Improper integrals and their convergence, comparison tests. Abel's and Dirichlet's tests. Frullani's integral, Integral as a function of a parameter. Continuity, derivability and integrability of an integral of a function of a parameter.
<b>SEPTEMBER</b>	<b>UNIT III-</b> Complex numbers as ordered pairs. Geometric representation of complex numbers. Stereographic projection. Continuity and differentiability of complex functions. Analytic functions, Cauchy Riemann equations, Harmonic functions.
<b>OCTOBER</b>	<b>UNIT III-</b> Elementary functions, mapping by elementary functions. Mobious transformations, Fixed points, Cross ratio, Inverse points and critical mappings, Conformal mappings.
<b>NOVEMBER</b>	<b>UNIT IV</b> Definition and examples of metric spaces. Neighbourhoods, Limit points, Interior points, Open and Closed sets, Closure and interior. Boundary points, Sub-space of a metric space. Cauchy sequences,
<b>DECEMBER</b>	<b>UNIT IV-</b> Completeness, Cantor's intersection theorem, Contraction principle, Construction of real numbers as the completion of the incomplete metric space of rational. Real numbers as a complete ordered field.
<b>JANUARY</b>	<b>UNIT V –</b> Dense subsets. Baire Category theorem, Separable, second countable and first countable spaces. Continuous functions. Extension theorem. Uniform continuity. Isometry and homeomorphism. Equivalent metrics.
<b>FEBRUARY</b>	<b>UNIT V –</b> Compactness, Sequential compactness. Totally bounded spaces. Finite intersection property. Continuous functions and compact sets. Connectedness, Components, Continuous functions and connected sets.



**B.Sc. III**  
**Mathematics**  
**PAPER-II**  
**ABSTRACT ALGEBRA**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT – I</b> Group-Automorphism, inner automorphisms. Automorphism groups and their computations, Conjugacy relation, Normaliser, Counting principle and the class equation of a finite group. Center for group of prime-order, Abelianizing of a group and its universal property. Sylow's theorems, Sylow's subgroup, structure theorem for finite Abelian groups.
<b>AUGUST</b>	<b>UNIT-II</b> Ring theory- Ring homomorphism, Ideals and Quotient Rings. Field of Quotients of an Integral Domain, Euclidean Rings, Polynomial rings, Polynomials over the Rational Field. The Eisenstein Criterion, Polynomial
<b>SEPTEMBER</b>	<b>UNIT-III</b> Definition and examples of vector spaces. Subspace, Sum and direct sum of subspaces, Linear span. Linear dependence, independence and their basic properties.
<b>OCTOBER</b>	<b>UNIT III</b> Basis Finite dimensional vector spaces, existence theorem for bases, invariance of the number elements of a basis set. Dimension, Existence of complementary subspace of a finite dimensional vector space. Dimension of sums of subspaces. Quotient space and its dimension.
<b>NOVEMBER</b>	<b>UNIT-IV</b> Linear transformations and their representation as matrices. The Algebra of linear transformations. The rank nullity theorem. Change of basis. Dual space, Bidual space and natural isomorphism, forms.
<b>DECEMBER</b>	<b>UNIT IV</b> Adjoint of a linear transformation, Eigenvalues and Eigen vectors of a linear transformation. Diagonalisation. Annihilator of a subspace, Bilinear, Quadratic and Hermitian
<b>JANUARY</b>	<b>UNIT-V</b> Inner product spaces-Cauchy-Schwarz inequality, Orthogonal vectors, Orthogonal complements, Orthonormal sets and bases. Bessel's inequality for finite dimensional spaces, Gram-Schmidt orthogonalization process.
<b>FEBRUARY</b>	<b>REVISION</b>

**B.Sc. III**  
**Mathematics**  
**PAPER-III**  
**DISCRETE MATHEMATICS**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JULY	<b>UNIT –I</b> <b><u>Sets and Propositions</u></b> - Cardinality, Mathematical induction, Principle of inclusion and exclusion. Computability and Formal Languages - Ordered sets, languages, Phrase structure Grammars, Types of Grammars and languages. Permutations, Combinations and Discrete probability.
AUGUST	<b>UNIT-II</b> <b><u>Relations and Functions</u></b> - Binary relations, Equivalence relations and Partitions. Partial Order Relations and Lattices. Chains and Antichains. Pigeon Hole Principle. <b><u>Graphs and Planar Graphs</u></b> - Basic Terminology, Multigraphs, Weighted graphs, Paths and circuits, Shortest paths, Eulerian Paths and circuits. Travelling Salesman Problem, Planner graphs. Trees.
SEPTEMBER	<b>UNIT-III</b> <b><u>Finite State machines</u></b> - Equivalent machines. Finite state machines as language recognizers
OCTOBER	<b>UNIT III</b> Analysis of Algorithms - Time complexity, Complexity of problems, Discrete Numeric functions and Generating functions.
NOVEMBER	<b>UNIT-IV</b> <b><u>Recurrence Relations and Recursive Algorithms</u></b> - Linear Recurrence Relations with constant coefficients. Homogeneous solutions, Particular solutions, Total solutions, Solution by the method of Generating functions, Brief review of Groups and Rings.
DECEMBER	<b>UNIT-V</b> <b><u>Boolean Algebra</u></b> - Lattices and Algebraic structures. Duality, distributive and complemented Lattices. Boolean Lattices and Boolean Algebras. Boolean functions and expressions.
JANUARY	<b>UNIT V</b> Propositional Calculus, Design and implementation of Digital Networks, Switching Circuits.
FEBRUARY	REVISION

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**PROPOSED TEACHING PLAN FOR THE SESSION 2017-18**

**Name of the Department: PHYSICS**

**CLASS B. SC. I**

<b>Month/ Days</b>	<b>Paper I</b>	<b>Paper II</b>
<b>July</b>	<b>Admission Work</b> <b>Unit-I Mechanics</b> Kepler's laws. Effect of centrifugal and Coriolis force due to earth's rotation. Cartesian, Cylindrical and Spherical co-ordinate system, Inertial and non-inertial frames of reference,	<b>Admission Work</b> <b>Unit I Mathematical Background</b> Gradient of a scalar field and its geometrical interpretation, divergence and curl of a vector field and their geometrical interpretation, line, surface and volume integrals,
<b>August</b>	uniformly rotating frame, Coriolis force and its applications. Motion under a central force, Center of mass (C.M.). Lab and CM frame of reference, motion of C.M. of system of particles subject to external forces, elastic and inelastic collisions in one and two dimensions, Scattering angle in the laboratory frame of reference. Conservation of linear and angular momentum. Conservation of energy.	flux of a vector field. Repeated integrals of a function of more than one variable, definition of a double and triple integral. Gauss's divergence theorem. Green's theorem and Stoke's theorem and their physical significance. Kirchhoff's law. Ideal constant-voltage and Constant-current Sources. Thevenin theorem, Norton theorem. Superposition theorem, Reciprocity theorem and Maximum Power Transfer theorem.
<b>September</b>	<b>Unit-II Oscillations and Rigid body Motion</b> Rigid body motion, rotational motion, moment of inertia and their products, principal moments and axes. Introductory idea of Euler's equations. Potential well and periodic oscillations,	<b>Unit-II Electrostatics</b> Coulomb's law in vacuum expressed in vector form. Calculations of E for simple distributions of charges at rest, dipole and quadrupole fields. Work done on a charge in an electrostatic field expressed as a line integral, conservative nature of the electrostatic field. Relation between Electric potential and electric field, torque on a dipole in a uniform electric field and its energy.

<b>October</b>	<p>case of harmonic oscillations, differential equation and its solution, kinetic and potential energy, examples of simple harmonic oscillations, spring and mass system, simple and compound pendulum, torsional pendulum. Unit-III Superposition of Harmonic Motions Bifilar oscillations, Helmholtz resonator, LC circuit, vibrations of a magnet, oscillations of two masses connected by a spring. Superposition of two simple harmonic motions of the same frequency, Lissajous figures, case of different frequencies.</p>	<p>flux of the electric field. Gauss's law and its application for finding E due to (1) an infinite line of charge, (2) a charged cylindrical conductor, (3) an infinite sheet of charge and two parallel charged sheets, capacitors, electrostatic field energy. Force per unit area on the surface of a conductor in an electric field, conducting sphere in a uniform field.</p>
<b>November</b>	<p>Damped harmonic oscillator, power dissipation, quality factor, examples, driven (forced) harmonic oscillator, transient and steady states, power absorption, resonance. Unit- IV Motion of charged Particles in electric and Magnetic Fields (Note: The emphasis here should be on the mechanical aspects and not on the details of the apparatus mentioned which are indicated as applications of principles involved.) E as an accelerating field, electron gun, case of discharge tube, linear accelerator, E as a deflecting field, CRO, sensitivity.</p>	<p>Unit-III Dielectrics; steady and Alternating Currents Dielectric constant. Polar and Non Polar dielectrics. Dielectrics and Gauss's Law. Dielectric Polarization. Electric Polarization vector P, electric displacement vector D. Relation between three electric vectors, Dielectric susceptibility and permittivity. Polarizability and mechanism of Polarization . Lorentz local field. Clausius Mossotti equation, Debye equation.</p>
<b>December</b>	<p>Transverse B field, 180 degree deflection, mass spectrograph, curvature of tracks for energy determination, principle of a cyclotron. Mutually perpendicular E and B fields, velocity selector, its resolutions. Parallel E and B fields, positive ray parabolas, discovery of isotopes, elements of mass spectrographs, principle of magnetic focusing (lens). Unit- V. Properties of Matter Elasticity : Strain and stress, elastic limit, Hook's law. Modulus of rigidity. Poisson's ratio. Bulk modulus.</p>	<p>Ferroelectric and Paraelectric dielectrics. Steady current, current density J, non-steady currents and continuity equation, rise and decay of current in LR, CR and LCR circuits, decay constants, AC circuits, complex numbers and their applications in solving AC circuit problems, complex impedance and reactance, series and parallel resonance, Q factor, power consumed by an AC circuit, power factor.</p>
<b>January</b>	<p>Relation connecting different elastic-constants, twisting couple of a cylinder (solid and hollow). Bending moment, Cantilever, Young modulus by bending of beam. Viscosity : Poiseuille's equation of liquid flow through a narrow tube, equations of continuity. Euler's equation, Bernoulli's theorem, viscous fluids, streamlin and tuberlent flow. Poiseull's law. Coefficient of viscosity, Stoke's law. Surface tension and moleculer interpretation of surface tention, surface energy. Angle of contact. Wetting.</p>	<p>Unit-IV Magnetostatics Magnetization Current and magnetization vector M, three magnetic vectors and their relationship. Magnetic permeability and susceptibility. Diamagnetic, paramagnetic and ferromagnetic substances. B.H. Curve, cycle of magnetization and hysteresis, Hysteesis loss. Biot and Savart's law and its applications: B due to (1) a</p>

		straight Current Carrying Conductor and (2) Current Loop. Current Loop as a Magnetic Dipole and its Dipole Moment (Analogy with Electric Dipole), Ampere's circuital law (Integral and Differential Forms).
<b>February</b>	<b>Revision and Practical Examinations</b>	<b>Revision and Practical Examinations</b>
<b>March</b>	<b>Annual Examinations</b>	<b>Annual Examinations</b>
<b>April</b>	<b>Annual Examinations</b>	<b>Annual Examinations</b>
<b>May</b>	<b>Annual Examinations</b>	<b>Annual Examinations</b>

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**PROPOSED TEACHING PLAN FOR THE SESSION 2017-18**

**Name of the Department: PHYSICS**

**CLASS B. SC. II**

<b>Month/ Days</b>	<b>Paper I</b>	<b>Paper II</b>
<b>July</b>	<b>Admission work</b> <b>UNIT I</b> The law of thermodynamics: The Zeroth law, concept of path function and point function, various indicator diagrams, work done by and on the system, first law of thermodynamics, internal energy as a state function, reversible and irreversible change,	<b>Admission work</b> <b>UNIT I</b> Waves in media: Speed of transverse waves on a uniform string, speed of longitudinal waves in a fluid, energy density and energy transmission in waves, typical measurements.
<b>August</b>	Carnot's theorem and the second law of thermodynamics. Different versions of the second law. Clausius theorem inequality. Entropy, Change of entropy in simple cases: ( i ) Isothermal expansion of an ideal gas (ii) Reversible isochoric process (iii) Free adiabatic expansion of an ideal gas. Entropy of the universe. Principle of increase of entropy. The thermodynamic scale of temperature, its identity with the perfect gas scale. Impossibility of attaining the absolute zero; third law of thermodynamics.	Waves over liquid surface: gravity waves and ripples. Group velocity and phase velocity, their measurements. Harmonics and the quality of sound; examples. Production and detection of ultrasonic and infrasonic waves and applications. Reflection, refraction and diffraction of sound: Acoustic impedance of a medium, percentage reflection and refraction at a boundary, impedance matching for

		transducers, diffraction of sound, Principle of a sonar system, sound ranging.
<b>September</b>	<b>UNIT II</b> Thermodynamic relationships: Thermodynamic variables, extensive and intensive, Maxwell's general relationships, application to Joule - Thomson cooling and adiabatic cooling in a general system, vander Waals gas, Clausius-Clapeyron heat equation. Thermodynamic potentials and equilibrium of thermodynamical systems, relation with thermodynamical variables. Cooling due to adiabatic demagnetization, production and measurement of very low temperatures.	<b>UNIT II</b> Fermat's principle of extremum path, the aplanatic points of a sphere and other applications. Cardinal points of an optical system, thick lens and lens combinations. Lagrange's equation of magnification, telescopic combination, telephoto lenses. Monochromatic aberrations and their reductions; aspherical mirrors and Schmidt corrector plates, aplanatic points, oil immersion objectives, meniscus lens.
<b>October</b>	Black body radiation: Pure temperature dependence, Stefan – Boltzmann law, pressure of radiation, spectral distribution of black body radiation, Wien's displacement law, Rayleigh – Jean's law, the ultraviolet catastrophe, Planck's quantum postulates, Planck's law, complete fit with experiment. <b>UNIT III</b> Maxwellian distribution of speeds in an ideal gas: Distribution of speeds and of velocities, experimental verification, distinction between mean, rms and most probable speed values. Doppler's broadening of the spectral lines.	Optical instruments: entrance and exit pupils, need for a multiple lens eyepiece, common types of eyepieces (Ramsden & Huygen's eyepieces). <b>UNIT III</b> Interference of light : The principle of superposition, two slit interference, coherence requirement for the sources, optical path retardation, lateral shift of fringes, Rayleigh refractometer, Localised fringes; thin films.
<b>November</b>	Transport phenomena in gases: Molecular collisions mean free path and collision cross sections. Estimates of molecular diameter and mean free path. Transport of mass, momentum and energy and interrelationship, dependence on temperature and pressure. Liquefaction of gases: Boyle temperature and inversion temperature. Principle of regenerative	Haidenger's fringes: Fringes of equal inclination, Michelson interferometer, its application for precision determination of wavelength, wavelength difference and width of spectral lines, Twymann. Green Interferometer and its uses. Intensity distribution in multiple beam interference. Tolansky fringes, Fabry – Perot

	cooling and of cascade cooling, liquification of hydrogen and helium. Refrigeration cycles, meaning of efficiency.	interferometer and etalon. UNIT IV Fresnel half- period zones, plates, straight edge, rectilinear propagation. Fraunhofer diffraction: Diffraction at a slit, half - period zones,
<b>December</b>	UNIT IV The statistical basis of thermodynamics: Probability and thermodynamic probability, principle of equal a priori probabilities, statistical postulates. Concept of Gibb's ensemble, accessible and inaccessible states. Concept of phase space, canonical phase space, Gamma phase space and mu phase space. Equilibrium before two systems in thermal contact, Probability and entropy, Boltzmann entropy relation. Boltzmann canonical distribution law and its applications,	phasor diagram and integral calculus methods, the intensity distribution, diffraction at a circular aperture and a circular disc, resolution of images, Rayleigh criterion, resolving power of telescope and microscopic systems. Diffraction gratings: Diffraction at N parallel slits, intensity distribution, plane diffraction grating, reflection grating and blazed grating. Concave grating and different mountings, resolving power of a grating and comparison with resolving powers of prism and of a Fabry –Perot etalon. Double refraction and optical rotation:
<b>January</b>	law of equipartition of energy. Transition to quantum statistics: 'h' as a natural constant and its implications, cases of particle in a one – dimensional box and one – dimensional harmonic oscillator. UNIT V Indistinguishability of particles and its consequences, Bose–Einstein & Fermi–Dirac conditions. Concept of partition function, Derivation of Maxwell - Boltzmann, Bose - Einstein and Fermi - Dirac statistics through canonical partition function. Limits of B–E and F–D statistics to M –B statistics. Application of B –E statistics to black body radiation. Application of F- D statistics to free electrons in a metal.	Refraction in uniaxial crystals, Phase retardation plates, double image prism. Rotation of plane of polarization, origin of optical rotation in liquids and in crystals. UNIT V Laser system: Purity of a spectral line, coherence length and coherence time, spatial coherence of a source, Einstein's A and B coefficients, Spontaneous and induced emissions, conditions for laser action, population inversion. Types of lasers: Ruby and He – Ne lasers and Semiconductor lasers. Application of lasers: Application in communication, Holography and non – linear optics. (Polarization P including higher order terms in E and generation of harmonics).
<b>February</b>	<b>Revision and Practical Examinations</b>	<b>Revision and Practical Examinations</b>

<b>March</b>	<b>Annual Examinations</b>	<b>Annual Examinations</b>
<b>April</b>	<b>Annual Examinations</b>	<b>Annual Examinations</b>
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**PROPOSED TEACHING PLAN FOR THE SESSION 2017-18**

**Name of the Department: PHYSICS**

**CLASS B. SC. III**

<b>Month/ Days</b>	<b>Paper I</b>	<b>Paper II</b>
<b>July</b>	<b>Admission work</b> Unit-I Reference system, inertial frames Galilean invariance and conservation laws, propagation of light, Michelson-Morley experiment; search for ether.	<b>Admission work</b> Unit - I Amorphous and crystalline solids, elements of symmetry, seven system, Cubic lattices, Crystal planes, Miller indices, Laue's equations for X- ray diffraction.
<b>August</b>	Postulates for the special theory of relativity, Lorentz transformations, length contraction time dilation, velocity addition theorem, variation of mass with velocity, mass – energy equivalence, particle with zero rest mass ,Compton effect.	Bragg's law. Bonding in solids classification. Cohesive energy of solid.Modelung constant, evaluation of parameters. Specific heat of solids, classical theory (Dulong- Petit's law). Einstein's and Debye theories. Vibrational modes of one dimensional monoatomic lattice, Dispersion relation, Brillouin zone.



<b>September</b>	<p>Unit- II</p> <p>Origin of the quantum theory: Failure of classical physics to explain the phenomena such as black body spectrum, photoelectric effect. Wave particle duality and uncertainty principle: de Broglie's hypothesis for matter waves; the concept of wave and group velocities, evidence for diffraction and interference of particles, experimental demonstration of matter waves. Davisson and Germer's experiment.</p>	<p>Unit- II</p> <p>Free electron model of a metal, solution of one dimensional Schrodinger's equation in a constant potential. Density of states. Fermi energy, Energy bands in a solid (kronig – penny model without mathematical details). Metals, insulators and semiconductors. Hall effect.</p>
<b>October</b>	<p>Consequence of de Broglie's concepts; quantization in hydrogen atom; energies of a particle in a box, wave packets.</p> <p>Consequence of the uncertainty relation: gamma ray microscope, diffraction at a slit.</p> <p>Unit – III</p> <p>Quantum Mechanics: Schrodinger's equation. Postulatory basis of quantum mechanics; operators, expectation values, transition probabilities,</p>	<p>Die, Para and Ferromagnetism.</p> <p>Langevin's theory of die and para magnetism.</p> <p>Curie – Weiss's law.</p> <p>Qualitative description of Ferromagnetism (Magnetic domains), B – H curve and hysteresis loss.</p>
<b>November</b>	<p>applications to particle in a one and three dimensional boxes, harmonic oscillator in one dimension, reflection at a step potential, transmission across a potential barrier.</p> <p>Hydrogen atom: natural occurrence of n, l and m quantum numbers, the related physical quantities.</p>	<p>Unit –III</p> <p>Intrinsic semiconductors, Carrier concentration in thermal equilibrium, Fermi level, Impurity, semiconductor, donor and acceptor levels, Diode equation, junctions, junction breakdown, Depletion width and junction capacitance, abrupt junction, Tunnel diode, Zener diode. Light emitting diodes, solar</p>

		cell, bipolar transistors, PNP and NPN transistors, characteristics of transistors, different configurations, current amplification factor, FET.
<b>December</b>	<p>Unit – IV</p> <p>Spectra of hydrogen, deuteron and alkali atoms, spectral terms, double fine structure, screening constants for alkali spectra for s, p, d and f states, selection rules,</p> <p>Discrete set of electronic energies of molecules, quantization of vibrational and rotational Energies, determination of internuclear distance, pure rotational and rotational vibrational spectra. Dissociation limit for the ground and other electronic states, transition rules for pure vibration and electronic spectra. Raman effect, Stokes and anti – Stokes lines complimentary character of Raman and infrared spectra, experimental arrangements for Raman spectroscopy.</p>	<p>Unit – IV</p> <p>Half and full wave rectifier, rectification efficiency, ripple factor, Bridge rectifier, filters, Inductor filter, T and <math>\pi</math> filters, Zener diode, regulated power supply. Application of transistors. Bipolar transistor as amplifier. Single stage and CE small signal amplifiers, Emitter follower, Transistor as power amplifier, Transistor as oscillator. Wein bridge oscillator and Hartley oscillator.</p>
<b>January</b>	<p>Unit - V</p> <p>Interaction of charged particles and neutrons with matter, working of nuclear detectors, G-M counter, proportional counter and scintillation counter, cloud chamber, Spark Chambers emulsions. Structure of nuclei, basic properties (I, <math>\mu</math>, Q and binding energy), deuteron binding energy, p-p and n-p scattering and general concepts of nuclear forces. Beta decay, range of alpha particle, Geiger- Nuttal law. Gamow's explanation of beta decay, alpha</p>	<p>Unit – V</p> <p>Introduction to computer organization, time sharing and multiprogramming systems, window based word processing packages, MS Word. Introduction to C programming and application to simple problems of arranging number in ascending/descending</p>

	<p>decay and continuous and discrete spectra.</p> <p>Nuclear reactions, channels, compound nucleus, direct reaction (concepts). Shell model: liquid drop model, fusion (concepts), energy production in stars by p-p and carbon- nitrogen cycles (concepts).</p>	<p>orders; sorting a given data in an array, solution of simultaneous equation.</p>
<b>February</b>	<b>Revision and Practical Examinations</b>	<b>Revision and Practical Examinations</b>
<b>March</b>	<b>Annual Examinations</b>	<b>Annual Examinations</b>
<b>April</b>	<b>Annual Examinations</b>	<b>Annual Examinations</b>
<b>May</b>	<b>Annual Examinations</b>	<b>Annual Examinations</b>

# **TEACHING PLAN OF ZOOLOGY FOR SESSION 2017-18**

**B. Sc. I**

**Zoology**

**PAPER-I**

## **CELL BIOLOGY AND INVERTEBRATE**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>Unit I -</b> The cell (Prokaryotic and Eukaryotic) Methods in cell biology (Microscopy-Light and Electron)  Organization of Cell-extra-nuclear and nuclear
<b>AUGUST</b>	<b>Unit I-</b> Plasma membrane, Endoplasmic reticulum, Golgi bodies, Ribosome, Mitochondria, Lysosomes, Nucleus , Chromosome
<b>SEPTEMBER</b>	<b>Unit II-</b> Cell division (Mitosis and Meiosis). An elementary idea of cell transformation. An elementary idea of Cancer and Immunity
<b>OCTOBER</b>	<b>Unit III</b> General characters and classification of Phylum Protozoa up to orders Protozoa-Type study-Paramecium. Protozoa and diseases
<b>NOVEMBER</b>	<b>Unit III</b> General characters and classification of Phylum Porifera and Coelenterata up to orders Porifera- Type study-Sycon. Coelenterata-Type study-Obelia.
<b>DECEMBER</b>	<b>UNIT – IV</b> General characters and classification of Phylum Helminthes, Annelida and Arthropoda up to orders Platyhelminthes and Nemaehelminthes-Type Study-Fasciola Annelida-Type Study-Pheretima. Arthropoda- Type Study-Palaemone.
<b>JANUARY</b>	<b>UNIT – V</b> General characters and classification of Phylum Mollusca and Echinodermata up to orders Mollusca- Type Study-Pila. Echinodermata- Type Study- Asterias(Starfish). Hemichordata – Type study - Balanoglossus
<b>FEBRUARY</b>	<b>REVISION</b>

**B. Sc. I**  
**Zoology**  
**PAPER-II**  
**VERTEBRATES AND EMBRYOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT – I</b> Chordata-Origin and classification of chordates. Protochordata-Type study-Amphioxus.
<b>AUGUST</b>	<b>UNIT- I</b> A comparative account of Petromyzon and Myxine. <b>UNIT – II</b> Fishes-Skin & Scales, migration in fishes, Parental care in Fishes. Amphibia-Parental care, Neoteny.
<b>SEPTEMBER</b>	<b>UNIT – II</b> Reptilia- Poisonous & Non-poisonous Snakes, Poison apparatus, snake venom <b>UNIT – III</b> Birds- Flight Adaptation, Migration Discuss-Birds are glorified reptiles.
<b>OCTOBER</b>	Mammals-Comparative account of Prototheria, Metatheria, Eutheria and Affinities
<b>NOVEMBER</b>	<b>UNIT –IV</b> Fertilization Gametogenesis, Parthenogenesis.
<b>DECEMBER</b>	<b>UNIT – IV</b> Development of Frog upto formation of three germ layers <b>UNIT –V</b> Embryonic induction, organizer and Regeneration.
<b>JANUARY</b>	<b>UNIT –V</b>  Development of Chick up to formation of three germ layer Placenta in mammals.
<b>FEBRUARY</b>	REVISION

**B. Sc. II**  
**Zoology**  
**PAPER-I**  
**ANATOMY AND PHYSIOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT I</b> – Integument and its derivatives: structure of scales, hair and feathers Alimentary canal and digestive glands invertebrates
<b>AUGUST</b>	<b>UNIT I</b> - Respiratory organs : Gills and lung , air-sac in birds
<b>SEPTEMBER</b>	<b>UNIT II</b> - Endoskeleton: (a) Axial Skeleton – Skull and Vertebrae (b) Appendicular Skeleton - Limbs and girdles Circulatory System: Evolution of heart and aortic arches Urino-genital System: Kidney and excretory ducts
<b>OCTOBER</b>	<b>UNIT III</b> -Nervous System: General plan of brain and spinal cord Ear and Eye: structure and function
<b>NOVEMBER</b>	<b>Unit III</b> – Gonads and genital ducts
<b>DECEMBER</b>	<b>UNIT – IV</b> Digestion and absorption of dietary components Physiology of heart, cardiac cycle and ECG Blood Coagulation Respiration: mechanism and control of breathing
<b>JANUARY</b>	<b>UNIT – V</b> - Excretion: Physiology of excretion, osmoregulation Physiology of muscle contraction Physiology of nerve impulse, Synaptic transmission
<b>FEBRUARY</b>	<b>REVISION</b>

**B. Sc. II**  
**Zoology**  
**PAPER-II**

**VERTEBRATE ENDOCRINOLOGY, REPRODUCTIVE BIOLOGY  
BEHAVIOUR, EVOLUTION AND APPLIED ZOOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT I-</b> General Characters ofHormones Hormonereceptor Biosynthesis and secretion of thyroid, adrenal, ovarian and testicularhormones Endocrine disorder due to hormones and otherglands
<b>AUGUST</b>	<b>UNIT II –</b> Reproductive cycle invertebrates Menstruation, lactation andpregnancy Mechanism ofparturition Hormonal regulation ofgametogenesis Extra-embryonicmembrane
<b>SEPTEMBER</b>	<b>UNIT III-</b> Evidences of organicevolution. Theories of organicevolution.
<b>OCTOBER</b>	<b>UNIT III-</b> Variation, Mutation, Isolation and Naturalselection. Evolution ofHorse
<b>NOVEMBER</b>	<b>UNIT IV-</b> Introduction toEthology. Patterns of Behaviour: Taxes, Reflexes, Drives and Stereotyped behaviours.
<b>DECEMBER</b>	<b>UNIT IV-</b> Reproductive behaviouralpatterns. Hormones, drugs andbehaviour
<b>JANUARY</b>	<b>UNIT V –</b> Aquaculture Sericulture Apiculture Pisciculture
<b>FEBRUARY</b>	<b>UNIT V –</b> Poultrykeeping Elements of pestcontrol- Chemicalcontrol Biologicalcontrol

**B. Sc. III****Zoology****PAPER-I****ECOLOGY, ENVIRONMENTAL BIOLOGY, TOXICOLOGY,  
MICROBIOLOGY AND MEDICAL ZOOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JULY	<b>UNIT – I</b> Aims and scopes of ecology Major ecosystems of the world-Brief introduction Population- Characteristics and regulation of densities Communities and ecosystem Bio-geo chemical cycles Air & water pollution Ecological succession
AUGUST	<b>UNIT-II</b> Laws of limiting factor Food chain in fresh water ecosystem Energy flow in ecosystem- Trophic levels Conservation of natural resources Environmental impact assessment
SEPTEMBER	<b>UNIT-III</b> Definition of toxicity Classification of toxicants Principle of systematic toxicology
OCTOBER	<b>UNIT III</b> Toxic agents & their action-Metallic & inorganic agents Animal poisons- snake venom, scorpion & bee poisoning Food poisoning
NOVEMBER	<b>UNIT-IV</b> General and applied microbiology Microbiology of domestic water and sewage
DECEMBER	<b>UNIT IV</b> Microbiology of milk & milk products Industrial microbiology
JANUARY	<b>UNIT-V</b> Brief introduction to pathogenic microorganisms, Rickettsia, Spirochaetes & Bacteria Brief account of life history & pathogenicity of the following pathogens with reference to man: prophylaxis & treatment Pathogenic protozoans- Entamoeba, Trypanosome & Giardia Pathogenic helminthes-Schistosoma Nematode pathogenic parasites of man Vector insects
FEBRUARY	REVISION



**B. Sc. III**  
**Zoology**  
**PAPER-II**  
**GENETICS, CELL PHYSIOLOGY, BIOCHEMISTRY, BIOTECHNOLOGY AND**  
**BIOTECHNIQUES**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT – I</b> Linkage & linkage maps Varieties of gene expression- multiple alleles; Lithogenesis, Pleiotropic Gene; Gene interaction; Epistasis Sex chromosomes systems & sexlinkage Mutation & chromosomal alteration; meiotic consequences Human genetics, chromosomal & single gene disorders (somatic cellgenetics)
<b>AUGUST</b>	<b>UNIT-II</b> General idea about pH &buffer Transport across membrane- cell membrane; mitochondria and endoplasmic reticulum Active transport & its mechanism; active transport in mitochondria & endoplasmic reticulum Hydrolytic enzymes-their chemical nature, activation &specificity
<b>SEPTEMBER</b>	<b>UNIT-III</b> Amino acids & peptides- Basic structure & biologicalfunction Carbohydrates & its metabolism- Glycogenesis; Gluconeogenesis; Glycolysis; Glycogenolysis; Cori-cycle
<b>OCTOBER</b>	<b>UNIT III</b> Lipid metabolism- Oxidation of glycerol; Oxidation of fattyacids Protein metabolism- Deamination, transamination, transmethylation; Biosynthesis of protein
<b>NOVEMBER</b>	<b>UNIT-IV</b> Biotechnology- Scope &importance Recombinant DNA & Genecloning
<b>DECEMBER</b>	<b>UNIT IV</b> Cloned genes & other tools ofbiotechnology Applications of biotechnology in (i) Pharmaceutical industry (ii) Food processing industry
<b>JANUARY</b>	<b>UNIT-V</b> Principles & techniques about the following: (i) pHmeter (ii) Colorimeter (iii) Microscopy- Light microscopes, Phase contrast & Electronmicroscopes (iv) Centrifugation (v) Separation of biomolecules by chromatography &electrophoresis (vi) Histo-chemical methods of determination of protein, lipid &carbohydrates
<b>FEBRUARY</b>	<b>REVISION</b>

**GOVT.D.B.GIRLS' P G (AUTONOMOUS) COLLEGE, RAIPUR**  
**TEACHING PLAN / SESSION 2017-18**

**B.SC.HOME SCIENCE PART I GROUP A PAPER II INTRODUCTION TO RESOURCE MANAGEMENT ECOLOGY AND ENVIRONMENT**

- JULY- INTRODUCTION, CONCEPT, PURPOSE OF MANAGEMENT, ACHIEVEMENT OF GOALS
- AUG- OBSTACLE TO IMPROVE MANAGEMENT, FACTORS AFFECTING MANAGEMENT, LIFESTYLE.  
TYPES OF FAMILY, SIZE, STAGES OF FAMILY LIFE CYCLE
- SEPT- DEFINITION, TYPES, UTILITY OF GOALS, IMPORTANCE, SOURCES CLASSIFICATION  
CHARACTERISTICS OF VALUE, CHANGING VALUES, STANDARD DEFINITION, QUANTITATIVE  
QUALITATIVE, CONVENTIONAL, NON CONVENTIONAL, ROLE OF DECISION IN MANAGEMENT ,  
AVAILABILITY OF RESOURCES, AND PRACTICAL
- OCT- MEANING OF MANAGEMENT PROCESSES PLANNING, CONTROLLING, EVALUATION, DECISION  
MAKING ,PLANNING IMPORTANCE, TYPES, TECHNIQUES, CONTROLLING PHASES ENERGIZING  
CHECKING, SUCCESS FACTORS, SUITABLY, PROMPTNESS, NEW DECISIONS, FLEXIBILITY &  
PRACTICAL
- NOV- SUPERVISION DIRECTIONS & GUIDANCE, ANALYSIS OF SUPERVISION, EVALUATION, IMPORTANCE  
RELATION TO GOALS, SELF EVALUATION, EVALUATION OF MANAGEMENT PROCESSES, TYPES  
AND FACTORS OF RESOURCES AND PRACTICAL
- DEC- MEANING, DEFINITION, SCOPE OF ECOLOGY AND ENVIRONMENT, LAND ENERGY, MINERALS  
RESOURCE, POLLUTION, SOURCES, DOMESTIC WASTE, HEALTH HAZARD PREVENTION  
CONTROL, WATER PROBLEM ISSUES, POLLUTION SCARCITY, POLLUTANTS, HEALTH HAZARD,  
CONTROL AND PRACTICAL
- JAN- UTILITY & RESOURCE OF FOREST, DEFORESTATION, CONSERVATION, AIR COMPOSITION,  
POLLUTANTS, SOURCES, HEALTH HAZARD, GREEN HOUSE EFFECT, & PRACTICAL
- FEB- ENERGY SOURCES, ALTERNATIVE, CONSERVATION, UNCONTROLLED POLLUTION GROWTH AND  
CONTROL, ENVIRONMENT EDUCATION, NEED, OBJECTIVES, ROLE OF GOVERNMENT, NGOS  
EDUCATION INSTITUTIONS, NATIONAL, INTERNATIONAL AGENCY, ENVIRONMENTAL  
PROTECTION POLICY, PROGRAMME, LEGISLATION

**GOVT.D.B.GIRLS'P G (AUTONOMOUS) COLLEGE, RAIPUR**  
**TEACHING PLAN / SESSION 2017-18**  
**BSc./ B.A. Part- I (FASHION DESIGNING)**  
**Group B / Paper-I**  
**NAME OF PAPER : TEXTILE SCIENCE**

MONTH	TEACHING PLAN
JULY	Introduction of the Subject. A brief historical background of Textile. Common Terminology used in Textile. Physical Properties of Textile fibers.
AUGUST	Chemical properties of Textile fibers. Introduction of Textile fibers Classification of Textile fibers : Natural fiber Vegetative Fiber : Cotton , Linen ( History, Cultivation , Manufacturing process & properties of each fiber )
SEPTEMBER	Animal Fiber : Silk,Wool ( History, Cultivation , Manufacturing process & properties of each fiber ) Mineral Fiber : Gold, Silver, Asbestoss Man-Made Fiber : Rayon ( History , Types, Production & Properties )
OCTOBER	Thermoplastic Fiber: Nylon ( History , Types, Production & Properties) Yarn : Meaning, yarn making. Types of yarn : Simple, Complex, Novelty. Yarn Twist
NOVEMBER	Methods of Fabric Construction:Weaving – Essential parts of Handloom Different types of Weaves. Other Methods of Fabric Construction.
DECEMBER	Identification of Fabric : Appearance test , Microscopic test , Burning test , Creasing test ,Breaking test ,Tearing test and Chemical test. Importance of Clothing
JANUARY	Selection of fabric for Dress according to Climate , Age, Occupation , Personality , Occasion , Figure type , Fashion etc. Wardrobe Planning
FREBRUARY	REVISION

**GOVT.D.B.GIRLS'P G (AUTONOMOUS) COLLEGE, RAIPUR**  
**TEACHING PLAN / SESSION 2017-18**  
**BSc./ B.A. Part- I (FASHION DESIGNING)**  
**Group B / Paper-II**  
**NAME OF PAPER : COLOR THEORY AND CONCEPTS**

MONTH	TEACHING PLAN
JULY	Introduction to Element of Design <ul style="list-style-type: none"> <li>• Color</li> <li>• Line &amp;</li> <li>• Texture</li> </ul>
AUGUST	Color Theories <ul style="list-style-type: none"> <li>• Prang's Color Theory</li> <li>• Munshell's Color Theory</li> </ul> Principles of Design <ul style="list-style-type: none"> <li>• Proportion</li> </ul>
SEPTEMBER	<ul style="list-style-type: none"> <li>• Balance</li> <li>• Harmony</li> <li>• Rhythm</li> <li>• Emphasis</li> </ul>
OCTOBER	Classification of Lines and its Significance. Combination of Lines, Different types of Patterns : Structural , Decorative , Geometrical , Abstract , Floral and Scrawly pattern.
NOVEMBER	Color Wheel ( According to Prang's Color Theory ) <ul style="list-style-type: none"> <li>• Single line design</li> <li>• Double line design</li> <li>• Four fold design</li> </ul>
DECEMBER	Color Scheme : Complementary, Double Complementary, Split Complementary, Traid Color Scheme, Pastel & Dusty Pastel, Contrast color scheme, Analogous color scheme, VIBGYOR color scheme, Neutral color scheme with Metallic colors, Nursery prints.
JANUARY	Enlargement of Pint. Texture : Fevicol texture , Thumb Impression, Rope Impression, Leaf Impression, Smoke and Spray texture, Wax drop & rubbing, Blowing, Stencils, Vegetable blocks, Stone Impression, Marble texture ,Dry brush etc.
FEBRUARY	REVISION

**GOVT.D.B.GIRLS'P G (AUTONOMOUS) COLLEGE, RAIPUR**  
**TEACHING PLAN / SESSION 2017-18**  
**BSc. Part- I ( HOME SCIENCE )**

**Group IV / Paper-B**

**NAME OF PAPER : PERSONAL EMPOWERMENT AND COMPUTER BASICS**

MONTH	TEACHING PLAN
JULY	Personal growth and personality development. The challenges: understanding and managing oneself. Personality development: Factors and influences. Peer pressures: Issues and management. Conflicts and stress, Simple coping strategies
AUGUST	Adjustment and readjustment to changing needs and conditions of contemporary society (technological changes, social changes, changes in values).Empowerment of women- Women and development: personal, familial, societal and national perspective.Capacity building for women: Education, decision-making abilities and opportunities.
SEPTEMBER	Women's organizations and collective strength: Women's action groups Women's participation in development initiatives.Study and discussion of life histories, case studies of illustrious Indian women from different walks of life eg. IndiraGandhi, Jhansi ki Rani, Kiran Bedi, Ha Bhat etc.
OCTOBER	Case studies: Medha Patkar, Vijaylaxmi Pandit, Sudha Chandran, Bhanvari Devi, Anutai Wagh. Home Science Education as Empowerment :The interdisciplinary of Home Science Education, the role of Home Science education for personal growth and professional development.
NOVEMBER	Home Science as holistic education with integration of goals for persons, enhancement and community development.Some Significant Contemporary Issues of Concern -Gender issues: inequities and discriminations, biases & stereotype; myths and facts.
DECEMBER	Substance abuse: Why and how to say no. Healthy habits: In relation to physique, to heterosexual interests. AIDS : Awareness and Education Computer Fundamentals : Overview about computers.
JANUARY	Computer Fundamentals : Components of a computer, Input / Output devices, Secondary storage devices, Number system : Decimal, Binary, Octal, Hexadecimal. Representation of information : BCD, EBCDIC, ASCII. Representation of Data : Files, Records, File organization and access. Security and safety of data. Introduction to operating systems.
FREBRUARY	RIVISION

**GOVT.D.B.GIRLS'P G (AUTONOMOUS) COLLEGE, RAIPUR**  
**TEACHING PLAN / SESSION 2017-18**  
**BSc./ B.A. Part- II (FASHION DESIGNING)**

**Group B / Paper-I**

**NAME OF PAPER: INTRODUCTION TO FASHION ILLUSTRATION & MODEL**

MONTH	TEACHING PLAN
JULY	Fashion : Definition ,Theories Fashion Trends In India. Terms Related To Fashion Industry. Factors Affecting Fashion.
AUGUST	Anatomy Of Human Body Skeleton & Muscular System Joints Of Human Body Normal Body , Abnormal Body
SEPTEMBER	Figure Problems & Different Types Of Figure Defects :Erect, Stooping, Low Shoulder, Square Shoulder, Thin Waist, Stout Waist, Long Body, Short Body, Full Back, Flat Back, Cylindrical, Corpulent, Head Forward, Head Backward
OCTOBER	Deformity : Natural & Accidental Principle Of Figure Drawing Sketching Of Different Body Features
NOVEMBER	Figure Head Theories : 7 ½ (Average Figure) 8 ½ (Average Figure) Drawing Of Human Form In Different Angles : Front , Back , Side .
DECEMBER	Figure Head Theories 10 ½ (Block Figure) 12 ½ (Fashion Figure) Drawing Of Human Form In Different Angles : Front , Back , Side .
JANUARY	Drawing Different Silhouettes Rendering Of Figure In Different Postures Sketching Styles For Different Age Group Male , Female , Kids
FREBRUARY	RIVISION

**GOVT.D.B.GIRLS'P G (AUTONOMOUS) COLLEGE, RAIPUR**

**TEACHING PLAN / SESSION 2017-18**

**BSc./ B.A. Part- II (FASHION DESIGNING)**

**Group B / Paper-II**

**NAME OF PAPER: DESIGN IDEAS IN GARMENTS**

MONTH	TEACHING PLAN
JULY	Body Measurements Anthropometric Measurements Methods Of Taking Body Measurements Standard Measurement Charts Based On Different Age Group
AUGUST	Pattern Making Principles, Techniques, And Application For Different Styles Basic Paper Pattern For : Children Wear (Any 3)
SEPTEMBER	Men's Wear (Any 2) Ladies Wear (Any 3) Preparing Layouts For Above Mention Paper Pattern Cloth Estimation For Different Garments
OCTOBER	Necklines :Study Of Different Types Of Necklines Variations Of Necklines Collars : Study Of Different Types Of Collars Collars Above The Necklines (Band Collars)
NOVEMBER	Collars Below The Necklines (Flat Collars) Tucks : Different Types Of Tucks (Pin, Diagonal, Blind, Cross, Spaced, Diamond, Shell, Corded)
DECEMBER	Pleats : Different Types Of Pleats (Simple, Knife, Box, Accordion, Kick, Reverse, Inverted Box) Seam : French & Counter Seam Gathers : Sheerings & Smocking
JANUARY	Yoke : Different Types Of Yokes (Body, Waist, Hip, Shoulder) Sleeves : Different Types Of Sleeves (Plain, Puff, Raglan, Kimono, Dolman)
FREBRUARY	REVISION

**GOVT.D.B.GIRLS'P G (AUTONOMOUS) COLLEGE, RAIPUR**

**TEACHING PLAN / SESSION 2017-18**

**BSc./ B.A. Part- III (FASHION DESIGNING)**

**Group B / Paper-I**

**NAME OF PAPER : MARKETING & SALES MANAGEMENT**

MONTH	TEACHING PLAN
JULY	Introduction to Marketing : Meaning, Definition, Nature & Scope ,Types, Functions & Method ,Marketing Process Standardization & Grading : Meaning, Definition, Importance & Advantages.
AUGUST	Product Policy Decision , Product Life Cycle Pricing Policies : Pricing Economic Concept & Objects Meaning of cost ,Methods of setting Price ,Factors Affecting Pricing Decisions, Sales Promotion: Meaning, Method, Strategies & Planning
SEPTEMBER	Salesmanship: Meaning,Definition,Characteristics & Scope Essentials of Successful Salesmanship, Duties & Main Qualities of Successful Salesmanship, Salesmanship & Advertisement,Channels of Distribution : Meaning, Definition, Types & Functions .
OCTOBER	Channels of Distribution of Consumer Goods & Industrial Goods,Role of Middleman. Channels of Distribution In India Advertisement: Meaning, Definition, Functions & Principles ,Advantages & Disadvantages, Media of Advertisement
NOVEMBER	Factors to be considered when selecting a medium of Advertisement,Consumer Education. Marketing Research &Information: Meaning,Definition,Object,Types,Procedure Importance & Advantages
DECEMBER	Market Report : Meaning & Types Market Terminology , Consumer Protection Entrepreneurship :Meaning, Definition, Nature & Types Qualities Of A Successful Entrepreneur
JANUARY	Theories & Models Of Entrepreneurship (Psychological, Sociological, Economic & 7 Integrated Models) Factors Affecting The Development Of Entrepreneurship Self Employment Programmes In India Consumer Association In India.
FREBRUARY	RIVISION



**GOVT.D.B.GIRLS'P G (AUTONOMOUS) COLLEGE, RAIPUR**  
**TEACHING PLAN / SESSION 2017-18**  
**BSc./ B.A. Part- III (FASHION DESIGNING)**

**Group B / Paper-II**

**NAME OF PAPER: CLOTHING CONSTRUCTION & FASHION DESIGNING**

MONTH	TEACHING PLAN
JULY	Clothing: Origin of Clothing, Meaning & Significance, Costumes of Ancient Age, Costumes of Modern Age. Personality : Meaning, Types & Factors Affecting Personality. Clothing & Personality. Selection of Children Clothing according to Age.
AUGUST	Fabric For Garment Making: Handling Of Different Types Of Fabric, Selection Of Suitable Fabric For Clothing, Suggestions For Persons Of Different Figures, Factors Affecting Clothing Decisions, Industrial Machines & Equipment Used For Cutting, Sewing And Finishing.
SEPTEMBER	Interrelationship Of Needles, Thread, Stitch Length, & Fabric Fitting : Fundamentals Of Fitting, Problems Area In Fitting, Factors Affecting Good Fit. Tailoring : General Principles, Proper Measurements , Principles Of Commercial Tailoring
OCTOBER	Pattern Making : General Instructions For Pattern Making, Method, Types & Layout, Use Of Commercial Paper Pattern, Pattern Alteration, Meaning & Types, Dart Manipulation & Dart Concealment, Drafting & Draping, Trimming Materials Used For Making Garment, Ornamentation Techniques
NOVEMBER	Embroidery : Fundamentals , Techniques , Design Color Combination , Use Of Different Threads , Different Types Of Stitches. Traditional Embroidery Of India: Kutch & Kathiyawar Of Gujrat, Zari Embroidery, Applique Work
DECEMBER	Traditional Embroidery of India: Kashida of Kashmir & Bihar, Kantha If Bengal, Phulkari of Punjab. Chikenkari of Lucknow, Kasuti of Karnataka, Costume of Men For Different States, Details of Costumes, Jewellery & Accessories
JANUARY	Costume of Women For Different States , Details of Costumes Jewellery & Accessories, Marriage Costumes For Different States of India, Various Dance Costumes Of India, Accessories: Importance & Types, Factors Affecting Selection Of Accessories
FREBRUARY	REVISION

PROPOSED TEACHING PLAN FOR THE SESSION OF **2017-18**

**B.SC.HOME SCIENCE PART III GROUP C PAPER I I**

JULY- DESIGN DEFINITION, TYPES STRUCTURAL, DECORATIVE, ELEMENTS OF DESIGN LINE, SIZE, FORM, STRUCTURE,SPACE, PATTERNS, SHAPES

AUG- LIGHT CHARACTERISTICS, CLASSIFICATION, STUDY OF COLOUR, CLASSIFICATION, DIMENSION, COLOUR SCHEMES, EFFECT, PRINCIPLES OF DESIGN DEFINITION CHARACTERISTICS, TYPES OF BALANCE, HARMONY, SCALE, PROPORTIONS, RHYTHM, EMPHASIS

SEPT- INDIAN REGIONAL, TRADITIONAL, CONTEMPORARY ART IN FLOOR DECORATION, HOME DECORATION, ACCESSORIES AND PRACTICAL, APPRECIATION OF ART IN TERMS OF PRINCIPLES OF ART &DESIGN, IN TERMS OF COMPOSITION And AESTHETIC APPEAL And PRACTICAL

OCT- FAMILY HOUSING NEED PROTECTIVE, ECONOMIC, AFFECTIONAL,SOCIAL, STANDARD OF LIVING , HOUSING GOALS, STYLE, FUNCTION, OCCUPATION, FACTORS INFLUENCING SELECTION & PURCHASE OF SITE FOR HOUSE BUILDING LEGAL ASPECT, LOCATION, PHYSICAL FEATURE, SOIL CONDITIONS, COST, SERVICES &PRACTICAL

NOV- HOUSE PLANNING READING HOUSE PLANS, GROUPING OF ROOMS, ORIENTATION, CIRCULATION, FLEXIBILITY, PRIVACY, SPECIOUSNESS, SERVICES, AESTHETIC, ECONOMY LIGHT VACCINATION, PLANNING OF DIFFERENT ROOMS LIVING,SLEEPING, DINING ROOM KITCHEN, STORE TOILET, PASSAGE, STAIRCASE ,LAND SCAPING PRINCIPLES &APPLICATION

DEC- FINANCIAL CONSIDERATIONS AVAILABILITY OF FUND FOR HOUSING HDFC, COOPERATIVE HOUSING SOCIETY, LIC,COOPERATIVE BANK, PF,FCI&PRACTICAL

JAN DISABILITY OF OWNING VERSUS RENTING,  
HOUSING PROBLEMS AND REMEDIES &PRACTICAL

FEB- FURNITURE STYLE TRADITIONAL, CONTEMPORARY, MODERN, SELECTION OF FURNITURE FOR COMFORT, REST, RELAXATION, WORK, STORAGE, ARRANGEMENT OF FURNITURE OF LIVING, SLEEPING, DINING AND MULTIPURPOSE ROOM, UPHOLSTERED FURNITURE MATERIAL TECHNIQUES, DESIGN, TYPES OF CURTAINS, DRAPERIES, FLOOR COVERINGS, RUGS, CARPETS CUSHION COVERS, SELECTION AND USE OF ACCESSORIES AND THEIR ROLE IN INTERIORS

**B.SC.HOME SCIENCE PART III GROUP C PAPER II FOUNDATION OF ART &DESIGN**

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JULY- DESIGN DEFINITION & TYPES STRUCTURAL, DECORATIVE, ELEMENTS OF DESIGN, LINE, SIZE, FORM STRUCTURE, SPACE, PATTERN, SHAPE, LIGHT CHARACTERISTICS CLASSIFICATION

AUG- STUDY OF COLOUR, CLASSIFICATION, DIMENSION, COLOUR SCHEMES, EFFECT, PRINCIPLES OF DESIGN, DEFINITION, CHARACTERISTICS & TYPES OF BALANCE, HARMONY, SCALE, PROPORTIONS. RHYTHM, EMPHASIS

SEPT- INDIAN REGIONAL, TRADITIONAL CONTEMPORARY ART IN FLOOR DECORATION, HOME DECORATION, ACCESSORIES, APPRECIATION OF ART IN TERMS OF PRINCIPLES OF ART & DESIGN IN TERMS OF COMPOSITION & AESTHETIC APPEAL AND PRACTICAL

OCT- FAMILY HOUSING NEED PROTECTIVE, ECONOMIC, AFFECTIONAL, SOCIAL STANDARD OF LIVING HOUSING GOALS, STYLE, FUNCTION OCCUPATION FACTORS INFLUENCING SELECTION &

PURCHASE OF SITE FOR HOUSE BUILDING LEGAL ASPECT LOCATION PHYSICAL FEATURE SOIL

CONDITIONS, COST, SERVICE AND PRACTICAL

NOV- HOUSE PLANNING READING HOUSE PLANS, GROUPING OF ROOMS. ORIENTATION,

CIRCULATION, FLEXIBILITY, PRIVACY, SPECIOUSNESS, SERVICES, AESTHETICS,

ECONOMY, LIGHT, VENTILATION, PLANNING OF DIFFERENT ROOMS LIVING, DINING, BEDROOM KITCHEN, STORE, TOILET, PASSAGE, STAIRCASE, LAND SCAPING PRINCIPLES & APPLICATION AND PRACTICAL

DEC- FINANCIAL CONSIDERATIONS AVAILABILITY OF FUNDS FOR HOUSING HDFC, COOPERATIVE HOUSING SOCIETY, LIC, COOPERATIVE BANK, FCI, PF & PRACTICAL

JAN- DISABILITY OF OWNING VERSUS RENTING, HOUSING PROBLEMS, CAUSES, REMEDIAL MEASURES

PRACTICAL

FEB- FURNITURE STYLE TRADITIONAL, CONTEMPORARY, MODERN, SELECTION OF FURNITURE FOR

COMFORT, REST, RELAXATION, WORK, STORAGE, ARRANGEMENT OF FURNITURE FOR LIVING,

SLEEPING, DINING AND MULTIPURPOSE ROOM, UPHOLSTERED FURNITURE MATERIAL,

TECHNIQUES, DESIGN, TYPES OF CURTAINS, DRAPERIES, FLOOR COVERINGS, RUGS, CARPETS

CUSHION COVERS, SELECTION AND USE OF ACCESSORIES AND THEIR ROLE IN INTERIORS

**DEPARTMENT OF HOME SCIENCE**  
**B.Sc. (H.Sc.)-III**  
**SESSION 2017-18**  
**GROUP-C**  
**PAPER-1**  
**EARLY CHILDHOOD EDUCATION**

Month	Plan
July	<b>UNIT-I</b> Significance and objectives of early childhood care and education. <ul style="list-style-type: none"> <li>1. Significance of early childhood years in individuals development.</li> <li>2. Meaning and need for intervention programmes for better growth and development.</li> <li>3. Objectives of ECCE.</li> <li>4. Different types of programs currently offered. Objectives of the program routine and target group covered by each of the following. ECE programme - Balwadi, anganwadi, Nursery school, Kindergarten, Montessori, laboratory nursery school ECCE Program - ICDS and mobile cretch. Play group : day care.</li> </ul>
August	<b>UNIT-II</b> Current Status and Expansion of Scope of ECE to ECCE <ul style="list-style-type: none"> <li>Expansion from ECE to ECCE.</li> <li>Current Status of ECCE programme.</li> <li>Objectives : staff qualifications, teacher-children ratio, indoor and outdoor play space and play facilities, equipment, curriculum and evaluation.</li> <li>Admission tests and effects on children.</li> <li>Effects of pressures on young children due to formal education.</li> <li>Need for ECCE programmes to provide quality care where mothers are at work.</li> <li>Historical overview of ECCE.</li> <li>Global perspective - views of educationists - Froebel, Mac Millan sister, Deweu and Montessori,</li> <li>ECE in India : Overview of pre.and post independence period.</li> <li>Contributions of Ravindranath Tagore, Mohandas Gandhi, Gijubhai Bodheka, Tarabai Modak, Anutai Wagh</li> </ul>
September	<ul style="list-style-type: none"> <li>Recent Developments : Policies, Institutions and contributions of NGOs</li> <li>national policy on children.</li> <li>National policy on education 1986.</li> <li>Adoption of Ram Joshi Committee Report on Child Education by Government of Maharashtra.</li> <li>Role of Indian Association of Preschool Education, National Institute of Public Cooperation and Child Development, National Council for Educational Research and Training, SCERT and NGOs</li> </ul>
October	<b>UNIT-III</b> <ul style="list-style-type: none"> <li>Meaning of curriculum, Foundation of. curriculum development.</li> <li>Impact of play as means of development and learning.</li> <li>Developmental stages of play. Types of Play - Solitary play, parallel play, associative play and coopertives play.</li> <li>Functions of play - play as a means of assessing children's development.</li> <li>Teachers Role in creating environment and Promoting play.</li> <li>Classical theories of play - Surplus energy theory relaxation theory, Preexercise &amp; recapitulation theory.</li> </ul>
November	<ul style="list-style-type: none"> <li>Programme Planning - Approaches to learning : Incidental and planned learning.</li> <li>Principles of programme planning : - from known to unknown, simple to complex, concrete to abstract.</li> <li>Balance between individual and group activity, indoor and outdoor play, quiet and active plays, guided and free activities.</li> <li>Factors influencing programme planning.</li> </ul>

	<ul style="list-style-type: none"> <li>Formal versus non-formal approach in education : advantages and disadvantages. - Integrated learning approach or project method that is covering various components of curriculum that is focussing on one topic/theme at a time.</li> <li>Short and long term planning.</li> </ul>
December	<p><b>UNIT-IV Languages</b></p> <ul style="list-style-type: none"> <li>Goals of language teaching.</li> <li>Readiness for reading and writing. Meaning of readiness.</li> <li>Factor to be considered for readiness : Age, Vision, Hearing, Physical, emotional, social, experiential background, attention span, finer motor coordination, eye hand coordination, reading from left to right and top to bottom.</li> </ul> <p><b>Mathematics</b></p> <ul style="list-style-type: none"> <li>Importance of number and mathematics.</li> <li>- Number as a language and history of its development.</li> <li>Abstract nature of number.</li> <li>Mathematical readiness.</li> <li>Analysis of prerequisite skill for 'number classification, comparing, seriation, patterning, counting, shape and space, measurement fractions, vocabulary, numeral operations.</li> <li>Decimal system of numeration (base 10)</li> <li>Number line-position and relevance of zero.</li> <li>Operations and relevant rules and properties; subtraction, multiplication and division.</li> <li>Two and three dimension shapes, properties, characteristics.</li> <li>Basic principles of measurements 0 time/distance, weight, capacity and money.</li> </ul>
January	<p><b>Environmental studies</b></p> <ul style="list-style-type: none"> <li>Scope of environmental studies.</li> <li>Importance and goals of environmental studies.</li> <li>Content : to conclude understanding from biological, physical and social environment.</li> </ul> <p><b>UNIT-V Project method</b></p> <ul style="list-style-type: none"> <li>Introduction</li> <li>Meaning and advantages of using project method.</li> <li>Planning .</li> <li>Resource unit.</li> </ul> <p><b>Alternative to Home Work</b></p> <ul style="list-style-type: none"> <li>Disadvantages of learning by role.</li> <li>Suitable alternatives such as observations, exploration, experimentation and reporting orally, picture or at. Something related to the concepts covered in class.</li> </ul>
February	<p><b>Evaluation</b></p> <ul style="list-style-type: none"> <li>Need for evaluation.</li> <li>Formative and summative evaluation.</li> <li>Methods of evaluation : Observations.</li> <li>Evaluation of daly work, tools for evaluation</li> <li>Reporting to parents.</li> <li>Revision</li> </ul>

**Govt. D.B. Girls P.G. Autonomous College , Raipur (C.G.)**  
**Proposed Teaching Plan For the Session 2017-18**  
**B.Com. Part - I**

Month	Financial Accounting	Business Mathematics	Business Communication	Business Regulatory Framework	Business Environment	Business Economics
July	UNIT-I Meaning & Scope of Accounting : Need, development & Definition, OBJECTIVES of accounting, difference between Book – keeping and accounting ; Branches of accounting ; Accounting principles.	UNIT-I Calculus (Problems and theorems involving trigonometrically ratios are not to be done) Differentiation : Partial derivatives up to second order ; Homogeneity of functions and Euler's theorem.	UNIT-I Introducing Business Communication: Definitions, concepts and Significance of communication, Basic forms of communication; Communication models and process, Principles of effective communication; Theories of communication ; Audience analysis.	UNIT-I Law of Contract(1872) : Nature of contract ; Classification ; Offer & Acceptance ; Capacity of parties to contract , free consent , considerations, legality of object ;	UNIT-I Business Environment : Concept , Components and Importance, Economic Trends (over view) : Income ;	UNIT-I Introduction: Basic problems of an economy ; Working of price mechanism . Elasticity of Demand : Concept and measurement of elasticity of demand ; Price , income and cross elasticity's ; Average revenue , marginal revenue and elasticity of demand ; Determinants of elasticity of demand ; importance of elasticity of demand.
August	UNIT-I Accounting Standards : International accounting standards (only outlines); Accounting standards in India. Accounting Transactions: Accounting cycle; Journal; Rules of debit & credit; Compound Journal entry ; Opening entry ; Relationship between journal & Ledger ; Capital & Revenue Classification of Income & Expenditure & Receipts.	UNIT-I Maxima & Minima; Cases of one variable involving second or higher order derivatives; logarithm's.	UNIT-I Self – Development and Communication : Development of positive personal attitudes, SWOT Analysis; Vote's model of interdependence; Whole communication.	UNIT-I <b>Agreement</b> declared void; Performance of contract; Discharge of contract; Remedies for breach of contract.	UNIT-I Savings and investments ; Industry ; Trade and balance of payments , money , Finance , Prices.	UNIT-II Production Function : Law of variable proportions ; Iso-quants ; Expansion path ; Returns to scale ; Internal & External economies and diseconomies.

September	UNIT-II Final accounts : Trial Balance; Manufacturing accounts ; Trading account ; Profit & Loss account; Balance Sheet ; Adjustment entries. Rectification of errors: Classification of errors; Location of errors; Rectification of errors; Suspense account; Effect on profit.	UNIT-II Matrices & Determinants : Definition of a matrix; Types of matrices; Algebra of matrices; Properties of determinants; Calculation o values of determinants upto third order; Adjoint of a matrix, elementary row or column operations;	UNIT-II Corporate communication: Formal and Informal communication networks; Grapevine; Miscommunication (Barriers); improving communication.	UNIT-II Special Contracts: Indemnity; Guarantee; Bailment and pledge; Agency.	UNIT-II Problems of Growth : Unemployment ; Poverty ; Regional imbalance ; Social injustice ; Inflation Parallel economy ; Industrial sickness.	UNIT-II Law of Demand: Meaning and Definitions, Effecting Factors, Types; Exception of Law of Demand
October	UNIT-III Depreciation, Provisions, & Reserves : Concept of depreciation ; Causes of depreciation ; Depreciation, depletion ,amortization; Depreciation accounting; Methods of recording depreciation ; Methods of providing depreciation;	UNIT-II Finding inverse of a matrix through adjoint and elementary row or column operations; Solution of a system of linear equations having unique solution and involving not more than three variables.	UNIT-II Practices in business communication: Group discussions; Seminars; Effective listening: Principles of affective listening; Factor affective listening exercises; Oral, Written, and video sessions. Audience analysis and Feedback.	UNIT-III Sale of Goods Act, 1930 : Formation of contract of sale ; Goods and their classification , price , conditions , and warranties ; Transfer of property in goods ; Performance of the contract of sale; Unpaid seller and his rights , sale by auction ; Hire purchase	UNIT-III Role of Government : Monetary and fiscal policy ; Industrial policy ; Industrial Licensing; Privatization ; Devaluation ;	UNIT-III Theory of Costs : Short-run and Long-run cost curves - traditional and modern approaches. Market Structures I Market structures and business decisions; OBJECTIVE of a business firm. a. Perfect Competition: Profit maximization and equilibrium of firm and industry; Short - Run and Long-run supply curves; Price and output determination. Practical Applications.
November	UNIT-III Depreciation of different assets ; Depreciation of replacement cost; Depreciation policy; as per Indian accounting standard : .Provisions & Reserves. Accounts of Non–Trading Institutions	UNIT-III Linear Programming – Formulation of LPP: Graphical method of solution; Problems relating to two variables including the case of mixed constraints ; Cases having no solutions , multiple solutions, unbounded solution and redundant constraints.	UNIT-III Writing Skills : Planning business messages; Rewriting and editing; The first draft; Reconstructing the final draft; Business letters and memo formats; Appearance request letters; Good news & bad news letter's; Persuasive letters ; Sales letters ; Collection letters ; Office memorandum.	UNIT-IV Negotiable Instrument Act (1881) :Definition of negotiable instruments; Features ; Promissory Note ; Bills of Exchange & Cheque ; Holder & Holder in the due course ;	UNIT-III Export – Import policy ; Regulation of Foreign investment; Collaborations in the light of recent changes.	UNIT-III b. Monopoly : Determination of price under monopoly ; Equilibrium of a firm; Comparison between perfect competition and monopoly ; Multi–plant monopoly, Price discrimination. Practical Applications.

December	UNIT-IV Special Accounting Areas : Branch Account : Dependent branch : Debtor system , stock & debtor system; Hire-purchase and instalment purchase system; Meaning of hire-purchase contract; Legal provision regarding hire-purchase contract; Accounting records for goods of substantial sale	UNIT-III Transportation Problem , Ratio & Proportion.	UNIT-IV Report Writing :Introduction to a proposal, short report and formal report, report preparation. Oral Presentation : Principles of oral Presentation , factors effecting presentation, sales presentation , training Presentation , conducting surveys , speeches to motivate , effective Presentation skills.	UNIT- IV Crossing of a cheque , Types of crossing ; Negotiation ;Dishonour and Discharge of negotiable instrument	UNIT- IV Review of Previous Plans, The Current Five Year Plan : Major policy ; Resource allocation..	UNIT-III Returns to scale and Equal product Curve Analysis; Internal & External economies and dis-economies.
January	UNIT-V a. Partnership Accounts : Essentials characteristics of partnership ; Partnership deed: Final accounts; Adjustment after closing the accounts; Fixed and fluctuating capital ; Goodwill ; AS-10 ; Joint Life Policy ; Change in profit sharing ratio	UNIT-IV Compound Interest and Annuities : Certain different types of interest rates; Concept of present value and amount of a sum ; Types of Annuities ; Present value and amount of an annuity, Including the case of continuous compounding;	UNIT-V Non-Verbal Aspects of Communicating : Body language : Kinesics , Proxemics , Para language. Effective Listening: Principles of effective listening ; Factors affecting listening exercises; Oral , Written , and video sessions. Interviewing S kills : Appearing in interview ; Conducting interview ; writing resume and letter of application.	UNIT-V The Consumer Protection Act 1986: Salient features; Definition of consumer ; Grievances Redressal Machinery..	UNIT-V International Environment : International trading environment (over view) ; Trends in World trade and the problems of developing countries ; Foreign trade and economic growth;	UNIT-IV Market Structures: Concept, characteristics, classification. Determination of Price under condition of Perfect Competition, Imperfect Competition and Monopoly, Monopolistic Competition, Oligopoly and Duopoly.
February	b. Reconstitution of a Partnership Firm – Admission of Partner : Retirement of a partner; Death of a partner; Dissolution of a firm, Accounting Entries ; Insolvency of partners - Modes of dissolution of a firm; Accounting Entries; Insolvency of partners distribution.	UNIT-IV Valuation of simple loans and debentures; Problems relating to sinking funds UNIT-V Averages, Percentages, Commission, Brokerage, Profit & Loss.	UNIT-V Modern Forms of Communication : Fax ; E-mail ; Video conferencing , etc. International Communication: Cultural sensitiveness and cultural context; Writing and presenting in international situations ; Inter- cultural factors in interactions ; Adapting to global business.	UNIT -V Foreign Exchange Management Act 2000 : Definitions and main Provisions. Right to Information Act 2005 ( Main Provisions )	UNIT-V International economic groupings. International economic institutions - GATT , WTO , World Bank , IMF , FDI, Counter trade.	UNIT-V Theories of distribution, Marginal Productivity theory of distribution, Concept and theories of Wages, Rent, Interest & Profit.



**Govt. D.B. Girls P.G. Autonomous College , Raipur (C.G.)**  
**Proposed Teaching Plan For the Session 2017-18**  
**B.Com. Part - II**

Month	Corporate Accounting	COST ACCOUNTING	PRINCIPLES OF BUSINESS MANAGEMENT	COMPANY LAW	BUSINESS STATISTICS	FUNDAMENTALS OF ENTREPRENEURSHIP
July	Unit-I Issue , Forfeiture and Re-issue of Shares	Unit-I Introduction : Nature and scope of cost accounting; Cost concepts and classification; Methods and techniques ; Installation of costing system ; Concept of cost audit.	Unit-I Introduction: Concept, nature, process and significance of management ; Management roles (Mintzberg) ;	Unit-I Corporate Personalities : Kinds of companies , Nature & Scope, promotion and Incorporation of companies.	UNIT-I Introduction : Statistics as a subject ; Descriptive Statistics – compared to Inferential Statistics ; Types of data ; Summation operation ; Rules of Sigma $\Sigma$	Unit-I Introduction : The entrepreneur , Definition ; Emergence of entrepreneurial class ; Theories of entrepreneurship ; Role of socio - economic environment
August	Unit-I Redemption of preference shares ; Issue and Redemption of debentures .	UNIT-I Accounting for Material : Material Control and techniques ; Pricing of material Issues ; Treatment of material losses.	UNIT-I An overview of functional areas of management ; Development management thought ; Classical and neo-classical system ; Concept Approaches.	UNIT-II Memorandum of Association ; Articles of Association ; Prospectus ,	UNIT-I Operations ; Analysis of University Data ; Construction of a frequency distribution; Concept of central tendency.	Unit-II Promotion of a Venture : Opportunities analysis ; External environmental analysis : Economic , social and technological ; Competitive factors ;
September	Unit-II Final Accounts (as per company act 2013),	Unit-II Accounting for Labour : Labour cost control procedure; Labour turnover ; Idle time and overtime; Methods of wage payment–time and piece rates; Incentive schemes.	Unit-II Planning : Concept , process and types . Decision making – concept and bounded Rationality; management by objectives ; Corporate planning ; Environment analysis and diagnosis ; Strategy formulation.	UNIT-II Share ; Share Capital – transfer and transmission.	UNIT-II Dispersion and their measurements: Partition values; Moments; Skewness and measures .	UNIT-II Legal requirements for establishment of a new unit and raising of funds ; Venture capital sources and documentation required

October	Unit-II Liquidation of Company	UNIT-II Accounting for overheads ; Classification and departmentalization ; Absorption of Overheads ; Determination of overhead rates ; Under and over absorption and its treatment.	UNIT-III Organizing : Concept , nature , process and significance; Authority and resident Relationships; Centralization and Decentralization ; Departmentalization ; Organization Structure – forms and contingency factor.	UNIT-III Capital Management: borrowing powers , mortgages and charges , debentures.	UNIT-III Analysis of Bivariate Data: Linear regression two variables & correlation.	Unit-III Entrepreneuria I Behavior : Innovation and entrepreneur ; entrepreneurial Behavior and Psycho – Theories , Social responsibility.
November	<b>Unit-III</b> Valuation of Goodwill and Shares.	Unit-III Cost Ascertainment : Unit costing ;	Unit-IV Motivating and Leading People at Work : Motivation – concept ; Theories Herzberg , McGregor and Ouchi ; Financial and non-financial incentives.	UNIT-III Directors – Managing Director, whole time director, Appointment, Remuneration and duties.	Index Number : Meaning , types and uses ; Methods of Constructing price and quantity indices ; Test of adequacy ; Chain - base index numbers; Base shifting , splicing and defaulting ; Problems of constructing index numbers ; Consumer price index. Analysis of time series : Causes of variation in time series data ; Components of time series ;	Unit-IV Entrepreneurial Development Programs ( EDP ) : EDP , their role, relevance and achievements ; Role of government in organizing EDPs ;Critical evaluation.
December	UNIT -IV Accounting for Amalgamation of Companies as per Indian Accounting Standard-14;	UNIT-III Job , batch and contract costing.	UNIT-IV Leadership – concept and leadership styles ; Leadership theories ( Tannenb Schmidt) ; Likert's System Management Communication – nature, process , networks and barriers , Effective communication.	Unit-IV Companies Meetings : Kinds , quorum , voting , resolutions , minutes.	UNIT-IV Decomposition – Additive and multiplicative models; Determination of trend – Moving Averages Method and method of least squares ; Computation of seasonal indices by simple averages, ratio – -to-moving average , and link relative methods.	Unit-V Role of Entrepreneur : Role of Entrepreneur in economic growth as an innovator, generation of employment opportunities , complementing and supplementing economic growth , bringing about social stability and balanced regional development of industries ;

January	UNIT-IV Accounting for Amalgamation of Companies as per Indian Accounting Standard-14;	Unit-IV Operating costing ; Process costing – excluding inter – process profits and joint and by – products.	Unit-V Managerial Control : Concept and process ; Effective control system ; Technical Control – traditional and modern.	Unit-V Majority powers and Minority rights ; Prevention of oppression and	UNIT-V Forecasting and Methods : Forecasting – Concept , types and importance ; General approach to forecasting ; Methods of forecasting ; Demand ; Industry Vs Company sales forecast ; Factors affecting company sales.	UNIT-V Role in export promotion and import substitution, forex earning and augmenting and meeting local demands.
February	UNIT-V Consolidated Balance Sheet of holding companies with one subsidiary only	Unit-V Cost Records : Integral and non-integral system ; Reconciliation of cost and financial accounts ; Break Even Point.	UNIT-V Management of change : Concept , nature , and process of planned Resistance to Change ; Emerging horizons of management in a environment.	UNIT-V mismanagement . Winding up : Kinds and conduct.	UNIT-V Theory of Probability : as a concept ; The three approaches to defining probability ; Addition and Multiplication laws of probability ; Conditional probability ; Bayes' Theorem ; Expectations and variances of a random variable.	

**Govt. D.B. Girls P.G. Autonomous College , Raipur (C.G.)**  
**Proposed Teaching Plan For the Session 2017-18**  
**B.Com. Part - III**

Month	Income Tax	Indirect Taxes	Management Accounting	Auditing	Principles of Marketing	International Marketing
July	<b>UNIT-I</b> Basic Concepts : Income, agriculture Income , casual income, assessment year, previous year, gross total income, total income, person ; Basis of charge :	UNIT-I Central Excise : Nature & Scope of Central Excise; Important terms and definitions under the Central Excise Act. ; General procedure of Central Excise ; Clearance and excisable goods ; Concession to small scale industries under Central Excise Act.	UNIT-I Management Accounting : Meaning , nature ,scope and function of management accounting ; Role of management accounting in decision making ; Management accounting Vs financial accounting ; Tools and techniques of management accounting ;	UNIT-I Introduction : Meaning and objectives of auditing ; Types of audit ; Internal audit. Audit Process : Audit programme ;	UNIT -I Introduction : Nature and scope of marketing ; Importance of marketing as a business function and in the economy ; Marketing Concepts –traditional and modern ; Selling Vs marketing ; Marketing Mix ; Marketing environment.	UNIT -I International Marketing : Nature , definition and scope of international marketing; Domestic marketing Vs International marketing ; International environment – internal and external.
August	<b>UNIT-I</b> : Scope of total income, residence and tax liability, income which does not form part of total income .	UNIT-II State Excise ; CENVAT. Detail study of State excise during calculation of tax.	UNIT-I Financial statement ; Objectives and methods of financial statements analysis ; Ratio analysis ; Classification of ratio – Profitability ratios ; turnover ratios , liquidity ratios , Advantages of ratio analysis ; Limitations of accounting ratios.	UNIT- I Audit and books ; Working papers and evidences .  UNIT-II Internal Check System : Internal control.	UNIT_II Consumer Behavior and Market Segmentation : Nature , scope and Significance of consumer behavior ; Market segmentation – Concept and Importance ; Bases for market segmentation.	UNIT-II Identifying & Selecting Foreign Market: Foreign market entry mode decisions. Product Planning for international market : Product designing ; Standardization Vs adaptation; Branding & Packaging ; Labeling and quality Issues ;

September	<b>UNIT-II</b> Heads of Income : UNIT-IIe Salaries ;	UNIT-III Customs : Role of Customs in international trade ; Important terms and definitions; Goods ; Duty ; Exporter ; Foreign going vessel ; Aircraft goods Export Manifest ; Letter of credit ; Kinds of duties Basic , auxiliary , additional and countervailing ; Basics of levy-advallorem, Specific duties ; Prohibition of export and import of goods and provisions regarding notified & specified goods;	UNIT-II Funds Flow Statement as per Indian Accounting Standard – 3 ; Cash Flow Statement.	UNIT-II Audit Procedure : Vouching : Verification of assets and liabilities.	UNIT-III Product : Concept of product, consumer and industrial goods ; Product Planning and development ; Packaging role and functions ; Brand name and Trade mark ; after sale service ; product-life-cycle concept.	UNIT-II After sale service . International Pricing : Factors influencing International price; Pricing process and methods ; International price quotations and payment terms.
October	<b>UNIT-II</b> Income from House Property.	UNIT-III Import of goods – Free import and restricted import; Type of import - Import of cargo , import of personal baggage, import of stores. Clearance Procedure : For home consumption, for warehousing for re- export; Clearance Procedure for import by post ; Prohibited export of cargo , export of baggage ; Export of Cargo by land , sea , and air routes.	UNIT -III Absorption and Marginal Costing : Marginal and differential costing as a tool for decision making – make or buy ; Change of price mix ; Pricing ;	UNIT-III Audit of Limited Companies : a) Company auditor – Appointment , powers , duties & liabilities. b) Divisible profits and dividends. c) Auditors report – standard report and qualified report.	UNIT-III Price : Importance of price in the marketing mix ; Factors affecting price of a product/service ; Discounts and rebates.	UNIT-III Promotion of Product and Service Abroad : Methods of international promotion ; Direct mail and sales literature ;
November	<b>UNIT-III</b> Profit and gains of business or profession, including provisions relating to specific Business	Unit-IV Central Sales Tax : Important terms and definitions under the Central Sales Tax Act. 1956 : Dealer , dealer goods ,	UNIT- III Break-even analysis ; Exploring new markets ; Shut down decisions.	UNIT -III d) Special audit of banking companies. e) Audit of	UNIT-IV Distribution channels and Physical Distribution : Distribution channels – Concept and role ; Types of	UNIT-III Advertising ; Personal selling ; Trade fairs and exhibitions.

	Capital gains	place of business , sale , sale price, turnover, year, appropriate Authority ; Nature & scope of Central Sales Tax Act. ;		educational institutions. f) Audit of Insurance companies.	distribution channel ; Factors affecting choice of a distribution channel ; Retailers & wholesalers.	
December	<b>UNIT-III</b> Income from other sources. <b>UNIT-IV</b> Computation of Tax Liability : Set-off and carry forward of Losses ; Deduction from gross total income.	UNIT-IV Provisions relating to inter-state sales; Sales/Purchase in the course of imports and export out of India. Registration of dealers and procedure thereof ; Rate of tax ; Exemption of subsequent sales ; Determination of turnover.	UNIT-IV Budgeting for Profit Planning and Control : Meaning of budget and Budgetary control; Objectives ; Merits and limitations ; Types of budgets; Fixed and flexible budgeting ;	UNIT- IV Investigation : Investigation ; Audit of non profit companies a)Where fraud is suspended , and b)When a running a business is proposed.	UNIT-IV Physical Distribution of goods – Transportation , warehousing , Inventory Control ; Order processing.	UNIT-IV International Distribution : Distribution Channels and logistic decisions ; Selection and appointment of foreign sales agents.
January	<b>UNIT-IV</b> Aggregation of income ; Computation of total income and tax liability of an Individual , H.U.F, and Firm	Unit-V State Commercial Tax Definition , Registration , Tax liability , Procedure of computation & collection of Tax , Penalties & Prosecution calculation of tax .	UNIT- IV Control ratio ; Zero based budgeting ; Responsibility accounting ; Performance budgeting.	<b>UNIT-V</b> Recent Trends in Auditing : Nature and significance of cost audit ; Tax audit;	UNIT -V Promotion : Methods of promotion ; Optimum promotion mix ; Advertising Media – their relative merits and limitations ;	UNIT-V Export Policy and Practices in India : EXIM Policy – an overview ; Trends in India's foreign trade ; Steps in starting an export business ; Product selection ;
February	<b>UNIT-V</b> Tax Management : Tax deduction at source , Advance payment of tax ; Assessment procedures ; Tax planning for individuals. Tax evasion, Tax avoidance and Tax Planning Tax Administration : Authorities , appeals , penalties.	UNIT-V VAT- Preliminary Knowledge.	<b>UNIT-V</b> Standard Costing and Variance Analysis : Meaning of Standard cost and Standard costing; Advantages and application ; Variance analysis – material ; Labour and overhead ( Two-way analysis) ; Variances .	<b>UNIT-V</b> Management audit . Company auditing – Qualification , Appointment ,Resignation and Liabilities.	UNIT -V Characteristics of an effective advertisement ; Personal selling ; Selling as a career ; Classification of successful sales person ; Functions of salesman.	UNIT-V Export pricing; Export finance; Documentation; Export procedures ; Export assistance and incentives.

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PROPOSED TEACHING PLAN FOR THE SESSION 2017-18

ECONOMICS

M.A. I & II SEMESTER

PAPER-I MICRO ECONOMICS

MONTH	UNIT	TOPIC
JULY	UNIT-I	Demand Analysis; Economic models. Equilibrium and Disequilibrium Systems. Elasticity of supply. Theories of demand-Utility
AUGUST	UNIT-II	Indifference curve ; Consumer's Surplus, Price formation - Theory of Production and Costs.
SEPTEMBER	UNIT-III	Isoquants- ; Returns to factor; Economies of scale; Elasticity of substitution; Euler's theorem, Monopoly .
OCTOBER	UNIT-IV	Monopolistic Competition, Oligopoly.
NOVEMBER	Seminars & Internal assessment	
DECEMBER	Semester Exam	
JANUARY	UNIT-I	Critical evaluation of marginal analysis.
FEBRUARY	UNIT-II	NEO-Classical Approach of Distribution and General Equilibrium Theory of distribution.
MARCH	UNIT-III	welfare economics.
APRIL	UNIT-IV	Partial and General equilibrium.
MAY	Seminars & Internal assessment	
JUNE	Semester Exam	

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**PROPOSED TEACHING PLAN FOR THE SESSION 2017-18**  
**ECONOMICS**  
**M.A. I & II SEMESTER**  
**PAPER-II MACRO ECONOMICS**

<b>MONTH</b>	<b>UNIT</b>	<b>TOPIC</b>
JULY	UNIT-I	National income and accounts, Social accounting,
AUGUST	UNIT-II	Consumption function
SEPTEMBER	UNIT-III	Investment function
OCTOBER	UNIT-IV	Demand for money – Quantity theory of money
NOVEMBER	Seminars & Internal assessment	
DECEMBER	Semester Exam	
JANUARY	UNIT-I	Theory of Inflation, control of inflation.
FREBRUARY	UNIT-II	Business Cycles.
MARCH	UNIT-III	Monetary Policy.
APRIL	UNIT-IV	Fiscal Policy.
MAY	Seminars & Internal assessment	
JUNE	Semester Exam	



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PROPOSED TEACHING PLAN FOR THE SESSION 2017-18

ECONOMICS

M.A. I & II SEMESTER

PAPER-III QUANTITATIVE METHODS & RESEARCH METHODOLOGY

MONTH	UNIT	TOPIC
JULY	UNIT-I	Skewness Correlation-
AUGUST	UNIT-II	Regression analysis: Interpolation and extrapolation
SEPTEMBER	UNIT-III	Association of Attributes Probability
OCTOBER	UNIT-IV	Index Number Time series
NOVEMBER	Seminars & Internal assessment	
DECEMBER	Semester Exam	
JANUARY	UNIT-I	Research Methodology and Research Methods. Methods of collection of data.
FREBRUARY	UNIT-II	Classification and tabulation of data, Frequency distribution of data,. Hypothesis,
MARCH	UNIT-III	Sampling and sample designs .
APRIL	UNIT-IV	Test of Significance – meaning, Procedure of test of significance, Student 't' test, Chi-square test.
MAY	Seminars & Internal assessment	
JUNE	Semester Exam	

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PROPOSED TEACHING PLAN FOR THE SESSION 2017-18

ECONOMICS

M.A. I & II SEMESTER

PAPER-IV INDIAN ECONOMICS

MONTH	UNIT	TOPIC
JULY	UNIT-I	GDP and National Income of India
AUGUST	UNIT-II	Demographic Features of Indian Population
SEPTEMBER	UNIT-III	Agricultural Development in Indian Economy
OCTOBER	UNIT-IV	Industrial Development in India
NOVEMBER	Seminars & Internal assessment	
DECEMBER	Semester Exam	
JANUARY	UNIT-I	Planning in India
FEBRUARY	UNIT-II	Problem of Poverty and Inequality Problem of Unemployment in India
MARCH	UNIT-III	Public Finance in Indian Economy
APRIL	UNIT-IV	External Sector Behavior of Indian Economy
MAY	Seminars & Internal assessment	
JUNE	Semester Exam	

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**PROPOSED TEACHING PLAN FOR THE SESSION 2017-18**

**ECONOMICS**

**M.A. I & II SEMESTER**

**PAPER-V LABOUR & INDUSTRIAL ECONOMICS**

<b>MONTH</b>	<b>UNIT</b>	<b>TOPIC</b>
JULY	UNIT-I	Industrialization pattern, Market Structure, Theories of Industrial Localization.
AUGUST	UNIT-II	Size & Growth of the firm, Industrial Productivity Industrial Policy of India, Industrial Policy of Chhattisgarh. Role of Public & Private Sectors. Liberalization and privatization. Regional industrial growth in India.
SEPTEMBER	UNIT-III	Industrial Finance.
OCTOBER	UNIT-IV	Industrial Labour and Labour Legislation.
NOVEMBER	Seminars & Internal assessment	
DECEMBER	Semester Exam	
JANUARY	UNIT-I	Labour Market, Employment and development relationship - Poverty, Unemployment – concept, types and measurement.
FREBRUARY	UNIT-II	Impact of rationalization, public sector and employment in agricultural sector; analysis of educated employment policy in five year plans its evaluation. Wage Determination
MARCH	UNIT-III	Productivity and wage relationship. Asymmetric information and efficiency of labour markets in wage determination; National wage policy,
APRIL	UNIT-IV	Labour legislation in India.
MAY	Seminars & Internal assessment	
JUNE	Semester Exam	

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ECONOMICS

M.A. III & IV SEMESTER

PAPER-I ECONOMICS OF GROWTH

MONTH	UNIT	TOPIC
JULY	UNIT-I	Economic Growth and Development, Physical Quality of Life Index, Human development index,
AUGUST	UNIT-II	Capital Output Ratio, input-output Analysis, Project evaluation and Cost – Benefit Analysis.
SEPTEMBER	UNIT-III	The Adam Smith model, The Ricardian model, The Marxian model. The Schumpeterian model, Keynesian, Mahalanobis .
OCTOBER	UNIT-IV	Harrod-Domar Model, Kaldor model, John Robinson model, Meads, Solow .
NOVEMBER	Seminars & Internal assessment	
DECEMBER	Semester Exam	
JANUARY	UNIT-I	Economic Planning- Objective. Achievements and Failures of Indian Plans
FREBRUARY	UNIT-II	Vicious circle of Poverty, Unlimited Supply of labour model, Big-Push Theory, Theory of critical minimum efforts, Balanced and unbalanced growth. Ranis and Fai model
MARCH	UNIT-III	Investment criterion in economic development
APRIL	UNIT-IV	measuring poverty and Income inequalities, unemployment, The choice of techniques, sustainable development, Role of state in Economic development. Problem of Price-rise in India.
MAY	Seminars & Internal assessment	
JUNE	Semester Exam	

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**ECONOMICS**

**M.A. III & IV SEMESTER**

**PAPER-II International Trade**

<b>MONTH</b>	<b>UNIT</b>	<b>TOPIC</b>
JULY	UNIT-I	Theory of International Trade
AUGUST	UNIT-II	Heckschar-Ohlin Theory of International Trade, Terms of Trade & Economic Development.
SEPTEMBER	UNIT-III	The Theory of Intervention – Tariffs, Quotas, and nontariff barriers.
OCTOBER	UNIT-IV	Balance of Payments, Foreign Exchange Rate.
NOVEMBER	Seminars & Internal assessment	
DECEMBER	Semester Exam	
JANUARY	UNIT-I	The Theory of Regional Blocks-Forms of Economic Co-operation, reforms for the emergence of trading blocks at the Global level
FREBRUARY	UNIT-II	Regionalism of European Union, NAFTA, Multilateralism and WTO,
MARCH	UNIT-III	Theory of short term & long term capital movement and international trade
APRIL	UNIT-IV	WTO and World Bank, Export policies of India, working and regulations of MNCs in India.
MAY	Seminars & Internal assessment	
JUNE	Semester Exam	

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ECONOMICS

M.A. III & IV SEMESTER

PAPER-III Public Finance

MONTH	UNIT	TOPIC
JULY	UNIT-I	Role of Government in organized Society. Principles of maximum social advantages, Taxation.
AUGUST	UNIT-II	Indian tax System, Indirect & direct tax, personal income tax..
SEPTEMBER	UNIT-III	Public Expenditure.
OCTOBER	UNIT-IV	Fiscal Federation in India.
NOVEMBER	Seminars & Internal assessment	
DECEMBER	Semester Exam	
JANUARY	UNIT-I	Fiscal Policy,
FREBRUARY	UNIT-II	Public Debt.
MARCH	UNIT-III	Federal Finance.
APRIL	UNIT-IV	Analysis of Chhattisgarh Govt. Financial Responsibilities and budget management Act.
MAY	Seminars & Internal assessment	
JUNE	Semester Exam	

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**ECONOMICS**

**M.A. III & IV SEMESTER**

**PAPER-IV ENVIRONMENTAL ECONOMICS**

<b>MONTH</b>	<b>UNIT</b>	<b>TOPIC</b>
JULY	UNIT-I	Pollution – Classification of pollution.
AUGUST	UNIT-II	Environmental Protection- Environmental laws.
SEPTEMBER	UNIT-III	Classification of Resource, social forestry.
OCTOBER	UNIT-IV	Economics of Education, Human Capital, Human Capital Vs. Physical capital. Health Economics- Prospective HDI, GDI, GEM and HPI.
NOVEMBER	Seminars & Internal assessment	
DECEMBER	Semester Exam	
JANUARY	UNIT-I	Welfare Economics – Definition of welfare Economics. Criterion of Social Welfare-Bentham Criteria, Cardinalize Criterion, Pareto
FREBRUARY	UNIT-II	Social Welfare function, Maximization of social welfare, Maximization in perfect competition, public goods and private goods. Market failure & public goods.
MARCH	UNIT-III	Environmental Economics – Definition of Environmental Economics, Relation between Environmental Economics and Economics
APRIL	UNIT-IV	Theories of Externalities –Pigouvian Taxes and Subsidies. Environmental values , international carbon Tax, Environment and W.T.O.
MAY	Seminars & Internal assessment	
JUNE	Semester Exam	

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ECONOMICS

M.A. III & IV SEMESTER

PAPER-V DEMOGRAPHY

MONTH	UNIT	TOPIC
JULY	UNIT-I	Demography – Meaning and importance, Theories of Population – Theory of optimum population and Theory of demographic transition.
AUGUST	UNIT-II	Migration.
SEPTEMBER	UNIT-III	Mortality.
OCTOBER	UNIT-IV	Fertility.
NOVEMBER	Seminars & Internal assessment	
DECEMBER	Semester Exam	
VIVA		



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**PAPER-I**  
**POETRY-I**

<b>MONTH</b>	<b>PLAN</b>
<b>JULY</b>	<b>UNIT-I-</b> A brief survey of English poetry from Chaucer to Romantic age <b>UNIT-II</b> Geoffrey Chaucer: Prologue to the Canterbury Tales (Detailed)
<b>AUGUST</b>	<b>UNIT-II</b> Geoffrey Chaucer: Prologue to the Canterbury Tales (Detailed) <b>UNIT-III</b> John Donne: Death Be not Proud, Valediction, Forbidden Mourning, Extasie, (Detailed) Shakespeare: Sonnets 1,18,26,54, 116 (Non- detailed) Andrew Marvell: To His Coy Mistress (Non - detailed)
<b>SEPTEMBER</b>	<b>UNIT-IV</b> John Milton: Paradise Lost – Book 1 Lines 1-100 only (Detailed) John Dryden: Absalom and Achitophel (Non - detailed) <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>UNIT-V</b> Alexander Pope : Rape of the Lock ( Non-Detailed Study) Thomas Gray: Elegy Written in a Country Churchyard (Detailed) William Collins: Ode to Evening (Detailed) <b>Internal Test 2</b>
<b>NOVEMBER</b>	<b>SEMINAR/EXAM</b>
<b>DECEMBER</b>	<b>EXAM /SEMESTER BREAK</b>

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**SEMESTER - I**  
**PAPER-II**  
**DRAMA-I**

<b>MONTH</b>	<b>PLAN</b>
<b>JULY</b>	<b>UNIT-I</b> A brief survey of English drama upto Romantic age <b>UNIT-II</b> Christopher Marlowe: Dr. Faustus (Detailed)
<b>AUGUST</b>	<b>UNIT-III</b> John Webster: The Duchess of Malfi (Detailed) Ben Jonson: The Alchemist (Non-Detailed)
<b>SEPTEMBER</b>	<b>UNIT-IV</b> William Congreve: The Way of The World (Non- detailed) Oliver Goldsmith: She Stoops to Conquer (Detailed) <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>UNIT-V</b> William Shakespeare: The Tempest (Detailed) King Henry IV- Part I (Non- detailed) <b>Internal Test 2</b>
<b>NOVEMBER</b>	<b>SEMINAR/EXAM</b>
<b>DECEMBER</b>	<b>SEMESTER BREAK</b>

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**PAPER-III**  
**PROSE-1**

<b>MONTH</b>	<b>PLAN</b>
<b>JULY</b>	<b>UNIT-I</b> A brief survey of English drama upto Romantic age <b>UNIT-II</b> Francis Bacon: Selected Essays: Of Studies, of Friendship, Of Truth (All – Detailed)
<b>AUGUST</b>	<b>UNIT-III</b> Thomas Browne: Urn Burial (Detailed) John Milton: Aeropagitica (Non -detailed)
<b>SEPTEMBER</b>	<b>UNIT-IV</b> Joseph Addison: Sir Roger at Home, Sir Roger at Assizes, Sir Roger at Church (All Detailed) Richard Steele: Recollections of Childhood, A Day in London, The Spectator Club (Non-Detailed) Rousseau: Confessions (Non -detailed) <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>UNIT-IV</b> Rousseau: Confessions (Non -detailed) <b>UNIT-V</b> Samuel Johnson: Life of Milton (Non-Detailed) R. L. Stevenson: Walking Tours, An Apology for Idlers, El Dorado (All Detailed) <b>Internal Test 2</b>
<b>NOVEMBER</b>	<b>SEMINAR/EXAM</b>
<b>DECEMBER</b>	<b>SEMESTER BREAK</b>

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**PAPER-IV**  
**FICTION-I**

<b>MONTH</b>	<b>PLAN</b>
<b>JULY</b>	<b>UNIT-I</b> Rise of English fiction from Bunyan to Modern Age.
<b>AUGUST</b>	<b>UNIT-II</b> John Bunyan: The Pilgrim's Progress Daniel Defoe: Robinson Crusoe <b>UNIT-III</b> Henry Fielding: Joseph Andrews
<b>SEPTEMBER</b>	<b>UNIT-III</b> Oliver Goldsmith: The Vicar of Wakefield <b>UNIT-IV</b> Sir Walter Scott: Ivanhoe Jane Austen: Pride and Prejudice <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>UNIT-V</b> Charles Dickens: Great Expectations Thomas Hardy: Tess of Du'bervilles <b>Internal Test 2</b>
<b>NOVEMBER</b>	<b>SEMINAR/EXAM</b>
<b>DECEMBER</b>	<b>EXAM /SEMESTER BREAK</b>

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**SEMESTER - II**  
**PAPER-I**  
**POETRY - II**

<b>MONTH</b>	<b>PLAN</b>
<b>JANUARY</b>	<b>UNIT-I</b> A Brief Survey of English poetry from Romantic age to Modern age <b>William Wordsworth:</b> Immortality Ode (Non-Detailed) Tintern Abbey (Detailed) <b>Samuel Taylor Coleridge:</b> Dejection an Ode (Non-Detailed) Kubla Khan (Detailed)
<b>FEBRUARY</b>	<b>UNIT-II</b> <b>P. B. Shelly:</b> Ode to the Westwind (Detailed) To the Skylark (Non-Detailed) <b>John Keats:</b> Ode to Autumn, Ode to Nightingale (Detailed) Ode to Grecian Urn (Non-Detailed)
<b>MARCH</b>	<b>UNIT-III</b> <b>Alfred Tennyson:</b> Lotus Eaters (Detailed) Ulysses (Non-Detailed) <b>Robert Browning:</b> Prospice, The Last Ride Together (Detailed)
<b>APRIL</b>	<b>UNIT-IV</b> <b>Mathew Arnold:</b> Scholar Gypsy (Non-Detailed) <b>Gerard Manley Hopkins:</b> The Windhover, Pied Beauty, Felix Randal (Detailed) <b>Seminar</b>
<b>MAY</b>	<b>SEMESTER EXAM</b>

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**PAPER-II**  
**DRAMA**

<b>MONTH</b>	<b>PLAN</b>
JANUARY	<b>UNIT-I</b> A Brief Survey of English drama from Romantic age to Modern age <b>William Shakespeare:</b> Hamlet (Detailed) Macbeth (Non-Detailed)
FEBRUARY	<b>UNIT-II</b> <b>George Bernard Shaw:</b> St. Joan (Detailed) <b>J. M. Synge:</b> Riders to the Sea (Non-Detailed)
MARCH	<b>UNIT-III</b> <b>Thomas Stearns Eliot:</b> Murder in the Cathedral (Detailed)
APRIL	<b>UNIT-IV</b> <b>Henrik Ibsen:</b> A Doll's House (Detailed) <b>Anton Chekov:</b> The Cherry Orchard (Non-Detailed) <b>Seminar</b>
MAY	SEMESTER EXAM

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**PAPER-III**  
**FICTION-II**

<b>MONTH</b>	<b>PLAN</b>
<b>JANUARY</b>	<b>UNIT-I</b> A Brief Survey of English prose from Romantic age to Modern age <b>Charles Lamb:</b> Dream Children, A Bachelor's Complaint, Dissertation upon a Roasted Pig, (Detailed) <b>William Hazlitt:</b> On going on a Journey, Indian Jugglers (Non-Detailed)
<b>FEBRUARY</b>	<b>UNIT-II</b> <b>Thomas Carlyle:</b> Hero as a Poet (Detailed) <b>John Ruskin:</b> Sesame and Lilies (Non-Detailed)
<b>MARCH</b>	<b>UNIT-III</b> <b>Robert Lynd:</b> On Forgetting, The Pleasure of Ignorance (Non-Detailed) <b>A.G. Gardiner:</b> On saying "Please", On the rule of the Road (Detailed)
<b>APRIL</b>	<b>UNIT-IV</b> <b>Thomas Moore:</b> Utopia (Detailed) <b>Machiavelli:</b> The Prince (Non-Detailed) <b>Seminar</b>
<b>MAY</b>	<b>SEMESTER EXAM</b>

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**PAPER-IV**  
**FICTION-II**

<b>MONTH</b>	<b>PLAN</b>
<b>JANUARY</b>	<b>UNIT-I</b> <b>James Joyce:</b> Portrait of the Artist as a Young Man <b>Virginia Woolf:</b> Mrs. Dalloway <b>UNIT-II</b> <b>D. H. Lawrence:</b> Sons and Lovers
<b>FEBRUARY</b>	<b>UNIT-II</b> <b>George Orwell:</b> Animal Farm <b>UNIT-III</b> <b>Joseph Conrad:</b> Heart of Darkness <b>William Golding:</b> Lord of the Flies
<b>MARCH</b>	<b>UNIT-IV</b> <b>Chinua Achebe:</b> Things Fall Apart <b>Bapsi Sidhwa:</b> Ice Candy Man
<b>APRIL</b>	<b>UNIT-V</b> <b>J.M. Coetzee:</b> Disgrace <b>Doris Lessing:</b> The Grass is Singing <b>Seminar</b>
<b>MAY</b>	<b>SEMESTER EXAM</b>



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**SEMESTER - III**  
**PAPER-I**  
**CRITICAL THEORY- I**

<b>MONTH</b>	<b>PLAN</b>
<b>JULY</b>	<b>UNIT-I</b> Aristotle: Poetics
<b>AUGUST</b>	<b>UNIT-II</b> Longinus: On the Sublime
<b>SEPTEMBER</b>	<b>UNIT-III</b> Philip Sidney: An Apology for Poetry John Dryden: Essay on Dramatic Poesy <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>UNIT-IV</b> William Wordsworth: Preface to Lyrical Ballads S. T. Coleridge: Biographia Literaria chapter XIII to XVII <b>UNIT-V</b> Mathew Arnold: The Study of Poetry, The Function of Criticism in Present Times <b>Internal Test 2</b>
<b>NOVEMBER</b>	<b>UNIT-V</b> New Bearings in English Poetry SEMINAR/EXAM
<b>DECEMBER</b>	EXAM /SEMESTER BREAK

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**SEMESTER - III**  
**PAPER-II**  
**INDIAN WRITING IN ENGLISH - I**

<b>MONTH</b>	<b>PLAN</b>
<b>JULY</b>	<b>UNIT-I</b> Sri Aurobindo: Savitri- Book I, Canto I Rabindranath Tagore: Songs 1 to 15 from Gitanjali
<b>AUGUST</b>	<b>UNIT-II</b> Kamla Das: The Freaks, A Hot Noon In Malabar, The Looking Glass, The Sunshine Cat Nissim Ezekiel: Enterprise, Poet Lover and Birdwatcher Night of the Scorpion
<b>SEPTEMBER</b>	<b>UNIT-III</b> Girish Karnad: Nagmandala Vijay Tendulkar: Silence 'The Court is in Session' <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>UNIT-IV</b> Raja Rao: Kanthapura R.K.Narayan : The Guide <b>UNIT-V</b> Mulk Raj Anand: Coolie
<b>NOVEMBER</b>	<b>UNIT-V</b> V.S. Naipaul: A House for Mr.Biswas <b>SEMINAR/EXAM</b>
<b>DECEMBER</b>	<b>EXAM /SEMESTER BREAK</b>

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**SEMESTER - III**  
**PAPER-III**  
**AMERICAN LITERATURE - I**

<b>MONTH</b>	<b>PLAN</b>
<b>JULY</b>	<b>UNIT-I</b> A brief survey of American literature, Puritanism, Democracy in America, Romanticism in America, Indian Thought in Emerson, Thoreau and Whitman, New England Renaissance,
<b>AUGUST</b>	<b>UNIT-II</b> Walt Whitman: When Lilacs last in the Dooryard Bloomed There was a child went forth everyday Edgar Allan Poe: Dreamland, The Raven. <b>UNIT-III</b> Robert Frost: Birches, Stopping by the Woods on a Snowy Evening, Departmental Emily Dickinson: Bring Me the Sunset in a Cup (128); The Soul selects her own Society (303); Some keep the Sabbath Going to Church (324)
<b>SEPTEMBER</b>	<b>UNIT-III</b> Wallace Stevens: Peter Quince at the Clavier, Of Modern Poetry, Sunday Morning, A Postcard from the Volcano <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>UNIT-IV</b> Ralph Waldo. Emerson: Self-Reliance Henry David Thoreau: Civil Disobedience <b>Internal Test 2</b>
<b>NOVEMBER</b>	<b>SEMINAR/EXAM</b>
<b>DECEMBER</b>	<b>EXAM /SEMESTER BREAK</b>

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**SEMESTER - III**  
**PAPER-IV**  
**LINGUISTICS - I**

<b>MONTH</b>	<b>PLAN</b>
<b>JULY</b>	<b>UNIT-I</b> Language: Definition, Human Language and its difference with Animal Communication, Speech and Writing as manifestations of Language, Characteristics of Human Language.
<b>AUGUST</b>	<b>UNIT-II</b> Linguistics: Definition, Objective, Branches of Linguistics: Phonetics, Phonology, Morphology, Syntax and Semantics, Linguistics and its Related Disciplines.
<b>SEPTEMBER</b>	<b>UNIT-III</b> Phonetics: Definition, Branches: Articulatory /Acoustic Phonetics, Auditory Phonetics, The Organs of Speech and their Functions. <b>UNIT-IV</b> Classification of Human Speech Sounds: Characteristics of Vowels and Consonants, Similarities and Dissimilarities between Vowels and Consonants, Phonetics Symbols (IPA). <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>UNIT-V</b> Classification of Vowels: On the Basis of Height of the Tongue, Parts of the Tongue, Position of Soft Palate, Position of Muscles and Length. Classification of Consonants: On the Basis of Place and Manner of articulation, aspiration and voicing. <b>Internal Test 2</b>
<b>NOVEMBER</b>	<b>UNIT-V</b> Sound Attributes: Length, Stress, Pitch, Intonation and Juncture. <b>SEMINAR/EXAM</b>
<b>DECEMBER</b>	<b>EXAM /SEMESTER BREAK</b>

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**SEMESTER - IV**  
**PAPER-I**  
**CRITICAL THEORY- II**

<b>MONTH</b>	<b>PLAN</b>
JANUARY	<b>UNIT-I</b> <b>Bharata:</b> Natyashastra (Rasa and Bhava Theory) <b>Anandavardhanacharya:</b> Dhvanyaloka
FEBRUARY	<b>UNIT-II</b> <b>T. S. Eliot:</b> Tradition and Individual Talent
MARCH	<b>UNIT-III</b> <b>I. A. Richards:</b> 'Poetry for Poetry's Sake' Analysis of a Poem <b>UNIT-IV</b> <b>Ferdinand S Sassure:</b> Nature of Linguistic sign
APRIL	<b>UNIT-IV</b> <b>Michael Foucault:</b> What is an Author? <b>UNIT-V</b> <b>Northrop Fry:</b> The Function of Criticism <b>Elaine Showalter:</b> Feminist Criticism in Wilderness <b>Seminar</b>
MAY	SEMESTER EXAM

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**SEMESTER - IV**  
**PAPER-II**  
**INDIAN WRITING IN ENGLISH – II**

<b>MONTH</b>	<b>PLAN</b>
JANUARY	<b>UNIT-I</b> <b>A.K. Ramanujan:</b> Obituary, Love Poem for a Wife <b>Jayant Mahapatra:</b> Indian Summer, A Missing Person, Dawn at Puri
FEBRUARY	<b>UNIT-II</b> <b>N. C. Choudhary:</b> The Autobiography of an Unknown Indian <b>J. L. Nehru:</b> The Discovery of India (chapter 1 to 5)
MARCH	<b>UNIT-III</b> <b>M. K. Gandhi:</b> The Story of my Experiments with Truth <b>A.P.J. Kalam:</b> Ignited Minds <b>UNIT-IV</b> <b>Shashi Deshpande:</b> The Dark Holds no Terror
APRIL	<b>UNIT-IV</b> <b>Anita Desai:</b> Cry the Peacock <b>UNIT-V</b> <b>Arundhati Roy:</b> The God of Small Things <b>Arvind Adiga:</b> The White Tiger <b>Seminar</b>
MAY	SEMESTER EXAM

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**PAPER-III**  
**AMERICAN LITERATURE–II**

<b>MONTH</b>	<b>PLAN</b>
<b>JANUARY</b>	<b>UNIT-I</b> Expressionism, Naturalism, Realism, Existentialism, The Theatre of Absurd <b>UNIT-II</b> <b>Eugene O' Neill:</b> The Emperor Jones
<b>FEBRUARY</b>	<b>UNIT-II</b> <b>Tennessee Williams:</b> The Glass Menagerie <b>UNIT-III</b> <b>Arthur Miller:</b> All My Sons <b>Edward Albee:</b> Who's Afraid of Virginia Woolf
<b>MARCH</b>	<b>UNIT-IV</b> <b>William Faulkner:</b> The Sound and the Fury <b>Ernest Hemingway:</b> The Old Man and the Sea
<b>APRIL</b>	<b>UNIT-V</b> <b>Nathaniel Hawthorne:</b> The Scarlet Letter <b>Mark Twain:</b> The Adventures of Huckleberry Finn
<b>MAY</b>	<b>SEMESTER EXAM</b>

**DEPARTMENT OF ENGLISH**  
**TEACHING PLAN, SESSION 2017-2018**  
**M. A. ENGLISH LITERATURE**  
**SEMESTER - IV**  
**PAPER-IV**  
**LINGUISTICS – II**

<b>MONTH</b>	<b>PLAN</b>
JANUARY	<b>UNIT-I</b> <b>Phoneme:</b> Definition, Distinctive features of Sounds, Allophones and Classification of English Phonemes <b>UNIT-II</b> <b>Morphology:</b> Morpheme, Morph, Allomorph, Types of Morphemes, Word-Classes
FEBRUARY	<b>UNIT-III</b> <b>Syntax:</b> Sentence types- Simple, Compound, Complex, Constituents, Immediate Constituents, I C Analysis
MARCH	<b>UNIT-IV</b> <b>Semantics:</b> Semene, Types of meaning: Synonymy, Antonymy, Polysymy, Homonymy, Collocation, Sets.
APRIL	<b>UNIT-V</b> Introduction to Phrase Structure Grammar Limitation to Phrase Structure Grammar
MAY	SEMESTER EXAM



**DEPARTMENT OF ENGLISH**  
**TEACHING PLAN, SESSION 2017-2018**  
**M. A. ENGLISH LITERATURE**  
**SEMESTER - IV**  
**PAPER-V**  
**MODERNIST LITERATURE – II**

<b>MONTH</b>	<b>PLAN</b>
JANUARY	<b>UNIT-I</b> <b>Samuel Beckett:</b> Waiting for Godot <b>UNIT-II</b> <b>John Osborne:</b> Look Back in Anger
FEBRUARY	<b>UNIT-III</b> <b>Alice Walker:</b> The Color Purple <b>Ralph Allison:</b> The Invisible Man
MARCH	<b>UNIT-IV</b> <b>Edward Said:</b> Orientalism
APRIL	<b>UNIT-IV</b> <b>Toni Morrison:</b> Beloved <b>George Lamming:</b> The Pleasures of Exile
MAY	SEMESTER EXAM

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2017-18**

**TEACHING PLAN**

**M. A.I SEMESTER GEOGRAPHY**

**PAPER-I**

**TITLE OF THE PAPER: GEOMORPHOLOGY**

MONTH	PLAN
JULY	Nature and scope of geomorphology, fundamental concepts. Interior of the earth.
AUGUST	Earth movements: Endogenic movement: Plate tectonics, volcanic with special reference to Himalayas. Exogenic process: concept of gradation agents and processes of gradation
SEPTEMBER	weathering mass wasting, Normal cycle of erosion, Interruption of the cycle of erosion, Drainage patterns
OCTOBER	Glacial, Aeolian and Marine (Coastal) River, Karst: processes and resulting landforms, slope, Analysis by penck wood & king
NOVEMBER	Geological structure and landforms: development of drainage and landscape on folded and domal structure, Applied geomorphology.

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**SESSION 2017-18**

**TEACHING PLAN**

**M. A.I SEMESTER GEOGRAPHY**

**PAPER-II**

**TITLE OF THE PAPER: CLIMATOLOGY**

MONTH	PROPOSED PLAN
JULY	Nature and scope of climatology and its relationship with meteorology. Composition of atmosphere; Insulation, heat balance of the earth, stability and instability, green house effect, vertical and horizontal distribution of temperature; Jet stream
AUGUST	General circulation in the atmosphere, acid rain, concept of air masses and atmospheric disturbances, ocean- atmospheric interaction, El Nino and La Nino; Monsoon winds & cyclones.
SEPTEMBER	application of general principles of elementary, physical and synoptic meteorology to the study and classification of climate, climatic classification of Koppen and Thornthwaite.
OCTOBER	Major climates of the world: Tropical, Temperate, Desert and Mountain climate; Climatic change and Global warming, Environment impact and Society's response.
NOVEMBER	Applied climatology.

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**SESSION 2017-18**

**TEACHING PLAN**

**M. A.I SEMESTER GEOGRAPHY**

**PAPER-III**

**TITLE OF THE PAPER: GEOGRAPHICAL THOUGHT**

MONTH	PROPOSED PLAN
JULY	Definition, scope and function of geography, geography as a science of aerial differentiation. Environmentalism, Determinism, Possibilism and Neo- determinism. Laws and theories in geography
AUGUST	The growth of geographical knowledge from earliest time up to 15 <sup>th</sup> century, contribution of Greek and Roman thinkers, <b>Arab</b> geographers:- Al- baruni. Al-masudi, Ibn-e-batuta and Al- idarsi . Geographical information in ancient Indian literature. The Dark Age in geography. The great age of maritime discovery and exploration.
SEPTEMBER	Contribution of Various Schools of thought in modern geography.  German school -Humbolt, Ritter, Ratzel. 2. French school - Vidal -de- la-bliche.3. British school - Mackinder.4.American - Davis and Huntington. Models in geography, quantitative revolution, positivism.
OCTOBER	Behaviouralism, Humanistic geography-relevance and the movement, Radical geography. Changing paradigm, status of Indian geography. Dualism in geography. :- Physical and Human, Systematic VS regional
NOVEMBER	Inductive VS Deductive.

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**TEACHING PLAN**

**M. A.I SEMESTER GEOGRAPHY**

**PAPER-IV**

**TITLE OF THE PAPER: ADVANCED GEOGRAPHY OF INDIA**

MONTH	PROPOSED PLAN
JULY	Physical & Biological elements in the geography of India, Geological structure, relief, climate water resources. Vegetation and Soils
AUGUST	Agriculture : major characteristics and problems, Important crops : wheat. rice, cotton, sugarcane, oil seeds, tea and coffee: Agricultural regions.
SEPTEMBER	Population : distribution density and growth, problems and policies. Sources of power coal, petroleum, natural gas, hydroelectricity .Mineral resources with specific reference to Iron-ore. Manganese. Bauxite and Copper
OCTOBER	Industrial development with special reference to Iron and steel. Cement. Cotton Textile and Sugar. Industrial regions Industrial Policy.
NOVEMBER	Trade Transport & Communication.

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**SESSION 2017-18**

**TEACHING PLAN**

**M. A.I SEMESTER GEOGRAPHY**

**PAPER-PRACTICAL**

**TITLE OF THE PAPER: ADVANCED CARTOGRAPHY**

MONTH	PROPOSED PLAN
JULY	
AUGUST	Thematic maps- Chorochromatic and choropleth map, isolines, dot map, routed map. flow map,
SEPTEMBER	Morphometric analysis: Profiles, Slope analysis, Altimetric and Hypsometric curves, Drainage analysis, Block diagram
OCTOBER	Map projection: Properties and principles of construction of world projection
NOVEMBER	Interpretation of maps: Topographical sheets

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**SESSION 2017-18**

**TEACHING PLAN**

**M. A.III SEMESTER GEOGRAPHY**

**PAPER-I**

**TITLE OF THE PAPER: ECONOMIC GEOGRAPHY**

MONTH	PLAN
JULY	Nature, scope and systematic development of Economic geography. Fundamental concepts in economic geography. Approaches and methods to study of Economic Geography
AUGUST	Mineral: - Iron - ore, Bauxite, Manganese .Energy resource: - Coal, Hydro-electricity, Petroleum and Non conventional resource
SEPTEMBER	Weber 's Theory of industrial location. Case studies of selected industries: Iron and Steel; Chemical, Engineering Textile; Industrial Regions, Transport and trade. Trade blocks: EEC, LAFTA and ASIAN
OCTOBER	Distribution factors of Economic Activities: - Primary and Secondary Economic Activities, World economies and economic regions, Market orientated economy.
NOVEMBER	Globalization and with special reference to India.

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**SESSION 2017-18**

**TEACHING PLAN**

**M. A.III SEMESTER GEOGRAPHY**

**PAPER-II**

**TITLE OF THE PAPER: RESEARCH METHODOLOGY**

MONTH	PLAN
JULY	Research Methodology : An over view Procedure of Scientific Research, Defining research problem, formulating Hypothesis, Research Design.
AUGUST	Methods of data collection : Observation, Questionire, Schedule and Interview, Sampling : sampling Methods, Si, of samples.
SEPTEMBER	Processing and analysis of Data : Processing, Editing, Coding, Classification and Tabulation. Analysis, Measurement of Central Tendency, Disperssion, Correlation
OCTOBER	Preparation of Research Reports; Steps layout Types of Report
NOVEMBER	Revision



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**SESSION 2017-18**

**TEACHING PLAN**

**M. A.III SEMESTER GEOGRAPHY**

**PAPER-III**

**TITLE OF THE PAPER: REGIONAL DEVELOPMENT AND PLANNING**

	PLAN
JULY	Concept of Planning, Region and Planning regions, Origin Definition and scope of Regional Planning. Evolution, Functions and Objectives of Regional Planning
AUGUST	Spatial Organisation: Von Thunen's Isolated State, Industrial Location Theory of Weber. Central Place theory: Single Function Central Place System, Multiple Functions and Hierarchies, Loschian Modification,
SEPTEMBER	Regional Development Theories: Export Base Theory, Neoclassical Exogeneous Growth Theory, Cumulative Causation Theory of Myrdal, Regional Development Theory of Hirschman., Core –periphery theory of Friedmann, Growth Pole Theory , New Economic Geography.
OCTOBER	Concept of Development. Planning for special areas: River basins- Damodar Valley Corporation, National Capital Region,
NOVEMBER	Development programme (HADP)/ Western Ghats Development programme (WGDP) and Tribal area of Chhattisgarh,

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**SESSION 2017-18**

**TEACHING PLAN**

**M. A.III SEMESTER GEOGRAPHY**

**PAPER-IV**

**TITLE OF THE PAPER: POPULATION GEOGRAPHY**

MONTH	PLAN
JULY	Definition and scope of Population geography. Historical development of population geography in western countries and in India. Sources of demographic data. Census and its history.
AUGUST	: Population density and its types, factors affecting population distribution. Population distribution in the world with special reference to Europe and Asia. Distribution of population in India
SEPTEMBER	Prehistoric and modern trends of population growth in the world. Regional aspect of population growth in India. Population theories. Demographic transition, future growth of population.
OCTOBER	Population composition in terms of age and sex, rural-urban, educational status and occupational structure, Significance of these elements in population analysis,
NOVEMBER	Migration of population: causes, characteristics and types. Methods of estimating internal migration. Internal migration in India. Important international migration

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**SESSION 2017-18**

**TEACHING PLAN**

**M. A.III SEMESTER GEOGRAPHY**

**PRACTICAL**

**Quantitative Techniques, Remote Sensing and Aerial Photographs**

MONTH	PLAN
JULY	
AUGUST	<b>Quantitative Techniques</b>  (i) Measures of Central tendency. Dispersion and Variability. Product Moment and Rank Correlation Coefficient, Linear Regression.  (ii) Hypothesis Testing: Chi-Square and 't' tests, Analysis of Variance and F test: Sampling,
SEPTEMBER	Running mean. Mean centre, Nearest Neighbour Analysis Lorenz Curve, Normal Distribution curve, probability
OCTOBER	<i>Remote Sensing and GIS</i> Air Photos and Photogrammetry: Elements of Photographic Systems: types, scales and ground coverage resolution, films with aerial Cameras, vertical photographs, relief displacement, airphoto interpretation.
NOVEMBER	Image Processing; types of imagery, basic concepts and techniques of visual interpretation, ground verification and transfer of interpreted thematic information to base maps. Remote sensing programme of India: image interpretation, mapping of land use and study of water resources. Application of remote sensing , elements of GIS

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2017-18**

**TEACHING PLAN**

**M. A.II SEMESTER GEOGRAPHY**

**PAPER-I**

**TITLE OF THE PAPER: GEOGRAPHY OF CHHATTISGARH**

MONTH	PLAN
JANUARY	Physical setting- location, extent, geology, physical, features, climate, drainage, soil and vegetation.
FEBURARY	Socio-economic-, major crops and agriculture region Water resources, irrigation, major irrigation projects, mineral and power resources [renewable and non- renewable] and power projects.
MARCH	Major industries - Iron and Steel, Cement, Aluminium, Agro and Forest-industries.  Population: Distribution of Population, Social, Cultural characteristics of population and tribes of Chhattisgarh
APRIL	Urbanization.Transport and Trade, Tourist places of Chhattisgarh, National parks, wild LIFE

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2017-18**

**TEACHING PLAN**

**M. A.II SEMESTER GEOGRAPHY**

**PAPER-II**

**TITLE OF THE PAPER: OCENOGRAPHY**

MONTH	PLAN
JANUARY	Nature and scope of oceanography, Detailed study of distribution of land and water, major features of ocean basins: continental shelf, continental slope oceanic plain and deeps, composition of sea water.
FEBURARY	Inter link between atmospheric circulation and circulation pattern in. the oceans, oceanic currents; Temperature, Salinity, Density, waves and tides.
MARCH	Marine sediments: Marine-biological environments, Bio- geo- chemical cycle in the ocean, bio-zones, types of organisms, food and mineral resources of the sea.
APRIL	Major marine environments: coastal, estuary, delta barrier Island, rocky coasts Pelagic environment impact of humans on the marine environment. Exclusive Economic Zone: with special reference to Indian ocean. Applied oceanography.

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**SESSION 2017-18**

**TEACHING PLAN**

**M. A.II SEMESTER GEOGRAPHY**

**PAPER-III**

**TITLE OF THE PAPER: AGRICULTURAL GEOGRAPHY**

MONTH	PLAN
JANUARY	Definition, nature, scope and significance of agricultural geography, approaches to the study of agriculture in geography commodity, deterministic, systematic, regional, behavioral and ecosystem Origin and dispersal of agriculture.
FEBURARY	Determinants of agricultural land use – Physical, economic, social, and technological, Land holding and land tenure systems, Land reforms, land use policy and planning. Cropping pattern, crop concentration, intensity of cropping, degree of commercialization, diversification and specialization efficiency and productivity, crop combination regions and agricultural development.
MARCH	Theories of agricultural location :- Von Thunen's theory of agricultural location and its recent modifications; Whittlesey's classification of agricultural regions; land use and land capability
APRIL	Agriculture in India : Landuse pattern, regional pattern of productivity : Green Revolution, Food deficit and food surplus regions; Specific Problems in Indian agriculture and their management; Agricultural policy in India.

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2017-18  
TEACHING PLAN  
M.A. II SEMESTER GEOGRAPHY  
PAPER- IV  
TITLE OF THE PAPER: URBAN GEOGRAPHY**

MONTH	PLAN
JANUARY	Definition and scope of urban geography. Centrifugal and centripetal forces in urban Geography , urban morphology and landuse pattern :- Burgess concentric zone theory , Hoyt sector model ,Ullman and Harris multiple Nuclei model.
FEBURARY	Evolution and growth of urban settlement . the geographical setting of urban centers :- site, situation and location , rank size rule. Functional classification of towns-Harris and Nelsion,
MARCH	Central place theory:- Christaller theory . Growth centre theory. Umland. Rural-urban fringe. Economic bases of Town. Basic -Non Basic concept.
APRIL	Urban Planning : Types and elements ,Urban Problem, Blight and renewal Urbanization in World and in India, Urban planning with reference to Naya Raipur.

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**SESSION 2017-18**

**TEACHING PLAN**

**M.A. II SEMESTER GEOGRAPHY**

**PAPER-PRACTICAL**

**TITLE OF THE PAPER: ADVANCED CARTOGRAPHY AND SURVEYING**

MONTH	PLAN
JANUARY	Graphs and Diagrams: Triangular graph. Ergograph, Snail diagram climatograph ; Pie- diagram and divided rectangles, proportional circles, spheres and cubes. Interpretation of Maps :-Geological maps and Thematic maps
FEBURARY	Principles and Methods of topographical survey involving the use of Theodolite and Dumpy level



**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2017-18**  
**TEACHING PLAN**  
**M. A.IV SEMESTER GEOGRAPHY**  
**PAPER- I**  
**TITLE OF THE PAPER: SOCIAL GEOGRAPHY**

MONTH	PLAN
JANUARY	Definition meaning and scope of Social geography . Nature and Relationship with other social sciences. Development of social geography. Approaches to the study of social geography, Evolution of Man. , Definition , Origin and Types of Society and Human Races.
FEBURARY	Society and Environment , Quality of Social Environment, Man's impact on Social environment-environmental pollution. Social well being and human development. Cultural Realms , Cultural Regions of Asia
MARCH	Indian Society in Historical Perspective, Traditional Hindu Social Organisation. Human Race of India .Religious and Linguistic groups of India .Backward and Scheduled Castes. Tribes Of India
APRIL	Social Change in India , Status of Woman in India , Human Development in India, Social Planning In India, Gender Inequality , Woman Empowerment, Urbanization and Related Problems in India.

**SESSION 2017-18**

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**TEACHING PLAN  
M. A.IV SEMESTER GEOGRAPHY  
PAPER-II**

**TITLE OF THE PAPER: POLITICAL GEOGRAPHY**

MONTH	PLAN
JANUARY	Nature, scope, history and recent development in Political geography; approaches to study, major schools of political thought. Global Strategic Views.
FEBURARY	Geographic Elements and the State: Physical Elements; Human elements: Economic elements; Cultural elements and Political geography and environment interface .Concept of State , Nation, Frontiers and Boundaries
MARCH	Capital and Core Area , Geographical studies of Election , Supra - Nationalism i.e Emergance of International Organisation and their Role in World Politics, The changing patterns of World Powers.
APRIL	Geopolitical significance of Indian Ocean: Political geography of SAARC Region. Political geography of contemporary India with special reference to its spirit: Unity in Diversity. Emerging Politico - geographical issues in modern World.

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2017-18**

**TEACHING PLAN**

**M. A.IV SEMESTER GEOGRAPHY**

**PAPER-III**

**TITLE OF THE PAPER: ENVIRONMENT GEOGRAPHY**

MONTH	PLAN
JANUARY	Meaning, definition, Concepts and theories related to environment. Environment and its components, Man environment relationship, Ecology and Ecosystem.
FEBURARY	Plant and Animal Kingdom, Bio-diversity. Biomes. Food Chains, Tropic level and productivity, Energy flow, Circulation of Elements, hydrological cycle.
MARCH	Soil system-erosion, Man and Climate, Environment Degradation. Environment Planning and Management, Pollution.
APRIL	Deforestation and Desertification, Hazards and Disaster. Environment Problem- global and in Indian scenario, Global Co-operation, World Summit on Sustainable development.

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**TEACHING PLAN**  
**SESSION 2017-18**  
**M.A. IV SEMESTER GEOGRAPHY**  
**PAPER-IV**  
**TITLE OF THE PAPER: DISASTER MANAGEMENT**

MONTH	PLAN
JANUARY	Disaster meaning and concept- hazard, risk, vulnerability, disaster management, plans, managing environment. Disaster its effect on different social group. Poverty and vulnerability. Disaster management prevention, preparedness and mitigation.
FEBRUARY	Disaster - Classification of disaster; Natural disaster - earthquake, floods, drought and global warming causes consequences and mitigation, natural disaster prone areas of world and India
MARCH	manmade disasters, their types-technological and industrial disasters. Social disaster: cause consequences and mitigation. With special reference to India.
APRIL	Disaster management- relief and response, reconstruction and rehabilitation. Disaster - Strategies for survival, types of strategies. Importance of information in disaster management, significance of Remote Sense and GIS. Planning in the context of Disaster management.

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2017-18**

**TEACHING PLAN**

**M. A.IV SEMESTER GEOGRAPHY**

**PROJECT WORK**

**TITLE OF THE PAPER: SOCIO ECONOMIC SURVEY**

MONTH	PLAN
JANUARY	Physical aspect- Location, Physical feature, Climate, Vegetation, Drainage, Soil and Land use. Cultural aspect- Population, Economic activities, Services and Settlements. Analysis of the findings and report writing.
FEBURARY	
MARCH	
APRIL	

**प्राचार्य शास. दू.ब. महिला स्नात.(स्वशासी) महाविद्यालय  
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**टीचिंग प्लान हिंदी स्नातकोत्तर सेमेस्टर परीक्षा**

**सत्र 2017-18**

क्र.	माह/दिन	स्नातकोत्तर I, II सेमेस्टर	स्नातकोत्तर III, IV सेमेस्टर
1	जुलाई/26	इकई 1 प्रश्न पत्र I, II, III, IV स्नातक हिन्दी साहित्य का इतिहास कबीर ग्रंथावली, गुप्त नाटक	इकई I प्रश्न पत्र I, II, III, IV भारतीय काव्यशास्त्र, भाषा और भाषाविज्ञान, हिंदी के विभिन्न रूप, भारतीय साहित्य
2	अगस्त/25	इकई II आदिकाल चंद्रवरदाई, प्रसाद, राकेश	इकई II प्रश्न पत्र I, II, III, IV अलंकार, रूपन, परिभाषिक शब्द
3	सितम्बर/23	इकई III काल, जायसी, निराला, निबंध	इकई III प्रश्न पत्र I, II, III, IV पाश्चात्य काव्यशास्त्र, व्याकरण, इन्टरनेट
4	अक्टूबर/21	इकई III सूफी काव्य, रहीम, रैदास, निबंध	इकई IV प्रश्न पत्र I, II, III, IV लॉजाइनस, अर्थ विज्ञान, पत्रकारिता
5	नवम्बर/25	इकई IV भक्ति, खुसरो, मीराबाई, रत्नाकर, महादेवी वर्मा, आंतरिक मूल्यांकन, सेमिनार	इकई IV प्रश्न पत्र I, II, III, IV लेखन कला, संपादन, पत्रकार वार्ता, आंतरिक मूल्यांकन, सेमिनार
6	दिसम्बर/21	सेमेस्टर परीक्षा	सेमेस्टर परीक्षा
क्र.	माह/दिन	II, IV सेमेस्टर	
1	जनवरी/26	इकई I प्रश्न पत्र I, II, III, IV उत्तर मध्यकाल, सूरदास, गोदान	इकई I प्रश्न पत्र I, II, III, IV अभिसाव्यवाद, भाषाएँ, मीडिया, छत्तीसगढ़ का इतिहास
2	फरवरी/24	इकई II प्रश्न पत्र I, II, III, IV आधुनिककाल, तुलसीदास, मुक्तिबोध, मैला आँचल	इकई II प्रश्न पत्र I, II, III, IV काव्यशास्त्रीय चिंतन, बोली, दृश्य, श्रव्य माध्यम, छत्तीसगढ़ के साहित्यकार
3	मार्च	इकई III प्रश्न पत्र I, II, III, IV द्विवेदी युग, बिहारी, नागार्जुन कहानी	इकई III प्रश्न पत्र I, II, III, IV आलोचना, हिंदी के विविध रूप, अनुवाद, क्षया उपन्यास
4	अप्रैल	इकई IV प्रश्न पत्र I, II, III, IV गद्य द्रुतपाठ, द्रुतपाठ कहानी	इकई IV प्रश्न पत्र I, II, III, IV समीक्षा, लिपि. अनुवाद प्रकार, करमछड़हा नाटक
5	मई	इकई IV प्रश्न पत्र I, II, III, IV आन्तरिक मूल्यांकन, सेमिनार	इकई IV प्रश्न पत्र I, II, III, IV आन्तरिक मूल्यांकन, सेमिनार
6	जून	सेमेस्टर परीक्षा	सेमेस्टर परीक्षा

M A I ,II SEM. HISTORY , 1<sup>st</sup> PAPER

HISTORY METHOD WRITING

SESSION – 2017-18

S.NO.	MONTH	PLAN
1	AUGUST	History meaning and definition . The extent and types of history. History relation to other social sciences. Utility of history.
2	SEPTEMBER	Cause of Action in history. Objectivity in history. Facts in history. Is history a science or an art.
3	OCTOBER	Relativistic theory of history . The cyclist theory of history . Sociological theory of history . Idealistic theory of history .
4	NOVEMBER	Comparative theory of history . Critical theory of history . Materialistic theory of history . Etihasvad .
5	DECEMBER	RIVISION
1	JANUARY	II SEM Greek and Roman historiography . Chinese historiography . Arab and Persian historiography . The tradition of writing historiography in ancient India .
2	FEBRUARY	Medieval Indian historiography . Modern Indian historiography . Themes of indian history - economic history . Thimes of indian history - social and cultural history .
3	MARCH	Imperialist interpretation of indian history . Nationalist interpretation of indian history . Marxist interpretation of indian history . Nationalist interpretation of indian history . Democratic interpretation of indian history .
4	April	Ancient indian history – nomenclature of Indus valley civilization , Origin of Rajput's . Medieval indian history – Muhammad Bin Tughlaq ,Aurangzeb's religious fanaticism .  Modern indian history – Form of revolution 1857 ,partition of india .

M A I , II SEM ,HISTORY

SECOND PAPER – WORLD HISTORY 1871 -1919

SESSION 2017-18

S NO	MONTH	PLAN
1	AUGUST	New imperialism – partition of Africa . Development of Capitalism . Rise of Labaralism in England ,France. Rise of Socialism .
2	SEPTEMBER	Home and foreign policy of Bismark . Foreign policy of Kaiser William II . Foreign policy of Italy [1871 -1914] Industrial development in United State of America .
3	October	Meiji Restoration in Japan . Russio –Japanese war –1904-5 . Chinese revolution – 1911 . Eastern problem –1878 -1913—Berlin congress – 1878
4	NOVEMBER	Balkan war – 1912 -13. First world war – 1914 -1918 –causes incidents and results . Russian revolution -1917—causes and results Peace treaties of Paris .
1	JANUARY	II SEM Achievement and failure of league of nations . Problem of compensation . Problem of disarmament . World recession - 1929
2	FEBRUARY	Fascism in Italy - Mussolini Nazism in Germany – Hitler . Second world war – causes Incidents and results .
3	MARCH	Communism in China National movement in Indochina . National movement in Indonesia . Arab nationalism .
4	April	United Nations Organization Cold war Non –Alignment movement. Role of India in non alignment movement



M A I,II SEM 3<sup>rd</sup> PAPER – HISTORY OF CHHATTISGARH

SESSION 2017-18

S N	MONTH	I SEM PLAN
1	AUGUST	Introduction of Chhattisgarh – nomenclature and geographical location Vedic to Maurya period Chhattisgarh -political social economic and cultural condition . Chhattisgarh during the Satavahana period Gupta vakataka era Chhattisgarh
2	SEPTEMBER	Nala and Rajershitulya dynasty Sharabhpuriya dynasty Pandu dynasty Chindacknagvansh and Phaninagvansh
3	OCTOBER	Establishment of Kalchuri rule Early Kalchury king Post Kalachuri king- arrival before Marathas Social economic and cultural condition of Kalchuris
4	NOVEMBER	Maratha invasion Bimbaji Bhosle Suba administration Socio economic and cultural condition of Maratha period
1	JANUARY	II SEM Chhattisgarh under British protection and Raghuji 3 <sup>rd</sup> [1818-1830] British administration in Chhattisgarh Governance system after the formation of the central provinces British land revenue system
2	FEBRUARY	Social change in British era Chhattisgarh Economic condition in British era Chhattisgarh Cultural condition in British era Chhattisgarh British policy towards the princely states of chhattisgarh
3	MARCH	The Revolt of 1857 in Chhattisgarh National movement in Chhattisgarh – 1885-1919 National movement in Chhattisgarh – 1920-1947 Peasant ,lebar and tribal movement in Chhattisgarh
4	APRIL	Religious faith of chhattisgarh -Shaiva, shakta, Vaishnav ,Jain Buddha Kabir sect, Satnam sect Folk culture of Chhattisgarh Background of Chhattisgarh state formation

M A I,II SEM,HISTORY,4<sup>th</sup> PAPER- Tourism theory and practice  
SESSION 2017-18

1	AUGUST Unit -1	Explanation of tourism Principles and objectives of tourism . Concept of tourism. Tourism information.
2	SEPTEMBER Unit - 2	History of tourism . Travel agency formation . Functions of travel agencies . Tour operators and guides .
3	OCTOBER Unit -3	Impact of tourism on the industry . Tourism – Accommodation and Hotel industry . Tourism and Handicrafts industry . Shops ,emporium and Fair.
4	NOVEMBER Unit -4	Tourism and folk culture . Important historical tourist center of India --Agra ,Ajanta Ellora Caves, Bhimbetka Caves ,Hampi ,Sun temple- Konark ,Khajuraho ,Rameshwaram . Important historical tourist center of Chhattisgarh – Sirpur, Giroudpuri ,Bhoramdev ,Dantewada, DongargarhRatanpurRamgiri . Vibrant culture and performing spiritual arts .
1	JANUARY Unit -1	Tourism organization . Central tourism organization of india. Tourism department and organization of Chhattisgarh . State government tourism -encouragement plans-with reference of Chhattisgarh.
2	FEBRUARY	Tourism Marketing . International tourism. Tourism and transport. Wildlife of Chhattisgarh -Barnawapara ,Achanackmarga.
3	MARCH	Tourism and environment . Importance of national parks in tourism . Tourism and fair- in a national perspective. Monuments and Museums.
4	APRIL	Tourism prospects in Chhattisgarh . Major tourist places of Chhattisgarh.

M A III ,IV SEM ,HISTORY – I PAPER – Ancient India

SESSION -2017-18

S NO	MONTH	II SEM PLAN
1	AUGUST	A review of sources related to ancient Indian history Stone age culture Megalithic civilization Harappan civilization
2	SEPTEMBER	Pre Vedic society – political ,economic ,social and religious life Later Vedic society – political economic social and religious life Culture of Epic era Religious movement – Jainism and Buddhism
3	OCTOBER	Mahajanapada period – sixteen Mahajanapadas Republic system Urban centers and economic development Body corporate -castsystem ,Aashram system, tradition ,marriage Status of woman
4	NOVEMBER	Agricultural development of ancient India Development of industry and trade Scientific advancement in ancient times Ancient religious architecture
1	JANUARY	IV SEM Rise of Magadha empire -Haryak to Nand dynasty Alexander's invasion -causes and result Sangam era – social economic and religious condition of south India Administrative arrangement in Maurya period
2	FABRUARY	Art and architecture Ashoka's dhamma Downfall of Maurya empire Culture of Kushan satavahana period
3	MARCH	Gupta period administrative system Scientific ,literary and cultural development in Gupta period Harshvardhan period Development of Vaishnavism and Shaivism in ancient India
4	APRIL	Rise of cast system in ancient India ,untouchability Social and religious status of woman Development of education in ancient India Development of Temple architect sculpture art

M A III & IV SEM HISTORY -II PAPER- HISTORY OF INDIA[650 to 1200]

SESSION -2017-18

S N	MONTH	III SEM PLAN
1	AUGUST	Means of knowing history Political changes Economic and social changes Eastern India – Pal ,Sen dynasty
2	SEPTEMBER	Indian state – Pratihara, Chauhan , Parmar dynasty Kalchuri ,Chandel dynasty Pallava ,Chalukya dynasty Rashtrakoot, Chola dynasty
3	OCTOBER	Origin of Rajput Raj system and administration of Rajput Socio, economic ,religious condition of Rajput period Trade relation with south east Asia and western Asia
4	NOVEMBER	Early contact with Arab , Arab invasion in Sindh Arrival of Turks in India – Mahmud Ghaznavi Muhammad Gori -invasion -causes and result Success of Turks
1	JANUARY	IV SEM Agricultural economic arrangement – land donation Development of agricultural technology Urban economy -craft and trade Contribution of 'Guild' in economic arena
2	FEBRUARY	Development of new Trade and craft class Origin of caste system Untouchability Social status of woman
3	MARCH	Educational development and teaching institution Development of regional languages and literatures Temple architecture Development of Sculpture art
4	APRIL	Bhakti movement -with special reference of south India – Shaivism , Vaishnavism and Tantricism Vedanta ,Mimamsa philosophy Sufi movement

M A III ,IV SEM – III PAPER- INDIANs NATIONAL MOVEMENT

SESSION 2017-18

S N.	MONTH	III SEM PLAN
1	AUGUST	Revolt of 1857 – causes , nature results and failure Indian Renaissance -means and cause Social religious reform movement -Bramhasamaj, Arya samaj Ramacrishana mission, theosophical socity ,Aligarh movement
2	SEPTEMBER	Political organization of pre congress Establishment of national congress Liberalism Militancy
3	OCTOBER	Swadeshi movement Revolutionary movement -first step- Bengal Maharashtra Panjab " " step Marle -Minto reforms -1909
4	NOVEMBER	Home -rule movement Gandhian political thought Khilafat movement Indian government act 1919
1	JANUARY	IV SEM Non co operation movement Swaraj party Civil dis obedience movement Indian government act - 1935
2	FEBRUARY	Development of Indian industries Peasant and labor movement Tribes movement Quit India movement and Subhash Chandra Bos
3	MARCH	Communalism in Indian politics Cripps mission Cebinet mission plan Mount batton plan
4	APRils	Integration of Indian princely states -contribution of Sardar Patel Great leaders of india Twenty years of post independence -internal change ,foreign policy Five years plans

M A III ,IV SEM – IV PAPER- INDIANs NATIONAL MOVEMENT

SESSION 2017-18

S N.	MONTH	III SEM PLAN
1	AUGUST	SOURCE OF WOMAN STUDIES IDEOLOGY OF WOMAN STUDIES- LIBRILIST , EXTRIMIST IDEOLOGY OF WOMAN STUDIES- SOCILIST , COMMUNIST IDEOLOGY OF WOMAN STUDIES- PHYCISOLOGIEST
2	SEPTEMBER	POSITION OF WOMANS IN DIFFERENT RELIGIONS – HINDU RELIGION IN BUDDHISM AND JAINISM POSITION OF WOMANS IN ISLAM POSITION OF WOMAN IN SIKH RELIGION
3	OCTOBER	LIGEAL POSITION OF WOMANS- IN ANCIENT INDIA LIGEAL POSITION OF WOMANS -IN MEDIVAL INDIA SOCIAL RIGHTS-PROPERTY RIGHTS WOMAN ORGANISATION IN REFERENCE OF 20 <sup>TH</sup> CEN.
4	NOVEMBER	WOMANS AND FREEDOM MOMENT GANDHIAN MOMENT AND WOMANS WOMANS LIBERATION MOMENT WOMANS AND POLITICS IN POST INDEPENDECE INDIA
1	JANUARY	IV SEM WOMANS AND THERE WORK AREA DOMESTIC WORK AREA AGRICULTURE AND INDUSTRIAL AREA , TRADE WORK AREA EMPLOYED WOMAN
2	FEBRUARY	WOMANS AND CULTURE CENEMA THEATER AND MEDIA AREA LITRATURE AND RELIGION AREA LITRARY WRITING AND HISTEREOGRAPHY
3	MARCH	REFORM MOMENT AND WOMANS- BHAKTI MOMENT RELIGIOUS REFORM MOMENT AND WOMANS- BRAMH SAMAJ ARYA SAMAJ REFORM MOMENT AND WOMANS- ALIGARH MOMENT REFORM MOMENT AND WOMANS- THIOSOPHICAL SOCEITY , SELF RESPECT MOMENT
4	APRIL	ROLE OF WOMANS IN MOMENT AND POLITICS AREA- TRIBLE MOMENT PEASANT MOMENT LABOUR MOMENT ROLE OF MOMENTS IN LOCAL BODIES

**M.A. I SEM.  
SESSION 2017-18  
TEACHING PLAN**

**PAPER-I**

**पाश्चात्य राजनीतिक चिंतन**

MONTH	PLAN
JULY	प्लेटो, अरस्तु
AUGUST	मैकियावली, जेरेमी, बेन्थम
SEPTEMBER	टॉमस हाब्स, जॉन लाक, जीन जैक्स,रुसो
OCTOBER	जॉन स्टुअर्ट मिल, थामस हिल ग्रीन
NOVEMBER	कार्ल मार्क्स एवं मार्क्सवाद

**SESSION 2017-18**  
**TEACHING PLAN**

**PAPER-II**  
**तुलनात्मक राजनीति**

MONTH	PLAN
JULY	राजनीतिक व्यवस्था के अध्ययन में तुलनात्मक पद्धति। तुलनात्मक राजनीति का अर्थ, प्रकृति
AUGUST	तुलनात्मक राजनीति का क्षेत्र। तुलनात्मक राजनीति का विकास। राजनीतिक व्यवस्था की अवधारणा
SEPTEMBER	तुलनात्मक राजनीति के अध्ययन के विविध उपागम – परम्परागत, मार्क्सवादी
OCTOBER	तुलनात्मक राजनीति के अध्ययन के विविध उपागम—निवेश—निर्गत। संरचनात्मक :- प्रकार्यात्मक, राजनीतिक समाजशास्त्रा उपागम।
NOVEMBER	राजनीतिक संस्कृति एवं राजनीतिक समाजीकरण। राजनीतिक संचार



**SESSION 2017-18**  
**TEACHING PLAN**

**PAPER-III**  
**लोक प्रशासन**

MONTH	PLAN
JULY	लोक प्रशासन :- परिभाषा, प्रकृति, क्षेत्र । निजी प्रशासन एवं लोक प्रशासन में अंतर ।
AUGUST	अध्ययन के उपागम :- व्यावहारवादी, तुलनात्मक, निर्णयपरक, विकास प्रशासन एवं नवीन प्रशासन
SEPTEMBER	संगठन के सिद्धांत:- नियंत्रण का क्षेत्र, पदसोपान, प्रत्यायोजन, समन्वय, केन्द्रीयकरण एवं विकेन्द्रीयकरण ।
OCTOBER	मुख्य कार्यपालिका :- प्रकार एवं भूमिका , सूत्रा एवं स्टॉफ अभिकरण,
NOVEMBER	विभागीय संगठन, स्वतंत्रा नियामकीय आयोग, लोक निगम

**SESSION 2017-18**  
**TEACHING PLAN**

**PAPER-IV**  
**भारत की विदेश नीति**

MONTH	PLAN
JULY	विदेशनीति :- अर्थ एवं निर्धारक तत्व । भारतीय विदेशनीति :- सिद्धांत एवं उद्देश्य ।
AUGUST	भारत की विदेशनीति के आंतरिक निर्धारक :- भूगोल, इतिहास, संस्कृति
SEPTEMBER	भारतीय विदेशनीति के बाह्य निर्धारक :- वैश्विक, क्षेत्रीय एवं द्विपक्षीय । विदेशनीति निर्माण प्रक्रिया की संरचना
OCTOBER	भारतीय विदेशनीति में नैरन्तर्य एवं परिवर्तन । भारतीय विदेशनीति तुलनात्मक परिपेक्ष्य में
NOVEMBER	पड़ोसी देशों के प्रति भारतीय नीति, प्रमुख वैश्विक मुद्दों के प्रति भारतीय दृष्टिकोण, सीमापार आतंकवाद, पर्यावरण एवं मानव अधिकारों का प्रश्न ।

**SESSION 2017-18**  
**TEACHING PLAN**  
**PAPER-I**  
**भारतीय शासन एवं राजनीति**

MONTH	PLAN
JULY	संविधान सभा की पृष्ठभूमि, संगठन (संरचना) एवं कार्यप्रणाली, वैचारिक आधार, प्रस्तावना
AUGUST	मौलिक अधिकार एवं मौलिक कर्तव्य, राज्य के नीति निर्देशक सिद्धांत, सामाजिक परिवर्तन के उपकरण के रूप में संविधान संशोधन प्रक्रिया
SEPTEMBER	संघीय सरकार – राष्ट्रपति, प्रधानमंत्री, मंत्रीपरिषद, संसद
OCTOBER	सर्वोच्च न्यायालय एवं न्यायिक पुनरीक्षण, न्यायिक सक्रियतावाद
NOVEMBER	दलपद्धति की प्रकृति, राष्ट्रीय एवं क्षेत्रीय दल, दबाव समूह

**SESSION 2017-18**  
**TEACHING PLAN**  
**PAPER-II**  
**अंतर्राष्ट्रीय राजनीति के सिद्धांत**

MONTH	PLAN
JULY	अंतर्राष्ट्रीय राजनीति का विषय के रूप में विकास, प्रकृति एवं क्षेत्रा । अध्ययन पद्धतियों :- परम्परागत एवं वैज्ञानिक
AUGUST	अंतर्राष्ट्रीय राजनीति के सिद्धांत :- (वृहत्) यथार्थवाद, आदर्शवाद, साम्यावस्था, निर्णय-निर्माण, खेल, संचार, व्यवस्था सिद्धांत
SEPTEMBER	शक्ति संकल्पना :- तत्व एवं सीमाएं । शक्ति प्रबंधन – शक्ति संतुलन । सामूहिक सुरक्षा
OCTOBER	अंतर्राष्ट्रीय राजनीति में राष्ट्रीय हित । निःशस्त्रीकरण । परमाणु अप्रसार – सी.टी.बीटी. एन.पी.टी. ।
NOVEMBER	क्षेत्रवाद, क्षेत्रीय संगठन । साम्राज्यवाद, नव-साम्राज्यवाद

**SESSION 2017-18**  
**TEACHING PLAN**  
**PAPER-III**  
**शोध प्रविधि**

MONTH	PLAN
JULY	सामाजिक अनुसंधान – अर्थ एवं प्रकृति, वैज्ञानिक पद्धति
AUGUST	वैज्ञानिक पद्धति एवं सामाजिक विज्ञानों में उपयुक्तता, सामाजिक विज्ञान में अध्ययन की कठिनाईयों, शोध के चरण।
SEPTEMBER	सामाजिक सर्वेक्षण – उद्देश्य, महत्व, प्रमुख चरण, वैयक्तिक अध्ययन पद्धति।
OCTOBER	अनुसंधान, अभिकल्पना, उपकल्पना, तत्वों के प्राथमिक एवं द्वितीयक स्रोत।
NOVEMBER	तथ्य संग्रहण के एवं प्रविधियाँ : अवलोकन पद्धति, साक्षात्कार पद्धति :- गुणदोष एवं सीमाएं

**SESSION 2017-18**  
**TEACHING PLAN**  
**PAPER-IV**  
**अंतर्राष्ट्रीय संगठन**

MONTH	PLAN
JULY	अंतर्राष्ट्रीय संगठनों की प्रकृति एवं विकास। अंतर्राष्ट्रीय संगठन – राष्ट्र राज्य एवं अंतर्राष्ट्रीय व्यवस्था का समन्वय
AUGUST	राष्ट्रसंघ – उत्पत्ति संरचना कार्य एवं असफलता
SEPTEMBER	संयुक्त राष्ट्र संघ – संरचना एवं कार्य
OCTOBER	विवादों का शांतिपूर्ण समाधान एवं बाध्यकारी उपाय, अंतर्राष्ट्रीय न्यायालय
NOVEMBER	आर्थिक एवं सामाजिक विकास में संयुक्त राष्ट्र संघ की भूमिका। उत्तर शीत युद्धकाल और संयुक्त राष्ट्रसंघ

**SESSION 2017-18**  
**TEACHING PLAN**

**PAPER-I**  
**राजनीतिक चिंतन**

MONTH	PLAN
JANUARY	मनु, कौटिल्य
FEBURARY	महात्मा गांधी, डॉ. भीमराव अम्बेडकर जार्ज बिल्हेलम
MARCH	फ्रेडरिक हीगल, हेरल्ड जे. लास्की एवं बहुलवाद परम्परागत राजनीतिक सिद्धांत एवं आधुनिक राजनीतिक सिद्धांत की विशेषताएं
APRIL	परम्परागत राजनीतिक सिद्धांत एवं आधुनिक राजनीतिक सिद्धांत की विशेषताएं

## SESSION 2017-18

### TEACHING PLAN

#### PAPER-II

विकासशील देशों की राजनीति एवं तुलनात्मक राजनीति

MONTH	PLAN
JANUARY	राजनीतिक विकास । राजनीतिक अभिजन
FEBURARY	सरकार का वर्गीकरण :- एकात्मक व संघात्मक, संसदीय व अध्यक्षतात्मक
MARCH	नौकरशाही :- संरचना, कार्य व भूमिका । राजनीतिक दल, दबाव समूह  राजनीतिक संस्थाएँ :- व्यवस्थापिका – संरचना, कार्य व भूमिका । कार्यपालिका :- संरचना, कार्य व भूमिका
APRIL	न्यायपालिका :- न्यायिक पुनरीक्षण । शक्ति पृथक्करण । अवरोध एवं संतुलन



## SESSION 2017-18

### TEACHING PLAN

#### PAPER-III

#### लोक प्रशासन (स्थानीय स्वायत्त शासन)

MONTH	PLAN
JANUARY	कार्मिक प्रशासन : भर्ती पदोन्नति, प्रशिक्षण, सेवानिवृत्ति
FEBURARY	संघ लोक सेवा आयोग, नौकरशाही, कार्मिकों की समस्याओं के निवारण की व्यवस्था।
MARCH	वित्तीय प्रशासन :- अर्थ प्रकृति, विशेषताएं। बजट :- सिद्धांत एवं महत्व, भारत में बजट निर्माण प्रक्रिया  कार्यपालिका, व्यवस्थापिका, न्यापालिका एवं जन समूह का प्रशासन पर नियंत्रण
APRIL	लोक प्रशासन में भ्रष्टाचार, आम्बुड्समेन, लोकपाल, लोकायुक्त एवं लोक संपर्क स्थानीय स्वायत्तशासी संस्थाओं की भूमिका

## SESSION 2017-18

### TEACHING PLAN

#### PAPER-IV

#### प्रमुख शक्तियों की विदेशनीति

MONTH	PLAN
JANUARY	विदेशनीति के अध्ययन के उपागम । अमेरिका की विदेशनीति
FEBURARY	ब्रिटेन एवं फ्रांस की विदेशनीति जर्मनी एवं जापान की विदेशनीति
MARCH	सोवियत संघ / रूस की विदेशनीति, चीन की विदेशनीति
APRIL	प्रमुख वैश्विक मुद्दों के प्रति भारतीय दृष्टिकोण – वैश्वीकरण, निःशत्रुीकरण एवं शस्त्र नियंत्रण ।

**SESSION 2017-18**

**TEACHING PLAN**

**PAPER-I**

**भारतीय शासन में राज्यों की राजनीति**

MONTH	PLAN
JANUARY	निर्वाचन आयोग, संघ लोक सेवा आयोग भारतीय संघवाद तथा केन्द्र राज्य संबंध, राज्यपाल, मुख्यमंत्री एवं मंत्रीमंडल
FEBURARY	राज्य विधान मंडल, राष्ट्रीय राजनीति का राज्य, राजनीति पर प्रभाव
MARCH	राज्यों की स्वायत्ता की मांग – गठबंधन की राजनीति
APRIL	दलबदल की राजनीति, भारतीय राजनीति में जाति, धर्म, क्षेत्रवाद, भाषा का प्रभाव ।

**SESSION 2017-18**

**TEACHING PLAN**

**PAPER-II**

**अंतर्राष्ट्रीय राजनीति के सिद्धांत (समकालीन मुद्दे)**

MONTH	PLAN
JANUARY	अंतर्राष्ट्रीय राजनीति में असंलग्नता – आधार, भूमिका, महत्व एवं प्रासंगिकता । शीतयुद्ध एवं शीतयुद्ध की समाप्ति – कारण एवं परिणाम । नई विश्व व्यवस्था
FEBURARY	उत्तर शीत युद्धकालीन महत्वपूर्ण मुद्दे – वैश्वीकरण, मानवधिकार  उत्तर शीत युद्धकालीन महत्वपूर्ण मुद्दे – पर्यावरण, आतंकवाद
MARCH	प्रमुख राष्ट्रों की विदेश नीतियां – भारत, संयुक्त राज्य अमेरिका
APRIL	चीन एवं रूस की विदेश नीति

**SESSION 2017-18**

**TEACHING PLAN**

**PAPER-III**

**शोध प्रविधि – क्षेत्रीय कार्य**

MONTH	PLAN
JANUARY	प्रश्नावली एवं अनुसूची :- प्रकार, गुण, दोष, सीमाएं ।  निदर्शन :- अर्थ, प्रकार, सारणीयन, प्रतिवेदन लेखन, अनुमापन प्रविधियाँ
FEBURARY	अनुसंधान दल, अनुसंधान की समस्याएँ, प्रक्षेपी प्रविधियाँ
MARCH	सामाजिक अनुसंधान में साँख्यिकी की उपयोगिता एवं सीमाएँ – मीन, मोड, मीडियन
APRIL	कम्प्यूटर का उपयोग एवं संकेतन

## SESSION 2017-18

### TEACHING PLAN

#### PAPER-IV

#### अंतराष्ट्रीय कानून

MONTH	PLAN
JANUARY	अंतराष्ट्रीय कानून :- प्रकृति क्षेत्रा, विकास, स्रोत एवं संहिताकरण । राष्ट्रीय एवं अंतराष्ट्रीय कानून ।
FEBURARY	अंतराष्ट्रीय कानून एवं राष्ट्र उत्तराधिकार एवं मान्यता । राज्यों के अधिकार एवं कर्तव्य । क्षेत्राधिकार समानता एवं आत्मरक्षा
MARCH	युद्ध :- परिभाषा, प्रकृति, लक्षण, घोषणा, प्रभाव । स्थल युद्ध के नियम :- समुद्री युद्ध के नियम एवं वायु युद्ध के नियम, आणविक युद्ध, अधिग्रहण न्यायालय  युद्ध की समाप्ति, शांति संधि एवं पूर्वावस्था । युद्ध अपराध, युद्धबंदी एवं दण्ड
APRIL	तटस्थता :- परिभाषा, प्रकार, लक्षण । तटस्थ राज्यों के अधिकार एवं कर्तव्य ।  नाकाबंदी, राजनयिक उन्मुक्तियों एवं विशेषाधिकार । अंतराष्ट्रीय कानून एवं आर्थिक विकास, नवीन विश्व के संदर्भ में

## PROPOSED TEACHING PLAN FOR THE SESSION 2017-18

Class - M.A. Psychology (I<sup>st</sup>&II<sup>rd</sup>Semester)

Title of the paper – Social Psychology & Group Processes and Cultural Psychology

MONTH/DAYS	Proposed Plan
JULY /26 SEM-I	UNIT-I Introduction and Social Psychological Perspective Social Psychology- Nature And Scope , Historical Background and Methods of Social Psychology, Theoretical Perspectives- Cognitive Dissonance, Attribution, Field and Psychodynamic, Symbolic Interaction and Socio-Biology
AUGUST/25	UNIT-II Social Cognition and Person Perception Sources of Errors in Social Cognition, Social Perception and Person Perception, Determinants of Person Perception, Impression Formation and Management, Role of Stereotypes in Person Perception
SEPTEMBER/23	UNIT-III Process of Social Influences Meaning and Nature of Social Influence , Social Facilitation, Conformity, Compliance and Obedience, Social Power , Reactance Attitude– Nature and Characteristics, Development and Formation of Attitudes, Theories of Attitude Change
OCTOBER/21	UNIT-IV Social Psychology and Social Situations Prosocial Behavior, Aggression and Violence- nature, characteristics, determinants and theories, Management of Aggression
NOVEMBER/25	Seminars &Project work Practical- Psychological Experiments
DECEMBER/21	Semester Exam (Theory &Practical)
JANUARY/26 SEM-II	UNIT-I Intergroup Relations Group Dynamics and Group Behavior, Group Effectiveness and Group Cohesiveness-Meanings, Formation, Decision Making, Problem Solving and Group Level Behaviors
FREBRUARY/24	UNIT-II leadership Leadership –meaning, nature and functions, Styles and Effectiveness of Leadership, Psychology of Followers
MARCH	UNIT-III Social Issues Poverty, Caste, Gender and Population Issues in India Communal Tension and Harmony Culture and Behavior-I Culture, Cognition and Emotions, Culture and Organization
APRIL	UNIT-IV Culture And Behavior-II Culture And Health, Culture and Personality, Health , Environment and Law Practical – Psychological Tests
MAY	Seminars &Project work
JUNE	Semester Exam

JULY /26 SEM-I	UNIT-I Psychophysics: Nature, Problem And methods, Signal detection theory, Subliminal perception and related factors. Perceptual process- Approaches to study Perception: Gestalt, Physiological, processing and Ecological Approaches. Perceptual Organization: Gestalt, Figure and Ground, Law of organization. Perceptual Constancy: Size, Shape and Brightness.
AUGUST/25	UNIT-I Depth perception; Monocular and Binocular cues, Movement Perception: Nature, Types and Theories UNIT-II Attention: Nature, Concept and Mechanism of Attention. Types, Theories and Applications
SEPTEMBER/23	UNIT-III Motivation and Emotion: Basic Motivational concept: Instincts, needs, drive, incentive, Motivational cycle. Approaches to study Motivation; Psychoanalytical, Ethological, S-R Cognitive, Humanistic, Biological Motives, Social motives: Achievement, Affiliation, and Approval. Emotion concept; physiological correlates of Emotions. Theories of Emotions; James- Lange, Canon- Bard. Schechter and Singer.
OCTOBER/21	UNIT-III Conflicts: Sources and Types UNIT-IV Consciousness: Nature and concept of consciousness, Theories of Consciousness, Methods to Studying Consciousness, Consciousness Self and Identity.
NOVEMBER/25	Lab work, Seminars & Project work
DECEMBER/21	Semester Exam (Theory & Practical)
JANUARY/26 SEM-II	UNIT- I Learning Process: Classical Conditioning: Procedure, Phenomena and related issue. Instrumental Learning: phenomena, paradigms And Theoretical issue, Process Escape Conditioning, Avoidance Conditioning, Generalization, Reinforcement: Basic variable and schedule. Experimental Analysis of behavior: Behavior Modification, Shaping, Discrimination Learning, Neurophysiology of Learning
FREBRUARY/24	UNIT-II Verbal Learning: Methods and Materials, Organizational Process, learning Theories: Hull, Tolman, and Skinner. Cognitive Approaches In Learning: latent Learning, Observational Learning.
MARCH	UNIT-III Memory and Forgetting: Memory Processes; Encoding, Storage and Retrieval. Stages of Memory: Sensory Memory, Short Term Memory and Long Term Memory. Episodic and Semantic Memory.
APRIL	UNIT-IV Forgetting: Nature and causes of Forgetting, Theories of Forgetting; Interference, Decay, Retrieval. Improving Memory.
MAY	Lab work, Seminars & Project work
JUNE	Semester Exam



## PROPOSED TEACHING PLAN FOR THE SESSION 2017-18

Class - M.A. Psychology ( I<sup>st</sup> & II<sup>nd</sup> Semester ) Paper- III<sup>rd</sup>Title of the paper- BASIC RESEARCH METHODOLOGY & ADVANCE RESEARCH  
METHODOLOGY

MONTH/DAYS	PROPOSED PLAN
JULY /26	UNIT-I Introduction to Psychological Research Meaning, Purpose and Dimensions of Research. Types of Psychological Research: Qualitative and Quantitative. Parametric and Non-Parametric Statistics. Methods of Psychological Research: Experimental. Quasi-Experimental. Case Studies, Field Studies. Variables: Nature and Types. Techniques of experimental manipulation, controlling experiment.
AUGUST/25	UNIT-II Research Process Research Process: Consideration of Research Problem and Hypothesis, Operationalization .Sampling: Probability and Non probability Sampling. Sources of Bias. Ethical Issues in Psychological Research.
SEPTEMBER/23	UNIT-III Research Designs: Cross Sectional and Longitudinal, Experimental, Correlation. Single Factor, Quasi - Experimental.
OCTOBER/21	UNIT-IV Central Tendencies, Measures of Dispersion, Normal Probability Curve, its properties and utility. Null Hypothesis, Type-I and Type-II Errors, Level of Significance. Inferential Statistics: t -Test. Method of Data Collection Survey and Observation Method: Questionnaire, Interview. Tests and Scales.
NOVEMBER/25	Seminars & Project work
DECEMBER/21	Semester Exam (Theory & Practical)
JANUARY/26	UNIT-I Experimental Design; Randomized groups, Matched Groups, Factorial Designs; Between and within Groups, Repeated Measures (One Factors).
FREBRUARY/24	UNIT-II Analysis of Variance; ANOVA; One Way and Two-Way
MARCH	UNIT-III Measures of Relationships; Bi-serial, point Bi-serial, Tetra choric and Phi, Multiple and partial Correlations
APRIL	UNIT-IV Regression and Factor Analysis: Simple and Multiple, factor Analysis: Assumptions, Methods, Rotation and Interpretation. Report Writing; Uses of computer in Psychological Researches, Research Report Writing.(APA Style)
MAY	Lab work, Seminars & Project work
JUNE	Semester Exam

## PROPOSED TEACHING PLAN FOR THE SESSION 2017-18

Class - M.A. Psychology (I<sup>st</sup>&II<sup>nd</sup>Semester)

Title of the paper – Psychopathology and Physiological Psychology and Health Behavior

MONTH/DAYS	PROPOSED PLAN
JULY /26 I <sup>nd</sup>	UNIT-I Concept of Psychopathology and Classification System Diagnosis: Purpose, diagnostic system: Mental Status Examination (MSE). Clinical Interview and Diagnostic Tools. Classification Systems: ICD and DSM .Evaluation of Classification System. Theoretical Models of Psychopathology Psychodynamic, Behavioral, Cognitive, Humanistic, Biological and Socio- Cultural.
AUGUST/25	UNIT – II Disorders of Anxiety, Somatoform, and Behavioural Syndromes Panic, Phobic, OCD, Post-Traumatic, GAD, Somatoform Disorders, Impulse Control Disorder, Eating Disorder, Sleep Disorder. Dissociative Disorder: Types, Characteristics, Etiology and Management.
SEPTEMBER/23	UNIT – III Psychotic Spectrum Disorders Schizophrenia, Mood Disorder. Personality Disorders: Clinical Characteristics, Etiology and Management.
OCTOBER/21	UNIT – IV Substance Related Disorders and Developmental Disorders of Childhood Mental Retardation. Disorders of Childhood: Autism Spectrum Disorder (ASD), Attention Deficit Disorder (ADD), Attention Deficit and Hyperactive Disorder (ADHD). Learning disabilities.
NOVEMBER/25	Seminars & Project work
DECEMBER/21	Semester Exam (Theory & Practical)
JANUARY/26 II <sup>nd</sup> Sem	UNIT – I Methods and Basic Concepts Methods of Physiological Psychology: Lesion and Brain Stimulation. Receptors, Effectors and Adjuster Mechanisms. Neural Impulse: Origin. Conduction and Measurement.
FREBRUARY/24	UNIT – II Sensory System Vision and Audition. Human Nervous System: Structure and Functions.
MARCH	UNIT – III Sleep and Waking: Stages of Sleep, Disorders of Sleep and Physiological, Mechanisms of Sleep and Waking. Drinking and its Neural Mechanism; Hunger and its Neural Mechanism. Endocrine System: Chemical and Glandular.
APRIL	UNIT - IV Approach to Therapy Psychoanalytic, Biological, Behavioral, Behavioral Medicine and Spiritual Therapy. Mental Health Mental Health Promotion and Maintenance. Current Issues and Trends in Health Psychology.
MAY	Seminars & Project work
JUNE	Semester Exam

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**PROPOSED TEACHING PLAN FOR THE SESSION 2017-18**

**Class - M.A. Psychology (III<sup>Rd</sup> & IV<sup>th</sup> Semester)**

**Paper- I<sup>ST</sup> Personality and Indigenous Psychology-I & Life Span Development  
(Compulsory)**

MONTH/DAYS	PROPOSED PLAN
JULY /26 III <sup>TH</sup>	UNIT-I Personality; Meaning, Perspective and measurement of Personality Concept of Mature Personality, Personality Theory- Problems and Procedures.
AUGUST/25	UNIT – II Approaches to Personality- I Psychodynamic Perspectives of Personality: Theories of Personality: Freud, Erikson, Adler. Structure, Dynamics and Development of Personality. Methods to study Personality. Approaches to Personality –II Theories of Personality: Cattell and Eysenck - Structure, Dynamics and Development of Personality. Research Methods.
SEPTEMBER/23	UNIT – III Approaches to Personality-III Cognitive, Behavioral and Humanistic. Kelly, Bandura and Roger's. Structure, Dynamics and Development of Personality. Research Methods.
OCTOBER/21	UNIT – IV Approaches to Personality-IV Indigenous Concept and Models of Personality – Yogic, Samkhya. Current Researches in the Field of Personality.
NOVEMBER/25	Internship, Seminars & Project work
DECEMBER/21	Semester Exam (Theory & Practical)
JANUARY/26 IV <sup>th</sup> Sem	UNIT-I Scope, Nature and Principles of development, Concepts-maturity, experience factors in development: Biogenic, Psychogenic and Sociogenic. Factors influencing development: Heredity, Environment, Motivation and Learning. Development processes: Nature, Principles and related.
FREBRUARY/24	UNIT-II Methods; Cross-sectional, longitudinal approach, Research strategies: Co relational, Experimental and other sequential techniques. The Developmental tasks and theories of Development. Psychoanalytic, Behaviorist and cognitive.
MARCH	UNIT-III How life begins Infancy, baby hood and childhood. The Characteristics, adjustment, hazards and Personality Development.
APRIL	UNIT-IV Adolescence and Adulthood. Characteristic, Physical, Social and Cognitive development psychosocial Changes and adjustment. Middle and Old age, Characteristics, problems. Personal social and vacation adjustment.
MAY	Seminars & Project work
JUNE	Semester Exam

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**PROPOSED TEACHING PLAN FOR THE SESSION 2017-18**

**M.A. Psychology (III<sup>rd</sup> & IV<sup>th</sup> Semester)**

**PAPER- II PSYCHOLOGICAL ASSESSMENT I**

MONTH/DAYS	Proposed Plan
JULY /26	UNIT-I Nature of psychological assessment: difference between physical and psychological assessment, problems in psychological assessment. Levels of assessment
AUGUST/25	UNIT-II SCALING- Unidimensional and multidimensional scale. Scale construction technique. Difference between tests, scales, questionnaires and schedule. Characteristics of a good psychological test. Difference between psychometric and projective tests.
SEPTEMBER/23	UNIT-III Construction of a psychological tool: steps in test construction, item writing, pre try- out, item difficulty, discrimination power, types of psychological tests.
OCTOBER/21	UNIT-IV Adaptation of Tests. Test taking Response Styles: Social Desirability, Acquiescence and Faking. Use of Psychological tests in Applied Field of Life: Diagnosis, Psychotherapy, Education, Occupations and Organizations.
NOVEMBER/25	Lab work, Seminars & Project work
DECEMBER/21	Semester Exam (Theory & Practical)
JANUARY/26	UNIT-I Concept and Measurement of Intelligence, Major Tests of Intelligence developed under Western and Indian Cultural set up.
FREBRUARY/24	UNIT-II Concept and Measurement of Aptitude; Major Test of Aptitude developed under Western and Indian Cultural set up. Achievement; concept and measurement of Achievement Test; Major Test of Achievement developed under Indian Cultural set up.
MARCH	UNIT-III Test of Personality: Projective and Psychometric Approaches, Major Test of Personality, developed under Western and Indian Cultural set up.
APRIL	UNIT-IV Test of Adjustment, Values, Interest, Stress and Anxiety development under Indian condition. Psychological Testing in Applied Field: Neuropsychological Testing: Objectives and Major Neuropsychological Test. Emotional Intelligence: Concept and Major Test of emotional Intelligence developed under western and Indian cultural set up.
MAY	Lab work, Seminars & Project work
JUNE	Semester Exam

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PROPOSED TEACHING PLAN FOR THE SESSION 2017-18

Class - M.A. Psychology (III<sup>st</sup>&IV<sup>th</sup>Semester )

Paper III – Cognitive Psychology &

Psychology of Cognitive Abilities

MONTH/DAYS	PROPOSED PLAN
JULY /26	UNIT-I Theories of thought processes: Associationism, Gestalt, Information processing. Concept formation: Rules and Strategies.
AUGUST/25	UNIT-II Problem- Solving: Type and strategies. Role of concepts in thinking. Cognitive Strategies: Algorithms and heuristics. Convergent and divergent thinking. Decision- making; impediments to problem-solving.
SEPTEMBER/23	UNIT-III Models of memory: Atkinson and Shiffrin, Craik and Lockhart, Tulving. Semantic memory: Episodic, trace model and network model.
OCTOBER/21	UNIT-IV Biological basis of memory: The search for the engram, PET scan, and biochemical factors in memory. Improving memory: Strategies.
NOVEMBER/25	Lab work, Seminars &Project work
DECEMBER/21	Semester Exam (Theory &Practical)
JANUARY/26	UNIT-I Creative thinking and problem - solving. Language and thought. Theories of intelligence: Cattell, Jensen, Sternberg Goleman. Creativity: Views of Torrance, Getzels, Guilford.
FREBRUARY/24	UNIT-III Intelligence and creativity: Relationship. Abilities and achievement: Concept and role of emotional intelligence.
MARCH	UNIT-III Intelligence; Biological, Social, Eco- cultural determinants. Theories of intelligence: Spearman, Thurston, Guilford.
APRIL	UNIT-IV Individual and group differences: Extent and causes. Measurement of human abilities.
MAY	Seminars &Project work
JUNE	Semester Exam

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PROPOSED TEACHING PLAN FOR THE SESSION 2017-18

Class - M.A. Psychology (III<sup>st</sup>&IV<sup>th</sup>Semester )

Paper IV (Elective) – Educational Instructional Psychology&

Basics of Psychological Guidance and Counseling

MONTH/DAYS	PROPOSED PLAN
JULY /26	UNIT-I Conceptual and Theoretical Perspectives in Educational Psychology. Theories: Behaviouristic, Social Learning and Cognitive Applications in Teaching.
AUGUST/25	UNIT-II Instructional Models Programmed Learning, Concept, Characteristics and Models.
SEPTEMBER/23	UNIT-III Learning Styles: Nature, Approaches to Learning Style, Measurement of Learning Styles. Attempt to Modify Learning Styles.
OCTOBER/21	UNIT-IV Individual and Group Differences in Intelligence. Theories of Intelligence, Gender Differences issues in the Classroom. Learning and Motivation, Study Habit, importance, Levels of Learning.
NOVEMBER/25	Lab work,/Internship. Seminars &Project work
DECEMBER/21	Semester Exam (Theory &Practical)
JANUARY/26	UNIT-I Nature, Need and Functions of Counseling. Counseling and Psychotherapy. Intervention, Goal and objectives of Counseling. Approaches of Counseling: Directive, Non-directive, Eclectic. Individual and group counseling. Evaluation of counseling. Follow up and placement services. Techniques of appraising the client: Standardized Techniques, Intelligence, Personality, Aptitude and Interest Interview.
FREBRUARY/24	UNIT-II Characteristics of a good Counselor. Counselors, Training, Issues and trends in guidance and counseling. Ethical standards. Nature, Need and Functions of Guidance. Principles of Guidance. Techniques of appraising the client: Non-Standardized Methods. Anecdotal Record, Auto biography, Case study, Sociometric, Observation, Rating scale, Questionnaire.
MARCH	UNIT-III Guidance service: - Kinds of guidance services. Various services in guidance programme- 1. Information 2. Self inventory 3. Preparation follow up4 . Placement 5. Individual data collection 6. Counseling 7. Research Services. Organization of a guidance program Relevance of Guidance under 10+2+3 educational patterns.
APRIL	UNIT-IV Special areas of Guidance and Counseling: Marital, Family. Counseling for the pre-school and elementary school children adolescent. Special areas of Guidance- Vocational Guidance, Educational Guidance, personal Guidance Problems of Guidance in India.
MAY	Seminars &Project work
JUNE	Semester Exam

## PROPOSED TEACHING PLAN FOR THE SESSION 2017-18

Class - M.A. Psychology (III<sup>rd</sup> & IV<sup>th</sup> Semester)

Paper –IV (Elective) Clinical Diagnosis and Psychotherapeutic Counseling

MONTH/DAYS	PROPOSED PLAN
JULY /26 III <sup>RD</sup>	UNIT-I History And Current trends, Growth of the Branch; Growth in numbers, Differentiation. Professionals spiral of growth. Growth in India, Approach of Clinical Psychology: Psychodynamic, Behaviouristic, Humanistic, Cognitive and Socio- Cultural.
AUGUST/25	UNIT – II Personality assessment: Projective, psychometric and behavioral measures. Projective tests: Characteristics and clinical use, Rorschach & TAT.
SEPTEMBER/23	UNIT – III Human Diversity and Education Psychometric tests: MMPL, WAIS & WISC.
OCTOBER/21	UNIT – IV Individual and Group Differences Dynamic diagnosis: Observation, Case history, and Interview. Neuropsychological examination: Approaches; Approaches; Halstead Neuropsychological test battery, Luria Nebraska.
NOVEMBER/25	Internship, Seminars & Project work
DECEMBER/21	Semester Exam (Theory & Practical)
JANUARY/26 IV <sup>TH</sup>	UNIT-I Methods for preventing problems and developing resourcefulness: Training family members, sibling's behavior change agents, Maintenance of parent raining. Development of academic skills- Teaching study skills to adults, improving study behavior through self- control technique. Assertiveness Training, Developing Assertive Behavior through Converts Modeling Training, Developing Assertive Behavior through Converts Modeling. Personal Appearance, Improving clients grooming.
FREBRUARY/24	UNIT-II Methods for Promoting Wise Decision- Making: With Children, Career Decision Making Evaluation of Problem Solving Competence. Social Interaction: Conversational Skills, Weight: Control: Psychological techniques, improving Physical Fitness, Cardio Vascular Problems: Psychological prevention. Drug Abuse: Drug abuse perception Reimforment of alternatives Peer Counseling: Peer Guidance program and behavioral interventions, Counselor Accountability System.
MARCH	UNIT-III Psychotherapeutic Counseling: Psychoanalytic Technique, Behavioral. Technique, Client centered technique, Community interventions and Group therapeutic techniques. Methods for Altering Maladaptive Behavioral deficits: Shyness, delinquency, depression, Speech and sexual dysfunctions.



APRIL	<p>UNIT-IV Methods of altering inappropriate behavior: Marital maladjustment, child-misbehavior, homosexuality, and exhibitionism.</p> <p>Methods for altering maladaptive behavioral excesses: Excessive smoking, alcoholism, drug addiction and temper-outburst, physical aggression.</p> <p>Methods for altering fears and anxiety and treating psycho physiological disorders: test-anxiety, generalized anxiety, stress, school phobia, snake phobia, combination of fears, CHD, asthma and peptic ulcer</p>
MAY	Seminars & Project work
JUNE	Semester Exam



**TEACHING PLAN**  
**M.A. SEMESTER – I**  
**PAPER – I**  
**CLASSICAL SOCIOLOGICAL TRADITION**  
**SESSION 2017-18**

<b>MONTH</b>	<b>PLAN</b>
JULY	<b>Unit-I: Historical Development of the Emergence of Sociology</b> – Historical development of social thought; Tradition feudal economic and social structure.
AUGUST	<b>Unit-I: Historical Development of the Emergence of Sociology</b> – Impact of Industrial Revolution and New Mode of production on society and Economy; Emergence of Capitalist mode of production: Nature and Feature of Capitalism; Enlightenment and it's impact on thinking and reasoning.
SEPTEMBER	<b>Unit-II: August Comte</b> – Social Static's and Dynamics; Law of three stages; Hierarchy of Sciences; Positivism; Scheme of Social Reconstruction.
OCTOBER	<b>Unit-III: Emile Durkheim</b> – Social Facts; Mechanical and Organic Solidarity; Division of Labour; Theory of Suicide; Collective Representation.
NOVEMBER	<b>Unit-IV: Velfredo Pareto</b> – Theory of Social Change; Contribution of Methodology; Theory of the Circulation of Elite; Theory of Logical and Non-Logical Action.
DECEMBER	<b>Seminars and Projects Semester Exam</b>

**TEACHING PLAN**  
**SEMESTER - I SOCIOLOGY**  
**PAPER - II**  
**PHYLOSOPHICAL AND CONCEPTUAL FOUNDATION OF**  
**RESEARCH METHODOLOGY**  
**2017-18**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>
1	July	Unit-I	Philosophical Roots Of Social Research: Issues In The Theories Of Epistemology Forms And Types Of Knowledge
2	August	Unit-I	Validation Of Knowledge, Positivism And Its Critique Research Design, Steps And Process
3	September	Unit-II	Objectivity In Social Science: Scientific Methods In Social Science, Objectivity, Problems Of Objectivity Problems Of Concept And Theory, Hypothesis
4	October	Unit-III	Qualitative Methods In Social Research: Techniques And Methods Of Qualitative Research: Observation And Interview Guide, Case Study, Content Analysis, Experiences In Field Work
5	November	Unit-IV	Issues In Social Research: Issues In Qualitative Research, Theoretical Vs. Applied Research, Interdisciplinary Research
6	December		Semester Exam & Project Work

**TEACHING PLAN**  
**SEMESTER - I SOCIOLOGY**  
**PAPER - III**  
**SOCIAL CHANGE IN INDIA**  
**2017-18**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>
1	July	Unit-I	<b>Conceptual &amp; Theoretical Frame Work :</b> a. Social change concepts, Characteristics & Forms b. Linear Theory & Cyclical Theory, Evolution & Progress
2	August	Unit-I	c. Economic Factors & Biotech Factors of Social Change d. Culture & Development
3	September	Unit-II	<b>Trends &amp; Processes of change in Modern India :</b> a. Sanskritization b. Westernization c. Globalization d. Mass Media
4	October	Unit-III	<b>Changes in Tribal &amp; Rural India :</b> a. Changes in Tribal Society b. Changes in Rural Society c. Rural economy d. Tradition & Modernity
5	November	Unit-IV	<b>Changes in Urban &amp; Industrial India :</b> a. Migration b. Development of Slums c. Development of Criminal Activities d. Welfare Measures & Consequent changes
6	December		Project Work & Semester Exam

**TEACHING PLAN**  
**SEMESTER - I SOCIOLOGY**  
**PAPER - IV**  
**RURAL SOCIOLOGY**

**2017-18**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>
1	July	Unit-I	Characteristics & Approaches a. Rural Social Structure b. Characteristics of rural Society
2	August	Unit-I	c. Subltern Approaches d. Land Ownership and its types
3	September	Unit-II	Planned Change a. Panchayati raj b. Five Years Plan in India c. Changing Scenario of Indian Village d. Rural Leadership & Functionalism
4	October	Unit-III	<b>Rural Development &amp; Change</b> a. Agrarian Legislation & Land Reform b. Green Revolution c. Globalization & its impacts on Agriculture d. Power Structure in Rural India
5	November	Unit-IV	Welfare Measures & Consequents changes a. Community Development Projects b. Self Help Group c. MANREGA(Mahatma Gandhi Rural Employment Guarantee Act) d. Diversification of Occupation e. SSA (Sarv Siksha Abhiyan)
6	December		Project Work & Semester Exam

**M.A. SEMESTER – II**  
**PAPER – I**  
**CLASSICAL SOCIOLOGICAL THINKERS**  
**2017-18**

<b>MONTH</b>	<b>PLAN</b>
JANUARY	<b>Unit-I: Karl Marx</b> – Materialistic Interpretation of History; Class and Class Struggle; Alienation; Theory of Ideology; Theory of Surplus Value.
FEBRUARY	<b>Unit-II: Max Weber</b> – Theory of Social Action; Concept of Status, Class and Power; Sociology of Religion and Economic Development; Contribution to Methodology; Bureaucracy.
MARCH	<b>Unit-III: Talcott Parsons</b> – Social Action; Pattern Variables; Social Stratifications-Class, Gender & Race; Social System.
APRIL	<b>Unit-IV: Robert K. Merton</b> – Reference Group; Social Conformity and Anomie; Middle Range Theory; Functional Paradigm.
MAY	<b>Seminars and Projects</b>
JUNE	<b>Semester Exam</b>

**TEACHING PLAN**  
**SEMESTER - II SOCIOLOGY**  
**PAPER - II**  
**QUANTITATIVE RESEARCH TECHNIQUES IN SOCIOLOGY**  
**2017-18**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>
1	Jan	Unit-I	Tools And Techniques Of Social Research: Techniques Of Survey Research, Interview, Preparations Of Questionnaire And Interview Schedule, Sampling Design, Sampling Error
2	Feb	Unit-II	Measurement And Scaling Techniques: Levels Of Measurement, Types Of Scales: Nominal And Ordinal Reliability And Validity Of Scaling, Measures Of Social Distance: Thurston, Lickert, And Bogardus Scale
3	March	Unit-III	Statistics In Social Research: Measures Of Central Tendency: Mean Median And Mode, Measures Of Dispersion: Stander
4	April	Unit-IV	Commuter Application And Social Research: Application Of Computer In Social Research, MS Office, Ethical Issues In Social Research: Use Of Computer In Data Processing, Processing Of Data: Classification, Tabulation, And Interpretation,
5	May		Project Work & Semester Exam

**TEACHING PLAN**  
**SEMESTER - II SOCIOLOGY**  
**PAPER – III**  
**SOCIOLOGY OF DEVELOPMENT**  
**2017-18**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>
1	Jan	Unit-I	Perspective on development a. Modernization b. Social Transformation c. Change in Social Structure in Contemporary India d. Economic Aspects of Human Development & Social Development
2	Feb	Unit-II	Indian Experiences on Development a. Sociological Appraisal of Five Year Plan b. Social Consequences of Economic Reforms c. Socio Culture Impact of Globalization d. Social Implication of Info Tech & Biotech Revolution
3	March	Unit-III	Consequences of Development : a. Indicators of Social Development b. Development & Socio Economic Disparities c. Ecological Perspectives of Development d. Development & Migration
4	April	Unit-IV	Issues & Development in Contemporary India a. Gender Discrimination b. Privatization c. Sustainable Development d. Issues of Community Development in India
5	May		Project Work & Semester Exam

**TEACHING PLAN**  
**SEMESTER - II SOCIOLOGY**  
**PAPER - IV**  
**INDIAN RURAL SOCIETY**  
**2017-18**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>
1	Jan	Unit-I	Tribal Society as Agrarian Society a. Structure & Characteristics of Tribal Society b. Tribe Cast & changing problems of Tribal's c. Agriculture & Landless Labor
2	Feb	Unit-II	Social Issues a. Migration b. Land Alienation c. Inequalities d. Rural Poverty
3	March	Unit-III	Contemporary Issues a. Health & Education b. Depeasantisation c. Changing Status of Rural Women d. Rural & Urban Community
4	April	Unit-IV	Peasant Women e. Cause & Types f. Tebhaga, Telangana, Naxalwadi g. Naxalite Movement in Contemporary India its origin & Causes h. Present Status Government Measures & People Response.
5	May		Project Work & Semester Exam



**M.A. SEMESTER – III**  
**PAPER – I**  
**CLASSICAL SOCIOLOGICAL THEORIES**  
**2017-18**

MONTH	PLAN
JULY	<b>Unit-I: Positivism</b> – Origin and basic postulates; Contribution of Comte; Contribution of Durkheim.
AUGUST	<b>Unit-I: Positivism</b> -Contribution of Max Weber; Criticism and present status.
SEPTEMBER	<b>Unit-II: Conflict Theory</b> – Origin and basic Postulates; Contribution of Karl Marx; Contribution of Dahrendorf; Contribution of Coser; Criticism and Present Status.
OCTOBER	<b>Unit-III: Structuralism</b> – Origin and basic Postulates; Contribution of Levistrauss; Contribution of Goldiner; Contribution of M. Foucault; Criticism and Present status.
NOVEMBER	<b>Unit-IV: Social Exchange Theory</b> – Intellectual Roots; Contribution of Levi-Strauss; Contribution of George C. Homans; Contribution of Peter M. Blau; Criticism and Present status.
DECEMBER	<b>Seminars and Projects, Semester Exam</b>

**TEACHING PLAN**  
**SEMESTER-III**  
**PAPER-II**  
**PERSPECTIVES OF STUDY TO INDIAN SOCIETY**  
**2017-18**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>	<b>PLAN</b>
1	July	Unit-1	<b>Distinctive Characteristics of Indian Society :</b>	
2	August	Unit-I	a. Configuration of Indian Society b. Consequences of Increasing Linkages & Network in Indian Society c. Village in Relation to the Wider World	
3	September	Unit-II	<b>Textual &amp; Structural Functionalism Perspective :</b> a. G.S. Ghurye b. S.C. Dubey c. M.N. Srinivas	
4	October	Unit-III	<b>Marxism :</b> a. D.P. Mukherjee b. A.R. Desai c. Criticism & Present Status	
5	November	Unit-IV	<b>Subaltern Perspective &amp; Civilization Perspective:</b> a. B.R. Ambedkar b. David Hardiman c. N.K. Bose d. Surjeet Sinha e. Criticism & Present Status	
6	December		Project Work & Semester Exam	

**TEACHING PLAN**  
**SEMESTER-III**  
**PAPER-III**  
**INDUSTRY AND SOCIETY IN INDIA**  
**2017-18**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>	<b>PLAN</b>
1	July	Unit-I	Industrial Sociology And Classical Sociological Tradition	
2	August	Unit-I	A-Development Of Industrial Sociology, Industry, Industrialization B-Division Of Labour C- Bureaucracy And Rationality D-Production Relation And Alienation	
3	September	Unit-II	Industrial Organization: A-Industrial Organization :Formal, Informal B-Industrial Management C-Scientific Management D-Sociology Of Work: Work Innovation ,Motivation Culture, Work, Satisfaction, Incentives And Its Effects	
4	October	Unit-III	Concept Of Industrialization And Social Problems Of Industrialization A-Migration B-Habitat And Settlement C-Environment D- Indebtedness of Industrial Workers	
5	November	Unit-IV	Technology Change And Automation A-Technology And Social Structure In Industry B-Socio Technological System C-Organisational change And Technological Change D-Automation And Its Consequences	
6	December		Project Work & Semester Exam	

**TEACHING PLAN**  
**SEMESTER - III**  
**PAPER - IV**  
**CRIMINOLOGY**

**2017-18**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>	<b>PLAN</b>
1	July	Unit-1	<b>Conceptual &amp; Theoretical Approaches :</b> a. Conceptual Approaches to Crime b. Legal & Sociological Approach	
2	August	Unit-I	c. Crime Deviance : Causes, Prevention & Control d. Theories on Crime Causation : Classical & Positivist	
3	September	Unit-II	<b>Types of Criminal &amp; Crime :</b> a. Types of Crime b. Juvenile Delinquency c. Women & Crime d. White Collar Crime	
4	October	Unit-III	<b>Changing Profile of Crime &amp; Criminals :</b> a. Corruption : Types, Causes & Consequences b. Cyber Crime : Causes, Prevention & Control c. Crime against Women : Causes, Prevention & Control d. Terrorism in India : Its Origin & Causes	
5	November	Unit-IV	<b>Theories of Punishment :</b> a. Retributive, Deterrent : Theories & Criticism b. Reformatory Theory : Probation & Parole c. Open Prison : Its Success & Failure d. Futility & Cost of Punishment	
6	December		Project Work & Semester Exam	

**M.A. SEMESTER – IV**  
**PAPER – I**  
**MODERN SOCIOLOGICAL THEORIES**  
**2017-18**

<b>MONTH</b>	<b>PLAN</b>
JANUARY	<b>Unit-I: Symbolic Interactionism</b> – Origin and Basic Postulates; Contribution of G.H. Mead; Contribution of H. Blumer; Contribution of E. Goffman; Criticism and Present status.
FEBRUARY	<b>Unit-II: Phenomenology</b> – Origin, Basic postulates of phenomenology; Contribution of Schutz; Contribution of Berger; Contribution of E. Husserl; Criticism and Present status.
MARCH	<b>Unit-III: Ethnomethodology</b> – Origin Basic postulates of Ethnomethodology; Contribution of Garfinkel; Contribution of Goffman; Contribution of Ckorel; Criticism and present status.
APRIL	<b>Unit-IV: Post Modernism</b> – Origin and Development; Contribution of Foucault; Contribution of Derrida; Contribution of Baudrillard; Criticism and present status.
MAY	<b>Seminars and Projects, Semester Exam</b>

**TEACHING PLAN**  
**SEMESTER - IV**  
**PAPER - II**  
**COMPARATIVE SOCIOLOGY**

**2017-18**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>	<b>PLAN</b>
1	JANUARY	Unit-I	<b>Historical &amp; Social Context of Emergence of Sociology in the West :</b> a. <b>Emergence of Growth of Sociology in India</b> b. <b>Western Sociological Tradition</b> c. <b>Americanization of Sociology</b>	
2	FEBRUARY	Unit-II	<b>Central Themes in Comparative Sociology:</b> a. Modernity & Development b. Diversity & Multiculturalism c. Environment d. Globalization	
3	MARCH	Unit-III	<b>Theoretical Concern in Comparative Sociology :</b> a. Problems of Theoring in Sociology b. Theoretical & Methodological Approaches in Sociology c. Sociology in India d. Trends of Sociology in India	
4	APRIL	Unit-IV	<b>Current Debates :</b> a. Contextualization b. Indigenization c. Use of Native Categories in The Analysis of Indian Society d. Text & Context	
5	MAY		Project Work & Semester Exam	

**SEMESTER - IV**  
**PAPER - III**  
**INDUSTRY AND SOCIETY IN INDIA**  
**2017-18**

No.	MONTH		TEACHING PLAN	PLAN
1	JAN.	UNIT-I	Industrial Relation: A-Importance Of Human Relation At Work B-Conflict: Causes And Types, Resolution Of Conflict C-Collective Bargaining D-Worker Participation In Management E-Education Training And Development Of Manpower F-Labour Welfare In India	
2	FEB	UNIT-II	Contemporary Issues: A-Industrialization And Women Labour B-Industrialization And Child Labour C-Industrialization And Environment D-Problems Of Industrialization In Developing Countries	
3	MARCH	UNIT-III	A-History Of Trade Unionism In India B-Objectives And functions Of Trade Union C-ILO D-Trade Unionism And Globalization	
4	APRIAL	UNIT-IV	A-MNCS And Third World B-FDI And Third World C-International Agencies: World Bank And Third World Countries D-Status Of Industries In Third World Countries	
5	MAY		Project Work & Semester Exam	

**SEMESTER - IV**  
**PAPER - IV**  
**CRIMINOLOGY**  
**2017-18**

No.	MONTH		TEACHING PLAN	PLAN
1	JAN.	UNIT-I	<b>Roots of Correction to Prevent Crime:</b> <ul style="list-style-type: none"> <li>a. Socialization, Role of Family Values &amp; Education</li> <li>b. Correctional Programs in Prison : history of Prison, Reform in India</li> <li>c. Correctional Program : Meditational &amp; Recreation</li> <li>d. After Care &amp; Rehabilitation Program</li> </ul>	
2	FEB	UNIT-II	<b>Problems of Correctional Administration :</b> <ul style="list-style-type: none"> <li>a. Antiquated Jail manual &amp; Prison Act</li> <li>b. Over Crowding Lack of Inter Agency Coordination among Police Prosecution Judiciary &amp; Prison</li> <li>c. Prison Offenses</li> <li>d. Problem of Criminal Justice Administration</li> </ul>	
3	MARCH	UNIT-III	<b>Victimological Perspectives :</b> <ul style="list-style-type: none"> <li>a. Historical Background of Victimology</li> <li>b. Victims Responsibility in Crime</li> <li>c. Compensation to Victims</li> <li>d. Violation of Prisoners Human Rights</li> </ul>	
4	APRIAL	UNIT-IV	<b>Community Policing:</b> <ul style="list-style-type: none"> <li>a. Concept of Police</li> <li>b. Role of Police</li> <li>c. Concept of Judiciary</li> <li>d. Role of Judiciary</li> </ul>	
5	MAY		Project Work & Semester Exam	



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**PROPOSED TEACHING PLAN FOR THE SESSION 2017-18**

**DEPARTMENT OF BOTANY**

**SEMESTER 1, PAPER 1 -CELL BIOLOGY M.M. 80**

MONTH	CELL BIOLOGY
JULY Unit-I	<b>The dynamic cell:</b> Structural Organization of the plant cell, specialized plant cell type, chemical foundation, and biochemical energetic. <b>Cell wall</b> – Structure and functions, biogenesis growth.
AUGUST Unit-I & Unit II	<b>Plasma membrane:</b> Structure, models and functions, site for ATPases, ion carries, channels and pumps, receptors. <b>Chloroplast:</b> Structure, Genome organization, Gene expression, RNA editing
September Unit II & Unit III	<b>Mitochondria:</b> Structure, Genome organization, Biogenesis. <b>Plant Vacuole:</b> Tonoplast membrane, ATPases, transporters as a storage organelle. <b>Nucleus:</b> Structure, Nuclear Pore.
October Unit III	<b>Ribosome:</b> Structure and functional significance <b>Cell cycle and Apoptosis:</b> Control mechanisms, Role of cyclins dependent kinases Retinoblastoma and E2F proteins, cytokinesis and cell plate formation, mechanism of programmed cell death.
November Unit IV	<b>Other cell organelles:</b> Structure and functions of microtubules, Microfilaments, Golgi apparatus, Lysosome, Endoplasmic Reticulum. <b>Techniques in cell biology:</b> Immuno-techniques, in situ hybridization to locate transcripts in cell types FISH, GISH, Confocal microscopy, Flow Cytometry.
DECEMBER	<b>Revision,</b> Practicals done every month as per schedule

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Proposed Teaching Plan ( Session-2017-18)

**DEPARTMENT OF BOTANY**

**SEMESTER-I, PAPER- II –Genetics**

<b>MONTH</b>	<b>PAPER-II, GENETICS</b>
<b>JULY</b> <b>UNIT-I</b>	❖ <b>Chromatic Organization:</b> Chromosome structure and packaging of DNA, Nucleosome organization, molecular organization of centromere and telomere, nucleolus and ribosomal RNA genes, Euchromatin and heterochromatin, karyotype, banding pattern.
<b>AUGUST</b> <b>UNIT-I</b>	❖ <b>Chromatic Organization:</b> Specialized type of chromosomes, polytene, lamp brush, B chromosomes and sex chromosomes Molecular basis of chromosome pairing, chromosomal aberration and polyploidy.
<b>SEPTEMBER</b> <b>UNIT-II</b>	❖ <b>Mapping of Bacteriophage genome,</b> Phage phenotype, and recombination in phage, genetic transformation and transduction in bacteria.
<b>OCTOBER</b> <b>UNIT-III</b>	❖ <b>Genetic recombination &amp; genetic mapping:</b> Mechanism of crossing over, molecular mechanism of recombination, role of Rec-A and Rec-B, C, D enzyme, site specific recombination, linkage group, genetic marker
<b>NOVEMBER</b> <b>UNIT-IV</b>	❖ <b>Alien gene transfer through chromosome manipulation:</b> Transfer of whole genome, examples from Wheat, Arachis & Brassica. Transfer of individual chromosomes & chromosome segment, methods for detecting Alien chromatin production.  ❖ Characterization and utility of Alien addition & substitution lines, genetic basis of breeding and heterosis, exploitation of hybrid vigour.

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**PROPOSED TEACHING PLAN FOR THE SESSION 2017-18**

**DEPARTMENT OF BOTANY**

**SEMESTER I PAPER- III – Microbiology, Phycology and Mycology**

**Max.Marks 80**

Month	<b>Microbiology, Phycology and Mycology</b>
JULY Unit-I	<b>Archaeobacteria and Eubacteria:</b> General account, ultra structure nutrition and reproduction, biology and economic importance. <b>Cyanobacteria:</b> Salient feature and biological importance.
AUGUST Unit-I & II	<b>Viruses:</b> Characteristics and ultra structure of virus, isolation and purification of viruses, chemical nature, replication, transmission of viruses, economic importance. <b>Phytoplasma:</b> General characteristic and role in causing plant diseases.
SEPTEMBER Unit – III	<b>Phycology:</b> Algae in diversified habitats (terrestrial, freshwater, marine), thallus organization, cell ultra structure, reproduction (vegetative, asexual, sexual)  General account of Chlorophyta, Xanthophyta, Bacillariophyta, Phaeophyta and Rhodophyta.  Economic importance of algae.
OCTOBER Unit-IV	<b>Mycology:</b> General character of fungi, substrate relationship in fungi, cell structure, unicellular and multicellular, organization, cell wall composition, nutrition (saprobic, biotrophic, symbiotic)
NOVEMBER Unit -IV	<b>Mycology:</b> Reproduction, vegetative, asexual, sexual) heterothallism, heterokaryosis, Parasexuality, recent account of Mastigomycotina, Zygomycotina, Ascomycotina, Basidiomycotina, Deuteromycotina, Mycorrhiza, Fungi as biocontrol agent.

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**PROPOSED TEACHING PLAN FOR THE SESSION 2017-18**

**DEPARTMENT OF BOTANY**

**SEMESTER I PAPER- IV – Bryophyta, Pteridophyta and Gymnosperm**

**Max.Marks 80**

Month	<b>Bryophyta, Pteridophyta and Gymnosperm</b>
JULY  Unit-I	<b>Bryophyta:</b> General characters, distribution and classification.  General account of following orders: - Marchantiales, Jungernanniales
AUGUST  Unit-I & II	Anthocerotales, Sphagnales, Funariales & Polytrichales. <b>II</b> <b>Pteridophyta:</b> General characters and classification. Evolution of stele in Pteridophytes. General account of – Psilopsida, Lycopsida, Sphenopsida and Pteropsida
SEPTEMBER  Unit – II & III	Sphenopsida and Pteropsida <b>Gymnosperms:</b> General characters and classification.  Resemblances and difference between Gymnosperms, Pteridophyta and Angiosperms.  Distribution of Gymnosperms in India and their economic importance.
OCTOBER  Unit-III	Brief account of following families: Lygnopteridaceae, Medullosaceae, Glossopteridaceae, Caytoniaceae General account of order Pentoxylales.
NOVEMBER  Unit -IV	General account of following orders:  Cycadales, Ginkgoales, Coniferales, Ephedrales, Gnetales, Welwitchchiales.  Note : Life cycle of individual genera is not expected

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**PROPOSED TEACHING PLAN FOR THE SESSION 2017-18**

**DEPARTMENT OF BOTANY**

**M.Sc.BOTANY, SEMESTER -III, PAPER- I**

**Plant Development and Resource Utilization**

<b>MONTH</b>	<b>Course</b>
<b>JULY</b>  <b>UNIT I</b>	Introduction: Unique features of plant development  Seed germination and seedling growth, Metabolism of nucleic acids, proteins and Fat
<b>AUGUST</b>  <b>UNIT I ,UNIT II</b>	Mobilization of food reserves; tropisms; hormonal control of seedling growth; gene expression; use of mutants in understanding seedling growth  Leaf growth and differentiation: Determination, Phyllotaxy; control of leaf form; differentiation of epidermis (with special reference to stomata and trichomes) and mesophyll.
<b>SEPTEMBER</b>  <b>UNIT II UNIT III</b>	Root development, Organization of the Root Apical Meristem (RAM); lateral roots; root hairs; root-microbe interactions.  Shoot development, Organization of the Shoot Apical Meristem (SAM); cytological and molecular analysis of SAM; control of cell division and cell to cell communication; control of tissue differentiation, especially xylem and phloem.
<b>OCTOBER</b>  <b>UNIT III &amp; IV</b>	Secretory ducts and laticifers; wood development in relation to environmental factors.  Origin of Agriculture, Origin, evolution, botany, cultivation and uses of (i) Food, Forage and Fodder crops, (ii) Fiber crops, (iii) Medicinal and Aromatic Plants &
<b>NOVEMBER</b>  <b>UNIT IV</b>	(iv) Vegetable oil-yielding crops. Important fire-wood and timber-yielding plants and Non-wood Forest Products (NFPs) such as bamboos, rattans, raw materials for paper-making, gums, tannins, dyes, resins and fruits.  Practicals done every month as per schedule

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**PROPOSED TEACHING PLAN FOR THE SESSION 2017-18**

**DEPARTMENT OF BOTANY**

**M.Sc. BOTANY, SEMESTER- III, PAPER- II**

MONTH	Course
<b>JULY</b>  <b>UNIT- I</b>	<b>Ecosystem Organization:</b> Structure and functions; primary production (methods of measurement, global pattern, controlling factors); energy dynamics (trophic organization energy flow pathways, ecological efficiencies);
<b>AUGUST</b>  <b>UNIT -I</b>  <b>UNIT- II</b>	<b>Ecosystem Organization:</b> Litter fall and decomposition (mechanism, substrate quality and climatic factors) global biogeochemical cycles of C, N, P and S; mineral cycles (pathways, processes, budgets) in terrestrial and aquatic ecosystems.  <b>Vegetation organization:</b> Concepts of community and continuum; analysis of communities (analytical and synthetic characters); community coefficients, inter-specific association ordination, concept of ecological niche.
<b>SEPTEMBER</b>   <b>UNIT- II</b>  <b>UNIT- III</b>	<b>Vegetation development:</b> Temporal changes (cyclic and non-cyclic); mechanism of ecological succession (relay floristic and initial floristic composition; facilitation, tolerance and inhibition models); changes in ecosystem properties during succession.  <b>Biological diversity:</b> Concept and levels; role of biodiversity in ecosystem functions and stability; speciation and extinction; IUCN categories of threat; distribution and global patterns; terrestrial biodiversity hot spots; inventory.
<b>OCTOBER</b>  <b>UNIT -III</b>  <b>UNIT-IV</b>	<b>World centers of primary diversity of domesticated plants:</b> The Indo-Bumese center, plant introductions and secondary centers.  <b>Climate, Soil and Vegetation patterns of the world:</b> Life zones, major biomes and major vegetation and soil types of the world.
<b>NOVEMBER</b>  <b>UNIT- IV</b>	<b>Climate, Soil and Vegetation patterns of India:</b> Life zones, major biomes and major vegetation and soil types of India.

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**PROPOSED TEACHING PLAN FOR THE SESSION 2017-18**

**DEPARTMENT OF BOTANY**

**SEMESTER III, PAPER III Biotechnology I- Genetic Engineering of Plants and Microbes**

MONTH	Biotechnology I- Genetic Engineering of Plants and Microbes
<b>JANUARY</b>  <b>UNIT I</b>	<b>Biotechnology:</b> Basic concepts, Principles and scope.  <b>Recombinant DNA technology:</b> Gene cloning, Principles and Techniques.  Construction of Genomics/ cDNA libraries, choice of vectors, DNA synthesis and sequencing.
<b>FEBRUARY</b>  <b>UNIT II</b>	Polymerase chain reaction, DNA fingerprinting, Basic concepts of Bioinformatics, Functional Genomic, Micro array, Protein profiling and its significance.
<b>MARCH</b>  <b>UNIT III</b>	<b>Genetics Engineering of plants:</b> Aims, strategies for development of transgenics (with suitable examples).  <b>Agro Bacterium:</b> The Natural Genetic Engineer,  T-DNA and Transposon mediated gene tagging,  Chloroplast transformation and its utility, Intellectual Property Rights (IPR)
<b>APRIL</b>  <b>UNIT III &amp; IV</b>	<b>Microbial Genetic Manipulation:</b> Bacterial transformation, selection of recombinant and transformation, genetic improvement of industrial microbes and nitrogen fixers type and design of fermenters, immobilization of enzymes.
<b>MAY</b>	Revision    Practicals done every month as per schedule

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**PROPOSED TEACHING PLAN FOR THE SESSION 2017-18**

**DEPARTMENT OF BOTANY**

**M.Sc.-BOTANY SEMESTER III, PAPER IV - Ethnobotany**

<b>MONTH</b>	<b>Topic</b>
<b>JULY</b>  <b>UNIT I</b>	<b>Ethnobotany</b> : History, general account and its sub disciplines. Interdisciplinary approaches & aim of ethno botany. Main world centers of Ethnobotanical studies, workers & literature of Ethno botany Ethnobotany with special reference to Chhattisgarh.
<b>AUGUST</b>  <b>UNIT I ,UNIT II</b>	Ethnobotany in relation to national priorities and health care programme. Ethnobotanical Research done in India: Ethnobotany in relation to national priorities and health care programme. Practical application of ethnobotany for tribal development programme. Methods and techniques in ethnobotany. General account of major and minor tribes of Chhattisgarh with special reference to Gond ,Kamar ,Baiga , Abujhmara.
<b>SEPTEMBER</b>  <b>UNIT II UNIT III</b>	Ethnobotanical aspect of Art & literature. Abstract ethnobotany with special reference to folklore, Taboos, Majico-religious beliefs. Ethnobotanical importance of Bacteria, Algae, Fungi, Bryophyta, Pteridophyta and Gymnosperm.
<b>OCTOBER</b>  <b>UNIT III</b>	Ethnoveterinary medicines from plants. Major & Minor Forest Products (NWFPs) of Chhattisgarh. Ethnobotany in relation to livelihood security reference to tribes.
<b>NOVEMBER</b>  <b>UNIT IV</b>	Ethnobotanical study of following plants with special reference to their medicinal importance 1. <i>Azadirachta indica</i> (Neem) 2. <i>Emblica officinalis</i> (Amla) 3. <i>Ricinus communis</i> (Andi) 4. <i>Madhuca indica</i> (Mahuaa) 5. <i>Cassia fistula</i> (Amaltash) 6. <i>Ficus religiosa</i> (Pipal) 7. <i>Oscimum sanctum</i> (Tulsi) 8. <i>Asparagus racemosus</i> (Satavar) 9. <i>Aloe vera</i> (Ghrit kumari) 10. <i>Andographis paniculata</i> (Bhui neem). Practicals done every month as per schedule



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Proposed Teaching Plan ( Session-2017-18)

### DEPARTMENT OF BOTANY

#### SEMESTER-III PAPER- IV Elective Course- ( Microbial Ecology)

MONTH	PAPER- IV ( Microbial Ecology)
<b>JULY</b> <b>UNIT-I</b>	<b>Ecological Groups:</b> ❖ Ecological groups of microorganism. Microbial growth. Effect of the environment on microbial growth.
<b>AUGUST</b> <b>UNIT-I&amp;II</b>	❖ Gram positive and Gram negative bacteria, Cyanobacteria, sulphur and iron oxidizing bacteria, Methanotrophs, Mycobacterium, Spore forming bacteria Unit  <b>❖ Microbial interaction and industrial Microbiology:</b> A. Plant-microbe (Phyllosphere and phylloplane
<b>SEPTEMBER</b> <b>UNIT-II</b>	<b>❖ Microbial interaction and industrial Microbiology:</b> B. Microbe-microbe.  <b>❖ Animal microbe interaction. ❖ Microbes in Industry:</b> • Acid production • Alcohol production • Antibiotic production
<b>OCTOBER</b> <b>UNIT-III</b>	<b>❖ Soil Microbiology:</b> Soil as a habitat for micro-organisms  ❖ Rhizosphere and Rhizoplane microorganisms.  ❖ Organic matter decomposition.  ❖ Role of micro-organisms in Biogeochemical Cycles, Nitrogen fixation by microorganisms
<b>NOVEMBER</b> <b>UNIT-IV</b>	<b>❖ Water Microbiology:</b> Types of water and water micro-organisms  ❖ Microbial Water Pollution, Water Treatment, Bacteriological analysis of water.  ❖ Air Microbiology: Distribution of microbes in air.  ❖ Indoor aero microbiology, Aeroallergens and allergic disorders by air microflora.  ❖ Collection and enumeration of aeroallergen.

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**PROPOSED TEACHING PLAN FOR THE SESSION 2017-18**

**DEPARTMENT OF BOTANY**

**M.Sc.-SEMESTER - II, PAPER 1 – Taxonomy and Diversity of Angiosperms**

<b>MONTH</b>	<b>Course</b>
JANUARY  Unit-I	Origin of Intrapopulation Variations: population and the environment, ecades and ecotypes; Taxonomic hierachy major and minor categories; the species concept. Plant Nomenclature- Salient features of international code of Botanical Nomenclature, Binomial Nomenclature.
FEBRRUARY  Unit II	Taxonomic evidence: Morphology, Anatomy, Palynology, Embryology, Cytology, Photochemistry, Genome analysis and Nucleic acid hybridization.  Taxonomic tools- Herbarium, Flora, Taxonomic Literature  GIS (Geographical information system).
MARCH  Unit III & UNIT-IV	Fossil Angiosperms, Sustainable utilization of Bio- rurces. Systems of Angiosperm classification- Bentham and Hooker, Hutchinson, Takhatjan & Cronquist. Study of following families with particular reference to systematic position, phylogeny, Evolutionary trends and economic importance. Dicot families: Ranunculaceae, Magnoliaceae, Nymphaeaceae, Capparidaceae, Meliaceae, Tiliaceae, Cucurbitaceae, Leguminosae (Fabaceae) (Caesalpinoideae, Mimosoideae, Papileonoideae)
APRIL  Unit IV	,Umbelliferae (Apiaceae), Lythraceae, Mytraceae, Rubiaceae, Apocynaceae, Asclepiadaceae, Solanaceae, Labiateae (Lamiaceae), Verbinaceae, Euphorbiaceae; Compositeae. Monocot families- Orchidaceae, Zingiberaceae, Liliaceae, Cyperaceae, Gramineae (Poaceae).
MAY	Revision & Practical Exam
	Practicals done every month as per schedule

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Proposed Teaching Plan ( Session-2017-18)

### DEPARTMENT OF BOTANY

#### SEMESTER-II, PAPER- II - Molecular Biology

MONTH	PAPER-II Molecular Biology
<b>JANUARY</b> <b>UNIT-I</b>	RNA and DNA structure A, B and Z Forms, replication, Transcription, Translation, DNA damage and repair mechanism, Inherited human diseases –causes.
<b>FEBRUARY</b> <b>UNIT-II</b>	Molecular cytogenetics : Nuclear DNA concept, C-value paradox, Cot curve and its significance, restriction mapping – concept and techniques, multi-gene families and their evolution, in situ hybridization and techniques, chromosome, microdissection and microcloning.
<b>MARCH</b> <b>UNIT-III</b>	<b>Gene structure and expression:</b> Fine structure of gene, cis-trans test, fine structure analysis of eukaryotes introns and their significance, RNA splicing, regulation of gene expression in prokaryotes and eukaryotes.  ❖ <b>Protein sorting:</b> Targeting of proteins to organelles.
<b>APRIL</b> <b>UNIT-IV</b>	<b>Mutation:</b> Spontaneous and induced mutation, physical and chemical mutagens, molecular basis of gene, transposable elements in prokaryotes and eukaryotes, mutation induced by transposones, site-directed mutagenesis, translocation tester sets, Robertsonian translocation, B-A translocation.

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**PROPOSED TEACHING PLAN FOR THE SESSION 2017-18**

**DEPARTMENT OF BOTANY**

**SEMESTER- II , PAPER- III –Plant Physiology**

**Max.Marks 80**

MONTH	Course- Plant Physiology
<b>July</b> <b>Unit-I</b>	<b>Membrane transport and translocation of water and solutes:</b> Plant-water relation, mechanism of water transport through xylem, root microbe interactions in facilitating nutrient uptake,
<b>August</b> <b>Unit I &amp; II</b>	comparison of xylem and phloem transport, phloem loading and unloading, passive active active solute transport, membrane transport.  Structure and Mechanism of opening & closing of stomata, factors affecting transpiration. <b>Signal transduction:</b> Overview, receptors and G proteins, Phospholipids signaling, role of cyclic nucleotides, calcium
<b>September</b> <b>Unit-II &amp; III</b>	calcium-calmodulin cascade, diversity in protein kinases and phosphatases, specific signaling mechanism, two component sensor regulator system in  <b>Stress Physiology:</b> Plant responses to biotic and a-biotic stress, mechanisms of biotic and abiotic stress tolerance, HR fundamental and SAR, water deficit and drought resistance, salinity stress, metal toxicity, freezing and heat stress
<b>October</b> <b>Unit -III</b>	<b>Fundamentals of enzymology:</b> General aspect, allosteric mechanism regulatory and active sites, isozymes, kinetics of enzymatic catalysis, Michaelis-Menton equation and its significance.
<b>November</b> <b>Unit -IV</b>	<b>Sensory Photobiology:</b> History of discovery of phytochromes and cryptochrome  light induced responses, cellular localization, and molecular mechanism of action of photomorphogenic receptors.

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**PROPOSED TEACHING PLAN FOR THE SESSION 2017-18**

**DEPARTMENT OF BOTANY**

**SEMESTER II, PAPER IV -**

**PLANT METABOLISM**

Month	Course
JAN Unit-I	<b>Photosynthesis:</b> General concepts and historical background, evolution of photosynthetic apparatus, photosynthetic pigments and light harvesting complexes, photo-oxidation of water mechanism of electron and proton transport, carbon assimilation – The Calvin cycle, photorespiration and its significance, the C <sub>4</sub> cycle, the CAM pathway, biosynthesis of starch and sucrose, physiological and ecological considerations.
FEB Unit II	<b>Respiration and Lipid Metabolism:</b> Overview of plant respiration, glycolysis, the TCA cycle, electron transport and ATP synthesis, Pentose phosphate pathway, glyoxylate cycle, alternative oxidase system, structure and function of lipids, fatty acid biosynthesis, synthesis of membrane lipid and storage lipids and their catabolism.
MAR UNIT III	<b>Nitrogen and Sulphur Metabolism:</b> Overview, biological nitrogen fixation, nodule formation and nod factors, mechanism of nitrate uptake and reduction, ammonium assimilation, sulphur uptake, transport and assimilation.
APRIL Unit IV	<b>Plant growth regulator and elicitors:</b> Physiological effect and mechanism of action of auxins, gibberellins cytokinins, ethylenes, abscisic acid, brassinosteroids, polyamines, jasmonic acid and hormone receptors.  <b>The Flowering Process:</b> Photoperiodism and its significance, endogenous clock and its regulation, floral induction and development – Genetic molecular analysis, role of vernalization.
MAY	Practicals done every month as per schedule.  Theory and practical exams.

**PROPOSED TEACHING PLAN FOR THE SESSION 2017-18**

**DEPARTMENT OF BOTANY**

**M.Sc.BOTANY SEMESTER IV, PAPER I**

**Plant Reproduction**

MONTH	Topic
JANUARY UNIT I	Reproduction: Vegetative options and sexual reproduction; flower development; genetics of floral organ differentiation; homeotic mutant in <i>Arabidopsis</i> and <i>Antirrhinum</i> ; sex determination.
FEBRUARY UNIT I ,UNIT II	Male Gametophyte: Structure of anthers; microsporogenesis, role of Tapetum; Pollen development and Gene expression; Male sterility; Sperm dimorphism pollen germination, Pollen storage; Pollen allergy Female Gametophyte: Ovule development; megasporogenesis; organization of the embryo sac, structure of the embryo sac cells.
MARCH UNIT II UNIT III	Pollen-pistil interaction and Fertilization: Global Characteristics, Pollination mechanisms ; breeding systems; commercial considerations; structure of the pistil; Pollen-stigma interactions, Sporophytic and Gametophytic self compatibility (cytological, biochemical and molecular aspects); double fertilization, in-vitro fertilization.
APRIL UNIT III	Seed development and Fruit growth: Endosperm development during early, maturation and desiccation stages; embryogenesis, ultra structure and nuclear cytology; cell lineages during late embryo development; storage proteins of endosperm and embryo; Polyembryony; Apomixis; Embryo culture; Dynamics of fruit growth; Biochemistry and Molecular biology of fruit maturation. Latent life-dormancy: Importance and types of dormancy; Seed dormancy; overcoming seed dormancy; Bud dormancy;
MAY UNIT IV	Senescence and programmed Cell death (PCD): Basic concepts, types of cell death, PCD in the life cycle of plants, metabolic changes associated with senescence and its regulation; influence of hormones and environmental factors on Senescence. Practicals done every month as per schedule

**PROPOSED TEACHING PLAN FOR THE SESSION 2017-18**

**DEPARTMENT OF BOTANY**

**M.Sc.BOTANY SEMESTER IV, PAPER- II**

**Plant Ecology & Conservation**

<b>MONTH</b>	<b>Topic</b>
<b>JANUARY</b>  <b>UNIT- I</b>	<b>Air Pollution:</b> Kinds, sources, quality parameters; Effects on plants and ecosystems. Climate change, Green house gases (CO <sub>2</sub> , CH <sub>4</sub> , NO <sub>2</sub> , CFCs: sources, trends and role) Ozone layer and Ozone hole, consequences of climate change (CO <sub>2</sub> fertilization, Global Warming, Sea level rise, UV radiation).
<b>FEBRUARY</b>  <b>UNIT- II</b>	<b>Water Pollution &amp; Soil Pollution:</b> Kinds, source, quality parameters, effects on plants and ecosystems. Radioactive pollution. Noise Pollution.
<b>MARCH</b>  <b>UNIT- III</b>	<p>Plant used in Social forestry, Agro forestry and in pollution control, Extinction, Environmental status of plants based on International Union for Conservation of Nature (IUCN), Air conditioning by plants.</p> <p><b>Ecosystem Stability:</b> Concept (resistance and resilience), Ecological perturbances (natural and anthropogenic) and their impact on plants and ecosystems, Plant invasion, Environmental impact assessment, Ecosystem restoration.</p>
<b>APRIL</b>  <b>UNIT- IV</b>	<p><b>Ecological Management:</b> Concepts, Conservation and management of natural resources, Principles of Conservation Sustainable development &amp; Sustainability Bio-indicators</p> <p><b>Strategies for conservation, <i>in-situ conservation</i> :</b> International efforts and India initiatives; protected areas in India-sanctuaries, national parks, biosphere reserves, wetlands, mangroves and coral reefs for conservation of wild biodiversity.</p> <p><b>Strategies for conservation, <i>Ex-situ conservation</i> :</b> Principles and practices, botanical garden, field gene banks, seed banks, in vitro repositories, cryobanks and general account of the activities of botanical survey of India {BSI} National bureau of plant genetic resources {NBPGR} Indian council of agriculture research {ICAR} Council of scientific and industrial research {CSIR} and the department of biotechnology {DBT} for conservation, non formal conservation efforts.</p>

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**PROPOSED TEACHING PLAN FOR THE SESSION 2017-18**

**DEPARTMENT OF BOTANY**

**SEMESTER IV, PAPER III, Plant Cell, Tissue and Organ Culture**

<b>MONTH</b>	<b>Plant Cell, Tissue and Organ Culture</b>
<b>JANUARY</b>  <b>Unit – I</b>	<b>PLANTS CELL AND TISSUE CULTURE:</b> General introduction, history, scope, concept of cellular differentiation totipotency.  <b>TISSUE CULTURE MEDIA:</b> Media constituents, Media selection, Media preparation.  <b>CELL CULTURE:</b> Isolation of single cells, Suspension cultures, Culture of Single cell, Plant cell reactors, application of cell culture.  <b>CLONAL PROPAGATION-</b> Auxillary bud proliferation, Meristem and shoot tip culture, bud culture.
<b>FEBRUARY</b>  <b>UNIT I &amp; II</b>	<b>ORGANOGENESIS AND ADVENTIVE EMBRYOGENESIS:</b> Fundamental aspects of morphogenesis via callus formation, direct adventitive organ formation.  <b>SOMATIC EMBRYOGENESIS AND ANDROGENESIS:</b> Mechanism, techniques and utility.  <b>SOMATIC HYBRIDIZATION:</b> Methods of Protoplast isolation, Spontaneous and induced methods of protoplasm fusion, identification and selection of hybrid cells, Regeneration of hybrid plants, Vertification and Characterization of somatic hybrids, Cybrids, Possibilities achievements and limitation of protoplast research.
<b>MARCH</b>  <b>UNIT – III</b>	<b>CRYOPRESERVATION AND GERMPLASM STORAGE:</b> Raising sterile tissue cultures, Addition of cryoprotectants and pre-treatment, freezing, storage, thawing, determination of survival viability. Plant growth and generation, vertification, encapsulation and dehydration, slow growth method.
<b>APRIL</b>  <b>UNIT IV</b>	<b>APPLICATION OF PLANT TISSUE CULTURE:</b> artificial seeds, Production of hybrids and somaclones.  <b>PRODUCTION OF SECONDARY METABOLITES/ NATURAL PRODUCTS:</b> Morphological and chemical differentiation, medium composition for secondary product formation, Growth production patterns, Environmental factors, Selection of cell lines producing high amounts of a useful metabolite, Problems associated with secondary metabolite production, Immobilized cell system.  <b>TRANSGENICS IN CROP IMPROVEMENT:</b> Transgenic for Resistance of biotic and abiotic stresses, Transgenic for quality modification, Terminator seed technology.
<b>MAY</b>	Revision, Practicals done every month as per schedule



**PROPOSED TEACHING PLAN FOR THE SESSION 2017-18**

**DEPARTMENT OF BOTANY**

**M.Sc.BOTANY SEMESTER IV, PAPER IV**

**Elective Course – Ethnobotany**

<b>MONTH</b>	<b>Topic</b>
<b>JANUARY</b>  <b>UNIT I</b>	Plant Conservation by Tribes & role of Joint Forest Management Programme in Plant Conservation specially People's Protected Area  Ethnobotany and its role in domestication and conservation of native plant and genetic resources.
<b>FEBRUARY</b>  <b>UNIT I ,UNIT II</b>	The protection of plant varieties and Intellectual Properties Rights. General account of conservation of medicinal plants. General role of Aromatic plants. General ideas of various system of medicine using plants. Basic knowledge of Ayurvedic, Homeopathic, Allopathic system of medicine.
<b>MARCH</b>  <b>UNIT II UNIT III</b>	General idea of active principles of Plants. Herbal Cosmetics. General account of toxic plants and Harmful effect of plants on human society with special reference to allergic plants of Chhattisgarh. Endemic plants of Chhattisgarh. Endangered plants of Chhattisgarh
<b>APRIL</b>  <b>UNIT III</b>	Techniques of cultivation and marketing of Aromatic plants –Podina, Lemon grass Kasturibhindi, Palmarosa. Techniques of cultivation ,marketing and importance of mushroom Techniques of cultivation, extraction of juice and importance of wheat grass. Ethnobotanical study of the following plants with special reference to their medicinal importance- 1. <i>Allium sativum</i> (Lahsun) 2. <i>Aegle marmelos</i> (Bel) 3. <i>Terminallia arjuna</i> (Arjun)
<b>MAY</b>  <b>UNIT IV</b>	4 <i>T. bellerica</i> (Bahera) 5. <i>T chebula</i> (Harra) 6. <i>Calendula officianallis</i> (Calendula) 7. <i>Thuja occidentalis</i> (Vidhya) 8 <i>Dhatura alba</i> (Dhatura) 9. <i>Argemone maxicana</i> (Pili kateli) 10. <i>Ephedra</i> sps. ( Ephedra).  Practical's done every month as per schedule

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**PROPOSED TEACHING PLAN FOR THE SESSION 2017-18**

**DEPARTMENT OF BOTANY**

**SEMESTER IV, PAPER IV -**

**ELECTIVE COURSE MICROBIAL ECOLOGY**

Month	Topic
JAN Unit-I	<b>Environmental Microbiology:</b> Waste as a resource, Biogas production. Sewage Treatment. Heavy metal tolerance in microbes & mechanism of heavy metal resistance Biodegradation. Biodeterioration, Bioremediation, Biofertilizers , Biopesticides
FEB Unit II	<b>Diseases:</b> symptoms and types of bacterial disease- citrus canker, bacterial blight of rice, scab of potato, angular leaf spot of cotton, leaf spot of mango. <b>Etiology of Nematodal diseases</b> -ear cockle of wheat, molyar disease of barley, root knot of vegetable crops. <b>Etiology transmission of viral diseases</b> -Leaf curl of papaya, mosaic of bhindi, yellow mosaic of legumes, bunchy top of banana. <b>Etiology mycoplasmal diseases</b> -grassy shoot of sugarcane, mycoplasmal disease of potato, citrus greening, little leaf of brinjal. <b>Etiology of fungal diseases</b> - Downey mildews, powdery mildews, rusts, smuts & wilt.
MAR UNIT III	<b>Medical Microbiology:</b> <b>Protozoan Disease:</b> Name of diseases-Malaria, Giardiasis, Trypanosomiasis, Amoebiasis. <b>Fungal Disease:</b> Phycomycosis, Candidiasis, Actinomycosis, Dermatophytosis, Aspergillosis, Penicilliosis. <b>Bacterial Disease:</b> Tuberculosis, Diphtheria, Cholera, Shigellosis, Typhoid, and Tetanus. <b>Viral Disease:</b> Influenza, Polio
APRIL Unit IV	<b>Instrumentation &amp; Techniques</b> <b>Microscopy:</b> Light microscope, Electron Microscope (Transmission & Scanning), Colorimeter, Spectrophotometry, Chromatography, Electrophoresis, Laminar air flow, Collection sampling and identification of indoor microflora special reference to Library and Class rooms.
MAY	Practicals done every month as per schedule. Theory and practical exams.

## RAIPUR CHHATTISGARH

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### PROPOSED TEACHING PLAN FOR THE SESSION 2017-18

### SEMESTER-I

Month	Paper-I	Paper-II
July  UNIT-I	<b>SYMMETRY AND GROUP THEORY IN CHEMISTRY:</b> Symmetry elements and symmetry operation, definitions of group, subgroup, relation between orders of a finite group and its subgroup. Conjugacy relation and classes. Point symmetry group. Schoenflies symbols, representations of groups by matrices (representation for the $C_n$ , $C_{nv}$ , $C_{nh}$ , $D_{nh}$ , etc. Groups to be worked out explicitly). Character of a representation. The great orthogonality theorem (without proof) and its importance. Character tables and their use; spectroscopy.	A. <b>NATURE OF BONDING IN ORGANIC MOLECULES:</b> Delocalized chemical bonding, conjugation, cross-conjugation bonding in fullerenes. Bonds weaker than covalent, alternant and non-alternant hydrocarbons, Crown ether complexes and cryptands. B. <b>AROMATICITY:</b> Aromaticity in benzenoid and non-benzenoid compounds. Huckel's rule, annulenes, anti-aromaticity, homo-aromaticity. PMO approach for Aromaticity, Annulenes.
August  UNIT-II	A. <b>METAL-LIGAND BONDING:</b> Limitation of crystal field theory, molecular orbital theory, octahedral, tetrahedral and square planar complexes, bonding and molecular orbital theory. B. <b>METAL <math>\pi</math> COMPLEXES:</b> Metal carbonyls, structure and bonding, vibrational spectra of metal carbonyls for bonding and structural elucidation, important reactions of metal carbonyls; preparation, bonding, structure and important reactions of transition metal nitrosyl, di-nitrogen and di-oxygen complexes; tertiary phosphine as ligand.	A. <b>CONFORMATIONAL ANALYSIS:</b> Conformational analysis of cycloalkanes, decalins, effect of conformation on reactivity, conformation of sugars, steric strain due to unavoidable crowding. B. <b>STEREOCHEMISTRY:</b> Elements of symmetry, chirality, molecules with more than one chiral center, methods of resolution, optical purity, stereospecific and stereoselective synthesis. Asymmetric synthesis. Optical activity in the absence of chiral carbon (Biphenyls, allenes and spiranes), chirality due to helical shape.
September	A. <b>METAL-LIGAND EQUILIBRIA IN SOLUTION:</b> stepwise and overall formation constants and their interaction, trends in stepwise	A. <b>REACTION INTERMEDIATES:</b> Generation, structure, stability and reactivity of carbocations, carbanions, free radicals,

UNIT-III	<p>constants, factors affecting the stability of metal complexes with reference to the nature of metal ion and ligand, chelate effect and its thermodynamic origin, determination of binary formation constants by pH-metry and spectrophotometry.</p> <p>B. <b>ISOPOLY ACID AND HETEROPOLY ACID:</b> Isopoly and heteropoly acids of Mo and W. Preparation, properties and structure. Classification, preparation, properties and structures of Borides, Carbides, Nitrides and Silicides, Silicates-classification and structure, Silicones-preparation, properties and application.</p>	<p>carbenes and nitrenes. Sandmeyer reaction, Free radical rearrangement and Hunsdiecker reaction.</p> <p>B. <b>ELIMINATION REACTIONS:</b> THE E<sub>2</sub>, E<sub>1</sub> and E<sub>1cB</sub> mechanism. Orientation of the double bond. Reactivity, effects of substrate structures, attacking base, the leaving group and the medium.</p>
October UNIT-IV	<p>A. <b>METAL CLUSTERS:</b> Higher boranes, carboranes, metalloboranes and metallocarboranes, metal carbonyl and halide cluster, compounds with metal-metal multiple bonds.</p> <p>B. <b>CHAINS:</b> Catenation, Heterocatenation, Interactenation.</p> <p>C. <b>RINGS:</b> Borazines, Phosphazines.</p>	<p><b>PERICYCLIC REACTIONS:</b> Classification of pericyclic reactions. Woodward-Hoffmann correlation diagrams. FMO and PMO approach. Electrocyclic reactions conrotatory and disrotatory motions, 4n, 4n+2 and allyl systems. Cycloadditions – antarafacial and suprafacial additions, 4n and 4n+2 system, 2+2 addition of ketenes, 1, 3 dipolar cycloadditions and cheletropic reactions. Sigmatropic rearrangements – suprafacial and antarafacial shifts of H, sigmatropic shifts involving carbon moieties, 3, 3- and 5, 5-sigmatropic rearrangements. Claisen, Cope and Aza-Cope rearrangements. Ene reaction.</p>
November	Revision	
Remark	Practicals done every month as per schedule	

Month	Paper-III	Paper-IV
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July  UNIT-I	<p>A. <b>INTRODUCTION TO EXACT QUANTUM MECHANICAL RESULTS:</b> Vector, Dot Cross and triple products. Complex numbers and co-ordinate transformations (Cartesian to Spherical Polar in Quantum Chemistry). The Schrodinger equation and the postulates of quantum mechanics. Discussion of solutions of the Schrodinger equation to some model systems viz., particle in a box, the harmonic oscillator, the rigid rotor, the hydrogen atom.</p> <p>B. <b>ANGULAR MOMENTUM OF QUANTUM CHEMISTRY:</b> Angular Momentum, Ordinary Angular Momentum, Generalized Angular Momentum, Eigen-functions for Angular Momentum, Eigen values of Angular Momentum, Operator using ladder operator.</p>	<p>A. <b>EVALUATION OF ANALYTICAL DATA:</b> Accuracy and precision, Standard deviation, Variance and coefficient of variation Student 't' test, Confidence limits, Estimation of detection limit. Error; Classification, distribution, propagation, causes and minimation of errors. Significant figures and computation rules. Correlation analysis; Scatter diagram, Correlation coefficient 'r'. Calculation of 'r' by the method of least squares.</p> <p>B. <b>PROBABILITY:</b> Sampling measurement and distribution of attributes, normal poison and binomial distributions; arithmetic geometric and harmonic means; moments; expectations mode, median, skewness, dispersion and kurtosis; statistical inference; planning and analysis of experiments.</p> <p>C. <b>PERMUTATION AND PROBABILITY:</b> Permutations and combinations, probability and probability theorems, probability curves, average, root mean square and most probable errors, examples from the kinetic theory of gases, curve fitting (including least squares fit) with a general polynomial fit.</p>
August  UNIT-II	<p><b>BASICS OF THERMODYNAMICS:</b> Maxwell's thermodynamic relations and its applications. Reaction isotherm, Vant Hoff hypothesis. Partial molar properties; partial molar free energy, partial molar volume and partial molar heat content. Chemical potential, Gibbs Duhem equation, variation of chemical potential with temperature and pressure. Chemical potential of ideal gases, pure solids, liquids and mixture of ideal gases.</p>	<p>A. <b>DIFFERENTIAL CALCULUS:</b> Functions, continuity and differentiability, rules for differentiation, applications of differential calculus including maxima and minima (examples related to maximally populated rotational energy levels, Bohr's radius and most probable velocity from Maxwell's distribution etc.) exact and inexact differentials with their applications to thermodynamics properties.</p> <p>B. <b>INTEGRAL CALCULUS:</b> Basic rules for integration, integration by parts, partial fraction and substitution. Reduction formulae, applications of integral calculus. Functions of several</p>

		variables, partial differentiation, co-ordinate transformations (e.g. Cartesian to spherical polar), curve sketching.
September  UNIT-III	<b>ELECTROCHEMISTRY:</b> Electrochemistry of solution, Debye-Huckel Onsager treatment and its extension, ion solvent interactions. Debye-Huckel-Limiting Law. Debye-Huckel theory for activity coefficient of electrolytic solutions. Determination of activity and activity coefficient, ionic strength, Thermodynamics of electrified interface equations. Derivation of electrocapillarity, Lippmann equation (surface excess), methods of determination.	<p>A. <b>UNIFYING PRINCIPLES:</b> Electromagnetic radiation, interaction of electromagnetic radiation with matter-absorption, emission, transmission, reflection, refraction, dispersion, polarization and scattering. Uncertainty relation and natural line width and natural line broadening, transition probability, results of the time dependent perturbation theory, transition moment, selection rules, intensity of spectral lines, Born-Oppenheimer approximation, rotational, vibrational and electronic energy levels. Regions of spectrum, representation of spectra, F.T. spectroscopy, computer averaging, lasers.</p> <p>B. <b>MICROWAVE SPECTROSCOPY:</b> Classification of molecules, rigid rotor model, and intensity of spectral lines, effect of isotopic substitution on the transition frequencies, intensities, non-rigid rotor. Stark effect, nuclear and electron spin interaction and effect of external field. Applications including analysis by microwave spectroscopy, determination of bond lengths, and determination of transition frequency in term of B and J structures, O<sub>3</sub>, OCS, HCN and NH<sub>3</sub> molecules.</p>
October  UNIT-IV	<b>CHEMICAL DYNAMICS:</b> Methods of determining rate laws, collision theory of reaction rates, steric factor, Activated complex theory, kinetic salt effects, steady state kinetics, and thermodynamic and Kinetic control of reactions. Dynamic chain (Hydrogen-Bromine and Hydrogen-chlorine reactions) and Oscillatory reactions (Belousov-Zabolonsky reaction).	<p>A. <b>ULTRAVIOLET AND VISIBLE SPECTROSCOPY:</b> Instrumentation, Various electronic transitions (185-800 nm), Beer – Lambert law, effect of solvent on electronic transitions, ultraviolet bands for carbonyl compounds, unsaturated carbonyl compounds, dyes, conjugated polyenes. Fieser-Woodward rules for conjugated dienes and carbonyl compounds, ultraviolet spectra of aromatic and heterocyclic compounds. Steric effect in biphenyls.</p> <p>B. <b>INFRARED SPECTROSCOPY:</b> Instrumentation and sample handling. Characteristic vibrational frequencies of alkanes, alkenes, alkynes, aromatic compounds, alcohols, ethers, phenols and amines. Detailed study of vibrational frequencies of carbonyl compounds (Ketones, Aldehydes, Esters, Amides, Acids,</p>

		<p>Anhydrides, Lactones, Lactams and Conjugated Carbonyl Compounds) Effect of hydrogen bonding and solvent effect on IR of gaseous, solids and polymeric materials.</p> <p><b>C. FOURIER TRANSFORM INFRARED SPECTROSCOPY:</b>  Introduction, instrumentation, Michelson interferometer, slow scan, stepped scan and rapid scan interferometers, sources and detectors, resolution and wave number measurements, sources of error, computation and recording advantages.</p>
November	Revision	
December	Practicals done every month as per schedule	

## SEMESTER-II

Month	Paper-I	Paper-II
January  UNIT-I	<b>REACTION MECHANISM OF TRANSITION METAL COMPLEXES:</b> Energy profile of a reaction, reactivity of metal complexes inert and labile complexes, kinetic application of valence bond and crystal field theories, kinetics of octahedral substitution, anation reactions, without metal ligand bond cleavage. Substitution reactions in square planar complexes, the trans effect. Redox reactions, electron transfer reactions, mechanism of one electron transfer reactions, outer sphere type reactions, cross reactions and Marcus-hush theory, inner sphere type reactions.	<b>A. ALIPHATIC NUCLEOPHILIC SUBSTITUTION:</b> The SN 2, SN 1 mechanisms. The neighbouring group mechanism, neighbouring group participation by and bond, anchimeric assistance. Reactivity effects of substrate structure, attacking nucleophile, leaving group and reaction medium, phase transfer catalysis, ambident nucleophile and regioselectivity.  <b>B. AROMATIC NUCLEOPHILIC SUBSTITUTION:</b> The S <sub>N</sub> Ar, SN 1 and benzyne mechanisms. Reactivity – effect of substrate structure, leaving group and attacking nucleophile. The von Richter, Sommelet-Hauser, and Smiles rearrangements.
February  UNIT-II	<b>ELECTRONIC SPECTRA AND MAGNETIC PROPERTIES OF TRANSITION METAL COMPLEXES:</b> Spectroscopic ground states, Correlation, Orgel and Tanabe-Sugano diagrams for transition metal complexes (d1-d9 states), Selection rules, mechanism for breakdown of the selection rules. Intensity of absorption, band width, spectra of d-d metal complexes of the type [M (H <sub>2</sub> O)] <sup>n+</sup> spin free and spin paired ML <sub>6</sub> complexes of other geometries, Calculations of Dq, B and parameters, spin forbidden transitions, effect of spin-orbit coupling, Spectrochemical and Nephelouxetic series. Magnetic properties of complexes of various geometries based on crystal field model, spin free-spin paired equilibria in octahedral stereochemistry.	<b>A. ALIPHATIC ELECTROPHILIC SUBSTITUTION:</b> Mechanisms of SE <sub>2</sub> , SE <sub>1</sub> , electrophilic substitution accompanied by double bond shifts. Effect of substrates, leaving group and the solvent polarity on the reactivity.  <b>B. AROMATIC ELECTROPHILIC SUBSTITUTION:</b> The arenium ion mechanism, orientation and reactivity. The ortho/para ratio, ipso attack, orientation in other ring systems. Vilsmeier reaction and Gattermann-Koch reaction
March	<b>A. TRANSITION METAL COMPLEXES:</b> Transition metal complexes with unsaturated organic molecules, alkanes, allyl, diene dienyl, arene and trienyl complex, preparations, properties, nature of bonding and	<b>ADDITION TO CARBON-CARBON MULTIPLE BONDS:</b> Mechanistic and stereochemical aspects of addition reactions involving electrophiles, nucleophiles and free radicals, regio-and



UNIT-III	<p>structure features, important reaction relating to nucleophilic and electrophilic attack on ligands and organic synthesis.</p> <p><b>B. TRANSITION METALS COMPOUND WITH BOND TO HYDROGEN:</b> Transition Metals Compounds with Bond to Hydrogen.</p>	chemoselectivity. Addition to cyclopropane ring. Hydrogenation of double and triple bonds, hydrogenation of aromatic rings Hydroboration, Michael reaction, Sharpless asymmetric epoxidation.
April UNIT-IV	<p><b>A. ALKYL AND ARYL OF TRANSITION METALS:</b> Types, routes of synthesis, stability and decomposition pathways, organocopper in organic synthesis.</p> <p><b>B. COMPOUNDS OF TRANSITION METAL – CARBON MULTIPLE BONDS:</b> Alkylidenes, low valent carbenes nature of bond and Structural characteristics.</p> <p><b>C. FLUXIONAL ORGANOMETALLIC COMPOUNDS:</b> Fluxionality and dynamic equilibria in compounds such as olefin, <math>\pi</math>-allyl and dienyl complexes.</p>	<b>ADDITION TO CARBON-HETERO MULTIPLE BONDS:</b> Mechanism of metal hydride reduction of saturated and unsaturated carbonyl compounds, acids, esters, nitriles. Addition of Grignard Reagent, Organo-Zn, Organo-Li reagent to carbonyls and unsaturated carbonyl compounds, Wittig reaction. Mechanism of condensation reactions involving enolates – Aldol, Knoevenagel and Stobbe reactions. Hydrolysis of esters and amides, ammonolysis of esters.
Remark	Practicals done every month as per schedule	

Month	Paper-III	Paper-IV
January UNIT-I	<p><b>A. APPLICATION OF MATRICES IN QUANTUM CHEMISTRY:</b> Addition and multiplication, inverse and transpose of matrices. Determinants, in quantum chemistry.</p> <p><b>B. APPROXIMATE METHOD:</b> The variation theorem, linear variation principle. Perturbation theory (first order and nondegenerate). Applications of variation method and perturbation theory to the Helium atom.</p>	<b>A. NUCLEAR MAGNETIC RESONANCE SPECTROSCOPY:</b> Chemical shift values & correlation for protons bonded to carbon (aliphatic, olefinic & aromatic) & other nuclei (Alcohols, Phenol, aldehydes, Carboxylic acids, amines, amides and mercapto) chemical exchange effect of deuteration. Nuclear magnetic double resonance, contact shift reagents, solvent effects. Fourier transform techniques.

		<p><b>B. CARBON – <sup>13</sup>C NMR SPECTROSCOPY:</b> General considerations, chemical shift (aliphatic, olefinic, alkyne, aromatic, heteroaromatic, and carbonyl carbon) coupling constants.</p> <p><b>C. RAMAN SPECTROSCOPY:</b> Classical and quantum theories of Raman effect. Pure rotational, vibrational and vibrational rotational Raman spectra, selection rules, mutual exclusion principle. Resonance Raman spectroscopy, coherent anti Stokes Raman spectroscopy (CARS), techniques and instrumentation, applications.</p>
February UNIT-II	<p><b>A. THERMODYNAMICS OF NON-IDEAL GASES:</b> Activity and Fugacity, Determination of Fugacity, Variation of Fugacity with Temperature and Pressure.</p> <p><b>B. NON-EQUILIBRIUM THERMODYNAMICS:</b> Fundamental concepts, forces and fluxes, Entropy production, Phenomenological Laws and Onsager's reciprocity relations.</p>	<p><b>A. MASS SPECTROMETRY:</b> Introduction, basic principles, separation of the ions in the analyzer, resolution, molecular ion peak, mass spectral fragmentation of organic compounds, factors affecting fragmentation, McLafferty rearrangement. Examples of mass spectral fragmentation of organic compounds with respect to their structure determination.</p> <p><b>B. MOSSBAUER SPECTROSCOPY:</b> Basic principles, spectral parameters and spectrum display. Application of the technique to the studies of (1) bonding and structures of Fe<sup>2+</sup>, and Fe<sup>3+</sup> compounds including those of intermediate spin, (2), Sn<sup>2+</sup> and Sn<sup>4+</sup> compounds.</p>
March UNIT-III	<p><b>ELECTROCHEMISTRY – II:</b> Structure of electrified interfaces. Gouy-Chapman, Stern, Over potentials and exchange current density, Derivation of Butler – Volmer equation, Tafel plot. Semiconductor interfaces, Theory of double layer at semiconductor, electrolyte solution interfaces, structure of double layer interfaces. Effect of light at semiconductor solution interfaces. Electro catalysis influence of various parameters. Hydrogen electrode.</p>	<p><b>A. INTRODUCTION TO COMPUTERS:</b> Block diagram of a computer, CPU, I/O Devices, Primary and Secondary Memory, Software – System software and application software, Low-level and high-level language. Problems analysis &amp; solving schemes, Computational procedure, program, outline, algorithm and flow charts, branching and looping, writing executing &amp; testing the program with examples.</p> <p><b>B. WORKING WITH MS-OFFICE:</b> Introduction to word: Basic of word-processing; Features and Advantages of Word Processing, Creating, editing, formatting &amp; previewing documents. Advanced</p>

		features; using thesaurus, Mail Merge, Table and Chart Introduction to Excel: Worksheet Basics, Creating, Opening & Moving in Worksheet, working with formula & cell referencing, Absolute & Relative addressing, Working with Ranges, Formatting of worksheet, Graphs & Charts, Database, Function and Macros.
April  UNIT-IV	<b>CHEMICAL DYNAMICS - II:</b> General features of fast reactions by flow method, relaxation method, flash photolysis and the nuclear magnetic resonance method. Dynamics of molecular motions, probing the transition state, dynamics of barrier less chemical reactions in solutions, dynamics of unimolecular reaction. [Lindemann – Hinshelwood and Rice-Ramsperger-Kassel-Marcus {RRKM}] theories of unimolecular reactions.	<p>A. <b>PROGRAMMING WITH C: PART - I:</b> Introduction to C: Character set, Identifiers and Keywords, Variables, Displaying variables, Reading Variables, Character and Character String, Qualifiers, Type define statements, Value initialized Variables, Constants, Constants Qualifier, Operators and Expressions, Operator precedence and Associativity, Basic input output operations. Control Structure: If-statement, If else statement, Multiway decision, compound statements, Loops: For-loop, While loop Do-while loop, Break statement, Switch statement, Continue statement, Goto statement.</p> <p>B. <b>PROGRAMMING WITH C: PART – II:</b> Functions: Function accepting more than one parameters, User defined and library functions, concept associativity with functions, function parameters, Return value, recursion, comparisons of Iteration and recursion variable length argument list. Arrays and Pointers: Elementary idea of one-dimensional and multi-dimensional Arrays, Strings, Array of Strings. Definition and elementary use of Pointers. Structure and Union: Declaring and using Structure and Union. Difference between Union and Structure.</p>
Remark	Practicals done every month as per schedule	

## SEMESTER-III

Month	Paper-I	Paper-II
July  UNIT-I	<p><b>A. ELECTRON SPIN RESONANCE SPECTROSCOPY:</b> Hyperfine coupling, polarization for atoms and transition metal ions, spin-orbit coupling and significance of g-tensors, application to transition metal complexes (having one unpaired electron)</p> <p><b>B. NUCLEAR QUADRUPOLE RESONANCE SPECTROSCOPY:</b> Quadrupole nuclei, quadrupole moments, electric field gradient, coupling constant, splittings, applications.</p>	<p>A. <b>BIOENERGETICS:</b> Standard free energy changes in biochemical reactions, exergonic, endergonic, Hydrolysis of ATP, synthesis of ATP from ADP.</p> <p>B. <b>ELECTRON TRANSFER IN BIOLOGY:</b> Structure and function of metalloproteins in electron transport processes – cytochromes and iron-sulphur proteins, synthetic models.</p> <p>C. <b>TRANSPORT &amp; STORAGE OF DIOXYGEN:</b> Heme proteins and oxygen uptake, structure and function of haemoglobin, myoglobin, haemocyanins and haemerythrin, model synthetic complexes of iron, cobalt and copper.</p>
August  UNIT-II	<p>A. <b>PHOTOELECTRON SPECTROSCOPY:</b> Basic principle both for atoms and molecules; Photo-electric effect, ionization process, Koopman's theorem, photoelectron spectra of simple molecules, Debye and Clausius-Mossotti equation, Auger electron spectroscopy, Determination of Dipole moment.</p> <p>B. <b>PHOTOACOUSTIC SPECTROSCOPY:</b> Basic Principle of Photo acoustic Spectroscopy(PAS), PAS – gases and condensed system Chemical and Surface application.</p>	<p>A. <b>METALLOENZYMES:</b> Zinc enzymes – carboxypeptidase and carbonic anhydrase. Iron enzymes – catalase, peroxidase and cytochrome P-450. Copper enzymes – superoxide dismutase. Molybdenum oxotransferase enzymes-xanthine oxidase.</p> <p>B. <b>ENZYME MODELS:</b> Host-guest chemistry, chiral recognition and catalysis, molecular recognition, molecular asymmetry and prochirality. Biomimetic chemistry, Cyclodextrin-based enzyme models, calixarenes, ionophores, synthetic enzymes of synzymes.</p>
September  UNIT-III	<p>A. <b>PHOTOCHEMICAL REACTION:</b> Interaction of electromagnetic radiation with matter, types of excitations, fate of excited molecule, quantum yield, transfer of excitation energy, Actinometry.</p> <p>B. <b>DETERMINATION OF REACTION MECHANISM:</b> Classification, rate constants and life times of reactive energy states –</p>	<p>A. <b>ENZYMES:</b> Nomenclature and classification of Enzyme. Fischer's lock and key and Koshland's induced fit hypothesis, concept and identification of active site by the use of inhibitors.</p> <p>B. <b>CO-ENZYME CHEMISTRY:</b> Structure and biological functions of coenzyme A, Thiamine pyrophosphate, pyridoxal</p>

	<p>determination of rate constants of reactions. Effect of light intensity on the rate of photochemical reactions.</p> <p>C. <b>MISCELLANEOUS PHOTOCHEMICAL REACTIONS:</b> Photo-Fries reactions of anillides, Photo-Fries rearrangement. Barton reaction. Singlet molecular oxygen reactions. Photochemical formation of smog. Photodegradation of polymers, Photochemistry of vision.</p>	<p>phosphate, NAD<sup>+</sup>, NADP<sup>+</sup>, FMN, FAD, lipoic acid, vitamin B<sub>12</sub>.</p> <p>C. <b>BIOTECHNOLOGICAL APPLICATION OF ENZYMES:</b> Techniques and methods of immobilization of enzymes, effect of immobilization on enzyme activity, application of immobilization enzymes in medicine and industry. Enzymes and Recombinant DNA Technology.</p>
October UNIT-IV	<p>A. <b>PHOTOCHEMISTRY OF ALKENES:</b> Intramolecular reaction of the olefinic bond – geometrical isomerism, cyclisation reactions, rearrangement of 1, 4 &amp; 1, 5 dienes.</p> <p>B. <b>PHOTOCHEMISTRY OF CARBONYL COMPOUNDS:</b> Intramolecular reactions of carbonyl compounds, Cyclohexadienones. Intermolecular Cycloaddition reactions – dimerisations and oxetane formation.</p> <p>C. <b>PHOTOCHEMISTRY OF AROMATIC COMPOUNDS:</b> Isomerisations, additions and substitutions.</p>	<p>A. <b>BIOPOLYMER INTERACTIONS:</b> Forces involved in biopolymer interaction. Electrostatic charges and molecular expansion, hydrophobic forces, dispersion force interactions. Multiple equilibria and various types of binding processes in biological systems. Hydrogen ion titration curves.</p> <p>B. <b>THERMODYNAMICS OF BIOPOLYMER SOLUTIONS:</b> Thermodynamics of biopolymer solution, osmotic pressure, membrane equilibrium, muscular contraction and energy generation in mechanochemical system.</p> <p>C. <b>CELL MEMBRANE AND TRANSPORT OF IONS:</b> Structure and functions of cell membrane, ion transport through cell membrane, irreversible thermodynamic treatment of membrane transport and nerve conduction.</p>
November	Revision	
Remark	Practicals done every month as per schedule	

Month	Paper-III	Paper-IV
July  UNIT-I	<b>AIR POLLUTION:</b> A. Introduction, Composition of atmosphere, vertical temperature, chemical composition of atmosphere, Biogeochemical cycle of C, N, P, S and O. Biodistribution of elements. B. Chemical composition of aerosols, trace gases, outdoor and indoor air pollutants, urban air pollution, air quality index. C. Air Pollution monitoring techniques, monitoring of trace gases i.e. SO <sub>2</sub> , H <sub>2</sub> S, Oxides of nitrogen, NH <sub>3</sub> , CO <sub>2</sub> , CO, Volatile organic compounds (VOC), air pollution control devices.	<b>STATISTICAL THERMODYNAMICS:</b> Concepts of probability, Maxwell Boltzmann distribution. Different ensembles and Partition functions. Thermodynamic function using appropriate partition function. Fermi-Diraic and Bose-Einstein Statistics and statistical basis of entropy. Heat capacity of Solids Debye and Einstein Models.
August  UNIT-II	<b>WATER POLLUTION</b> A. Chemical composition of Water bodies, rivers, lakes, streams, wetlands, ground water pollution, Waste Water Pollution, aquatic pollution: river pollution, lake pollution, inorganic, organic pesticides, industrial sewage, detergents and oil pollution. B. Water quality monitoring and treatment, DO, COD, BOD, Color. Water quality standards, Treatment of waste water.	<b>POLYMER CHEMISTRY:</b> A. Importance of basics polymers, Basic concept monomers, Degree of polymerization linear branched and network polymers, classification of polymers polymerization, Condensation, addition, radical chain-ionic and co-ordination & copolymerization polymerization conditions and polymer reactions polymerization in homogenous and heterogenous system. B. Polymer structure and physical properties-crystalline melting point, T <sub>m</sub> -melting points of homogenous series, effect of chain flexibility and other steric factors, entropy and heat of fusion. The glass transition temperature T <sub>g</sub> relationship between T <sub>m</sub> & T <sub>g</sub> effect of molecular weight, diluents, chemical structure chain topology, branching & cross-linking property requirements and polymer utilization.
September	<b>SOIL POLLUTION</b>	<b>SOLID STATE CHEMISTRY:</b>

UNIT-III	<p>A. Soil composition, micro and macro nutrient pollution: Fertilizers, pesticides, plastics and metals, fly ash, radioactive and biomedical waste.</p> <p>B. Analysis of soil: moisture, pH, total nitrogen, phosphorus, silica, lime, magnesia, manganese, sulphur. Monitoring of soil characteristics such as pH, N, P, K, organic carbon. Methods of analysis of toxicants, i.e. As, Pb, Cd, Hg, Tl. Remediation of the contaminated soil</p>	<p>Crystal defects and Non-stoichiometry-Perfect and imperfect crystals, intrinsic and extrinsic defects – point defect, line and plane defects, vacancies – Schottky defects and Frankel defects. Thermodynamics of Schottky and Frenkel defect, formation of color centers, non-stoichiometry and defects.</p>
October UNIT-IV	<p><b>INDUSTRIAL POLLUTION</b></p> <p>A. Cement, Sugar, Distillery, Drug, Paper and Pulp, Thermal Power Plants, Nuclear power Plants, Disposal of waste and their management.</p> <p>B. Chemical solutions to environmental problems, biodegradability, Acid rain, photochemical smog, greenhouse effect, global warming, ozone hole.</p> <p>C. Bhopal gas tragedy., Chernobyl, Minimata disaster.</p>	<p><b>ELECTRONIC PROPERTIES &amp; BAND THEORY:</b></p> <p>A. Metal insulators and semiconductors, electronic structure of solids band theory, band structure metals, insulators and semiconductors intrinsic and extrinsic semiconductors, doping semiconductors P-n junction, super conductors.</p> <p>B. Optical properties – Optical reflectance, photoconduction, photoelectric effects.</p> <p>C. Magnetic properties – Classification of materials, quantum theory of paramagnetic-cooperative phenomena-magnetic domains hysteresis.</p>
November	Revision	
Remark	Practicals done every month as per schedule	

## SEMESTER-IV

Month	Paper-I	Paper-II
January  UNIT-I	<p>A. <b>TERPENOIDS AND CAROTENOIDS:</b> Occurrence, isolation classification, nomenclature, general methods of structure determination of and synthesis Citral, Geraniol, Terpeneol, Menthol, Farnesol, Zingiberene, Santonin, Phytol, Abietic acid and Carotene.</p> <p>B. <b>ALKALOIDS:</b> Occurrence, isolation nomenclature and physiological action stereochemistry of steroids general methods of structure elucidation, degradation, classification, synthesis of the following alkaloids: Ephedrine, (++) Conine, Nicotine, Atropine, Quinine and Morphine</p>	<p><b>ACID BASES, ELECTROPHILES, NUCLEOPHILES AND CATALYSIS:</b> Acid-base dissociation, Electronic and structural effects, acidity and basicity. Acidity functions and their applications. Hard and soft acids and bases. Nucleophilicity scales. Nucleofugacity. The <math>\alpha</math>-effect. Ambivalent nucleophiles. Acid-base catalysis – specific and general catalysis. Bronsted catalysis, Enzyme Catalysis.</p>
February  UNIT-II	<p>A. <b>STERIODS:</b> Introduction, structural features, structure determination, stereochemistry and synthesis of Cholestrol, Biosynthesis of cholesterol, Bile acids, Androsterone, Testosterone, Estrone, Progesterone, Aldosterone.</p> <p>B. <b>PLANT PIGMENTS:</b> Occurrence, nomenclature and general method of structure determination. Synthesis of Quercetin, Myricetin, Diadzin, Cyanidin, Hisutin.</p>	<p><b>MATERIAL CHEMISTRY:</b> Preparation and Properties of Nanoparticles, Materials-Metals, Semiconductors, Ceramics (Oxide, carbides, sulphides, nitrides). Physical and Chemical methods. Reduction method, size and shape-controlled synthesis, Sol-gel methods, Optical properties, Electrical and Magnetic properties, Application of Nanoparticles.</p>
March  UNIT-III	<p>A. <b>DRUG DESIGN:</b> Development of new drugs, procedures followed in drug design, concept of lead compound and lead modifications, concept of prodrug and soft drug, structure activity relationship (SAR), factors affecting bioactivity, resonance, inductive effect. Theories of Drug Activity – Occupancy theory, rate theory and induced fit theory.</p> <p>B. <b>PHARMACOKINETICS AND PHARMACODYNAMICS:</b> Definition and general introduction.</p>	<p><b>NUCLEAR THEORY:</b> Nuclear cross section and nuclear radii, nuclear shells and magic numbers, theory of nuclear shell model, nuclear potentials, square well and simple harmonic oscillator potentials, application, liquid drop model. Semi-empirical mass equation, application and limitations.</p> <p><b>NUCLEAR FISSION:</b> Mass, energy and charge distribution of fission products, decay chains, prompt and delayed neutrons, liquid drop model of nuclear fission.</p> <p><b>NUCLEAR ENERGY:</b> Nuclear fission, chain reaction, multiplication factor, nuclear reactors.</p>



April  UNIT-IV	<p>A. <b>ANTIBIOTICS:</b> Constitution and synthesis of Penicillins, chloramphenicol, tetracycline and streptomycin, cephalosporin.</p> <p>B. <b>ANTI MALARIALS:</b> Synthesis and properties of the following Antimalarial: 8-amino quinoline derivatives – Pamaquine, Primaquine, Pentaquine, Isopentaquine, 4-amino quinoline derivatives – Santoquine, camaquine, Acridine derivatives – Mepacrine, Azacrin, Pyrimidine and Biguanid derivatives – Paludrine, Pyremethamine.</p>	<p><b>APPLIED RADIOCHEMISTRY:</b> Radioactive isotopes, purity and strength of radioisotopes. Radiochemical principle in the use of tracers, application of tracers in chemical investigations, Physico-chemical methods, Analytical applications, Age determinations, Medical applications, Agricultural application.</p> <p><b>DETECTION OF NUCLEAR RADIATIONS:</b> Techniques, Equipments, G.M&gt; counter, proportional counter, Scintillation counter, Counting Statistics.</p>
Remark	Practicals done every month as per schedule	

Month	Paper-III	Paper-IV
January  UNIT-I	<p>A. <b>ATOMIC EMISSION SPECTROPHOTOMETRY (AES):</b> Theory, instrumentation and application of flame photometer, emission spectroscopy, induced couple plasma (ICP) – AES.</p> <p><b>ATOMIC ABSORPTION SPECTROPHOTOMETRY (AAS):</b> Theory instrumentation and application of flame – AAS, graphite furnace – AAS, cold vapor – AAS, and hydride generation – AAS.</p> <p>B. <b>AUTOMATED METHODS:</b> Principle and theory of automated methods, segmented &amp; non-segmented continuous (flow injection analysis, FIA). Instrumentation &amp; fabrication of FIA in separation, preconcentration, reduction, oxidation and reaction kinetics. FIA – spectrophotometry, FIA – AAS /ICP-AES, IC-AAS/CP – AES/MS. Application of FIA methods for analysis of anions and cations.</p>	<p><b>CLINICAL ANALYSIS:</b></p> <p>A. Concepts and principles of analytic methods commonly used in the clinical species: i.e. ammonia, blood urea Nitrogen, Ca, Cl, CO<sub>2</sub>, Fe, K, Li, Mg, Na, P, urea, glucose.</p> <p>B. Method for analysis of proteins (i.e. albumin, bilirubin, creatinine, cholesterol, HDL-cholesterol, triglycerides, creatinine) and Enzymes (i.e. Alanine Aminotransferase, acid phosphatase, alkaline phosphatase, amylase, aspartate aminotransferase, cholinesterase, lactate, and lipase)</p>
February	<p>A. <b>THERMAL METHODS:</b> Principles, techniques and common applications of different thermo analytical methods: TGA, DTA, DTG. <b>SCATTERING METHODS:</b> Principles, instrumentation and application of nephelometry, turbidimetry.</p>	<p><b>FOOD ANALYSIS:</b></p> <p>A. Moisture ash, crude protein, fat, crude fibre, carbohydrate, calcium, potassium, sodium and phosphate. Food adulteration:</p>

UNIT-II	<p><b>B. METHODS FRO STRUCTURE DETERMINATION:</b></p> <p>Spectroscopic techniques for structure studies, Neutron and X-ray scattering spectroscopy, X-ray fluorescence spectroscopy. Principle and theory of chromatographic techniques i.e. paper, thin layer, ion exchange, gas chromatography, high-pressure liquid and ion chromatography. Analytical applications of GC and HPLC in analysis of pesticides. Application of IC in analysis of anions i.e. <math>F^-</math>, <math>Cl^-</math>, <math>Br^-</math>, <math>NO_2</math>, <math>NO_3</math>, <math>PO_4^{3-}</math>, <math>CH_3COO^-</math>.</p>	common adulterants in food, contamination of foodstuffs, microscopic examination of foods for adulterants, pesticides analysis in food products, HPLC, Gas chromatographic technique for analysis of organic phosphates in food products, TLC technique for identification of pesticides in food products.
March UNIT-III	<p>A. Electrode polarization dissolution potential concentration polarization, decomposition potential, over potential, influence of various factors on over potential.</p> <p><b>B. APPLIED POLAROGRAPHIC TECHNIQUES:</b> Principles, general treatment and applications of following techniques in trace level analysis – Oscillographic polarography, Square wave polarography.</p> <p>C. General consideration and measurement of conductivity, high frequency conductometric titration's –Principle, theory, applications, advantages and disadvantages.</p>	<p><b>DRUG ANALYSIS:</b></p> <p>Narcotics and dangerous drugs, classification of drugs, Mode of action of narcotics, Sedatives, Hypnotics and tranquilizers, Screening by gas and thin layer chromatography, spectrophotometric measurements.</p>
April UNIT-IV	<p>A. Ion selective electrode (ISE) constitution of ISE, Electrode for <math>I^-</math>, <math>I^-</math>, <math>Na^+</math>, and <math>K^+</math>.</p> <p>B. Theory of electro-gravimetric analysis, Electrode reactions, over potential electrolytic separation of metals with controlled cathode potential, electrolytic determinations at constant current.</p> <p>C. Potentiometry – Reference electrodes, indicator electrode, ion sensitive electrodes, instrumentation and measurement of cell e.m.f., potentiometers and pH meters and selective ion meters and potentiometric titrations.</p>	<p><b>FUEL ANALYSIS:</b></p> <p>Solid, liquid and gas fuels, ultimate and proximate analysis, heating values, grading of coal, liquid fuels, flash and fire point, octane number and carbon residue, gaseous fuels, producer gas and water gas, calorific value.</p>
Remark	Practicals done every month as per schedule	

**M.Sc. I<sup>st</sup> Semester  
Mathematics  
PAPER-I**

**Advanced Abstract Algebra (I)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JULY	<b>Unit-I</b> Groups - Normal and Subnormal series. Composition series
AUGUST	<b>Unit I .</b> Jordan-Holder theorem. Solvable groups. Nilpotent groups. <b>Unit-II</b> Field theory- Extension fields. Algebraic and transcendental extensions. Separable and inseparable extensions. Normal extensions.
SEPTEMBER	<b>Unit-III</b> Perfect fields. Finite fields. Primitive elements. Algebraically closed fields. <b>Internal Test 1</b>
OCTOBER	<b>Unit-IV</b> Automorphisms of extensions. Galois extensions. Fundamental theorem of Galois theory. <b>Internal Test 2</b>
NOVEMBER	<b>Unit-V</b> Solution of polynomial equations by radicals. Insolvability of the general equation of degree 5 by radicals. <b>Seminar</b>

**M.Sc. I<sup>st</sup> Semester**  
**Mathematics**  
**PAPER-II**  
**Real Analysis (I)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JULY	<b>Unit-I</b> Sequences and series of functions, pointwise and uniform convergence, Cauchy criterion for uniform convergence, Weierstrass M-test, Abel's and Dirichlet's tests for uniform convergence, uniform convergence and continuity,
AUGUST	<b>Unit I</b> Definition and simple properties of Riemann-Stieltjes integral, uniform convergence and Riemann-Stieltjes integration, uniform convergence and differentiation, Weierstrass approximation theorem. <b>Unit-II</b> Power series, uniqueness theorem for power series, Abel's and Tauber's theorems. Rearrangements of terms of a series, Riemann's theorem.
SEPTEMBER	<b>Unit-III</b> Functions of several variables, linear transformations, Derivatives in an open subset of $\mathbb{R}^n$ , Chain rule, Partial derivatives, interchange of the order of differentiation, Derivatives of higher orders, Taylor's theorem, Inverse function theorem, Implicit function theorem.  <b>Internal Test 1</b>
OCTOBER	<b>Unit-IV</b> Jacobians, extremum problems with constraints, Lagrange's multiplier method, Differentiation of integrals.  <b>Internal Test 2</b>
NOVEMBER	<b>Unit-V</b> Partitions of unity, Differential forms, Stoke's theorem.  <b>Seminar</b>

**M.Sc. I<sup>st</sup> Semester**  
**Mathematics**  
**PAPER-III**  
**Topology**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>Unit-I</b> Countable and uncountable sets. Infinite sets and the Axiom of Choice. Cardinal numbers and its arithmetic. Schroeder-Bernstein theorem. Cantor's theorem and the continuum hypothesis. Zorn's lemma, well-ordering theorem. Definition and examples of topological spaces.
<b>AUGUST</b>	<b>Unit I</b> Closed sets. Closure. Dense subsets. Neighbourhoods. Interior, exterior and boundary. Accumulation points and derived sets. Bases and sub-bases. Subspaces and relative topology.  <b>Unit-II</b> Alternate methods of defining a topology in terms of Kuratowski Closure Operator and Neighbourhood Systems. Continuous functions and homeomorphism. First and Second Countable spaces. Lindelof's theorems. Separable spaces. Second countability and reparability.
<b>SEPTEMBER</b>	<b>Unit-III</b> Separation axioms; their Characterizations and basic properties. Urysohn's lemma, Tietze extension theorem. <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>Unit-IV</b> Compactness. Continuous functions and compact sets. Basic properties of Compactness. Compactness and finite intersection property. Sequentially and countably compact sets. Lococompactness and one point compactification. Stone-Cech compactification.  <b>Internal Test 2</b>
<b>NOVEMBER</b>	<b>Unit-V</b> Compactness in metric spaces. Equivalence of compactness, countable compactness and sequential compactness in metric space. Connected spaces. Connectedness on the real line. Components. Locally connected spaces. <b>Seminar</b>

**M.Sc. I<sup>st</sup> Semester  
Mathematics  
PAPER-IV**

**Complex Analysis (I)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JULY	<b>Unit-I</b> Complex integration, Cauchy-Goursat. Theorem. Cauchy's integral formula. Higher order derivatives. Morera's Theorem. Cauchy's inequality and Liouville's theorem..
AUGUST	<b>Unit I</b> The fundamental theorem of algebra. Taylor's theorem. Laurent's series. Isolated singularities. Meromorphic functions  <b>Unit-II</b> Maximum modulus principle. Schwarz lemma. The argument principle. Rouché's theorem Inverse function theorem
SEPTEMBER	<b>Unit-III</b> Residues. Cauchy's residue theorem. Evaluation of integrals. Branches of many valued functions with special reference to $\arg z$ , $\log z$ and $z^a$ . <b>Internal Test 1</b>
OCTOBER	<b>Unit-IV</b> Bilinear transformations, their properties and classifications. Definitions and examples of Conformal mappings. <b>Internal Test 2</b>
NOVEMBER	<b>Unit-V</b> Spaces of analytic functions. Hurwitz's theorem. Montel's theorem Riemann mapping theorem.  <b>Seminar</b>

**M.Sc. I<sup>st</sup> Semester  
Mathematics  
PAPER-V**

**Advanced Discrete Mathematics (I)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JULY	<b>Unit-I</b> Formal Logic-Statements. Symbolic Representation and Tautologies. Quantifiers, Predicates and Validity. Propositional Logic.
AUGUST	<b>Unit I</b> Semigroups & Monoids-Definitions and Examples of Semigroups and monoids (including those pertaining to concatenation operation). <b>Unit-II</b> Homomorphism of semigroups and monoids. Congruence relation and Quotient Semigroups. Subsemigroup and submonoids. Direct Products. Basic Homomorphism Theorem.
SEPTEMBER	<b>Unit-III</b> Lattices-Lattices as partially ordered sets. Their properties. Lattices as Algebraic Systems. sublattices, Direct products, and Homomorphisms. Some Special Lattices e.g., Complete, Complemented and Distributive Lattices. Boolean Algebras-Boolean Algebras as Lattices. Various Boolean Identities. The Switching Algebra example. Subalgebras, <b>Internal Test 1</b>
OCTOBER	<b>Unit-IV</b> Direct Products and Homomorphisms. Join-Irreducible elements, Atoms and Minterms. Boolean Forms and Their Equivalence. Minterm Boolean Forms, Sum of Products Canonical Forms. Minimization of Boolean Functions. Applications of Boolean Algebra to Switching Theory (using AND,OR & NOT gates). The Karnaugh Map Method. <b>Internal Test 2</b>
NOVEMBER	<b>Unit-V</b> Grammars and Languages-Phrase-Structure Grammars. Rewriting Rules. Derivations. Sentential Forms. Language generated by a Grammar. Regular, Context-Free, and Context Sensitive Grammars and Languages. Regular sets, Regular Expressions and the Pumping Lemma. Kleene's Theorem. Notions of Syntax Analysis, Polish Notations. Conversion of Infix Expressions to Polish Notations. The Reverse Polish Notation. <b>Seminar</b>

**M.Sc. II<sup>nd</sup> Semester  
Mathematics  
PAPER-I**

**Advanced Abstract Algebra (II)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JANUARY	<b>Unit-I</b> Modules - Cyclic modules. Simple modules. Semi-simple modules. Schuler's Lemma. Free modules. Noetherian and artinian modules and rings-Hilbert basis theorem. Wedderburn Artin theorem. Uniform modules, primary modules, and Noether-Lasker theorem.
FEBRUARY	<b>Unit-II</b> Linear Transformations - Algebra of linear transformation, characteristic roots, matrices and linear transformations. <b>Unit-III</b> Canonical Forms - Similarity of linear transformations. Invariant subspaces. Reduction to triangular forms. <b>Internal Test 1</b>
MARCH	<b>Unit III</b> Nilpotent transformations. Index of nilpotency. Invariants of a nilpotent transformation. The primary decomposition theorem. Jordan blocks and Jordan forms. <b>Unit-IV</b> Smith normal form over a principal ideal domain and rank. <b>Internal Test 2</b>
APRIL	<b>Unit IV</b> Fundamental structure theorem for finitely generated modules over a Principal ideal domain and its applications to finitely generated abelian groups. <b>Unit-V</b> Rational canonical form. Generalized Jordan form over any field. <b>Seminar</b>



**M.Sc. II<sup>nd</sup> Semester**  
**Mathematics**  
**PAPER-II**  
**Real Analysis (II)**

MONTH	PROPOSED PLAN
JANUARY	<b>Unit-I</b> Definition and existence of Riemann-Stieltjes integral, Properties of the Integral, integration and differentiation, the fundamental theorem of Calculus, integration of vector-valued functions, Rectifiable curves. <b>Unit-II</b> Lebesgue outer measure. Measurable sets. Regularity.
FEBRUARY	<b>Unit II</b> Measurable functions. Borel and Lebesgue measurability. Non-measurable sets. Integration of Non-negative functions. The General integral. Integration of Series. <b>Unit-III</b> Measures and outer measures, Extension of a measure. <b>Internal Test 1</b>
MARCH	<b>Unit III</b> Uniqueness of Extension. Completion of a measure. Measure spaces. Integration with respect to a measure. Riemann and Lebesgue Integrals. <b>Unit-IV</b> The Four derivatives. Lebesgue Differentiation Theorem. <b>Internal Test 2</b>
APRIL	<b>Unit IV</b> Differentiation and Integration. <b>Unit-V</b> Functions of Bounded variation. The $L^p$ -spaces. Convex functions. Jensen's inequality. Holder and Minkowski inequalities. Completeness of $L^p$ , Convergence in Measure, Almost uniform convergence. <b>Seminar</b>

**M.Sc. II<sup>nd</sup> Semester  
Mathematics  
PAPER-III**

**General and Algebraic Topology**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JANUARY	<b>Unit-I</b> Tychonoff product topology in terms of standard sub-base and its characterizations. Projection maps. Separation axioms. <b>Unit-II</b> Product spaces. Connectedness and product spaces.
FEBRUARY	<b>Unit II</b> Compactness and product spaces (Tychonoff's theorem). Countability and product spaces. <b>Unit-III</b> Embedding and metrization. Embedding lemma and Tychonoff embedding. The Urysohn metrization theorem. Metrization theorems and Paracompactness-Local finiteness. <b>Internal Test 1</b>
MARCH	<b>Unit III</b> The Nagata-Smirnov metrization theorem. Paracompactness. The Smirnov metrization theorem. <b>Unit-IV</b> Nets and filter. Topology and convergence of nets. Hausdorffness and nets. Compactness and nets. Filters and their convergence. <b>Internal Test 2</b>
APRIL	<b>Unit IV</b> Canonical way of converting nets to filters and vice-versa. Ultra-filters and Compactness. <b>Unit-V</b> The fundamental group and covering spaces-Homotopy of paths. The fundamental group. Covering spaces. The fundamental group of the circle and the fundamental theorem of algebra <b>Seminar</b>

**M.Sc. II<sup>nd</sup> Semester  
Mathematics  
PAPER-IV**

**Advanced Complex Analysis (II)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JANUARY	<p><b>Unit-I</b> Weierstrass' factorisation theorem. Gamma function and its properties. Riemann Zeta function. Riemann's functional equation. Runge's theorem. Mittag-Leffler's theorem.</p> <p><b>Unit-II</b> Analytic Continuation. Uniqueness of direct analytic continuation.</p>
FEBRUARY	<p><b>Unit II</b> Uniqueness of analytic continuation along a curve. Power series method of analytic continuation Schwarz Reflection Principle. Monodromy theorem and its consequences.</p> <p><b>Unit-III</b> Harmonic functions on a disk. Harnack's inequality and theorem.</p> <p><b>Internal Test 1</b></p>
MARCH	<p><b>Unit III</b> Dirichlet Problem. Green's function.</p> <p><b>Unit-IV</b> Canonical products. Jensen's formula. Poisson-Jensen formula. Hadamard's three circles theorem. Order of an entire function. Exponent of Convergence. Borel's theorem. Hadamard's factorization theorem.</p> <p><b>Internal Test 2</b></p>
APRIL	<p><b>Unit-V</b> The range of an analytic function. Bloch's theorem. The Little Picard theorem. Schottky's theorem. Montel Caratheodory and the Great picard theorem. Univalent functions. Bieberbach's conjecture (Statement only) and the "1/4-theorem.</p> <p><b>Seminar</b></p>

**M.Sc. II<sup>nd</sup> Semester  
Mathematics  
PAPER-V**

**Advanced Discrete Mathematics (II)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JANUARY	<b>Unit-I</b> Graph Theory-Definition of (Undirected) Graphs, Paths, Circuits, Cycles, & Subgraphs. Induced Subgraphs. Degree of a vertex. Connectivity. Planar Graphs and their properties. Trees. Euler's Formula for connected planar Graphs. Complete & Complete Bipartite Graphs. Kuratowski's Theorem (statement only) and its use.
FEBRUARY	<b>Unit-II</b> Spanning Trees, Cut-sets, Fundamental Cut -sets, and Cycle. Minimal Spanning Trees and Kruskal's Algorithm. Matrix Representations of Graphs. Euler's Theorem on the Existence of Eulerian Paths and Circuits. <b>Unit-III</b> Directed Graphs. In degree and Out degree of a Vertex. Weighted undirected Graphs. <b>Internal Test 1</b>
MARCH	<b>Unit III</b> Dijkstra's Algorithm.. strong Connectivity & Warshall's Algorithm. Directed Trees. Search Trees. Tree Traversals. <b>Unit-IV</b> Introductory Computability Theory-Finite State Machines and their Transition Table Diagrams. Equivalence of finite State Machines <b>Internal Test 2</b>
APRIL	<b>Unit IV</b> Reduced Machines. Homomorphism. <b>Unit-V</b> Finite Automata. Acceptors. Non-deterministic Finite Automata and equivalence of its power to that of Deterministic Finite Automata. Moore and mealy Machines. Turing Machine and Partial Recursive Functions. <b>Seminar</b>

**M.Sc. III<sup>rd</sup> Semester**  
**Mathematics**  
**PAPER-I**

**Integration Theory and Functional Analysis (I)**

MONTH	PROPOSED PLAN
JULY	<b>UNIT I</b> Signed measure. Hahn decomposition theorem, mutually singular measures. Radon-Nikodym theorem.
AUGUST	<b>UNIT I</b> Labesgue decomposition. Riesz representation theorem. Extension theorem (Caratheodory). <b>UNIT II</b> e-Stieltjes integral, product measures, Fubini's theorem. Differentiation and Integration. Decomposition into absolutely continuous and singular parts.
SEPTEMBER	<b>UNIT III</b> Baire sets. Baire measure, continuous functions with compact support. Regularity of measures on locally compact spaces. Integration of continuous functions with compact support, Riesz-Markoff theorem. <b>Internal Test 1</b>
OCTOBER	<b>UNIT IV</b> Normed linear spaces. Banach spaces and examples. Quotient space of normed linear spaces and its completeness, equivalent norms. Riesz Lemma, basic properties of finite dimensional normed linear spaces and compactness.
NOVEMBER	<b>UNIT V</b> Convergence and bounded linear transformations, normed linear spaces of bounded linear transformations, dual spaces with examples. <b>Seminar</b>

## M.SC.III<sup>rd</sup> SEMESTER

### Mathematics PAPER-II

#### Partial Differential Equations and Mechanics (I)

MONTH	PROPOSED PLAN
JULY	<b>Unit-I</b> Examples of PDE. Classification. Transport Equation-Initial value Problem. Non-homogeneous Equation. Laplace's Equation-Fundamental Solution
AUGUST	<b>UNIT I</b> Mean Value Formulas, Properties of Harmonic Functions, Green's Function, Energy Methods. <b>UNIT II</b> Heat Equation-Fundamental Solution, Mean Value Formula, Properties of Solutions, Energy Methods. Wave Equation-Solution by Spherical Means, Non-homogeneous Equations, Energy Methods.
SEPTEMBER	<b>Unit-III</b> Generalized coordinates. Holonomic and Non-holonomic systems. Scleronomic and Rheonomic systems. Generalized potential. Lagrange's equations of first kind. Lagrange's equations of second kind. Uniqueness of solution. Energy equation for conservative fields. Hamilton's variables. Donkin's theorem. Hamilton canonical equations. Cyclic coordinates. Routh's equations. <b>Internal Test 1</b>
OCTOBER	<b>Unit-IV</b> Poisson's Bracket. Poisson's Identity. Jacobi-Poisson Theorem. Motivating problems of calculus of variations, Shortest distance. Minimum surface of revolution. Brachistochrone problem. Isoperimetric problem. Geodesic. Fundamental lemma of calculus of variations. Euler's equation for one dependent function and its generalization to (i) 'n' dependent functions, (ii) higher order derivatives. Conditional extremum under geometric constraints and under integral constraints. <b>Internal Test 2</b>
NOVEMBER	<b>Unit-V</b> Attraction and potential of rod, disc, spherical shells and sphere. Surface integral of normal attraction (application & Gauss' theorem). Laplace and Poisson equations. Work done by selfattracting systems. Distributions for a given potential. Equipotential surfaces. Surface and solid harmonics. Surface density in terms of surface harmonics. <b>Seminar</b>

## M.SC.III<sup>rd</sup> SEMESTER

### Mathematics PAPER-III

#### Fundamentals of Computer Science-Theory and Practical (Object Oriented Programming and Data Structure)

MONTH	PROPOSED PLAN
JULY	<b>Unit-I</b>  Object Oriented Programming-Classes and Scope, nested classes, pointer class members; Class initialization, assignment and destruction.  <b>Practical:-</b> Practical based on class and constructor
AUGUST	<b>Unit-II</b>  Overloaded functions and operators; Templates including class templates; class inheritance and virtual functions. <b>Practical :-</b> Practical based on function and operator overloading Inheritance, virtual function
SEPTEMBER	<b>Unit-III</b>  Data Structures-Analysis of algorithms, q, W, O, o, w notations ; Sequential and linked representations, Lists, <b>Practical :-</b> Practical based on array
OCTOBER	<b>UNIT III</b> Stacks, and queues; <b>Unit-IV</b> Trees: Binary tree- search tree implementation, B-tree (concept only); <b>Practical :-</b> Practical based on stack ,queue and tree
NOVEMBER	<b>Unit-V</b>  Sorting: Insertion sort, shell sort, quick-sort, heap sort  and their analysis; Hashing-open and closed.  <b>Practical :-</b> practical based on searching and sorting .

## M.SC.III<sup>rd</sup> SEMESTER

### Mathematics PAPER-IV

#### Operations Research (I)

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>Unit-I</b> Operations Research and its Scope. Necessity of Operations Research in Industry. Linear Programming-Simplex Method. Theory of the Simplex Method. Duality and Sensitivity Analysis.
<b>AUGUST</b>	<b>Unit-II</b> Other Algorithms for Linear Programming-Dual Simplex Method.
<b>SEPTEMBER</b>	<b>Unit-III</b> Parametric Linear Programming. Upper Bound Technique. Interior Point Algorithm. Linear Goal Programming. <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>Unit-IV</b>  Transportation and Assignment Problems.  <b>Internal Test 2</b>
<b>NOVEMBER</b>	<b>Unit-V</b>  Network Analysis-Shortest Path Problem. Minimum Spanning Tree Problem. Maximum Flow I Problem. Minimum Cost Flow Problem. Network Simplex Method. Project Planning and Control I with PERT-CPM.  <b>Seminar</b>



## M.SC.III<sup>rd</sup> SEMESTER

### Mathematics PAPER-V

#### Programming in C (with ANSI features) Theory and Practical

MONTH	PROPOSED PLAN
JULY	<b>Unit-I</b> An overview of programming. Programming language, Classification .C Essentials-Program Development. Functions. Anatomy of a C Function. Variables and Constants. Expressions. Assignment Statements. Formatting Source Files. Continuation Character. The Preprocessor. <b>Practical:-</b> Practical based on Arithmetic operator
AUGUST	<b>Unit-II</b> Scalar Data Types-Declarations, Different Types of Integers. Different kinds of Integer Constants. Floating-Point Types. Initialization. Mixing Types. Explicit Conversions-Casts. Enumeration Types. The Void Data Type. Typedefs. Finding the Address of an object. Pointers. <b>Practical :-</b> Practical based on working of different datatypes
SEPTEMBER	<b>Unit-III</b> Control Flow-Conditional Branching. The Switch Statement. Looping. Nested Loops. The break and continue Statements. The goto statement. Infinite Loops. <b>Practical :-</b> Practical based control statement
OCTOBER	<b>Unit-IV</b> Operators and Expressions-Precedence and Associativity. Unary Plus and Minus operators. Binary Arithmetic Operators. Arithmetic Assignment Operators. Increment and Decrement Operators. Comma Operator. Relational Operators. Logical Operators. Bit - Manipulation Operators. Bitwise Assignment Operators. Cast Operator. Size of Operators. Conditional Operator. Memory Operators. <b>Practical :-</b> Practical based on different operator
NOVEMBER	<b>Unit-V</b> Arrays -Declaring an Array. Arrays and Memory. Initializing Arrays. Encryption and Decryption. <b>Practical :-</b> practical based on Array .

**M.Sc. IV<sup>th</sup> Semester  
Mathematics  
PAPER-I**

**Functional Analysis (II)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JANUARY	<p><b>Unit-I</b> Uniform boundedness theorem and some of its consequences. Open mapping and closed graph theorems.</p> <p><b>Unit-II</b> Hahn-Banach theorem for real linear spaces, complex linear spaces and normed linear spaces. Reflexive spaces. Weak Sequential Compactness. Compact Operators.</p>
FEBRUARY	<p><b>Unit II</b> Solvability of linear equations in Banach spaces. The closed Range Theorem.</p> <p><b>Unit-III</b> Inner product spaces. Hilbert spaces. Orthonormal Sets. Bessel's inequality. Complete orthonormal sets and Parseval's identity.</p> <p><b>Internal Test 1</b></p>
MARCH	<p><b>Unit-IV</b> Structure of Hilbert spaces. Projection theorem. Riesz representation theorem. Adjoint of an operator on a Hilbert space. Reflexivity of Hilbert spaces.</p> <p><b>Internal Test 1</b></p>
APRIL	<p><b>Unit-V</b></p> <p>Self-adjoint operators, Positive, projection, normal and unitary operators. Abstract variational boundary-value problem. The generalized Lax-Milgram theorem.</p> <p><b>Seminar</b></p>

**M.Sc. IV<sup>th</sup> Semester**  
**Mathematics**  
**PAPER-II**  
**Partial Differential Equations and Mechanics (II)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<b>Unit-I</b> Nonlinear First Order PDE-Complete Integrals, Envelopes, Characteristics, HamiltonJacobi Equations (Calculus of Variations, Hamilton's ODE, Legendre Transform, Hopf-Lax Formula, Weak Solutions, Uniqueness), Conservation Laws (Shocks, Entropy Condition, LaxOleinik formula, Weak Solutions, Uniqueness, Riemann's Problem, Long Time Behaviour)
<b>FEBRUARY</b>	<b>Unit-II</b> Representation of Solutions-Separation of Variables, Similarity Solutions (Plane and Travelling Waves, Solitons, Similarity under Scaling), Fourier and Laplace Transform, Hopf-Cole Transform, Hodograph and Legendre Transforms, Potential Functions. <b>Unit III</b> Asymptotics (Singular Perturbations, Laplace's Method, Geometric Optics, Stationary Phase, Homogenization), <b>Internal Test 1</b>
<b>MARCH</b>	<b>Unit-III</b> Power Series (Non-characteristic Surfaces, Real Analytic Functions, Cauchy-Kovalevskaya Theorem) <b>Unit-IV</b> Hamilton's Principle. Principle of least action. Poincare Cartan Integral invariant. Whittaker's equations. Jacobi's equations. Lee Hwa Chung's theorem, canonical transformations and properties of generating functions. <b>Internal Test 2</b>
<b>APRIL</b>	<b>Unit-V</b> Hamilton-Jacobi equation. Jacobi theorem. Method of separation of variables. Lagrange Brackets. Condition of canonical character of a transformation in terms of Lagrange brackets and Poisson brackets, invariance of Lagrange brackets and Poisson brackets under canonical transformations. <b>Seminar</b>

**M.Sc. IV<sup>th</sup> Semester**  
**Mathematics**  
**PAPER-III**  
**Operating System and Database Management System**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JANUARY	<b>Unit-I</b> Database Systems-Role of database systems, database system architecture and data modeling. <b>Unit-II</b> Introduction to relational algebra and relational calculus.
FEBRUARY	<b>Unit-III</b> Introduction to SQL: Basic features including views; Integrity constraints; Database design-normalization up to BCNF. <b>Practical :-Practical based on SQL</b>
MARCH	<b>Unit-IV</b> Operating Systems- Overview of operating system, user interface, processor management, memory management.
APRIL	<b>Unit-V</b> I/O management, concurrency and Security, network and distributed systems.

**M.Sc. IV<sup>th</sup> Semester  
Mathematics  
PAPER-IV**

**Operations Research (II)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JANUARY	<p><b>Unit-I</b> Dynamic Programming-Deterministic and Probabilistic Dynamic programming.</p> <p><b>Unit II</b> Game Theory-Two-Person, Zero-Sum Games. Games with Mixed Strategies.</p>
FEBRUARY	<p><b>Unit-II</b> Graphical . Solution. Solution by Linear Programming.</p> <p><b>Unit-III</b> Integer Programming-Branch and Bound Technique.</p> <p><b>Internal Test 1</b></p>
MARCH	<p><b>Unit-IV</b> Applications to Industrial Problems-Optimal product mix and activity levels. Petroleum. refinery operations. Blending problems. Economic interpretation of dual linear programming. problems. Input-output analysis. Leontief system. Indecomposable and Decomposable economies.</p> <p><b>Internal Test 2</b></p>
APRIL	<p><b>Unit-V</b> Nonlinear Programming-One/and Multi-Variable Unconstrained Optimization. Kuhn-Tucker Conditions for Constrained Optimization. Quadratic Programming. Separable Programming. I Convex Programming. Non-convex Programming.</p> <p><b>Seminar</b></p>

**M.Sc. IV<sup>th</sup> Semester**  
**Mathematics**  
**PAPER-V**

**Programming in C (with ANSI features) (II)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JANUARY	<p><b>Unit-I</b>  Storage Classes-Fixed vs. Automatic Duration. Scope. Global variables. The register Specifier. ANSI rules for the syntax and Semantics of the storage-class keywords.</p> <p><b>Unit-II</b>  Pointers Pointer Arithmetic. Passing Pointers as Function Arguments.</p> <p><b>Practical :-</b>practical based on storage classes and pointer</p>
FEBRUARY	<p><b>Unit II</b>  Accessing Array Elements through Pointers. Passing Arrays as Function Arguments. Sorting Algorithms. Strings. Multidimensional Arrays. Arrays of Pointers. Pointers to Pointers.</p> <p><b>Unit-III</b>  Functions-Passing Arguments. Declarations and Calls. Pointers to Functions. Recursion. The main Function. Complex Declarations.</p> <p><b>Practical :-</b> practical based on Array and Function</p>
MARCH	<p><b>Unit III</b>  The C Preprocessor-Macro Substitution. Conditional Compilation. Include Facility. Line Control.</p> <p><b>Unit-IV</b>  Structures and Unions-Structures. Dynamic Memory Allocation. Linked Lists. Unions, enum Declarations.</p> <p><b>Practical :-</b> practical based on Macro, Structure and Union</p>
APRIL	<p><b>Unit-V</b>  Input and Output-Streams, Buffering. The &lt;Stdio.h&gt; Header File. Error Handling. Opening and Closing a File. Reading and Writing Data. Selecting an I/O Method. Unbuffered I/O Random Access. The standard library for Input/Output.</p> <p><b>Practical :-</b> practical based on File handling</p>

**GOVT. D. B. GIRL'S P.G. (AUTONOMOUS) COLLEGE, RAIPUR CHHATTISGARH**

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**PROPOSED TEACHING PLAN FOR THE SESSION 2017-18**

**Name of the Department: PHYSICS**

**CLASS M. Sc. I Semester**

<b>Month/ Days</b>	<b>Paper I</b>	<b>Paper II</b>	<b>Paper III</b>	<b>Paper IV</b>
<b>July</b>	<b>Anmission</b>	<b>Anmission</b>	<b>Anmission</b>	<b>Anmission</b>
<b>August</b>	<b>Admission UNIT-I</b> Variational method, expectation value of energy, application to excited states, ground state of He-atom, Zero point energy of one dimensional harmonic oscillator, Vander-waals interaction, the W.K.B. approximation, approximate solutions, .	<b>Admission UNIT-I</b> Foundation of statistical mechanics : macroscopic and microscopic states, contact between statistics and thermodynamics, physical significance of $\Omega(N, V, E)$ , the classical gas, entropy of mixing and Gibb's paradox,	<b>Admission Unit- I</b> Electrons in Solids and Electronic Properties Energy bands: nearly free electron model, origin of energy gap and its magnitude, Bloch function, Kronig-Penny model, Wave equation of electron in periodic potential, restatement of Bloch theorem, crystal moment of an electron, solution of Central equation,	<b>Admission UNIT - I</b> Number system : Decimal, Binary, Octal and Hexadecimal Number System with mutual conversion, BCD addition and subtraction, 1's and 2's compliments, multiplication & division BCD code (8421), Excess -3 code, gray code, binary to gray code and gray code to binary code conversion. Logic gates: Positive and negative logic , Basic gates,

<p><b>September</b></p>	<p>Diagonalization, Complete orthonormal sets of functions UNIT-II Complex Variables: Cauchy-Riemann condition, analytic functions, Cauchy's theorem, Cauchy integral formula, Laurent series, singularities, residue theorem, contour integration, evaluation of definite integrals, problems. <b>UNIT – III</b> Differential equations, first order differential equation,</p>	<p>(iii) spherical pendulum (iv) Isotropic oscillator (v) Atwood's Machine, conservation of linear momentum angular momentum and energy in Lagrangian formulation Lagrange's equation for nonholonomic system procedure to eliminate consideration of Ignorable coordinates the Routhian function. <b>UNIT-II</b> Variational Principle, calculus of variation, some techniques of calculus of variables, Euler Lagrange differential equation. Hamilton variational principle Deduction of Hamilton's Principle from D'Alembert's principle. Deduction of Newton's second law of motion from Hamilton's Principle. Deduction of Lagrange's equations of motion from Hamilton's Principle for conservation and for non conservative systems Non conservative forces. Dissipative system, Rayleigh's Dissipation function, Lagrangian for a charged particle in an electromagnetic field.</p>	<p>library functions. Identifiers, qualifiers, define statements, value Initialized variables, operators, and expressions. Operator precedence and associativity. Scanf with specifier, search set arrangements and suppression Character, format specifier for scanf. <b>UNIT - II</b> Control structure, If statement, if else statement, multiway decision, compound statement. Loops: for loop, while loop, do while loop, break statement, compound statement continue statement, go to statement Function: function main, function accepting more than one parameter, user defined and library function concept associatively with functions, function parameter, return value, recursion comparison. Arrays, strings, multidimensional array, array of strings function in string. <b>UNIT - III</b> (Without Programming) Method for determination of zeroes of linear, non linear,</p>	<p>Coefficient of FET, and relation between different coefficient. Metal Oxide Field Effect Transistor (MOSFET) – DE MOSFET and E-MOSFET construction and working principle, static and dynamic characteristics. Uni-junction transistor (UJT) – basics structure, working principle, Voltage – Current characteristics and important parameters <b>UNIT – II</b> MIS Diode : Introduction, Energy band diagram, accumulation, depletion and inversion condition concept of surface space charge, surface potential, surface capacitance, Ideal MIS curves. MOS diode: structure, Ideal MOS, surface depletion region, Ideal MOS curves, Si-SiO<sub>2</sub> MOS diode-(real case) interface trapped charge, oxide charges. Charged Couple Device (CCD) : Basic structure, working principle, charge transfer with clock voltage.</p>
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<p>October</p>	<p>second order differential equation with constant coefficients, second order linear ODEs with variable coefficients, Solution by series expansion, nonhomogenous differential equations and solution by the method of Green's functions  <b>UNIT-IV</b>  Special functions, Legendre, Bessel, Hermite and Laguerre functions with their physical applications, generating functions, orthogonality conditions,</p>	<p>UNIT – III  Hamiltonian formulation of mechanics: Phase space and the motion of the system, Hamiltonian function, Hamilton's canonical equation of motion. Physical significance of Hamilton's Canonical equation from variational principle. Hamilton's canonical equations of motion in different coordinate systems. Application of Hamilton equation of motion (i) Simple pendulum (ii) compound pendulum (iii) Two dimensional Isotropic Harmonic oscillator (iv) Linear Harmonic(v) Particle in central field of force. Hamiltonian for a charged particle in an electromagnetic field. Principle of least action statement and its proof.  <b>UNIT – IV</b>  Canonical or constant transformation, its advantage example of canonical transformation, necessary and sufficient condition for a transformation to be canonical, Infinitesimal contact transformations. Hamilton-Jacobi partial differential equation for Hamilton's Principle function. Solution of Harmonic oscillator problem by Hamilton-Jacobi method. Hamilton- Jacoby theory. Poisson Bracket: Definition and properties. Invariance of Poisson-Brackets with respect to canonical transformation ,</p>	<p>algebraic equations. And transcendental equations and their convergence. Solution of simultaneous linear equations Gaussian elimination pivoting, iterative method matrix inversion. Eigen values and Eigen vectors of matrices. Power and Jacobi method, curve fitting polynomial least squares.  <b>UNIT - IV</b>  (Without Programming)  Finite difference interpolation with equally spaced and unequally spaced</p>	<p>UNIT – III  Microwave devices: Tunnel Diode – Introduction, Definition, Tunneling Phenomenon, Energy band Structure, Volt-Ampere Characteristics, Negative Resistance of tunnel diode (Characteristics of tunnel diode) Transfer Electron Devices: Transfer Electron Effect, Gun Diode- Introduction and characteristics. Backward Diode: Introduction and Characteristics.  IMPATT Diode : Introduction, Structure, Principle of operation, Static and Dynamic Characteristics.  <b>UNIT – IV</b>  Modulation : Definition, Types of Modulation, Mathematical expression of modulation, Percentage of modulation, Amplitude modulation, Generation of Amplitude modulation,</p>
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<b>November</b>	recursion relations, Integral transforms, Fourier integral and transforms, inversion theorem, Fourier transform of derivatives, convolution theorem. <b>Preparation leave[Exams]</b>	Equations of motion in Poisson bracket form Jacoby identity. Infinitesimal contact transformations interpretation in terms of Poisson Brackets. The angular momentum and Poisson Bracket Lagrange's Brackets: definition & Properties, Relation with Poisson Brackets. <b>Preparation leave[Exams]</b>	points, Numerical differentiation and Integration, Newton's formula, Monte Carlo's evaluation of Integral Numerical solution of ordinary differential equation. Euler and Runge Kutta methods. Predictor corrector method. <b>Preparation leave[Exams]</b>	Demodulation, Demodulation of Amplitude modulated wave, side bands, band width, DSBSC modulation, Generation of DSBSC waves. SSB modulation, Generation and Detection of SSB waves, Multiplexing: Frequency division multiplexing (FDM). <b>Preparation leave[Exams]</b>
<b>December</b>	<b>Exam</b>	<b>Exam</b>	<b>Exam</b>	<b>Exam</b>

### CLASS M. Sc. II Semester

Month/ Days	Paper I	Paper II	Paper III	Paper IV
<b>January</b>	<b>Vacations</b> <b>UNIT - I</b> Inadequacy of classical mechanics, Plank quantum hypothesis and radiation law, Photoelectric effect, de-broglie's theory. Schrödinger equation, continuity equation, Ehrenfest theorem, admissible wave functions, stationary states, one-dimensional problems; walls and barriers,	<b>Vacations</b> <b>Unit-I</b> Laser Characteristics – Spontaneous and stimulated emission, Einstein's quantum theory of radiation, theory of some optical processes, coherence and monochromaticity, kinetics of optical absorption, line broadening mechanism, Basic principle of lasers, population inversion,	<b>Vacations</b> <b>UNIT – I</b> Equation of continuity, Maxwell's equations (SI unit) and its derivation, Integral form of equation, Maxwell's equations in some particular cases, Electromagnetic energy: Poynting Theorem. The wave equation. Plane electromagnetic waves in free space. Plane electromagnetic waves in a non-conducting isotropic medium (i.e. Isotropic dielectrics).	<b>Vacations</b> <b>UNIT – I</b> Radiative and non-radiative transistors, Optical Absorption, bulk and thin film, photoconductive devices (LDR), Emission spectra, Luminescent efficiency, method of excitation. Light emitting diode (LED): high frequency limit, effect of surface and indirect combination current, operation of LED, Visible LEDs and Infrared LEDs.

<p><b>February</b></p>	<p>Schrödinger equation for harmonic oscillator and its solution, uncertainty relations, states with minimum uncertainty product.  <b>UNIT –II</b>            Superposition principle, general formalism of wave mechanics, representation of states and dynamical variables, commutation relationship, completeness and normalization of eigen functions, Dirac-delta function, Bra &amp; Ket notation, matrix representation of an operator, harmonic oscillator and its solution by matrix method, Heisenberg equation of motion.  <b>UNIT -III</b>            Angular momentum in quantum mechanics, commutation relationships,</p>	<p>laser pumping, two &amp; three level laser systems, resonator, Q-factor, losses in cavity, threshold condition, quantum yield.  <b>UNIT – II</b>            Laser Systems            Solid state lasers- the ruby laser, Nd:YAG laser, ND: Glass laser, semiconductor lasers – features of semiconductor lasers, intrinsic semiconductor lasers, Gas laser -neutral atom gas laser, He-Ne laser, molecular gas lasers, CO2 laser, Liquid lasers, dye lasers and chemical laser.  <b>UNIT-III</b>            Advances in laser Physics            Production of giant pulse -Q-switching, giant pulse dynamics,</p>	<p>Plane electromagnetic waves in Anisotropic Non-conducting medium (Anisotropic dielectric) , Plane electromagnetic waves in conducting medium. A simple model for dynamic conductivity. Propagation of electromagnetic waves in ionized gases.  <b>UNIT – II</b>            Boundary conditions at the interface of two media, Reflection and Refraction of electromagnetic waves at the interface of Non-conducting media,. Fresnel's equations experimental verification of fresnel's equations. Reflection and transmission coefficients at the interface between two non conducting media, Brester's law and degree of polarisation , Total internal reflection , Group velocity Propagation of Electromagnetic waves between parallel conducting planes. Wave guides. TM modes and TE modes, Rectangular wave guides.</p>	<p>Diode Laser (Condition for population inversion in active region, light confinement factor , optical gun and threshold current for lasing, Fabry-Perrot Cavity Length for losing and the separation.  <b>UNIT – II</b>            Photo detectors:            Photoconductor, equivalent circuit of photoconductor. Phototransistor.            Bipolar phototransistor, photo – Darlington transistor, V-I characteristic of bilateral hetero structure phototransistor, Solar cells, Solar radiation, solar spectrum, ideal conversion efficiency, Energy band diagram of solar cell, IV characteristics of solar cell, PN junction solar cells, Hetero junction, Interface thin film solar cells.  <b>UNIT – III</b>            Basic Op-amp. Differential amplifier – circuit configurations, dual input, balanced output, differential amplifier –DC analysis,</p>
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<p><b>March</b></p>	<p>eigen values, Spin angular momentum, Pauli's matrices, addition of angular momentum, Clebsch-Gordon coefficients. Central force problem, spherically symmetric potentials in three dimensions, separation of wave equation, parity, three-dimensional square-well potential and energy levels</p> <p><b>UNIT – IV</b> Hydrogen atom; solution of the radial equation, energy levels and stationary state wave functions, discussion of bound states, degeneracy. Time-independent perturbation theory, non-degenerate case, first order and second perturbations with the example of an oscillator,</p>	<p>laser amplifiers, mode locking and pulling, Non-linear optics, Harmonic generation, second harmonic generation, Phase matching, third harmonic generation, optical mixing, parametric generation and self-focusing of light.</p> <p><b>UNIT – IV</b> Multi-photon processes; multi-quantum photoelectric effect, Theory of two-photon process, three-photon process, second harmonic generation, parametric generation of light, Laser spectroscopy : Rayleigh and Raman scattering, Stimulated Raman effect,</p>	<p><b>UNIT – III</b> Postulates of Einstein's special theory of relativity, Galilean transformations. Lorentz's transformations and its consequence, Transformation of differential operator, Invariance of D'Alembertian operator, Invariance of charge, Transformation of charge density, Electric field measured in different frames of reference, Minkowski space, concept of four vector, Lorentz transformation of space and time in four vector form, Transformation for charge and current density, Transformation of electromagnetic potential A and <math>\phi</math>. Lorentz condition in covariant form, Covariance or Maxwell field equation in terms of four vector.</p> <p><b>UNIT – IV</b> Electromagnetic vector and scalar potential, Lorentz Gauge, Lienard Wiechart potentials, the electromagnetic field of a uniformly moving point charge, Radiation from an accelerated charge at low velocity – Larmor's formula,</p>	<p>Ac analysis, inverting and non-inverting inputs, CMRR, Constant current bias level transistor. Block diagram of a typical Op-amp. Analysis, open loop configuration, inverting and non-inverting amplifier, Op-amp. With negative feedback, Voltage series feedback, effect of feedback on closed loop gain input persistence output, resistance bandwidth and output offset voltage, voltage follower.</p> <p><b>UNIT – IV</b> Practical Op-amp. Input offset voltage, Input offset current, total output offset voltage, CMRR frequency response, DC and AC amplifier summing scaling and averaging amplifiers instrumentation amplifier, integrator and differentiator Oscillators</p>
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<b>April</b>	degenerate cases, removal of degeneracy in second order, Zeeman effect without electron spin, first-order Stark effect in hydrogen, perturbed energy levels, correct eigen function, occurrence of permanent electric dipole moments. <b>Preparation leave[exams]</b>	Hyper-Raman effect, Coherent anti-stokes Raman Scattering, Photo-acoustic Raman spectroscopy. Laser Applications – ether drift and absolute rotation of the Earth, isotope separation, plasma, thermonuclear fusion, laser applications in chemistry, biology, astronomy, engineering and medicine. <b>Preparation leave[exams]</b>	Relativistic generalization of Larmor's formula, Angular distribution of radiation emitted by an accelerated charge, Radiation damping, The Abraham Lorentz formula, Cherenkov radiation, Radiation due to an oscillating electric dipole, electric quadrupole radiation, Radiation due to small current element, Radiation from linear antenna, Half wave antenna, Antenna array. <b>Preparation leave[exams]</b>	principles, oscillator types, frequency stability response, The phase shift oscillator. Wein bridge oscillator, Multivibrators, Monostable and Astable, Comparators, square wave and triangle wave generators. <b>Preparation leave[exams]</b>
<b>May</b>	<b>Practical and Theory Exam</b>	<b>Practical and Theory Exam</b>	<b>Practical and Theory Exam</b>	<b>Practical and Theory Exam</b>

### CLASS M. Sc. III Semester

Month/ Days	Paper I	Paper II	Paper III	Paper IV
July	Admission	Admission	Admission	Admission
<b>August</b>	<b>Admission</b> <b>UNIT-I</b> Variational method, expectation value of energy, application to excited states, ground state of He-atom, Zero point energy of one dimensional harmonic oscillator, Vander-waals interaction, the W.K.B. approximation, approximate solutions, .	<b>Admission</b> <b>UNIT-I</b> Foundation of statistical mechanics : macroscopic and microscopic states, contact between statistics and thermodynamics, physical significance of $\Omega(N, V, E)$ , the classical gas, entropy of mixing and Gibbs's paradox,	<b>Admission</b> <b>Unit- I</b> Electrons in Solids and Electronic Properties Energy bands: nearly free electron model, origin of energy gap and its magnitude, Bloch function, Kronig-Penny model, Wave equation of electron in periodic potential, restatement of Bloch theorem, crystal moment of an electron, solution of Central equation,	<b>Admission</b> <b>UNIT - I</b> Number system : Decimal, Binary, Octal and Hexadecimal Number System with mutual conversion, BCD addition and subtraction, 1's and 2's complements, multiplication & division BCD code (8421), Excess -3 code, gray code, binary to gray code and gray code to binary code conversion. Logic gates: Positive and negative logic, Basic gates,

September	<p>asymptotic nature of the solution, solution near turning point, connection formulae, energy levels of a potential well and quantization rule <b>UNIT -II</b></p> <p>Theory of scattering: differential and total scattering cross section, wave mechanical picture of scattering &amp; the scattering amplitude, Green's functions and formal expression for scattering amplitude, The Born approximation and its validity, Partial wave analysis, asymptomatic behavior of partial waves and phase shifts, optical theorem, scattering by a square well potential, scattering by a hard sphere, scattering by a Coulomb potential..</p> <p><b>UNIT- III</b></p> <p>Time-dependent perturbation theory, first order perturbation,</p>	<p>phase space of classical system, Liouville's theorem and its consequences, quantum states and phase space.</p> <p><b>UNIT- II</b></p> <p>Elements of ensemble theory – A system in microcanonical, canonical, and grand canonical ensembles, partition functions, physical significance of statistical quantities, example of classical system, energy and energy-density fluctuations and mutual correspondence of various ensembles.</p> <p><b>UNIT-III</b></p> <p>Formulation of quantum statistics – Quantum mechanical ensemble theory,</p>	<p>Kronig-Penny model in reciprocal space, empty lattice Approximation, approximate solution near zone boundary, Number of orbitals in a band, metals and insulators.</p> <p><b>Unit -II</b></p> <p>Fermi surfaces and metals Effect of temperature on F-D distribution, free electron gas in three dimension. Different zone schemes, reduced and periodic zones, construction of Fermi surfaces, nearly free electrons, electron, hole, open orbits, Calculation of energy bands, Tight binding, Wigner-Seitz, cohesive energy, pseudo potential methods. Experimental methods in Fermi surface studies, quantization of orbits in a magnetic field, de Haas van Alphen Effect, External orbits, Fermi surface of copper.</p>	<p>Universal building block. Basic laws of Boolean Algebra, De-Morgan's Theorem, two, three and four variable K-Map, mapping and minimization of SOP and POS expressions, pairs, quads, octet, overlapping, Rolling, concepts of Don't care condition.</p> <p><b>UNIT – II</b></p> <p>Ex-OR gate, Ex-NOR gate circuitry, Half adder, Full adder, binary parallel adder, Serial adder, Half Subtractor, Full Subtractor, 1's complements Subtractor circuit and 2's complements Subtractor circuit. Digital logic Families : Introduction, Basic concepts of RTL, DTL, TTL, ECL and CMOS logic. Decoder : 2 line to 4 line decoder, 1 of 16 decoder, BCD to decimal decoder, BCD to seven segment decoder, Encoder : decimal to BCD encoder. Multiplexer : 2-input, 4-input, 16 input Multiplexer, DeMultiplexer : 1 line to 2 line, 1 line to 4 line and 1 line to 16 line DeMultiplexer.</p> <p><b>UNIT – III</b></p> <p>Flip-flop and timing diagram, RS flip-flop using NOR gate,</p>
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<b>October</b>	<p>Harmonic perturbation, Fermi's Golden rule, Ionization of a H-atom, absorption and induced emission, Selection rules. Identical particles, symmetric and anti symmetric wave functions</p> <p><b>UNIT –IV</b> Relativistic quantum mechanics, formulation of relativistic quantum theory, the Klein-Gordon equation;</p>	<p>density matrix, statistics of various quantum mechanical ensembles, system composed of indistinguishable particles. Theory of simple gases –Ideal gas in various quantum mechanical ensemble, Maxwell-Boltzmann, Bose-Einstein, Fermi-Dirac distributions, statistics of occupation number.</p> <p><b>UNIT - IV</b> Ideal Bose and Fermi gases - Thermodynamic behavior of an ideal Bose gas, Bose-Einstein condensation and, elementary excitations in liquid helium II,</p>	<p>Unit- III Crystal vibration and thermal properties Lattice dynamics in monoatomic and diatomic lattice: two atoms per primitive basis, optical and acoustic modes, quantization of elastic waves, phonon momentum, inelastic neutron scattering by phonons, Anharmonic crystal interactions-thermal expansion, thermal conductivity, thermal resistivity of phonon gas, umklapp processes, imperfections.</p> <p><b>Unit–IV</b> Electron-Phonon interaction-superconductivity Experimental survey: occurrence of superconductivity, Destruction of superconductivity by magnetic field, Meissner effect,</p>	<p>RS flip-flop using NAND gate, Clocked RS flip-flop, D- latch flip-flop, Preset and Clear, JK flip-flop, Positive and negative edge triggered flop-flops., JK Master Slave flip-flop. Counters : Binary ripple counter , up counter , down counter, decade counter and Ring counter and time diagram Registers : Parallel and shift Register, Scaling, PIPO, SIPO, PISO, SOSI Bi- directional shift Register, Application of shift register.</p> <p><b>UNIT – IV</b> Digital to analog converter and Analog to Digital converters : D/A converters using binary weighted resistor network and R-2R ladder Network; Counter type A/D converter,</p>
<b>November</b>	<p>plane wave solutions, charge and current densities, The Dirac equation for a free particle, matrices alpha and beta, Lorentz covariance of the Dirac equation, free particle solutions and the energy spectrum, charge and current densities.</p> <p><b>Preparation leave[exams]</b></p>	<p>Thermodynamic behavior of an ideal Fermi gas, the electron gas, nonrelativistic and relativistic degenerate electron gas, theory of white dwarf stars.Statistical Mechanics of interacting systems – the method of cluster expansion for a classical gas, Virial expansion of the equation of state.</p> <p><b>Preparation leave[exams]</b></p>	<p>heat capacity, energy gap, MW, and IR properties, isotope effect. London equation, Coherence length, Cooper pairing due to phonons, BCS theory of superconductivity, BCS ground state, flux quantization of superconducting ring, duration of persistent currents, Type II superconductors, Vortex states, Josephson superconductor tunneling, DC/AC Josephson effect,.</p> <p><b>Preparation leave[exams]</b></p>	<p>Successive approximation A/D converter and dual slope converters , applications of DACs and ADCs.</p> <p>Intergraded Circuit : Introduction, Technology, Advantages and disadvantages, Basic technology of monolithic IC, Basic processes used in monolithic technology, Fabrication of components on monolithic IC, IC packing, symbol and scale of Integration.</p> <p><b>Preparation leave[exams]</b></p>
<b>December</b>	<b>Exam</b>	<b>Exam</b>	<b>Exam</b>	<b>Exam</b>

**CLASS M. Sc. IV Semester**

<b>Month/ Days</b>	<b>Paper I</b>	<b>Paper II</b>	<b>Paper III</b>	<b>Paper IV</b>
<b>January</b>	<b>Vacations</b> <b>UNIT- I</b> Plasmons, Polaritons Dielectric function of the electron gas, Plasma optics, Dispersion relation for EM wave, Transverse optical modes in Plasma, Transparency of Alkali metals in the ultraviolet, Longitudinal Plasma oscillations, Plasmon,	<b>Vacations</b> <b>UNIT-I</b> Nuclear Interactions : Nucleon-nucleon interaction, Two-nucleon system, The ground state of the deuteron, Tensor forces, Nucleon-nucleon scattering at low energy, Scattering length, Effective range theory, Spin dependence of nuclear forces,	<b>Vacations</b> <b>UNIT – I</b> Bohr theory of spectra of hydrogen and hydrogen like atoms, reduced mass of electron, variation of Rydberg constant. Sommerfeld's elliptical orbit. Space quantization, Pauli's vector atom model, four quantum numbers. Spectra of alkali atoms, Fine structure in alkali spectra, selection and intensity rules Spectral terms arising from l-s coupling,	<b>Vacations</b> <b>UNIT – I</b> Microprocessor & Micro Computers : Evolution of Microprocessor, Internal Microprocessor, Architecture, Architecture of digital Computer Memory : - Semiconductor memories (RAM, ROM, PROM, EPROM, Shift register). Magnetic Memory: - Floppy disks, Hard disks,



<p><b>February</b></p>	<p>electrostatic screening and screened Coulomb potential, Mott metal-insulator transition, screening and phonons in metals, Polaritons, LST relation .  <b>UNIT –II</b>          Dielectric and ferroelectrics          Maxwell's equations, polarization, macroscopic electric field, depolarization field, E<sub>1</sub>; local electric field at an atom, Lorentz field E<sub>2</sub>, fields of dipoles inside cavity E<sub>3</sub>; dielectric constant and polarizability, electronic polarizability; structural phase transition; ferro-electric crystals, classification; displacive transition, soft optical phonons, Landau theory of phase transitions, first and second order transition, antiferro-electricity, ferro-electric domain, piezoelectricity, ferro-elasticity, optical ceramics.  <b>UNIT –III</b>          Magnetism          General ideas of dia- and para-magnetisms, quantum theory of paramagnetism, rare earth ions,</p>	<p>Charge independence and charge symmetry of nuclear forces, Iso-spin formalism, Exchange forces, Meson theory of nuclear forces and the Yukawa interaction.  <b>UNIT-II</b>          Nuclear Decay :          Beta decay, Fermi's theory of beta decay, Shape of the beta spectrum, Total decay rate, Angular momentum and parity selection rules, Comparative half-lives, Allowed and forbidden transitions, Selection rules, Parity violation, Two component theory of neutrino decay, Detection and properties of neutrino Gamma decay, Multiple transitions in nuclei, Angular momentum and Parity selection rules, Internal conversion, Nuclear isomerism.</p>	<p>spin orbit interaction, screening constants for alkali spectra          Spectra of Alkaline earth atoms, singlet-triplet series, LS and JJ coupling, interaction energy, selection and intensity rules.  <b>UNIT – II</b>          Effect of magnetic field on energy levels (mono valent atoms)          Gyromagnetic ratio for orbital and spin motion, vector model, Lande's g-factor, normal and anomalous Zeeman effect, Paschen Back effect. Stark effect Line broadening mechanism. Electron spin resonance, Nuclear magnetic resonance  <b>UNIT – III</b>          Optical Fibers: Introduction, Structure, Classification, Refraction and Snell's law, Total internal refraction, Light propagation through and optical fiber,</p>	<p>Optical Disks, Magnetic Bubble Memory.          Networking : Local Area Networking (LAN) , LAN topology (Bus, Star, Ring ) .  <b>UNIT – II</b>          Intel 8085 : ALU, Timing and Control Unit, Registers, Data and Address          Bus, Pin          Configuration.          Instruction Cycle : Op-code and Operands, Fetch Operation, Execute          Operation, Machine Cycle, Instruction and Data flow.          Time Diagram : Opcode Fetch Cycle, Memory read, I/O Read, Memory write, I/O Write.</p>
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<p><b>March</b></p>	<p>Hund rule, iron group ions, crystal field splitting, quenching of orbital angular momentum, spectroscopic splitting factor, van vleck temperature dependent paramagnetism, Cooling by isentropic demagnetization, nuclear demagnetization, paramagnetic Susceptibility of conduction electrons.</p> <p><b>UNIT-IV</b> Ferromagnetism and anti ferromagnetism Ferromagnetic order, Curie point and exchange integral, temp dependence of saturation magnetization, saturation magnetization at absolute zero;</p>	<p><b>UNIT-III</b> Nuclear models : Liquid drop model, Bohr-Wheeler theory of fission, Shell Model, Experimental evidence for shell effects, Single particle shell model, Spinorbit interaction and magic numbers, Analysis of shell model predictions, Magnetic moments and Schmidt lines, Collective model of Bohr and Mottelson.</p> <p><b>UNIT-IV</b> Elementary particle Physics: The fundamental interactions, Classification of elementary particles, Leptons and Hadrons, Symmetries, groups and conservation laws,</p>	<p>energy levels and spectra. Rotational energy and spectra of diatomic molecules as rigid rotor and non rigid rotor, inter nuclear distance and isotope effect. Vibrational energy levels and spectra of diatomic molecules as harmonic oscillator- Anharmonicity of molecular vibrations, energy levels and spectrum, Morse potential energy curve, isotope effects and force constants</p> <p><b>UNIT – IV</b> Molecule as vibrating rotor-rotator vibrational spectrum of diatomic molecules-PQR branches</p>	<p><b>UNIT – III</b> Addressing Modes : Direct Addressing, Register addressing, Register Indirect Addressing, Immediate Addressing, Implicit Addressing. Instruction set of 8085 : Data transfer group, Arithmetic group, Logical group. Assembly Language Programs: Addition of Two 8-bit number, Sum 8-bit , Addition of Two 8-bit number, sum 16-bit, 8-bit subtraction, Find the largest number in a data array, To arrange a series of numbers in Descending order, Find the smallest number in a data array, To arrange a data array in ascending order, Shift of 8-bit number of left by one bit and two bit , Shift of 16-bit number left by one and two bit.</p> <p><b>UNIT – IV</b> Optical Fibers: Introduction, Structure, Classification, Refraction and Snell's law, Total internal refraction, Light propagation through and optical fiber,</p>
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<b>April</b>	<p>magnons, quantization of spin waves, thermal excitation of magnons; neutron magnetic scattering, Ferrimagnetic order, Curie temp and susceptibility of ferrimagnets, iron garnets. Antiferromagnetic order, susceptibility below neel temp, antiferromagnetic magnons, ferromagnetic domains.</p> <p><b>Preparation leave[Exams]</b></p>	<p>SU(2) and SU(3) multiplets and their properties, Quark model, Properties of Quarks, the standard model. Q-equation and threshold energies, Reactions cross sections, Resonance: Breit-Wigner single-level formula, Direct and compound nuclear reactions, Formal reaction theory: Partial wave approach and phase shifts, Scattering matrix, Reciprocity theorem.</p> <p><b>Preparation leave[Exams]</b></p>	<p>Electronic spectra of diatomic molecules- Born Oppenheimer approximation vibrational coarse structure of electronic bands- progression and sequences- Intensity of electronic bands-Franck Condon principle-Rotational fine structure of electronic bands.</p> <p><b>Preparation leave[Exams]</b></p>	<p>Acceptance angle for incident ray, Numerical Aperture, number of modes and cut-off parameter, single mode propagation, comparison of step and graded index fiber. Types of Optical Fiber : HPSUU, HPSIR, Halide fiber Optical fiber cables : Multifibre cable, Splicing and connectors. Advantage and Disadvantage of optical fiber.</p> <p><b>Preparation leave[Exams]</b></p>
<b>May</b>	<b>Practical and Theory Exam</b>	<b>Practical and Theory Exam</b>	<b>Practical and Theory Exam</b>	<b>Practical and Theory Exam</b>

**M. Sc. I Semester**  
**Zoology**  
**Paper I**  
**BIOSYSTEMATICS, TAXONOMY AND BIODIVERSITY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>Unit-I</b> Definition and basic concepts of biosystematics and taxonomy. Historical resume of systematics. Importance and applications of biosystematics in biology
<b>AUGUST</b>	<b>Unit I</b> Trends in biosystematics concepts of different conventional and newer aspects, Chemotaxonomy, Cyto taxonomy, Molecular taxonomy  <b>Unit-II</b> Dimensions of speciation and taxonomic characters, Mechanisms of speciation in panmictic and apomictic species, Species concepts and species category, Theories of biological classification, Taxonomic characters and different kinds.
<b>SEPTEMBER</b>	<b>Unit-III</b> Procedure keys in taxonomy, Taxonomic procedures-taxonomic collections, preservation, curation, Taxonomic keys-different kinds of taxonomic keys, their merits and demerits, Process of typification and different Zoological types, International code of Zoological Nomenclature (ICZN) <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>Unit-IV</b> Procedure keys in taxonomy, Taxonomic procedures-taxonomic collections, preservation, curation, Taxonomic keys-different kinds of taxonomic keys, their merits and demerits. <b>Internal Test 2</b>
<b>NOVEMBER</b>	<b>Unit-IV</b> Process of typification and different Zoological types, International code of Zoological Nomenclature (ICZN) <b>Seminar</b>

**M. Sc. I Semester**  
**Zoology**  
**Paper II**  
**GENERAL PHYSIOLOGY AND ENDOCRINOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>Unit-I 1.Digestion</b> 1.1Nutrition 1.2 Histology and function of digestive tract 1.3Digestive juices [i Saliva ii Gastric juice iii Pancreatic juice iv Bile juice v Succus entericus] Composition, function and mechanism of various digestive juice 1.4 Mechanism and physiology of digestion 1.5 Mechanism of absorption 2. Circulation of body fluid and its regulation 2.1Structure of heart and properties of cardiac muscle 2.2 Structure, function, synthesis and composition of blood 2.3Blood group, cardiac cycle and blood fibrinization and defibrinization
<b>AUGUST</b>	<b>Unit I 3. Gas exchange and physiology of respiratory tract</b> 3.1 Structure of respiratory tract 3.2 Breathing physiology and aerodynamic pulmonary volume 3.3 Transport of gases [Oxygen and carbon dioxide]  <b>Unit-II Nervous System</b> 3.1Histological structure of neurons and neuroglia and physiological properties of nerve fibre 3.2 Neurotrophins, cerebrospinal fluid and its function 3.3Mechanism of conduction of nerve impulses in non medullated and medullated nerve fibres 3.4 Synapse- structure, properties and its re uptake mechanism 3.5 Neurotransmitters- classification, receptors function and metabolism 4. Muscle function and movements 4.1 Anatomy, structure and properties of muscle 4.2 Theories and physiology of muscle contraction mechanism 4.3 Changes during muscle contraction 1. Mechanical 2. Chemical 3. Thermal 4. Electrical 4.4 Enzyme uses in muscle contraction mechanism 5. Sensory transduction 5.1 Auditory receptors 5.2 Chemoreceptors, taste and smell 5.3 Vision and photo receptors

SEPTEMBER	<b>Unit-III</b> Patterns of nitrogen excretion and its physiology 6.1 Excretory substance and physiology of liver for excretion 6.2 Excretory physiology of kidney and micturition 6.3 Regulation of acid-base balance [ Acidemia and alkalaemia] 6.4 Detoxication 7. Thermoregulation and Cold Tolerance 7.1 Heat balance and exchange 7.2 Endotherms Vs Ectotherms 7.3 Torpor, hibernation and aestivation 7.4 Pyexia and hypothermia 8. Aims and scope of endocrinology 8.1 Discovery of hormones 8.2 Experimental methods of hormone research 8.3 Classification of endocrine glands and hormones  <b>Internal Test 1</b>
OCTOBER	<b>Unit-IV</b> 9.1 Structure and functions of endocrine glands (Pituitary, pineal, pancreas, adrenal, thyroid etc.) 9.2 Biosynthesis of hormones (adrenal, thyroid and gonadal) 9.3 Releasing mechanism, transport mechanism and metabolism of Hormones  <b>Internal Test 2</b>
NOVEMBER	<b>Unit-IV</b> 9.4 Receptors and action mechanism of hormones 9.5 Neurohormone [releasing stimulating factor of hypothalamus and endorphin]  <b>Seminar</b>

**M. Sc. I Semester**  
**Zoology**  
**Paper III**  
**STRUCTURE AND FUNCTION OF INVERTEBRATES**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JULY	<b>Unit-I</b> 1. Organization of coelom 1.1 Acoelomates and Pseudo coelomates 1.2 Coelomates: Protostomia and Deuterostomia. 2. Locomotion 2.1 Flagellar and ciliary movement in Protozoa.
AUGUST	<b>Unit I</b> 2.2 Hydrostatic movement in Coelenterata, Annelida and Echinodermata <b>Unit-II</b> 3. Nutrition and Digestion 3.1 Patterns of feeding and digestion in Protozoa 3.2 Filter feeding in polychaeta. 4. Respiration 4.1 Organs of respiration Gills, lungs and trachea. 4.2 Respiratory pigments.
SEPTEMBER	<b>Unit-III</b> 5. Excretion 5.1 Organs of excretion. 5.2 Excretion and osmoregulation 6. Nervous System 6.1 Primitive nervous system: Coelenterata and Echinodermata. 6.2 Advanced Nervous system: Annelida, Arthropoda (Crustacea and insecta) and Mollusca (Cephalopoda) <b>Internal Test 1</b>
OCTOBER	<b>Unit-IV</b> 7. Invertebrate larvae 7.1 Larval forms of free-living and parasitic invertebrates  <b>Internal Test 2</b>
NOVEMBER	<b>Unit-IV</b> 8. Minor Phyla 8.1 Organization and general characters of (Ctenophore, Rotifera, Ectoprocta, Endoprocta)  <b>Seminar</b>

**M. Sc. I Semester**  
**Zoology**  
**Paper IV**  
**MOLECULAR BIOLOGY AND BIOTECHNOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JULY	<b>Unit-I</b> Biomembranes Molecular composition and arrangement Transport across membrane 2. Structure and function Mitochondria Golgi complex
AUGUST	<b>Unit I</b> Lysosome Ribosome <b>Unit-II</b> 3. DNA replication 4. Transcription 5. Translation 5.1 Genetic code 5.2 Mechanisms of initiation, elongation and termination 5.3 Regulation of translation
SEPTEMBER	<b>Unit-III</b> 6. Genome organization 6.1 Chromosomal organization: morphological and structural types. 7. Molecular mapping of genome 7.1 Genetic and physical maps 7.2 Polymerase Chain Reaction (PCR) and blotting techniques 7.3 Introduction to Human Genome. <b>Internal Test 1</b>
OCTOBER	<b>Unit-IV</b> 8. Transgenic animals and knock-outs 8.1 Production and applications 8.2 Embryonic stem cells <b>Internal Test 2</b>
NOVEMBER	<b>Unit-IV</b> 9. Application of genetic engineering 9.1 Medicine 9.2 Agriculture 9.3 Industry <b>Seminar</b>



**M. Sc. II Semester**  
**Zoology**  
**Paper-I**  
**QUANTITATIVE BIOLOGY AND COMPUTER APPLICATION**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<b>Unit-I</b> 1. Introduction to digital computer and application 1.1 Basic knowledge of hardware and software 1.2 CPU (Central Processing Unit) 1.3 Input and Output devices 1.4 Auxiliary storage system 1.5 Operating system and Binary number system
<b>FEBRUARY</b>	<b>Unit-II</b> 2. Computer application 2.1 Introduction to MS office 2.1.1 Word 2.1.2 Excel 2.1.3 Power point 3. Computer application in biostatistics 4. Simple computation and elementary knowledge of flow chart <b>Internal Test 1</b>
<b>MARCH</b>	<b>Unit III</b> 5. Types of biological data 6. Representation of data 7. Sample and sampling 8. Measures of central tendency 9. Measures of dispersion 10. Hypothesis testing: Null and alternate hypothesis <b>Unit-IV</b> 11. Tests of significance 11.1 Chi-square test 11.2. Student's t-test 12. Analysis of Variance <b>Internal Test 2</b>
<b>APRIL</b>	<b>Unit IV</b> 13. Simple linear regression 14. Correlation 15. Probability distribution: normal and binomial <b>Seminar</b>

**M. Sc. II Semester**  
**Zoology**  
**Paper-II**  
**GAMETE BIOLOGY AND DEVELOPMENT BIOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<b>Unit-I</b> 1. Sex differentiation and development 1.1 Chromosomal (genetic) basis of sex determination 1.2 Gonadal differential 1.3 Phenotype (internal) 1.4 Brain sex differentiation 2. Spermatogenesis 2.1 Spermatogenesis and development of spermatozoa 2.2 ultra structure of sperm 2.3 Capacitation 3. Oogenesis 3.1 Differentiation and growth of oocytes. 3.2 Organization of egg cytoplasm and egg cortex. 3.3 Vitellogenesis <b>Unit-II</b> 4. Fertilization 4.1 Biological role of fertilization. 4.2 Basic requirements of fertilization. 4.3 Mechanism of fertilization
<b>FEBRUARY</b>	<b>Unit II</b> 4.4 Biochemistry of fertilization 4.5 Post fertilization event 5. Parturition, lactation and hormonal contraception 6. Cleavage -Characteristics and mechanisms of cleavages <b>Unit-III</b> 7. Formative movements 8. Fate maps <b>Internal Test 1</b>
<b>MARCH</b>	<b>Unit III</b> 8.1 Utility and comparative topographical relationship of the Presumptive areas in early embryos of 8.1.1 Amphioxus 8.1.2 Fishes 8.1.3 Amphibian 8.1.4 Birds 9. Differentiation <b>Unit-IV</b> 10. Cell and tissue interactions in development 10.1 Primary embryonic induction 10.2 Competence <b>Internal Test 2</b>
<b>APRIL</b>	<b>Unit IV</b> 10.3 Concept of organizer 11. Metamorphosis 12. Teratology <b>Seminar</b>

**M. Sc. II Semester**  
**Zoology**  
**Paper-III**  
**POPULATION GENETICS AND EVOLUTION**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JANUARY	<b>Unit-I</b> 1. Concepts of evolution and theories of organic evolution: Lamarckism, Darwinism and Synthetic theory of evolution 2. Evidences of evolution: anatomical, embryological, palaentological, physiological and Bio-chemical <b>Unit-II</b> 3. Hardy-Weinberg law of genetic equilibrium 4. Detailed account of destabilizing forces. 4.1 Natural selection
FEBRUARY	<b>Unit II</b> 4.2 Mutation 4.3 Genetic drift 4.4 Meiotic drive 5. Phenotypic variation  <b>Unit-III</b> 6. Patterns and mechanisms of reproductive isolation 7. Phylogenetic and biological concepts of species <b>Internal Test 1</b>
MARCH	<b>Unit III</b> 8. Gene Evolution, Evolution of gene families 9. Factors affecting human disease frequency  <b>Unit-IV</b> 10. Origin of higher categories 11. Micro-and Macro-evolution <b>Internal Test 2</b>
APRIL	<b>Unit IV</b> 12. Evolution of horse, elephant, camel, man  <b>Seminar</b>

**M. Sc. II Semester**  
**Zoology**  
**Paper-IV**  
**TOOLS AND TECHNIQUES IN BIOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JANUARY	<b>Unit-I</b> 1.Principles and application of 1.1 Ultracentrifugation 1.2 Electrophoresis 1.3 Chromatography (various types) 1.4 Lambert-Beers Law and colorimetry and spectrophotometry 1.5 Flow cytometry. <b>Unit-II</b> 2. Principles and Application of 2.1 Light Microscopy and micrometry 2.2 Phase Contrast microscopy 2.3 Interference microscopy
FEBRUARY	<b>Unit II</b> 2.4 Fluorescence microscopy 2.5 Transmission Electron microscopy. 2.6 Scanning Electron microscopy.  <b>Unit-III</b> 3. Assay 3.1 Chemical assays 3.2 Biological assays-in vivo and in vitro 4. Principles of cytological and cytochemical techniques <b>Internal Test 1</b>
MARCH	<b>Unit III</b> 4.1 Fixation: chemical basis of fixation by formaldehyde, gluteraldehyde, chromium salts, mercury salts, osmium salts, alcohol and acetone 4.2 Chemical basis of staining of carbohydrate, protein lipids and nucleic acids.  <b>Unit-IV</b> 5. Principle and techniques of 5.1 Nucleic acid hybridization and cot curve 5.2 Sequencing of proteins and nucleic acids  <b>Internal Test 2</b>
APRIL	<b>Unit-IV</b> 6. Freeze techniques 7. Media preparation and sterilization 8. Inoculation and growth monitoring  <b>Seminar</b>

**M. Sc. III Semester**  
**Zoology**  
**Paper-I**  
**COMPARATIVE ANATOMY OF VERTEBRATES**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>Unit-I</b> 1. Origin of Chordates 1.1 Amphibians, Reptiles, Birds and Mammals. 2. Classification of Vertebrates 2.1 Amphibians 2.2 Reptiles 2.3 Birds 2.4 Mammals.
<b>AUGUST</b>	<b>Unit-II</b> 3. Vertebrate integument and its derivatives. 3.1 General structure and functions of Integument. 3.2 Structure and functions of glands, scales, horns, claws, nails, hoof, feather and hair. 4. Skeletal system in vertebrates. 4.1 Comparative account of (i) Jaw suspensorium, (ii) Limbs and Girdles
<b>SEPTEMBER</b>	<b>Unit-III</b> 5. Respiration in Vertebrates. 5.1 Comparative account of respiratory organs (structure and functions) 6. Circulation in Vertebrates. 6.1 Structure and function of blood. 6.2 Evolution of heart. 6.3 Evolution of aortic arches. <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>Unit IV</b> 7. Nervous System – Central, Peripheral and Autonomic. <b>Internal Test 2</b>
<b>NOVEMBER</b>	8. Sense organs. 8.1 Comparative account of Sensory Receptors. 9. Evolution of Urinogenital system in vertebrates. <b>Seminar</b>

**M. Sc. III Semester**  
**Zoology**  
**Paper-II**  
**BIOLOGICAL CHEMISTRY**

MONTH	PROPOSED PLAN
JULY	<b>UNIT I</b> 1. Properties of Proteins 1.1 Structure and properties of amino acids. 1.2 Classification of proteins. 1.3 Structure of proteins.
AUGUST	<b>UNIT I</b> 1.4 Biological Functions of Proteins. 1.5 Protein Metabolism. <b>UNIT II</b> 2. Carbohydrates 2.1 Classification of carbohydrates. 2.2 Structure and Functions of Carbohydrates. 2.3 Carbohydrate metabolism. 2.4 Utilization of Krebs cycle 3. Lipid 3.1 Lipid structure and functions 3.2 Lipid metabolism.
SEPTEMBER	<b>UNIT III</b> 4. Vitamins 4.1 Water and Fat soluble vitamins, 4.2 Chemistry, occurrence and physiological role. 5. Enzymes 5.1 Classification and nomenclature. 5.2 Mechanism of action 5.3 Regulation of enzyme activity and functions of Co-enzymes. <b>Internal Test 1</b>
OCTOBER	<b>UNIT IV</b> 6. Nucleic acid 6.1 Chemistry of DNA. 6.2 Chemistry of RNA
NOVEMBER	<b>UNIT IV</b> 6.3 Biological importance of nucleic acids. 6.4 Nucleoproteins. 6.5 Metabolism of nucleic acids. <b>Seminar</b>

**M. Sc. III Semester**  
**Zoology**  
**Paper-III**

**ENVIRONMENTAL BIOLOGY AND POPULATION ECOLOGY**

MONTH	PROPOSED PLAN
JULY	<b>Unit-I</b> 1. Ecology 1.1 Definition, concept and scope of ecology. 2. Structure and components of ecosystem.
AUGUST	<b>UNIT I</b> 1. Types and functions of ecosystem. 4. Ecological modeling. <b>Unit-II</b> 1. 5. Limiting factors 5.1 Energy flow, food chain, food web and trophic levels, ecological pyramids. 5.2 Ecological succession
SEPTEMBER	<b>UNIT II</b> 5.3 Biogeochemical cycles: water cycle, carbon, oxygen and nitrogen cycles. <b>Unit-III</b> 6. Population dynamics 6.1 Dynamics of population growth. 6.2 Factors that increase or decrease population. <b>Internal Test 1</b>
OCTOBER	<b>Unit-III</b> 7. Community dynamics 7.1 Characteristics and composition 7.2 Development and classification of communities. <b>Internal Test 2</b>
NOVEMBER	<b>Unit-IV</b> 8. Renewable and non-renewable resources: Forest, water and mineral resources. 9. Conservation of energy sources. 10. National Parks, Wild life sanctuaries and biosphere reserves <b>Seminar</b>

**M. Sc. III Semester**  
**Zoology**  
**Paper-IV**  
**ANIMAL BEHAVIOUR**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>Unit-I</b> 1. Historical perspectives- Ethology 2. Behavioral patterns 3. Innate behavior 4. Biological rhythms 4.1 Types of biological rhythm 4.2 Biological clock
<b>AUGUST</b>	<b>Unit-II</b> 5. Communications 5.1 Auditory 5.2 Visual 5.3 Chemical 6. Learning and Memory 6.1 Conditioning 6.2 Habituation 7. Reasoning 8. Reproductive behaviour.
<b>SEPTEMBER</b>	<b>Unit-III</b> 9. Orientation 10. Echolocation in bats 11. Bird migration and navigation. 12. Fish migration. <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>UNIT III</b> 13. Neural and hormonal control of behaviour <b>Unit-IV</b> 14. Hormonal effect on behavioural patterns. 15. Social behaviour 15.1 Social organization in insects and primates 15.2 Schooling in fishes and Flocking in birds <b>Internal Test 2</b>
<b>NOVEMBER</b>	<b>Unit-IV</b> 15.3 Homing, territoriality, dispersal 15.4 Altruism 15.5 Host–parasite relation <b>Seminar</b>



**M. Sc. IV Semester**  
**Zoology**  
**Paper-I**  
**ENVIRONMENTAL PHYSIOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<b>Unit-I</b> 1. Adaptations 1.1 Levels of adaptation. 1.2 Mechanisms of adaptation. 2. Adaptations to different environments. 2.1 Marine, shores and estuaries. 2.2 Freshwater. 2.3 Terrestrial Life.
<b>FEBRUARY</b>	<b>Unit-II</b> 2. Adaptations to different environments. 3.1 Aerial 3.2 Polar 3.3 Deep sea environment 3.4 Desert, Cave 3.5 Wet land 3.6 Parasitic habitats. <b>Unit-III</b> 1. 4. Stress Physiology 4.1 Basic concepts of environmental stress and strain, Concept of elastic and plastic strain. <b>Internal Test 1</b>
<b>MARCH</b>	<b>Unit-III</b> 4.2. Stress avoidance, stress tolerance and stress resistance. 4.3. Acclimatization, acclimation and adaptation. 4.4. Endothermic and physiological mechanism of regulation of body temperature <b>Internal Test 2</b>
<b>APRIL</b>	<b>Unit-IV</b> 5. Stress physiology in different conditions 5.1 Osmoregulation in aqueous and terrestrial habitats. 5.2 Physiological response to oxygen deficient stress. <b>Seminar</b>

**M. Sc. IV Semester**  
**Zoology**  
**Paper-II**  
**IMMUNOLOGY AND PARASITISM**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<b>Unit-I</b> 1. Cells of immune system 1.1 B-Lymphocytes, T-lymphocytes, Null Cells 1.2 Mononuclear cells 1.3 Granulocytic cells (Neutrophils, Eosinophils and Basophils) 1.4 Mast cells 1.5 Dendritic cells 2. Organs of immune system 2.1 Primary lymphoid organs (Thymus, bone marrow) 2.2 Secondary lymphoid organs (Lymph nodes, spleen, mucosal associated lymphoid tissue, cutaneous associated lymphoid tissue)
<b>FEBRUARY</b>	<b>Unit-II</b> 2. Immunoglobulin structure and function 3.1 Molecular structure of Ig, Light chain and Heavy chain 3.2 Immunoglobulin classes 3.2.1 IgG 3.2.2 IgM 3.2.3 IgE 3.2.4 IgD 3.3 Monoclonal antibodies <b>Unit-III</b> 1. 4. Antigens 4.1 Immunogenicity 4.2.1 Complement System: Classical & Alternative Pathways 4.2.2 Contribution of the immunogens. 4.2.3 Contribution of Biological system. 5. Antigen - Antibody Interaction <b>Internal Test 1</b>
<b>MARCH</b>	<b>Unit-III</b> 6. Vaccine 6.1 Active and passive immunization 6.2 Whole organism vaccine 6.4 Recombinant vector vaccines 6.5 DNA vaccines <b>UNIT IV</b> 7. Immune system in Health disease 7.1 Immune response to infectious disease 7.2 Immune response in cancer <b>Internal Test 2</b>
<b>APRIL</b>	<b>UNIT IV</b> 8. Pathophysiology of parasitic infection 8.1 Viral infections 8.2 Bacterial infection 8.3 Helminths infection 9. AIDS <b>Seminar</b>

**M. Sc. IV Semester**  
**Zoology**  
**Paper-III**  
**ICHTHYOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<b>Unit-I</b> 1. Skin and its derivatives in fishes. 2. Skeleton in fishes. 3. Fins-Types, structure, modification, functions 4. Locomotion in fishes. 5. Food, feeding habit and alimentary canal of fishes.
<b>FEBRUARY</b>	<b>Unit-II</b> 6. Respiration and accessory respiratory organs. 7. Swim bladder and Weberian ossicles. 8. Blood, heart and blood vascular system of fishes. 9. Excretion and Osmoregulation in fishes.  <b>Internal Test 1</b>
<b>MARCH</b>	<b>Unit-III</b> 10. Nervous system and sense organs in fishes 11. Specialized organs in fishes (organs of sound production & electric organs). 12. Reproduction in fishes 13. Development in fishes 14. Endocrine glands  <b>Internal Test 1</b>
<b>APRIL</b>	<b>Unit-IV</b> 15. Adaptation: 15.1 Colouration 15.2 Deep sea fishes 15.3 Hill stream fishes 16. Larvivorous fishes 17. Exotic fishes 18. Fish products and by-products 19. Setting and maintenance of an aquarium <b>Seminar</b>

**M. Sc. IV Semester**  
**Zoology**  
**Paper-IV**  
**AQUACULTURE AND FISHERIES**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<b>Unit-I</b> 1. General characteristics, classification, evolution and phylogeny of the following: Placoderms Elasmobranchs Holocephali Dipnoi. Teleostomi.
<b>FEBRUARY</b>	<b>Unit-II</b> 2. Fish culture in fresh water Physicochemical condition of water and its effect on fishes. Construction and maintenance of fish farm, management of ponds Fresh water fish breeding (dry and wet bundh breeding, induced breeding) Stocking and transport of fish seed and brood fish. Intensive culture of air breathing fishes. Fish cum paddy culture.  <b>Internal Test 1</b>
<b>MARCH</b>	<b>Unit-III</b> 3. Composite fish culture 4. Integrated fish farming 5. Sewage fisheries 6. Prawn fishery 7. Inland fisheries 8. Marine fisheries  <b>Internal Test 2</b>
<b>APRIL</b>	<b>Unit-IV</b> 9. Fish diseases 9.1 Viral diseases 9.2 Bacterial and protozoan diseases 9.3 Helminth parasites of fishes 9.4 Prophylaxis and treatment of fish diseases  <b>Seminar</b>

**GOVT. D.B. GIRLS P.G.COLLEGE, RAIPUR(C.G)**

**TEACHING PLAN 2017-18**

**M.Sc Ist SEMESTER Resource management**

**PAPER - I**

**TITLE OF PAPER- RESEARCH METHODOLOGY**

<b>Month</b>	<b>Plan</b>
<b>October</b>	<b>Science, Scientific methods and approach</b>  <b>Social research &amp; survey: Meaning, definition, nature, scope, objects, types, distinction between social survey and research</b>
<b>November</b>	<b>Pretesting &amp; pilot survey</b>  <b>Hypothesis: Definition, Source, characteristics, importance, main difficulties in the formation of hypothesis, disadvantage</b>  <b>Source of data: primary &amp; secondary sources</b>
<b>December</b>	<b>Methods or techniques of data collection</b>  <b>a. Observation</b>  <b>b. Interview</b>  <b>c. Schedule</b>  <b>d. Questionnaire</b>  <b>e. Case-study</b>  <b>Sampling: Meaning, characteristics, advantages, and disadvantages</b>  <b>Types:</b>  <b>Random sampling</b>  <b>Purposive sampling</b>  <b>Stratified sampling</b>  <b>Other sampling method</b>
<b>January</b>	<b>Classification and tabulation of data analysis and interpretation of data</b>  <b>Research design steps and process of its formulation</b>  <b>Types of research design- exploratory, descriptive, diagnostic and experimental</b>
<b>February</b>	<b>Diagrammatic presentation of data</b>  <b>Revision &amp; SEMINAR</b>

# TEACHING PLAN - HOME SCIENCE - RESOURCE MANAGEMENT

CLASS: M.Sc. I SEMESTER PAPER – II

## THEORY OF MANAGEMENT

2017-18

No.	MONTH		TEACHING PLAN
1	July	Unit-I	<p>-History and development of management in India and 2 in ancient civilization, the management in medieval period. Importance of Management in India.</p> <p><b>Management Function and Process:</b> Definition, what is management, Process of management, Characteristics of management, Types of management</p> <p><b>-Advantages and limitations of management</b></p> <p><b>-Management functions and process</b></p> <p>- Factors Effecting Decision making</p> <p>-making of effective decision</p> <p><b>Planning:</b> Objectives, principles and Types</p> <p><b>Organizing:</b> Purpose, principles, processes, delegations of authority</p> <p><b>-Controlling :</b> Tools for management control,</p> <p><b>-Evaluation :</b> Tool and Techniques</p>
2	August	Unit-II	<p><b>Resources in family :</b> Definitions of resources, Types, Characteristics of resources, Factors affecting Management</p> <p><b>- Guiding, directing</b></p> <p><b>- Leadership :</b> Definitions and Characteristics, Qualities of Leader, Functions of Leader</p>
3	September	Unit-III	<p><b>- Management abilities.</b></p> <p><b>- Ends sought through management :</b></p> <p><b>Goals:</b> Factors affecting endless chain, classification</p> <p><b>Values:</b> Sources of value patterns, status security</p> <p><b>Standards:</b> meaning, types, factors affecting it.</p> <p><b>- Communication:</b> Meaning and definition, characteristics and process, importance of communication in management</p>
4	October	Unit-IV	<p><b>Decision making:</b> Meaning and types, Process of decision making, Consequences of each alternative, Chain decisions, decision conflict, Factors affecting decision making, Making of effective decision, Conflict management.</p> <p><b>Motivation :</b> Meaning and definition, Characteristics and importance, Elements of motivation, Evaluation tools &amp; techniques</p>
5	November		Semester Exam & Project Work

# TEACHING PLAN - HOME SCIENCE - RESOURCE MANAGEMENT

CLASS: M.Sc. I SEMESTER PAPER – III

## CONSUMER ECONOMICS

2017-18

No.	MONTH		TEACHING PLAN
1	July	Unit-I	<b>Consumer and the Indian economic environment.</b> A. Definition and characteristics of consumers B. Definition role types and how does an economy function, problems of economy. C. Role of consumer in the economy of the nation <b>Contemporary economic environment.</b>
2	August	Unit-II	<b>Introduction of market Meaning, definition, characteristics, types.</b> <b>Consumer behavior :</b> A. Understanding consumer and their wants B. Determinants of consumer behavior-Opinion, leadership, group influence, social class and culture, consumer dissatisfaction. C. Market strategies influencing consumer behavior D. Guidelines for wise purchasing.
3	September	Unit-III	<b>Market practices that exploit consumers</b> A. <b>Type of exploitation :</b> Adulteration, packaging, label, weights and measures, advertising and sale gimmicks. B. <b>Causes of exploitation :</b> Consumer problem and their solutions
4	October	Unit-IV	<b>Consumer protections: Need and rationale</b> A. <b>History of consumer movement in India:</b> Origin, growth, causes for slow growth. B. <b>Role of consumer organizations:</b> National, regional and international. C. Role of government agencies, legislation. D. Empowerment of consumers. <b>Consumer credit :</b> A. Definition and types of credit B. Factors affecting consumer credit decisions.
5	November		Project Work & Semester Exam

## **M.SC I SEM RESOURCE MANAGEMENT**

### **PAPER IV**

#### **LAND SCAPING**

JULY- INTRODUCTION, HISTORY OF LAND SCAPING, GARDEN ESTABLISHMENT, ORNAMENTAL GARDENS MANAGEMENT, MAINTENANCE

AUG- LAND PROFILE, SOIL TYPES, TEXTURE, ORNAMENTAL GARDENS CHART, PRINCIPLES OF LAYOUTS GARDEN STYLE, FURNITURE, TOOLS, EQUIPMENT

SEPT- FARM SHED, GREEN HOUSE, BONSAI, STYLE MATERIAL. METHODS, PEDESTAL, MONUMENT STATUES, ABSTRACT, PERGOAL, MANURE, WEED, TYPES, DISTRIBUTION

OCT- INDOOR OUTDOOR PLANTS NATURAL ARTIFICIAL, SHRUBS, CREEPERS, GRASS, POT CULTURE TERRACE GARDEN, IRRIGATION, NEED, SOURCES, METHODS, WASTE MANAGEMENT, TYPES

NOV- PRACTICAL LAND SCAPING AND SEMINAR

DEC- SEMESTER EXAMINATION

PROPOSED TEACHING PLAN FOR THE SESSION OF **2017-18**

## **M.SC II SEM RESOURCE MANAGEMENT**

### **PAPER II**

#### **HOSPITALITY ADMINISTRATION**

JAN- HOSPITALITY MEANING, TYPES, DEFINITION, NATURE, SCOPE SIGNIFICANCE, HISTORY ROLE OF HOUSEKEEPING, RELATION TO COMMERCIAL AND WELFARE SECTORS, MANAGEMENT

FEB- SCOPE, IMPORTANCE OF HOUSEKEEPING, LAYOUT OF HOUSEKEEPING DEPARTMENT, SERVICE MANAGEMENT MAINTENANCE, REPAIR, REDECORATING

MAR- ADMINISTRATIVE POLICIES PERSONNEL MANAGEMENT, BUDGET, HUMAN BEHAVIOUR, PERSONALITY, ATTITUDE

APR- SAFETY, SECURITY, SANITATION, FIRE FIGHTING, FIRST AID, SAFETY IN USE OF EQUIPMENT PEST CONTROL, UNIFORM TYPES, SELECTION, DISTRIBUTION, CONTROL, HOSTESS TRAINING BANQUET MANAGEMENT, STRESS MANAGEMENT DEFINITION, TYPES, METHODS OF STRESS REDUCTION, TEAM MANAGEMENT

MAY- SEMINAR

JUNE- SEMESTER EXAMINATION



# TEACHING PLAN - HOME SCIENCE - RESOURCE MANAGEMENT

CLASS: M.Sc. II SEMESTER PAPER – III

## PUBLIC FINANCE

2017-18

No.	MONTH		TEACHING PLAN
1	January	Unit-I	<b>National income:</b> Income distribution, per capita income, Inequalities of income, Consumer price index, Inflation v/s Deflation, Wages and earning principles of wage determination, Wages differentials
2	February	Unit-II	<b>Financial planning and implementation:</b> <b>Budgeting:</b> Allocation of resources, identifying aspiration, expectations and goals, objectives and advantages of budgeting, control. Planning a budget for a Family of fixed income, Restaurant/hostel/any selected organization, Boutique, Small industry
3	March	Unit-III	<b>Tax planning:</b> Types of taxes, Principles and procedures of income tax, Preparation of statement of income and filling of income tax in case of returns, Individuals (Salary class), Knowledge of various exemptions and deductions <b>Saving and investments:</b> Importance of savings components, Saving facilities and investment opportunities, Evaluations of savings components, Economics security and components, Economics security and financial alternatives.
4	April	Unit-IV	<b>Impact of globalization and direct foreign investment on business opportunities in India.</b> a. Income and property rights- Will, trusts and legal aspects of economics insecurity. b. Unemployment, its nature and causes. Government programs designed to increase family financial security. <b>Markets and Marketing:</b> a. Basic concept of market and marketing b. Types of markets: Wholesale, retail, specialty, local, residential. c. Changing nature of the business world i.e. e-business and e-commerce. d. Marketing environment, marketing theories, models. <b>Markets and prices:</b> a. Definition and types of marketing prices. b. Pricing under perfect and imperfect competition and monopoly. <b>International Marketing management</b> a. Meaning, need, organization for international marketing b. scope, elements of international marketing c. analysis product planning for world marketing.

5	May		Semester Exam & Project Work

## TEACHING PLAN - HOME SCIENCE - RESOURCE MANAGEMENT

**CLASS: M.Sc. II SEMESTER      PAPER – IV**

### ENVIRONMENT MANAGEMENT

**2017-18**

No.	MONTH		TEACHING PLAN
1	January	Unit-I	<b>Fundamentals of environment:</b> <ol style="list-style-type: none"> <li>Environment definition. Scope of environmental studies.</li> <li>Life and environment. Physical, chemical factors in the environment, changes in the environment.</li> <li>Environment hazards and risks.</li> </ol>
2	February	Unit-II	<b>Eco-system:</b> <ol style="list-style-type: none"> <li>Ecology: Definition, objectives and concept of Eco-system, scope of Ecology.</li> <li>Tropic structure of Ecosystem</li> <li>Ecological pyramid</li> <li>Energy flow in Ecosystem</li> </ol>
3	March	Unit-III	<b>Environmental pollution:</b> <ol style="list-style-type: none"> <li>Concept of pollution, meaning, definition, causes and classification of pollution.</li> <li>Effect of Environmental pollution</li> </ol> <b>Urban pollution :</b> Pollution and environment with reference to soil and noise.
4	April	Unit-IV	<b>Sources of pollution :</b> <ol style="list-style-type: none"> <li>Effect of pollution.</li> <li>Remedies of control pollution.</li> <li>Air pollution control</li> </ol> <b>Environment legislation:</b> <ol style="list-style-type: none"> <li>Environment policies</li> <li>Human rights issues relating to environment</li> <li>Environment movements</li> <li>Environment ethics</li> </ol>
5	May		Semester Exam & Project Work

PROPOSED TEACHING PLAN FOR THE SESSION OF 2017-18

**M.SC.IIISEM RESOURCE MANAGEMENT**

**PAPER I**

**ERGONOMICS**

JULY- MEANING, SCOPE, DEFINITION OF ERGONOMICS, NATURE OF WORK, MAN  
MACHINE ENVIRONMENT SYSTEM, STRUCTURE AND FUNCTION OF MUSCLE,  
BIOCHEMISTRY OF MUSCLE WORK

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AUG- SOURCES OF ENERGY, ATP,CP,FOOD ,ENERGY REQUIREMENTS, DEFINITION OF  
ANTHROPOMETRY, HUMAN BODY AS A LEVER PRINCIPLES OF MOTION ECONOMY

SEPT- IDENTIFICATION, ANALYSIS, TYPES OF POSTURE, EFFECTS OF WRONG POSTURE, CORRECT  
TECHNIQUES OF CARRYING AND LIFTING WEIGHTS, PHYSICAL ENVIRONMENT

OCT- HEAT, THERMAL REGULATION, HEAT BALANCE, EXCHANGE OF HEAT, LIGHTING, COLOUR, NISE

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NOV- PRACTICAL ERGONOMICS, SEMINAR

DEC- SEMESTER EXAMINATION

# TEACHING PLAN - HOME SCIENCE - RESOURCE MANAGEMENT

CLASS: M.Sc. III SEMESTER PAPER – II

## ENTREPRENEURSHIP

2017-18

No.	MONTH		TEACHING PLAN
1	July	Unit-I	<b>- Conceptual Framework :</b> Entrepreneurship ,Concept, nature & type of Entrepreneurship a. Development of Entrepreneurship. b. Entrepreneurship& socio-economic development <b>- Entrepreneurship :</b> Institutional finance and Entrepreneurship Organization, Concept, nature process and importance of Organization
2	August	Unit-II	<b>- The Entrepreneur :</b> i. Meaning , definition characteristics and function ii. Effectiveness of Entrepreneurs. iii. Social responsibility of an Entrepreneur <b>- The Entrepreneurs.</b> <b>- Organization Supporting Entrepreneurs.</b>
3	September	Unit-III	<b>- Licensing &amp; regulation of industries.</b> <b>- Infrastructure facilities.</b> <b>- Launching &amp; organizing Entrepreneurship :</b> Economic and sociological view points. Entrepreneurial development programs.
4	October	Unit-IV	<b>- Preparation of a new project.</b> <b>- Project report.</b> <b>- Start and expansion of a new business.</b>
5	November		Semester Exam & Project Work

# TEACHING PLAN - HOME SCIENCE - RESOURCE MANAGEMENT

CLASS: M.Sc. III SEMESTER PAPER – III

## HOUSING

2017-18

No.	MONTH		TEACHING PLAN
1	July	Unit-I	<ul style="list-style-type: none"><li>- <b>History of Housing.</b></li><li>- <b>Housing –Needs definition and importance.</b></li><li>- <b>Changes in Housing need &amp; standards.</b></li><li>- <b>Housing In India As Affected by Trends In :</b> Population, Establishment of Households, Level of Income per Households, Occupation, Family Mobil, Technological Development.</li></ul>
2	August	Unit-II	<ul style="list-style-type: none"><li>- <b>Present Housing Condition In India :</b> Rural &amp; Urban, Cost of Housing, Quality of Housing Available.</li><li>- <b>Private and Public Housing :</b> Various Housing Schemes &amp; Local Government Programs, Industrial Housing,</li><li>- <b>Housing finance.</b></li></ul>
3	September	Unit-III	<ul style="list-style-type: none"><li>- <b>Factors to be Considered While Designing :</b> Orientation, Grouping of users area, Circulation between &amp; within users area, Light &amp; Ventilation, Flexibility, Privacy, Roominess, Services, Aesthetics, Cost.</li><li>- <b>Type of Floor.</b></li><li>- <b>Study of building materials.</b></li></ul>
4	October	Unit-IV	<ul style="list-style-type: none"><li>- <b>False Ceilings :</b> Different types in various materials.</li><li>- <b>Kitchen Platform and type.</b></li><li>- <b>Storage areas :</b> Need and Rules for storage, Storage arrangements in different rooms.</li><li>- <b>Environmental Issues :</b> Human &amp; Environment.</li><li>- <b>Housing Research</b><ul style="list-style-type: none"><li>a. Agencies for research &amp; Development</li><li>b. Methods &amp; Techniques</li></ul></li></ul>
5	November		Semester Exam & Project Work

PROPOSED TEACHING PLAN FOR THE SESSION OF **2017-18**

**M.SC IIISEM,RESOURCE MANAGEMENT**

**PAPER IV**

**FUEL TECHNOLOGY**

JULY- SOURCES OF ENERGY, ENERGY CONSUMPTION PATTERNS,

AUG- FOSSIL FUEL, FUEL CLASSIFICATION SOLID, LIQUID, GAS, ARTIFICIAL FUEL LIQUID GAS SOLID

SEPT- SOLAR ENERGY, SOLAR TREE, AIR ENERGY, ENERGY FROM BIOMASS

OCT- ENERGY CONSERVATION, PRINCIPLES OF IMPROVING EFFICIENCY, PROPER USE OF ENERGY

NOV- SEMINAR

DEC- SEMESTER EXAMINATION

PROPOSED TEACHING PLAN FOR THE SESSION OF **2017-18**

**M.SC.IV SEM RESOURCE MANAGEMENT**

**PAPER I**

**RESIDENTIAL AND ESTABLISHMENT**

JAN- WATER SUPPLY SYSTEM TO BUILDING, WATER PIPES, VALVES, TYPES OF WATER SUPPLY

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FEB- WATER SUPPLY TO BATH ROOM, WC, TOILET AND KITCHEN, DRAINAGE SYSTEM, SEPTIC TANK,  
DRAINAGE USING SEPTIC TANK AND SOAKPI, DRAIN PIPES, TRAPS, PIPE

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MAR- ELECTRIC LAYOUTS AND WIRING SYSTEMS, AIR CONDITIONING BUILDING DISASTER  
MANAGEMENT

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APR- TERMITE PROOFING, DEMP PREVENTION, HEAT INSULATION, FIRE FIGHTING

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MAY- SEMINAR

JUNE- SEMESTER EXAMINATION

# TEACHING PLAN - HOME SCIENCE - RESOURCE MANAGEMENT

CLASS: M.Sc. IV SEMESTER PAPER – II

## CONSUMER EDUCATION

2017-18

No.	MONTH		TEACHING PLAN
1	January	Unit-I	<b>- Consumer Education :</b> a. Brief History b. Definition, Concept and Significance/need. c. Objectives <b>- Approach to consumer education :</b> Economic, environment, socio cultural, health & safety and legal. <b>- Action line for consumer education :</b> a. <b>Action plan :</b> knowing situation, formulating plan of action, implementing, evaluation and follow up. b. <b>Methods for imparting education :</b> Role-plays and games, project testing and evaluation.
2	February	Unit-II	<b>- Contents:</b> Resource management, decision-making, sound purchasing habits, learning skills, conservation and protection of environment. <b>- Resources:</b> Media-Written, audio and visual. Market place, government agencies consumer organizations. <b>- Problems faced and remedial measures.</b>
3	March	Unit-III	<b>- Teaching Consumerism :</b> a. Plans for teaching better consumption practices, factors b. Consumer aids : Meaning, Classification types. c. Consumer Rights and responsibilities.
4	April	Unit-IV	<b>- Consumer Protection :</b> a. Need, measures and methods. b. Role of consumer organizations: National and International. c. Consumers International regional Office at Pune India. d. Consumer laws: Role and Provisions of the acts-Implications.
5	May		Semester Exam & Project Work

# TEACHING PLAN - HOME SCIENCE - RESOURCE MANAGEMENT

## CLASS: M.Sc. IV SEMESTER

### PAPER – III

### SPACE DESIGN

2017-18

No.	MONTH		TEACHING PLAN
1	January	Unit-I	Analysis of Housing Design 1. Selection of site 2. Analysis of Plan – Needs and definition importance 3. Process of Map making. 4. Site plan & floor plan Types of Designs 1. Structural design decorative design Styles of Interior Designs: Traditional style, cottage style, modern style. 2. Design and Color: Color theory, dimensions of Color, Classification of Colors, Psycho-social and physical effects of colors, types of color schemes.
2	February	Unit-II	Decoration: History of development of decoration. Object of decoration. 1. Furniture Design – Fundamentals of Furniture arrangement in various rooms. 2. Classification selection. 3. Residential Furniture – Sketch, form and sizes of all and details of any 6 items, such as sofa, diwan, chairs, puffed centre table, wall unit, dining table, side board, kitchen unit, bed, wardrobe, dressing table etc.
3	March	Unit-III	1. The Special Need .Division of Rooms and their arrangement. - Circulation in building. - Space needs in relation to furniture and fittings - Space in room and passage. 2. Layout and dimensions of rooms Entrance wall & front door. Living & drawing Room Bedroom & Children Room Guest Room a. The Kitchen Dining Room,Bathroom & W.C.
4	April	Unit-IV	Current Trends in Interior Design 1. Place of Art in the Home 2. Use of Principle of Art in the decoration Uses of color in Home decoration. 3. Current trends of Indian decorative regional art.
5	May		Semester Exam & Project Work



## **M.SC IV SEM RESOURCE MANAGEMENT**

### **PAPER IV**

#### **MANAGEMENT OF HUMAN RESOURCES**

JAN- PRINCIPLES OF HUMAN RESOURCES USE,FATIGUE TYPES CAUSES

FEB- FACTORS, CONCEPT AND TYPES OF EFFICIENCY AND EFFECTIVENESS, MEANING FACTORS OF PRODUCTIVITY ,EFFECT OF MOTIVATION ON PRODUCTIVITY

MAR- MEANING NATURE, CHARACTERISTICS, PROCESS,METHODS, IMPORTANCE, FACTORS OF MOTIVATION, METHODS AND TECHNIQUES OF IMPROVING RESOURCE USE

APR- PERSONALITY AND DEVELOPMENT OF MANAGER TYPES IMPORTANCE, METHODS ,TRAINING, LEADERSHIP, TRAINING FOR PERSONALITY DEVELOPMENT AND LEADERSHIP, GOALS OF TRAINING AND DEVELOPMENT

MAY- SEMINAR

JUNE- SEMESTER EXAMINATION

## **PROPOSED TEACHING PLAN FOR THE SESSION OF 2017-18**

### **M.SC I SEM RESOURCE MANAGEMENT PAPER IV LAND SCAPING**

JULY- INTRODUCTION, HISTORY OF LAND SCAPING, GARDEN ESTABLISHMENT, ORNAMENTAL GARDENS MANAGEMENT, MAINTENANCE

AUG- LAND PROFILE, SOIL TYPES, TEXTURE, ORNAMENTAL GARDENS CHART, PRINCIPLES OF LAYOUTS GARDEN STYLE, FURNITURE, TOOLS, EQUIPMENT

SEPT- FARM SHED, GREEN HOUSE, BONSAI, STYLE MATERIAL. METHODS, PEDESTAL, MONUMENT STATUES, ABSTRACT, PERGOAL, MANURE, WEED, TYPES, DISTRIBUTION

OCT- INDOOR OUTDOOR PLANTS NATURAL ARTIFICIAL, SHRUBS, CREEPERS, GRASS, POT CULTURE TERRACE GARDEN, IRRIGATION, NEED, SOURCES, METHODS, WASTE MANAGEMENT, TYPES

NOV- PRACTICAL LAND SCAPING AND SEMINAR

DEC- SEMESTER EXAMINATION

PROPOSED TEACHING PLAN FOR THE SESSION OF **2017-18**

**M.SC II SEM RESOURCE MANAGEMENT PAPER II HOSPITALITY ADMINISTRATION**

JAN- HOSPITALITY MEANING, TYPES, DEFINITION, NATURE, SCOPE SIGNIFICANCE, HISTORY ROLE OF HOUSEKEEPING, RELATION TO COMMERCIAL AND WELFARE SECTORS, MANAGEMENT

FEB- SCOPE, IMPORTANCE OF HOUSEKEEPING, LAYOUT OF HOUSEKEEPING DEPARTMENT, SERVICE MANAGEMENT MAINTENANCE, REPAIR, REDECORATING

MAR- ADMINISTRATIVE POLICIES PERSONNEL MANAGEMENT, BUDGET, HUMAN BEHAVIOUR, PERSONALITY, ATTITUDE

APR- SAFETY, SECURITY, SANITATION, FIRE FIGHTING, FIRST AID, SAFETY IN USE OF EQUIPMENT PEST CONTROL, UNIFORM TYPES, SELECTION, DISTRIBUTION, CONTROL, HOSTESS TRAINING BANQUET MANAGEMENT, STRESS MANAGEMENT DEFINITION, TYPES, METHODS OF STRESS REDUCTION, TEAM MANAGEMENT

MAY- SEMINAR

JUNE- SEMESTER EXAMINATION

PROPOSED TEACHING PLAN FOR THE SESSION OF **2017-18**

**M.SC III SEM, RESOURCE MANAGEMENT PAPER IV FUEL TECHNOLOGY**

JULY- SOURCES OF ENERGY, ENERGY CONSUMPTION PATTERNS,

AUG- FOSSIL FUEL, FUEL CLASSIFICATION SOLID, LIQUID, GAS, ARTIFICIAL FUEL LIQUID GAS SOLID

SEPT- SOLAR ENERGY, SOLAR TREE, AIR ENERGY, ENERGY FROM BIOMASS

OCT- ENERGY CONSERVATION, PRINCIPLES OF IMPROVING EFFICIENCY, PROPER USE OF ENERGY

NOV- SEMINAR

DEC- SEMESTER EXAMINATION

PROPOSED TEACHING PLAN FOR THE SESSION OF **2017-18**

**M.SC IV SEM RESOURCE MANAGEMENT PAPER IV MANAGEMENT OF HUMAN RESOURCES**

JAN- PRINCIPLES OF HUMAN RESOURCES USE, FATIGUE TYPES CAUSES

FEB- FACTORS, CONCEPT AND TYPES OF EFFICIENCY AND EFFECTIVENESS, MEANING FACTORS OF PRODUCTIVITY, EFFECT OF MOTIVATION ON PRODUCTIVITY

MAR- MEANING NATURE, CHARACTERISTICS, PROCESS, METHODS, IMPORTANCE, FACTORS OF MOTIVATION, METHODS AND TECHNIQUES OF IMPROVING RESOURCE USE

APR- PERSONALITY AND DEVELOPMENT OF MANAGER TYPES IMPORTANCE, METHODS , TRAINING, LEADERSHIP, TRAINING FOR PERSONALITY DEVELOPMENT AND LEADERSHIP, GOALS OF TRAINING AND DEVELOPMENT

MAY- SEMINAR

JUNE- SEMESTER EXAMINATION

**GOVT. D.B. GIRLS P.G.COLLEGE, RAIPUR(C.G)**  
**TEACHING PLAN 2017-18**  
**M.Sc Ist SEMESTER (FOOD & NUTRITION)**  
**PAPER - I**  
**TITLE OF PAPER- RESEARCH METHODOLOGY**

<b>Month</b>	<b>Plan</b>
<b>July</b>	<b>Science, Scientific methods and approach</b>  <b>Social research &amp; survey: Meaning, definition, nature, scope, objects, types, distinction between social survey and research</b>
<b>August</b>	<b>Pretesting &amp; pilot survey</b>  <b>Hypothesis: Definition, Source, characteristics, importance, main difficulties in the formation of hypothesis, disadvantage</b>  <b>Source of data: primary &amp; secondary sources</b>
<b>September</b>	<b>Methods or techniques of data collection</b>  <b>a. Observation</b>  <b>b. Interview</b>  <b>c. Schedule</b>  <b>d. Questionnaire</b>  <b>e. Case-study</b>  <b>Sampling: Meaning, characteristics, advantages, and disadvantages</b>  <b>Types:</b>  <b>Random sampling</b>  <b>Purposive sampling</b>  <b>Stratified sampling</b>  <b>Other sampling method</b>
<b>October</b>	<b>Classification and tabulation of data analysis and interpretation of data</b>  <b>Research design steps and process of its formulation</b>  <b>Types of research design- exploratory, descriptive, diagnostic and experimental</b>
<b>November</b>	<b>Diagrammatic presentation of data</b>

	<b>Revision &amp; SEMINAR</b>
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**PAPER - II**  
**TITLE OF PAPER- NUTRITIONAL BIOCHEMISTRY**

<b>Month</b>	<b>Plan</b>
<b>July</b>	<p><b>Hetropolysaccharides</b> – Definition, classification, structure and properties of glycoprotein and proteoglycans.</p> <p><b>Plasma proteins</b> – Nature, properties and function.</p> <p><b>Intermediately metabolism</b> – Reactions, standard for energy changes and regulation, carbohydrates – glycolysis, glyconeogenesis, citric acid cycle, hexose-mono-phosphate pathway.</p> <p><b>Lipids</b> – Beta-oxidation, denovo synthesis of fatty acids, synthesis and breakdown of unsaturated fatty acids, cholesterol, phospholipids and triglycerol.</p>
<b>August</b>	<p><b>Purines and pyrimidines</b> –Source and Biosynthesis of purines and pyrimidines.</p> <p><b>Nucleic acids</b> – DNA replication and transcription.</p> <p>DNA Transcription and recombinant –  Bio medical importance, restriction enzymes, cloning, libraries and library construction.</p> <p>Gene Mutation – Codon, characteristics of genetic code, WOBBLE, Single base changes, transition transversion.</p> <p><b>rotein biosynthesis</b> – Initiation, formation of 40s initiation complex, formation of 80s initiation complex, elongation, steps of elongation.</p>
<b>September</b>	<p><b>Hormones</b> – General Characteristics , Classification &amp; Mechanism of action, assay of hormones. Chemistry and functions of different hormones – Thyroxine, TSH, LH, ACTH And Insulin.</p> <p><b>Minerals</b> – Trace elements, their physiological functions, sources, absorption, excretion and deficiency of iron, copper, iodine, zinc and selenium.</p>
<b>October</b>	<p>Detoxification in the body – Metabolism of foreign compounds, oxidation, conjugation, reduction, hydrolysis.</p> <p>Major alteration in carbohydrates, protein and fat metabolism in chronic nutrition relate degenerative disease. (Diabetes, Heart diseases).</p>
<b>November</b>	<b>REVISION &amp; SEMINAR</b>

### PAPER - III

#### TITLE OF PAPER- CLINICAL NUTRITION

Month	Plan
<b>July</b>	<p>Etiopathophysiology, clinical symptoms, Complications, prevention and recent advances in nutritional management of GIT Disorders</p> <p>(i) <b>Peptic ulcer</b> – Aetiology, symptoms, dietary modification. Intervals of feeding, bland diet, four stage diet therapy, prevention of recurrence.</p> <p>(ii) <b>Diarrhoea</b>- Classification, modification of diet with special emphasis to fibre and fluids.</p> <p>(iii) <b>Constipation</b> – Classification, dietary consideration.</p> <p>(iv) <b>Ulcerative colitis</b> – Symptoms, dietary treatment</p> <p>(v) <b>Sprue</b> – Types, dietary consideration.</p> <p><b>Pancreatic disorders</b> – Etiology, Pathogenesis and nutritional care.</p>
<b>August</b>	<p>Diseases of <b>liver and gall bladder</b> :</p> <p>(vi) <b>Infective Hepatitis</b> – Types and dietetic management.</p> <p>(vii) <b>Cirrhosis</b> – Types and dietary management.</p> <p>(viii) <b>Cholecystitis</b> and <b>Cholelithiasis</b> –dietetic management.</p> <p><b>Cardio Vascular Diseases</b> –</p> <p>(i) Familial Hypercholesterolemia –nutritional care.</p> <p>(ii) Atherosclerosis–Etiological,factors,pathogenesis,dietetic management.</p> <p>(iii) Hypertension – Classification, etiology, nutritional care.</p>
<b>September</b>	<p><b>Renal Diseases</b> :</p> <p>Basic renal functions, Classification of renal diseases.</p> <p>(i) Glomerulonephritis – Acute and chronic – Symptoms and dietetic treatment</p> <p>(ii) Nephrosis – Symptoms and principles of nutritional care.</p> <p>(iii) Renal failure – Acute and chronic renal failure, dialysis.</p> <p>(iv) Renal Calculi – Etiology, types of stones and nutritional Care. Acid and alkaline ash diet.</p> <p><b>Fevers and infections-</b> Types of fever Tuberculosis, typhoid and malaria -Dietetic management</p>
<b>October</b>	<p>Historical background, prevalence, etiology, biochemical and clinical manifestations, preventive and therapeutic measures for metabolic disorders.</p> <p>Diabetes mellitus</p>

	<p>(i) Incidence and predisposing factors.  (ii) Symptoms, types and diagnosis  (iii) Metabolism in diabetes  (iv) Dietary management  (v) Hypoglycemic agents and insulin  (vi) Complication of diabetes.</p> <p>Disorders of thyroid gland :</p> <p>Normal Thyroid Function</p> <p>(vii)       Hyperthyroidism – Symptoms and care.  Hypothyroidism – Symptoms and care</p>
<b>November</b>	<b>REVISION &amp; SEMINAR</b>

#### PAPER - IV

##### TITLE OF PAPER- FOOD SCIENCE

<b>Month</b>	<b>Plan</b>
<b>July</b>	<p><b>Water-</b> structure and Physical properties of water and ice and chemical nature, adsorption phenomena, types of water solution and colligative properties.</p> <ul style="list-style-type: none"> <li>- Free bound water</li> <li>- Water activity and food spoilage.</li> <li>-</li> </ul> <p><b>Food dispersion</b> – Colloidal sol, stabilization of colloidal systems, Rheology of food dispersion.</p> <ul style="list-style-type: none"> <li>- Gels : Structure, formation, strength, types and permanence.</li> <li>- Emulsion : Formation, stability, surfactants and emulsifiers.</li> </ul> <p>- Foams : Structure, formation and stabilization.</p>
<b>August</b>	<p><b>Polysaccharides, sugars and sweeteners:</b></p> <p><b>Starch:</b> Structure, Gelatinization, Characteristics of some food starches, modified food starches. Non starch polysaccharides : Cellulose, hemicelluloses, pectin, gum, animal polysaccharides.</p> <p><b>Sugars and sweeteners:</b> Sugars, syrups, potent sweeteners, sugar product.</p> <ul style="list-style-type: none"> <li>- Sweetener chemistry related to usage in food products : Structural relationships to sweetness perception, hydrolytic reactions, solubility and crystallization, hygroscopicity, fermentation, non-enzymatic browning.</li> </ul>

	<b>Cereals and cereals products:</b> <ul style="list-style-type: none"> <li>- Cereals grains : Structure and composition</li> <li>- Flours and flour quality</li> <li>- Extruded foods, breakfast cereals, wheat germ, bulger, puffed and flaked cereals</li> </ul>
<b>September</b>	<b>Fats, oils and related products:</b>  Sources, Composition, effect of composition on fat properties. Functional properties of fat and uses in food preparation. Fat substitutes, fat deterioration (Rancidity) and antioxidants.
<b>October</b>	<b>Dairy products: Milk</b> Composition, physical and functional properties. Denaturation effects of processing and storage.  <b>Milk products:</b> Cultured milk, yogurt, butter, whey, cheese, concentrated and dried products, frozen desserts, dairy product substitutes.  <b>Enzymes:</b> Nature of enzymes, stability and action. Proteolytic enzymes, oxidase, lipases, enzymes decomposing carbohydrates, immobilised enzymes  Protein denaturation, non enzymatic browning
<b>November</b>	<b>REVISION &amp; SEMINAR</b>



**M.Sc IInd SEMESTER (FOOD & NUTRITION)**

**PAPER - I**

**TITLE OF PAPER- STATISTICS & COMPUTER APPLICATION**

<b>Month</b>	<b>Plan</b>
<b>January</b>	<b>Statistics: Meaning, definition, scope, importance, characteristics, distrust of statistics</b>  <b>Measurement of central tendency:</b>  <b>Mean</b>  <b>Median</b>  <b>Mode</b>
<b>February</b>	<b>Graphic presentation of Data: Importance, types</b>  <b>-Histogram</b>  <b>-Fequency Polygon</b>  <b>-Frequency Curve</b>  <b>Correlation: Definition, Meaning and types</b>  <b>Methods of determining coefficientof correlation</b>  <b>-Product moment method</b>  <b>-Rank correlation</b>  <b>Methods of dispersion and variation</b>  <b>Mean deviation</b> <b>Standard deviation</b> <b>Quartile deviation</b>
<b>March</b>	<b>Introduction to computers</b>  <b>What is computer? Characteristics, components of computer system, CPU, I/O devices and memory (RAM and ROM), secondary storage devices (Hard disk, floppy disk, magnetic tape etc.)</b>  <b>Analysis of variance</b>

	<b>One way method: Direct and Shortcut</b>
<b>April</b>	<b>Computer generations</b> <b>Classification of computer: Analog, digital, hybrid, general and special purpose computer</b> <b>Types of computer: Micro, mini, mainframe and super computer</b> <b>Chi-square test and goodness of fit</b> <b>Application of student 't' test for small samples</b> <b>Working with MS-word:</b> <b>Getting started with word, formatting text and paragraph. Applying text and language tools. Designing pages with columns and tables, using graphics.</b>
<b>May</b>	<b>REVISION &amp; SEMINAR</b>

## PAPER - II

### TITLE OF PAPER- METHODS OF INVESTIGATION

<b>Month</b>	<b>Plan</b>
<b>January</b>	<p>Electrolytic dissociation : Principle, technique and theory of electrolytic dissociation.</p> <p>Hydrogen ion concentration : Principle and measurement of PH, indicators, buffers.</p> <p>Physiochemical techniques: Principles and methodology of the following-</p> <ul style="list-style-type: none"> <li>(a) Diffusion</li> <li>(b) Osmosis</li> <li>(c) Filtration</li> </ul>

	(d) Surface tension (e) Adsorption (f) Centrifugation
<b>February</b>	Chromatography: Principles, techniques and application of the following- (a) Paper chromatography- Circular, ascending and descending. (b) Ion exchange chromatography (c) Column chromatography (d) Thin layer chromatography (e) Gas liquid chromatography (f) High performance liquid chromatography
<b>March</b>	Electrophoresis: Principles and techniques of paper and gel electrophoresis. Microbiological assay : Principle and methodology of the following- (a) Vitamins (b) Amino acids Colorimetry : Principles, applications.
<b>April</b>	Radioactive isotopes: Properties, detection and uses of radioactive isotopes in medical science. Immunological methods: Principle and technique of the following- (c) Radio Immuno Assay (RIA) (d) Enzyme Linked Immuno sorbent Assay (ELISA) Collection of biological samples.
<b>May</b>	<b>REVISION &amp; SEMINAR</b>

### PAPER - III

#### TITLE OF PAPER- PROBLEMS IN NUTRITION

Month	Plan
January	<p>Nutritional screening and assessment of nutritional status of hospitalized</p> <p>Identification of high risk patients. Assessment of patient need based on interpretation of patient data (Clinical, biochemical, biophysical, personal etc.)</p> <p>Nutritional support service: Recent advances in techniques and feeding methods.(enteral nutrition ,parental nutrition) pre and post operative diets, Diet in burns.</p>
February	<p><b>Weight imbalance—</b></p> <p><b>Obesity</b> – Types, etiology, assessment, treatment, diet and other measures, complications of obesity.</p> <p><b>Under weight</b> – Causes, dietetic management</p> <p><b>Neurological disorders :</b></p> <ul style="list-style-type: none"> <li>(i) Neuritis – Etiology, nutritional care.</li> <li>(ii) Migraine – Symptoms &amp; Dietary management</li> <li>(iii) Anorexia Nervosa – Etiology, treatment.</li> </ul>
March	<p><b>Diet in genetic disorders:</b></p> <p>Fructosuria, Galactosemia, Phenylketonuria.</p> <p><b>Musculoskeletal disorders:</b></p> <p>Gout – Characteristics, nutritional care</p> <p><b>Cancer:</b></p> <ul style="list-style-type: none"> <li>- Types of cancer, Nutritional effect of cancer, Nutritional disorders related to treatment,</li> <li>Nutritional care in cancer.</li> </ul>

<b>April</b>	<p>Prevalence , etiology, clinical manifestation, preventive and therapeutic measures for the following-</p> <p>Vitamin A deficiency</p> <p>IDD</p> <p>Rickets</p> <p>Dental caries : Etiology, nursing bottle caries.</p> <p>Nutrition in AIDS.</p>
<b>May</b>	<b>REVISION &amp; SEMINAR</b>

## **PAPER - IV**

### **TITLE OF PAPER- FOOD CHEMISTRY**

<b>Month</b>	<b>Plan</b>
<b>January</b>	<p>Meat and Poultry : Muscle composition, characteristics and structure. Post mortem changes during processing, preservation and their effects. Heat induced changes in meat variables in meat preparation, Tenderizing treatments, meat products.</p> <p>Eggs : Structure and composition, changes during storage. Functional properties of eggs, use in cookery. Egg processing, low cholesterol egg substitutes.</p>
<b>February</b>	<p>Fish and sea foods : Types and composition, storage and changes during storage, changes during processing, by- product and newer products.</p> <p>Pulses and Legumes : Structure, composition, processing, toxic constituents.</p> <p>Nuts and oil seeds : Composition, oil extraction and by-products.</p>
<b>March</b>	<p>Fruits and vegetables: Plant, anatomy, gross composition, structure, features and activities of living systems. Enzymes in fruits and vegetables. Flavour constituents, plant phenolics, pigments, post harvest changes. Texture of fruits and vegetables. Effects of storage, processing and preservation.</p> <p>Spices and condiments: Composition, flavouring extracts – Natural and synthetic.</p> <p>Beverages : Synthetic and natural, alcoholic and non-alcoholic, carbonated and non- carbonated, coffee, tea, cocoa, malted drinks.</p>
<b>April</b>	<p>Traditional processed products : jam, jellies &amp; squash.</p> <p>Protein concentrates : Hydrolysates and textured vegetable proteins, milk substitutes.</p> <p>Fermented food-cereal based, pulse based, fruit/vegetables based like vinegar, pickle and alcoholic beverages.</p>

	<p>Leavened products: Leavened agents biologically leavened and chemically leavened products. Batters and dough, bakery products.</p> <p>Salt and salt substitutes</p>
<b>May</b>	<b>REVISION &amp; SEMINAR</b>

M.Sc IIIrd SEMESTER (FOOD & NUTRITION)

PAPER - I

TITLE OF PAPER- FOOD MICROBIOLOGY

Month	Plan
July	<p>Bacterial morphology, structure, structure, staining, culture media, culture method and identification of Bacteria.</p> <p>Growth and Nutrition of Bacteria :</p> <p>Microbial Criteria of Food.</p> <p>Microbial Standards and food safety.</p> <p>Microorganism important in food microbiology – Mold, Yeast, Bacteria.</p> <p>Controlling the microbial quality of foods –</p> <p>Quality control using microbial crities</p> <p>The HACCP – (Hazard Analysis and Critical Control Point) SYSTEM.</p> <p>Spoilage of different groups of foods :</p> <p>Cereals and cereal products</p> <p>Vegetables and fruits</p> <p>Fish and meat</p> <p>Eggs and poultry</p> <p>Milk and milk products</p> <p>Canned foods</p>
August	<p>Contamination of foods</p> <p>Food Preservation:</p> <p>General principles of food preservation:</p> <p>Asepsis, removal of micro-organism, maintenance of anaerobic conditions.</p> <p>Preservation by use of high temperature</p> <p>Preservation by use of low temperature</p> <p>Preservation by drying</p> <p>Preservation by food additives</p> <p>Preservation by radiation.</p>
September	<p>Preservation by radiation.</p> <p>(i) Food borne illness: Bacterial and viral food borne disorders. Food borne important animal parasites, mycotoxins.</p>
October	Fermented foods:

	Role of microbes in fermented foods - Fermented dairy products Fermented vegetables Fermented meat Fermented fish Beverage and distilled products. Anti Microbial Therapy Food laws.
November	REVISION & SEMINAR

## PAPER - II

### TITLE OF PAPER- NUTRITION FOR HEALTH OF WOMEN AND CHILDREN

Month	Plan
July	<p>Women in family and community : Demographic changes menarche, marriage, fertility, morbidity, mortality, life expectancy, sex ratio, aging, widowhood.</p> <p>Women and Health : Health facilities. Disease pattern and reproductive health.</p> <p>Policies and programs for promoting maternal and child nutrition and health.</p> <p>Concept of small family. Methods of family planning merits and demerits.</p>
August	<p>Importance of nutrition prior to and during pregnancy-prerequisites for successful outcome.</p> <p>Effect of under nutrition on mother and child including pregnancy outcome and maternal and child health - short term and long term effect.</p> <p>Physiology and endocrinology of pregnancy, embryonic and foetal growth and development.</p> <p>Nutritional requirements during pregnancy: Adolescent pregnancy, pregnancy and T.B., IUGE, gestational diabetes.</p>
September	<p>Lactation – Development of mammary tissue and role of hormones – Physiology and endocrinology of lactation. Synthesis of milk component, let down reflex, role of hormones. Lactational amenorrhea, effect of breast feeding on maternal health.</p> <p>Human milk composition and factors affecting breast feeding. Human milk banking.</p> <p>Management of Lactation : Prenatal breast feeding, skill education. Rooming in problems - sore nipples, engorged breast, inverted breast.</p> <p>Exclusive breast feeding.</p>



October	<p>Infant physiology : Preterm and low birth weight infant – Implication for feeding and management.</p> <p>Growth and development during infancy, childhood and adolescents.</p> <p>Feeding of infants and children and dietary management.</p> <p>Malnutrition – Etiology and management.</p>
November	REVISION & SEMINAR

### PAPER - III

#### TITLE OF PAPER- NUTRITION FOR HEALTH AND FITNESS

Month	Plan
<b>July</b>	<p><b>Definition, components of fitness</b></p> <p>Anatomical fitness</p> <p>Physiological fitness</p> <p>Psychological Fitness Physiological fitness :</p> <p>(a) Growth and development, (b) Strength, (c) Speed, (d) Skill, (e) Stamina or endurance, specific fitness, general fitness and health status.</p> <p>Holistic approach to the management of fitness and health</p>
<b>August</b>	<p><b>Review of different energy systems for endurance and power activity:</b></p> <p>Endurance : Definition, classification of endurance, factors affecting endurance.</p> <p>Fuels and nutrients to support physical activity : Shifts in carbohydrates and fat metabolism, mobilization of fat stores during exercise.</p> <p>Nutrition in Sports : Sports specific requirement.</p> <p>Pregame and post game meals. Assessment of different nutrigenic aids. Commercial supplements.</p>

<b>September</b>	<p>Diets for persons with high energy requirements, stress, fracture and injury.</p> <p>Water and electrolyte balance: Losses and their replenishment during exercise and sports. Effect of dehydration.</p> <p>Alternative systems for health and fitness like ayurveda, yoga, Meditation, Vegetarianism.</p>
<b>October</b>	<p>(A) Significance of physical fitness in the prevention and management of : Diabetes mellitus, (ii) Cardiovascular disorders, (iii) Bone health and obesity. Nutrition and exercise regimes for pre and post natal fitness.</p> <p>A Defining nutritional goals/guidelines appropriate to health and prevention and management of the chronic degenerative disorder - (a) Cardiovascular disorders, (b) Diabetic mellitus (c) Cancer, (d) Bone health and obesity B. Various dietary regimes for weight reduction.</p>
<b>November</b>	<b>REVISION &amp; SEMINAR</b>

#### **PAPER - IV**

#### **TITLE OF PAPER- ADVANCED NUTRITION**

<b>Month</b>	<b>Plan</b>
<b>July</b>	<p>Energy :</p> <p>Energy content of foods, physiological fuel values.</p> <p>Measurement of energy expenditure – BMR, RMR, Thermal effect of feeding and</p>

	<p>physical activity. Methods of measurement of basal metabolism.</p> <p>Estimating energy requirements of individuals.</p> <p>Carbohydrates:</p> <p>Classification, general functions of carbohydrates</p> <p>Dietary fiber</p> <p>fructo - oligosaccharids</p> <p>Starch : chemical composition and physiological effects.</p> <p>Glycemic index of foods</p>
<b>August</b>	<p>Proteins :</p> <p>Classification &amp; general functions of Protein</p> <p>Role of liver and gastro intestinal tract in protein metabolism</p> <p>Protein quality – Methods of evaluating Quality</p> <p>Protein and amino acid requirements, specific functions of amino acids.</p> <p>Lipids :</p> <p>Classification &amp; functions of Lipids</p> <p>EFA: Role of N-3, N-6 fatty acids in health and diseases requirement of total fat and fatty acid.</p> <p>Prostaglandins, phospholipids, cholesterol.</p>
<b>September</b>	<p>Water : Water balance and its regulation.</p> <p>Minerals :</p> <p>(For each nutrient sources, bioavailability, metabolism, function, requirements, RDI, deficiency and toxicity to be discussed)</p> <p>Macro Minerals : Calcium, Phosphorus, Magnesium, sodium, potassium and chlorides.</p> <p>Micro Minerals : Iron, copper, zinc, manganese, iodine, fluoride.</p> <p>Trace Minerals : Selenium, Cobalt, chromium, vanadium, boron, nickel.</p>

<b>October</b>	<p>Vitamins:</p> <p>Structure, food sources, absorption and transport, metabolism, biochemical functions, assessment of status physiological and therapeutic effect. The toxicity and deficiency with respect to the following:</p> <p>Fat soluble vitamin - A, D, E and K</p> <p>Water soluble vitamin – Thiamin, riboflavin, niacin, biotin, pyridoxine, folic acid, pantothenic acid, chlorine, cyanocobalamin, inositol, ascorbic acid.</p>
<b>November</b>	<b>REVISION &amp; SEMINAR</b>

**M.Sc IVth SEMESTER (FOOD & NUTRITION)**

**PAPER - I**

**TITLE OF PAPER- PHYSIOLOGY**

<b>Month</b>	<b>Plan</b>
<b>January</b>	<p>Cell Structure and Functions:</p> <p>Levels of cellular organizations and function - Brief review. Cell Membrane, transport across cell membrane and intercellular communication, Regulations of cell multiplication.</p> <p>Nervous System:</p> <p>Review of structure and function of neuron. Conduction of nerve impulse, synapses, role of neurotransmitters.</p> <p>Organisation of central nervous system, structure and functions of brain and spinal cord, afferent and efferent nerves. Hypothalamus and its role in various body functions – Obesity, sleep, memory.</p> <p>Immune system:</p> <p>Humoral immunity. Development of lymphocytes. Role of inflammation and defence.</p>
<b>February</b>	<p>Endocrine System:</p> <p>Endocrine glands – Structure, function, role of hormones, regulation of hormonal secretion. Disorders of endocrine glands.</p> <p>Sense organs:</p> <p>Review of structure and function. Role of skin, eye, ear, nose and tongue in perception of stimuli.</p>

	<p>Reproduction:</p> <p>Menstrual cycle, spermatogenesis, physiological changes in pregnancy.</p>
<b>March</b>	<p>Digestive System:</p> <p>Review of structure, secretory, digestive and absorptive functions. Role of liver, pancreas and gall bladder and their dysfunction.</p> <p>Respiratory Function:</p> <p>Review of structure and function. Role of lungs in the exchange of gases. Transport of oxygen and carbon dioxide, respiratory quotient, hypoxia and asthma.</p> <p>Excretory System:</p> <p>Structure and function of nephron. Urine formation. Water, electrolyte and acid base balance, diuretics.</p>
<b>April</b>	<p>Circulating System:</p> <p>Structure and function of heart and blood vessels. Regulation cardiac output and blood pressure, heart failure, hypertension.</p> <p>Blood:</p> <p>Formation and function of plasma protein and blood erythropoiesis, blood Clotting, blood group and histocompatibility, blood indices, use of blood for investigation and diagnosis of specific disorders, anaemia.</p> <p>Musculo-Skeletal System:</p> <p>Structure and function of bone, cartilage and connective tissue. Disorders of skeletal system.</p> <p>Types of muscles, Structure and Function.</p>
<b>May</b>	<b>REVISION &amp; SEMINAR</b>

## **PAPER - II**

### **TITLE OF PAPER- PUBLIC NUTRITION**

<b>Month</b>	<b>Plan</b>
<b>January</b>	<p>Concept of Public Health Nutrition:</p> <ul style="list-style-type: none"><li>- Relationship between health and nutrition.</li></ul> <p>Role of public nutritionist in the Health care delivery system.</p> <p>Health Care of the community. National health care delivery system.</p>
<b>February</b>	<p>Population dynamics:</p> <p>Demography, demographic cycle, world population trend, birth rates, death rates, growth rates, demographic trends in India, age pyramid, sex ratio.</p> <p>Environment and Health:</p> <p>Water: Water pollution, surveillance of drinking water quality. Air: Air pollution</p>
<b>March</b>	<p>Nutritional Status:</p> <p>Determinants of nutritional status of individual and populations.</p> <p>Major Nutritional Problems:</p> <p>Etiology, prevalence, clinical manifestations. Preventive and therapeutic measures of- Macro and micro deficiencies – LBW, PEM, xerophthalmia, nutritional anemia.</p>

<b>April</b>	<p>Other nutritional problems like lathyrism, aflatoxicosis, alcoholism and fluorosis.</p> <p>National Nutrition Policy.</p> <p>Health Planning in India.</p> <p>Occupational Health.</p>
<b>May</b>	<b>REVISION &amp; SEMINAR</b>

### **PAPER - III**

#### **TITLE OF PAPER- GERIATRIC NUTRITION**

<b>Month</b>	<b>Plan</b>
<b>January</b>	<p>Aging: Definition</p> <p>Molecular changes during aging – (i) Changes in proteins, (ii)Chromatin, (iii) Cross linkers, (iv)Immune response, (v) Hormones, (vi) Ageing of cells in culture,</p> <p>(vii) Age pigment.</p> <p>Mechanism of Aging-</p> <p>Somatic Mutation,</p> <p>Errors in proteins</p> <p>Gene regulation</p> <p>Socio-Psychological aspects of aging- Especially problems of elderly women.</p>
<b>February</b>	<p>Nutritional and Food requirement during old age- Process of aging, nutritional requirements</p> <p>Nutrition related problems of old age-</p> <p>- (i) Osteoporosis, (ii) Obesity, (iii) Neurological dysfunction, (iv) Anemia, (v) Malnutrition, (vii)Constipation.</p> <p>Policies and program of the government to the elderly.</p>



	Policies and program of the NGO sector pertaining to the elderly.
<b>March</b>	<p>Degenerative diseases in old age-</p> <p>(i) Atherosclerosis, (ii) Hypertension, (iii) Cancer, (iv) Diabetes mellitus, (v) Arthritis</p> <p>Common complaints during oldage.</p> <p>Dietary guidelines</p>
<b>April</b>	<p>Drug – Food and nutrient reaction in elderly.</p> <p>Effect of drugs on food intake and absorption.</p> <p>Effect of various foods and beverages on drug action.</p> <p>Drug nutritional interaction.</p> <p>Aging and Immunity.</p> <p>Aging and Nutrition, nutrition and longevity, food habits of elderly people, stress during oldage.</p>
<b>May</b>	<b>REVISION &amp; SEMINAR</b>

#### **PAPER - IV**

##### **TITLE OF PAPER- RESEARCH METHODS IN FOOD &NUTRITION**

<b>Month</b>	<b>Plan</b>
<b>January</b>	<p>Body Composition:-</p> <p>Normal Body Composition</p> <p>Changes through the lifecycle</p> <p>Methods of Assessing body composition</p> <p>Diet Surveys-Following factors to be considered in conducting diet surveys:-</p>

	<p>Trained personnel</p> <p>Population sampling</p> <p>Methods of diet surveys</p> <p>Calculation of the nutritive value of the diet in terms of adult consumption unit and interpretation.</p> <p>Nutrition Education:-</p> <p>Training in Nutrition</p> <p>Channels of nutrition education of the community</p> <p>Nutrition education methods</p>
<b>February</b>	<p>Principles of Epidemiology – Definition, aims, uses, epidemiological approach</p> <p>Screening for Disease – Concept of screening, aims and objective,</p> <p>-Types of screening ,Uses of screening,</p> <p>Design Strategies in research. (Descriptive Studies):-</p> <p>- Issues in the design and conduct of descriptive studies–</p> <p>Defining the population, defining the disease, measurement of disease, comparing with known indices, formulation of hypothesis, uses of descriptive studies.</p>
<b>March</b>	<p>Design strategies in Research – (Analytical Studies I):-</p> <p>- Issues in the design and conduct of case control studies – Selection of cases. selection of controls, matching, exposure status, analysis, advantages and disadvantages.</p> <p>Design Strategies in Research – ( Analytical Studies II):-</p> <p>- Issues in the design of cohort studies – Selection of exposed population, selection of comparison group, obtaining data on exposure, follow-up, analysis, advantages, disadvantages.</p> <p>Health Information – Component of health information system,</p> <p>Sources of health information, Uses of Health information</p>
<b>April</b>	<p>Experimental Studies:-</p> <p>Randomized controlled trials (Clinical trials) -- Protocol, selection of reference and experimental population, randomization, manipulation, follow-up, assessment. Brief Overview of Case Study and Cross Sectional</p>

	<p>Survey</p> <p>Brief Overview of Case Study and Cross Sectional Survey</p> <p>Qualitative Research-</p> <p>PRA - (a) Concept of PRA</p> <p>Tools and Techniques</p> <p>Evaluation</p>
May	<p><b>REVISION &amp; SEMINAR</b></p>

## M.Sc. FOODS AND NUTRITION

### I<sup>st</sup> SEMESTER

SESSION: 2017-18

### PAPER:III

#### NAME OF PAPER: CLINICAL NUTRITION

August	<p>Etiopathophysiology, clinical symptoms, Complications, prevention and recent advances in nutritional management of GIT Disorders</p> <ul style="list-style-type: none"><li>(i) <b>Peptic ulcer</b> – Aetiology, symptoms, dietary modification. Intervals of feeding, bland diet, four stage diet therapy, prevention of recurrence.</li><li>(ii) <b>Diarrhoea</b>- Classification, modification of diet with special emphasis to fibre and fluids.</li><li>(iii) <b>Constipation</b> – Classification, dietary consideration.</li><li>(iv) <b>Ulcerative colitis</b> – Symptoms, dietary treatment</li><li>(v) <b>Sprue</b> – Types, dietary consideration.</li></ul> <p><b>Pancreatic disorders</b> – Etiology, Pathogenesis and nutritional care.</p>
September	<p>Diseases of <b>liver and gall bladder</b> :</p> <ul style="list-style-type: none"><li>(i) <b>Infective Hepatitis</b> – Types and dietetic management.</li><li>(ii) <b>Cirrhosis</b> – Types and dietary management.</li></ul> <p><b>Cholecystitis and Cholelithiasis</b> –dietetic management.</p> <p><b>Cardio Vascular Diseases</b> –</p> <ul style="list-style-type: none"><li>(i) Familial Hypercholesterolemia –nutritional care.</li><li>(ii) Atherosclerosis–Etiological,factors,pathogenesis,dietetic management.</li><li>(iii) Hypertension – Classification, etiology, nutritional care.</li></ul>
October	<p><b>Renal Diseases</b></p> <p>Basic renal functions, Classification of renal diseases.</p> <ul style="list-style-type: none"><li>a. Glomerulonephritis – Acute and chronic – Symptoms and dietetic treatment</li><li>b. Nephrosis – Symptoms and principles of nutritional care.</li><li>c. Renal failure – Acute and chronic renal failure, dialysis.</li><li>d. Renal Calculi – Etiology, types of stones and nutritional Care. Acid and alkaline ash diet.</li></ul> <p><b>Fevers and infections-</b></p> <p>Types of fever</p>

November	<p>Tuberculosis, typhoid and malaria -Dietetic managementHistorical background, prevalence, etiology, biochemical and clinical manifestations, preventive and therapeutic measures for metabolic disorders.</p> <p>Diabetes mellitus</p> <p>(i) Incidence and predisposing factors.</p> <p>(ii) Symptoms, types and diagnosis</p> <p>(iii)Metabolism in diabetes</p> <p>(iv)Dietary management</p> <p>(v) Hypoglycemic agents and insulin</p> <p>Complication of diabetes Disorders of thyroid gland :</p> <p>Normal Thyroid Function</p> <p>(i) Hyperthyroidism – Symptoms and care.</p> <p>(ii) Hypothyroidism – Symptoms and care</p> <p>REVISION</p>

## **M.Sc. FOOD AND NUTRITION**

### **III<sup>rd</sup> SEMESTER**

**SESSION: 2017-18**

### **PAPER: IV**

**NAME OF PAPER: ADVANCED NUTRITION**

July	<p><b>Energy:</b></p> <p>(a) Review of Energy content of foods, physiological fuel values-.</p> <p>(b) Measurement of energy expenditure – BMR, RMR. Thermal effect of feeding and physical activity. Methods of measurement of basal metabolism.</p> <p>(c) Estimating energy requirements of individuals.</p> <p>(d) Regulation of energy metabolism – Control of food intake, digestion, absorption and body weight.</p>
August	<p><b>Carbohydrates:</b></p> <p>(a) Review of Types, classification, digestion and transport of carbohydrates</p>

	<p>(b) Dietary fiber, fructo-oligosaccharides Starch :chemical composition and physiological effects.</p> <p>(c) Glycemic index of foods,sweeteners – Nutritive and non-nutritive.</p>
September	<p><b>Proteins:</b></p> <p>(a) Review of Classification, Digestion, absorption and transport of Proteins</p> <p>(b) Role of liver and gastro intestinal tract in protein metabolism.</p> <p>(c) Protein quality – Methods of evaluating Quality.</p> <p>(d) Protein and amino acid requirements, specific functions of amino acids.</p> <p><b>Lipids:</b></p> <p>(a) Review of Classification, digestion, absorption and transport of Lipids</p> <p>(b) Functions of fat, EFA: Role of N-3, N-6 fatty acids in health and diseases requirement of total fat and fatty acid.</p> <p>(c) Prostaglandins, phospholipids, cholesterol.</p>
October	<p><b>Water:</b> Water balance and its regulation<b>Minerals :</b> (For each nutrient sources, bioavailability, metabolism, function, requirements, RDI, deficiency and toxicity to be discussed)</p> <p>(a) Macro minerals : Calcium, Phosphorous, Magnesium, sodium, potassium and chlorides.</p> <p>(b) Micro Minerals: Iron, copper, zinc, manganese, iodine, fluoride.</p> <p>(c) Trace minerals: Selenium, Cobalt, chromium, vanadium, boron, nickel</p>
November	<p><b>Vitamins:</b></p> <p>Structure, food sources, absorption and transport, metabolism, biochemical functions, assessment of status physiological and therapeutic effect. The toxicity and deficiency with respect to the following:</p> <p>(a) Fat soluble: Vitamin A,D. E And K</p> <p>(b) Water soluble: Thiamin, riboflavin, niacin, biotin, pyridoxine, folic acid, pantothenic acid, choline, cyanocobalamin, inositol, ascorbic acid. Revision</p>

**M.Sc. FOODS AND NUTRITION**

**II<sup>nd</sup> SEMESTER**

**SESSION: 2017-18**

**PAPER: III**

**NAME OF PAPER: PROBLEMS IN HUMAN NUTRITION**

January	<p>Nutritional screening and assessment of nutritional status of hospitalized and outdoor patients.</p> <p>Identification of high risk patients. Assessment of patient need based on interpretation of patient data (Clinical, biochemical, biophysical, personal etc.)</p> <p>2. Nutritional support service: Recent advances in techniques and feeding methods. (enteral nutrition, parenteral nutrition)</p> <p>3. pre and post operative diets, Diet in burns.</p> <p><b>Weight imbalance –</b></p> <p><b>Obesity</b> – Types, etiology, assessment, treatment, diet and other measures, complications of obesity.</p> <p><b>Under weight</b> – Causes, dietetic management</p>
February	<p><b>Neurological disorders :</b></p> <p>(i) Neuritis – Etiology, nutritional care.</p> <p>(ii) Migraine – Symptoms &amp; Dietary management</p> <p>Anorexia Nervosa – Etiology, treatment <b>Diet in genetic disorders :</b></p> <p>Fructosuria, Galactosemia, Phenylketonuria.</p> <p><b>Musculoskeletal disorders :</b></p> <p>Gout – Characteristics, nutritional care</p> <p><b>Cancer :</b></p> <p>Types of cancer, Nutritional effect of cancer, Nutritional disorders related to treatment Nutritional care in cancer.</p> <p>Prevalence, etiology, clinical manifestation, preventive and therapeutic measures for the following-</p>
March	<p>Vitamin A Deficiency</p> <p>IDD</p> <p>Dental caries : Etiology, nursing bottle caries.</p> <p>Nutrition in AIDS.</p>

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**M.Sc.FOOD AND NUTRITION**

**IV<sup>th</sup> SEMESTER**

**SESSION: 2017-18**

**PAPER: IV**

**NAME OF PAPER: RESEARCH METHODS IN FOOD &NUTRITION**

January	<p>Body Composition :-</p> <ul style="list-style-type: none"> <li>(a) Normal Body Composition</li> <li>(b) Changes through the life cycle</li> <li>(c) Methods of Assessing body composition</li> </ul> <p>Diet Surveys-Following factors to be considered in conducting diet surveys:-</p> <ul style="list-style-type: none"> <li>(a) Trained personnel</li> <li>(b) Population sampling</li> <li>(c) Methods of diet surveys</li> <li>(d) Calculation of the nutritive value of the diet in terms of adult consumption unit and interpretation.</li> </ul> <p>Nutrition Education:-</p> <ul style="list-style-type: none"> <li>(a) Training in Nutrition</li> <li>(b) Channels of nutrition education of the community</li> <li>(c) Nutrition education methods</li> </ul>
February	<p>Design strategies in Research – (Analytical Studies I):-</p> <p>Brief overview – Case control, clinical trials.</p> <p>Issues in the design and conduct of case control studies –</p> <p>Selection of cases. selection of controls, matching, exposure status, analysis, advantages and disadvantages</p> <p>Screening for Disease – Concept of screening, aims and</p>



	<p>objective, -Types of screening ,Uses of screening</p> <p>Design Strategies in research. (Descriptive Studies):-  (a) Brief Overview of Case study, Cross sectional surveys.  (b) Issues in the design and conduct of descriptive studies –  Defining the population, defining the disease, measurement of disease, comparing with known indices, formulation of hypothesis, uses of descriptive studies.  Principles of Epidemiology – Definition, aims, uses, epidemiological approach</p>
March	<p>Design Strategies in Research –( Analytical Studies II):-  (a) Overview of types of cohort studies.  (b) Issues in the design of cohort studies –  Selection of exposed population, selection of comparison group, obtaining data on exposure, follow-up, analysis, advantages, disadvantages.  Health Information – Component of health information system,  Sources of health information,Uses of Health information  Experimental Studies:-  Randomized controlled trials (Clinical trials) --  Protocol, selection of reference and experimental population, randomization, manipulation, follow-up, assessment.  Qualitative Research-  PRA - (a) Concept of PRA  (b) Tools and Techniques  (c) Evaluation</p>

**Govt. D.B. Girls P.G. Autonomous College , Raipur (C.G.)**  
**Proposed Teaching Plan For the Session 2017-18**  
**M.Com. Part - I Semester**

Month	Managerial Economics	Advanced Accounting	Management Accounting	Statistical Analysis	Corporate Legal Framework
July	UNIT-1 Nature and Scope of Managerial, Economics: Objective of a firm; Economics theory and managerial theory; Managerial economist's role and responsibilities. UNIT-2 Fundamental economic concepts-incremental principle, opportunity cost principle, discounting principle. equi-marginal principle.	UNIT-1 Accounting for issue, Forfeited and redemption of shares and debentures. UNIT-2 Final accounts and financial statements of companies.	UNIT 1 Introduction of Accounting: Management accounting as a area accounting; Objectives, nature and scope of management accounting, techniques of management accounting, difference between financial accounting, cost accounting and management accounting, Management accounting and managerial decisions; Management accountant's position, role and responsibilities.	UNIT-1 Statistics - Definitions, Characteristics, Scope and Nature, Functions, limitations, Distrust and misuse importance & Statistical Investigations, Classification & Tabulation, UNIT-2 Data Sources: Primary and Secondary, Primary data collection techniques, Schedule, Questionnaire and interview & Sources' of Secondary data.	UNIT-1 The Companies Act, 1956 (Relevant Provisions) : Definition, types of companies Memorandum of association; Articles of association; Prospectus; Share capital and membership.
August	UNIT-3 Demand Analysis: Individual and Market demand functions Law of demand; determinants of demand; Elasticity of demand-its meaning and importance, Price elasticity; income elasticity and cross elasticity; Using elasticity 'in managerial decisions.	UNIT-3 Accounting issues relative to amalgamation and reconstruction of companies.	UNIT-2 Accounting Plan and Responsibility Centers: Meaning and significance of responsibility accounting; Responsibility centers-cost centre, profit centre and investment centre, Problems in transfer pricing, Objectives and determinates of responsibility centers.	UNIT-3 Dispersion, Co-efficient of variance and skewness, correlation - Karl-Pearsons and spearman's ranking method and Regression analysis, Two variables case.	UNIT-2 Meetings and resolutions - Company management; Managerial remuneration; Winding up and dissolution of companies.

September	UNIT-4 Theory of consumer Choice: Cardinal utility approach, indifference approach, revealed preference and theory of consumer choice under risk; Demand estimation for major consumer durable and non-durable products; Demand forecasting tech. technique.	UNIT-4 Accounting for holding and subsidiary companies.	UNIT-3 Budgeting. Definition of Budget; Essentials of budgeting; Types of budgets functional, master etc. .Fixed and flexible budget, Budgetary control, Zero-base budgeting; Performance budgeting. UNIT-4 Standard Costing and Variance Analysis:, Standard costing as a control technique; Setting of standards and their revision; Variance analysis- meaning and importance; Kinds of variances and their uses-material, labour and overhead variances; Disposal: of variances ; Relevance of variance analysis to budgeting and standard costing.	UNIT-4 Probability Theory: Probability classical, relative and subjective probability, Addition and multiplication probability models - Conditional probability and Baye's Theorem.	UNIT-3 The Negotiable Instruments Act, 1881 - Definition, types of negotiable instruments; Negotiation; Holder and holder in due course; payment in due course;  UNIT-4 Endorsement and crossing of cheque; Presentation of negotiable instruments.
October	UNIT-5 Production Theory: Production function- production with one and two variable inputs, Stages of production; Economics of scale; Estimation of production function.	UNIT-5 Accounts relating to Liquidation of companies.	UNIT-5 Marginal Costing: Concept of marginal cost; Marginal costing and absorption, costing, Marginal costing versus direct, costing; Cost-volume- profit analysis.	UNIT-5 Probability Distributions - Binomial, Poisson and Normal Distributions, Their characteristics and applications.	UNIT-5 Legal Environment for Security Markets: SEBI Act. 1992- organisation and objectives of SEBI.
November	Seminar And Internal Examination				
December	Semester Examination				

**Govt. D.B. Girls P.G. Autonomous College , Raipur (C.G.)**  
**Proposed Teaching Plan For the Session 2017-18**  
**M.Com. Part - II Semester**

Month	Business Economics	Advanced Accounting	Accounting For Managerial Decision	Advanced Statistics	Business Law
January	UNIT-I Cost Theory and Estimation, economic value analysis, Short and long run cost function s- their nature, shape and inter-relationship; Law of variable proportions;-Law of returns to scale.	UNIT-1 Accounts of General Insurance Companies. UNIT-2 Accounts of Banking Companies.	UNIT-I Break-even-analysis; Assumptions and practical applications of break- even-analysis; Decisions regarding sales-mix, make or buy decisions and discontinuation of a product line etc.	UNIT-1 Statistical Decision Theory: Decision environment, Expected profit under uncertainty and assigning probabilities and utility theory.	UNIT-I SEBI Act-1992: Organisation and objectives of SEBI, Functions and Role of SEB Rights and Power of SEBI. UNIT-II MRTP Act 1969: Monopolistic Trade Practice Meaning, essentials, Restrictive Trade Practices - Meaning, Unfair trade practice, MRTP commission offences and Penalties.
February	UNIT-II Price Determination under Different Market Conditions: Characteristics of different market structures; Price determination and firm's equilibrium in short-run and long-run under perfect competition, monopolistic competition, oligopoly and monopoly,	UNIT-3 Accounts of Public Utility concerns: Double Accounts System.	UNIT-2 Analyzing financial Statements: Method, objects and ratio analysis.  UNIT-3 Cash flow analysis and Fund flow analysis.	UNIT-2 Statistical Estimations. and Testory: Point and interval estimation of population mean, proportion and variance Statistical Testing - Hypothesis and Errors, Sample size – Large and Small Sampling test Z tests, T Tests & F Tests..	UNIT-III Consumer Protection Act 1986: Needs of Act, Rights of consumers, Objectives of Act.,Grievance redressal Machinery, District Forum, State Commission, National Commission.

March	UNIT-III Pricing Practices: Methods of price determination in practice, pricing of multiple products; price discrimination; International price discrimination and dumping; Transfer pricing.	Accounts of Public Utility concerns: Double Accounts System.	UNIT-4 Contemporary Issues in Management Accounting: Value chain analysis; Activity bases costing, Quality costing, Target and life cycle costing.	UNIT-3 Association of Attributes: Two Attributes, consistency of data, measurement of Association of Attributes - Percentage method, Co-efficient of Association, Comparison of Actual and (youle method) Expected frequency's & illusory Association.	UNIT-IV FEMA Act 1999: Objectives; Regulation and Management of FEMA, Penalties Appeal.
April	UNIT-IV Business Cycles: Nature and phases of la business .cycle; Theories of business cycles psychological, profit, monetary, innovation, cobweb, Samuelson and Hicks theories. UNIT-V Inflation: Definition, Characteristics and types; Inflation in terms of demand- pull and cost-push factors; Effects of inflation.	UNIT-4 Royalty accounts.  UNIT-5 Investment accounts.	UNIT-5 Reporting to Management: Objectives of reporting, reporting needs at different managerial levels; Types of ,reports," modes of reporting; reporting at different levels of management.	UNIT-4 Statistical Quality Control: Causes of Variations in quality characteristics, Quality Control charts-purpose and logic, Process under control and out of control, warning limits, control charts for attributes-fraction defectives and number of defects, Acceptance sampling. UNIT-5 Interpolation and Extrapolation - Parabolic Binomial, Newton and long rages method.	UNIT-V W.T.O.: Brief History of WTO, Objectives and Functions, Organisation, W.T.O. and India, Regional groupings, anti-dumping duties and other NTBs, Doha declaration , Dispute settlement system, TRIP, TRIMS and GATS.
May	Seminar And Internal Examination				
June	Semester Examination				

**Govt. D.B. Girls P.G. Autonomous College , Raipur (C.G.)**  
**Proposed Teaching Plan For the Session 2017-18**  
**M.Com. Part - III Semester**

Month	Management Concept	Organizational Behaviour	Advanced Cost Accounting	Income Tax Law and Accounts	Tax Planning and Management
July	Unit – I Schools of Management Thought : Scientific, process, human behaviour and social system school; Decision theory school; Quantitative and system school; Contingency theory of management; Functions of a manager.	Unit – I Organizational Behaviour : concept and significance ; Relationship between management and organizational behaviour; Emergence and ethical perspective; Attitudes; Perception; Learning; Personality; Transactional analysis.	Unit – I Introduction – Cost Analysis, concepts and classification, Materials control– Techniques of Materials control. Unit – II Labour cost – Computation and control, Overheads – Accounting and Control.	Unit – I Law relating to Income tax :Brief study of the main provisions of the Indian Income Tax Act. Important definitions. Income exempted from tax, Residence and Tax liability. Unit – II Calculation of taxable income under the head :Salary and House property.	Unit – I Calculation of taxable Income and tax of Firm and Companies.  Unit – II Return of Income, Provisional Regular, Expert and emergency assessment, Re-opening of assessment.
August	Unit – II Managerial Functions : Planning - concept, significance, types; Organizing - concept, principles of authority, theories, types of organizations, authority, responsibility, power, delegation, decentralization;  Unit – III Staffing; Directing; Coordinating; Control - nature, process, and techniques.	Unit – II Leadership : Concept; Leadership styles; Theories - trait theory, behavioural theory, Fielder's contingency theory; Harsey and Blanchard's situational theory; Managerial grid; Likert's four systems of leadership. Unit – III Organizational Conflict: Dynamics and management; Sources, patterns, levels, and types of conflict; Traditional and modern approaches to conflict; Functional and dysfunctional organizational conflicts; Resolution of conflict.	Unit – III Job, Batch, Contract Costing and operating costing.	Unit – III Depreciation and Development allowance, Calculation of taxable Income under the head :Business and Profession, capital gains, income from other sources.	Unit – III Concept of tax Planning; Tax avoidance and tax evasions; Tax planning with reference of location, nature and form of organization of new business.

September	Unit – IV Motivation : Process of motivation; Theories of motivation – need hierarchy theory, theory X and theory Y, two factor theory, Alderfer's ERG theory, McClelland's learned need theory, Victor Vroom's expectancy theory, Stacy Adams equity theory.	Unit – IV Interpersonal and Organizational Communication : Concept of two-way communication; Communication process; Barriers to effective communication; Types of organizational communication; Improving communication; Transactional analysis in communication.	Unit –IV Process Costing, Joint products & By – products costing. Uniform costing and Estimate costing.	Unit – IV Set off and carry forward of losses, Deduction from gross total Income Calculation of taxable Income and tax of an individual, and Hindu undivided Families.	Unit – IV Tax planning to capital structure, decision dividend policy ; Inter corporate dividends and bonus shares.
October	Unit – V Group Dynamics and Team Development : Group dynamics -Definition and importance, types of groups, group formation, group development, group composition, group performance factors; Principle-cantered approach to team development.	Unit – V Organizational Development: Concept; Need for change, resistance to change; Theories of planned change; Organizational diagnosis; Organizational Development intervention.	Unit – V Budgetary control – Importance of budgets in accounting. Nature of budgetary control, Organization for budgetary control preparation of fixed and variable budgets. Cash Budget, Production and sales Budget	Unit – V Appeals & Revisions Reference of High Court and Supreme court, offences & penalties, Income tax authorities.	Unit – V Preparation of income tax returns, Computation of Income tax, Tax deduction at source; Advance payment of tax.
November	Seminar And Internal Examination				
December	Semester Examination				

**Govt. D.B. Girls P.G. Autonomous College , Raipur (C.G.)**  
**Proposed Teaching Plan For the Session 2017-18**  
**M.Com. Part - IV Semester**

Month	Financial Management	Personnel Management	Production management	Strategic Management	Project
January	Unit – I Financial Management: Meaning, nature and scope of finance; Finance functions - investment, financing and dividend decisions. Capital Budgeting : Nature of investment decisions; Investment evaluation criteria - net present value, internal rate of return, profitability index, payback period, accounting rate of return; NPV and IRR comparison; Capital rationing; Risk analysis in capital budgeting.	Unit – I Concept, Definition, Importance & Objectives of Personnel Management, Historical Development of Personnel Management, Nature, scope planning, Philosophy and Principles of personnel Management and its relation with behavioural sciences.	Unit – I Fundamentals of production management, Nature, Scope, Functions; Problems, Production and Productivity organizing for production. Types of manufacturing systems.	Unit – I Concept of Strategy :Defining strategy, levels at which strategy operates; Approaches to strategic decision making; Mission and purpose, objectives and goals; Strategic business unit (SBU);Functional level strategies. Environmental Analysis and Diagnosis :Concept of environment and its components; Environment scanning and appraisal; Organisational appraisal; Strategic advantage analysis and diagnosis, SWOT analysis.	
February	Unit – II Cost of Capital :Meaning and significance of cost of capital; Calculation of cost of debt, preference capital, equity capital and retained earnings; Combined cost of capital (weighted); Cost of equity and CAPM. Unit – III Operating and Financial Leverage: Measurement of leverages; Effects of operating and financial leverage on profit; Analysing alternate financial plans; Combined financial and operating leverage. Capital structure Theories: Traditional and M.M. hypotheses -without taxes and with taxes; Determining	Unit – II Personnel policies, programmes & procedures. Personnel Department; Personnel Functions, Position of personnel Department & Organization of Personnel Management.	Unit – II Production planning, Objectives, Factors affecting Production Planning. Planning future activities, forecasting. Qualitative & Quantitative forecasting Methods, long range forecasts, project planning method Process planning System. Techniques of process planning: Assembly charts, process charts make or buy analysis. Unit – III Process design, Factors affecting design Relation with types of manufacturing plant location and layout : Factors affecting location. Types of plans layout, evaluation of alternative layout.	Unit – II Strategy Formulation and Choice of Alternatives : Strategies - modernisation, diversification, integration, Merger, take-over and joint strategies; Turnaround, divestment and liquidation strategies; Process of strategic choice-industry, competitor and SWOT analysis; Factors affecting strategic choice; Generic competitive strategies- cost leadership, differentiation focus, value chain analysis, benchmarking, service blue printing.	



March	Unit – IV Dividend Policies : Issues in dividend decisions, Walter’s model, Gordon’s model, M-M hypothesis, dividend and uncertainty, relevance of dividend; Dividend policy in practice; Forms of dividends; Stability in dividend policy; Corporate dividend Behaviour.	Unit – III Man power planning Recruitment and Selection, Training & Development of Employees & Executives. Promotion, Demotion, Transfers, Absenteeism & Turnover.  Unit – IV Performance Appraisal and Merit Routing, Discipline. Job-evaluation Wage & Salary Administration, plans of Remuneration & Financial Rewards/Incentive payments.	Unit – IV Work measurement and work standards Uses of work measurement data procedure for work measurement. Direct work measurement. Time study, activity sampling, Indirect work measurement: Synthetic timing, Predetermined motion time system, analytical estimating. Methods analysis: Areas of application, Approaches to methods design, Tools for methods analysis, work simplification programme.	Unit – III Functional Strategies: Marketing, production / operations and R & D plans and policies. Functional Strategies: Personnel and financial plans and policies. Unit – IV Strategy Implementation: Inter-relationship between formulation and implementation; Issues in strategy implementation; Resource allocation. Strategy and Structure : Structural considerations, structures for strategies; Organisational design	
April	Unit – V Management of Working Capital : Meaning, significance and types of working capital; Calculating operating cycle period and estimation of working capital requirements; Financing of working capital and norms of bank finance; Sources of working capital; Factoring services; Various committee reports on bank finance ;Dimensions of working capital management. Management of cash, and inventory.	Unit – V Employees Fringe Benefits & Services - Safety, Health & Security programme and welfare. Motivation and Moral.	Unit – V Production Control – Control functions: Routing Loading, Scheduling, and Dispatching, Follow up. Quality control & inspection: place of quality control in modern enterprises, organization of quality control. Statistical quality control, inspection location for inspection, inspection procedure and records, Inspection devices.	Unit – V Strategy Evaluation: Overview of strategic evaluation; Strategic control; Techniques of strategic evaluation and control. Techniques of strategic evaluation and control.	
May	Seminar And Internal Examination				
June	Semester Examination				

**CLASS: P.G.DIPLOMA IN DIETETICS**  
**SESSION:2017-18**

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**NAME OF PAPER: BASIC DIETETICS**

August	<b>CONCEPT OF DIET THERAPY</b>  Growth and source of dietetics, Purpose & principles of therapeutic diets, Modification of Normal Diet, Classification of therapeutic Diets.
September	<b>ROLE OF DIETICIAN</b>  Definition Of Nutritional Care, Inter Personal Relationship with Patient, Planning and Implementing dietary care, Team approach to nutritional care.  <b>INTRODUCTION TO HOSPITAL FOOD SERVICE MANAGRMENT</b>  Types of food services, Selection of food material, Cost Control ,Sanitation and safety(In brief).
October	<b>ROUTINE HOSPITAL DIETS</b>  Per-operative and post-operative diets, study and review of hospital diets, Basic Concepts and methods of (I)Oral Feeding(II)Tube Feeding(III) Parenteral Nutrition.  .
November	<b>DIET IN FEVERS AND INFECTIONS</b>  Types, Metabolism In Fevers, General Dietary Considerations, Diet in Influenza ,Typhoid Fever, Recurrent malaria and Tuberculosis <b>DIET IN BURNS AND FRACTURES</b> <b>OBSESITY AND LEANNESS</b>  Causes, complications & Health effects, Dietary treatment & other recommendations.

December	<p><b>1. DIET IN ALLERGY</b> Definition ,Classifications. Manifestation , Common food Allergy Tests and dietetic treatment.</p> <p><b>2. DIET AND DRUG INTERACTION</b> A The effects of Drugs on Nutrient intake, Absorption metabolism and requirements. B The effects of Nutrients and Nutritional status on the Absorption and Metabolism of Drugs.</p>
January	<p><b>1. PLANNING AND PREPARTION OF THE FOLLOWING DIET:</b> A Sodium – High &amp; Low B Protein - High &amp; Low c. Calorie - High &amp; Low D. Fiber - High &amp; Low</p> <p><b>2. DIET &amp; DENTAL DISEASES:</b> Dental Caries, Periodontal Disease.</p>
February	REVISION

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**PROPOSED TEACHING PLAN FOR THE SESSION 2016-17**

**B.A. I ECONOMICS  
PAPER- I  
MICRO ECONOMICS**

<b>MONTH/DAYS</b>	<b>UNIT</b>	<b>TOPIC</b>
JULY /26	UNIT –I	Introduction-Definitions, Nature and scope of Economics, Methodology in Economics.
AUGUST/25	UNIT-I	Utility–Cardinal and Ordinal Approaches, Indifference Curve, Consumer's equilibrium, Giffin goods, compensated demand. Demand- Law of Demand, Elasticity of demand, Price, income and cross elasticity, Consumer's surplus.
SEPTEMBER/23	UNIT-II	Theory of Production and Cost– Production decision, Production function, Iso-quant, Factor substitution, Law of variable proportions, Returns to scale, Economies of scale. Different concepts of cost and their interrelation, Equilibrium of the firm.
OCTOBER/21	UNIT-III	Market structure-perfect and imperfect markets, Equilibrium of a firm-perfect competition.
NOVEMBER/25	UNIT-III	Monopoly and price discrimination. Monopolistic competition- Duopoly, Oligopoly, controlled and administered prices.
DECEMBER/21	UNIT –IV	Factor Pricing-Marginal productivity theory of distribution. Theories of wage determination- wages and collective bargaining wage differentials.
JANUARY/26	UNIT –IV	Rent – Scarcity Rent, differential rent, Quasi rent, Modern Rent Theory. Interest -Classical and Keynesian Theories, Modern Theory. Profits – Innovation, Risk bearing and Uncertainty theories.
FREBRUARY/24	UNIT –V	Welfare economics – What welfare economics is about? Role of value judgments in welfare economics, Pigou's contribution in the field of welfare economics. Parato's optimality. New welfare economics – Kaldor, Hicks welfare criterion, Scitovsky paradox, Social welfare function and social choice. Bergson's –Samuelsson social welfare function, Prof. Amartya Sens critique, Arrow impossibility theorem

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**PROPOSED TEACHING PLAN FOR THE SESSION 2016-17**

**B.A. I ECONOMICS**

**PAPER- II**

**INDIAN ECONOMY**

<b>MONTH/DAYS</b>	<b>UNIT</b>	<b>TOPIC</b>
JULY /25	UNIT –I	Towards a Market Economy – Changes in the land system. Commercialization of agriculture, Policy of discriminating protection and Industrial development, Monetary and currency developments, Central and Commercial Banking Developments.
AUGUST/24	UNIT-I	Indian Economy at the Time of Independence, Backward economy, Stagnant economy, other salient features, Planning exercises in India – National Planning Committee, Bombay Plan, People's Plan. Gandhian Plan, The Planning Commission
SEPTEMBER/25	UNIT-II	Structure of Indian Economy – Basic features, Natural resources – land, water and forest resources, Broad demographic features – Population size and growth rates, Sex composition, Rural – Urban migration, Occupational distribution, Problem of over population, Population policy, Infra – structure development, National Income.
OCTOBER/21	UNIT-III	Planning in India – Objectives, Strategy; Broad achievements and failures, Current Five Year Plan – Objectives, Allocation and targets, New economic Reforms – Liberalization, Privatization and Globalization..
NOVEMBER/23	UNIT-III	Agriculture – Nature and importance, Trends in agricultural production and productivity, Factors determining productivity, Land reforms, New agricultural strategies and green revolution, Rural credit, Agricultural Marketing
DECEMBER/23	UNIT –IV	Industry – Industrial Development during the planning period, Industrial policy. Industrial licensing policy – MRTP Act, FERA and FEMA,
JANUARY/25	UNIT –IV	Growth and problems of small scale industries, Role of public sector enterprises in India's industrialization
FREBRUARY/24	UNIT –V	External Sector – Role of foreign trade, trends in exports and imports, Composition and direction of India's foreign trade, Balance of payments crisis and the new economic reforms – Export promotion measures and the new trade policies. Important areas of concern- Poverty, inequality and unemployment, Rising Prices.

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**PROPOSED TEACHING PLAN FOR THE SESSION 2016-17**

**B.A. II ECONOMICS**

**PAPER- I**

**MACRO ECONOMICS**

MONTH/DAYS	UNIT	TOPIC
JULY /25	UNIT –I	National Income:-Concept and Measurement of National Income; Economic welfare and national income, Social accounting. Circular flow of income. National Income accounting, Green accounting.
AUGUST/24	UNIT-I	Classical theory of employment, Say's Law of Markets, Keynesian theory of employment
SEPTEMBER/25	UNIT-II	Consumption function – Average and marginal propensity to consume; Keynes's psychological law of consumption, determinants of the consumption function. The saving function. The investment multiplier and its effectiveness. , The investment function – marginal efficiency of capital, autonomous and induced investment. Saving and investment equality
OCTOBER/21	UNIT-III	Nature and characteristics of trade cycle; theories of trade cycle , Hawtrey's monetary theory; Hayek's over investment theory
NOVEMBER/23	UNIT-III	Keynes' view on trade cycle; Schumpeter's theory of innovation. Samuelson and Hicks multiplier- accelerator model, Control of trade cycles.
DECEMBER/23	UNIT –IV	International Trade – Inter-regional and international trade, Comparative advantage cost theory, opportunity Cost theory and Hecksher-Ohlin theory.
JANUARY/25	UNIT –IV	International trade and economic development, Tariffs & import Quotas. Concept of optimum tariff. Balance of trade & Balance of Payment- Concept & Components of BOP, Equilibrium & Disequilibrium in BOP. Relative merits & demerits of devaluation. Foreign Trade Multiplier.
FREBRUARY/24	UNIT –V	Functions and objective of international monetary fund, World Bank and world trade organization, international monetary reform and India, Foreign Trade in India- recent Changes in the Composition and direction of foreign trade. India's balance of payment, export promotion and import substitution in India, multinational corporation and India.

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**PROPOSED TEACHING PLAN FOR THE SESSION 2016-17**

**B.A. II ECONOMICS**

**PAPER- II**

**MONEY BANKING AND PUBLIC FINANCE**

<b>MONTH/DAYS</b>	<b>UNIT</b>	<b>TOPIC</b>
JULY /25	UNIT –I	Basic concepts: Money – Meaning and functions, Gresham's law; Quantity theory of money – Cash transaction and cash balance approaches;
AUGUST/24	UNIT-I	Value of Money- Inflation, deflation and reflation, definition, types, causes and effects of inflation on different sectors of the economy; Demand pull and cost push inflation; Measures to control inflation. Phillips curve, concept
SEPTEMBER/25	UNIT-II	Commercial banking- meaning and types; Functions of commercial banks, The process of credit creation purpose and limitations; Liabilities and assets of banks; Functions of a central bank, Role and functions of the Reserve bank of India; Objectives and limitations of monetary policy with special reference to India.
OCTOBER/21	UNIT-III	Meaning and scope of public finance; Distinction between private and public finance; public goods v/s private goods; The principle of maximum social advantage; Role of the government in economic activities;
NOVEMBER/23	UNIT-III	Public expenditure – Meaning, classification and principles of public expenditure, Trends in public expenditure and causes of growth of public expenditure in India.
DECEMBER/23	UNIT –IV	Sources of Public revenue- Taxation – Meaning, Canons and classification of taxes; Division of tax burden. The benefit and ability to pay approaches; Impact and incidence of taxes;
JANUARY/25	UNIT –IV	Taxable capacity; Effects of taxation; Characteristics of a good tax system, equity and justice in taxation Major trends in tax revenue of the Central and state Government in India
FREBRUARY/24	UNIT –V	Public debt and financial administration- Sources of public borrowing effects of public debt. Methods of debt redemption.  The public budget- Kinds of budget, Economic and functional classification of the budget; Preparation and passing of budget in India.

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**PROPOSED TEACHING PLAN FOR THE SESSION 2016-17**

**B.A. III ECONOMICS**

**PAPER- I**

**DEVELOPMENT AND ENVIRONMENTAL ECONOMICS**

<b>MONTH/DAYS</b>	<b>UNIT</b>	<b>TOPIC</b>
JULY /25	UNIT –I	Economic Growth and Development – Factors affecting economic growth, Capital and Technology Development & under development, Population of Under-developed Countries,
AUGUST/24	UNIT-I	Poverty-Absolut & Relative, Measuring development and Under development, Gap per capita income, Inequity of income and wealth. Human Development index GDI, GEM, Poverty Index of development & Quality of life.
SEPTEMBER/25	UNIT-II	Population problem and growth, pattern of population. Theory of demographic transition. Population poverty & Environment. Theory of Social Change, Immutable laws of Capitalist Development-Crisis in capitalism. Karl Marx, Mahalonobis Model. Schumpeter, Big-Push, Balance and unbalanced Growth, Critical Minimum Effort thesis, Low-Income Equilibrium Trap, Dualism: technical, behavioural & social
OCTOBER/21	UNIT-III	Harrod and Domar Growth Model, Neo Classical models, Solow
NOVEMBER/23	UNIT-III	Meade & Mrs. Joan Robinson's Growth model, Unlimited supply of Labour.
DECEMBER/23	UNIT –IV	Environment and Ecology: Economic linkage, Environment as a necessary and luxury, Population environment linkage, Environmental use & environmental disruption as an allocation problem. Market Failure for environmental goods, environment as a public good, the Common Property problem.
JANUARY/25	UNIT –IV	Human Right approach to environmental problem, valuation of environmental damages; land, water, air & forest pollution Control-Prevention. Control and abetment of pollution, Choice of policy instrument
FREBRUARY/24	UNIT –V	Concept of Intellectual Capital – Food Security, Education Health & Nutrition, Efficiency & Productivity in Agriculture, New Technology & Sustainable Agriculture, Globalization & Agriculture growth, the Choice of Technique & appropriate technology & employment, Role of Monetary & Fiscal policies in developing Countries



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**PROPOSED TEACHING PLAN FOR THE SESSION 2016-17**

**B.A. III ECONOMICS**

**PAPER- II**

**STATISTICAL METHODS**

MONTH/DAYS	UNIT	TOPIC
JULY /25	UNIT –I	Statistical Methods Statistics – Definition Statistical Data, Statistical Methods, Functions of Statistics. Importance of Statistics, Limitations of Statistics, Statistical Survey & Report writing.
AUGUST/24	UNIT-I	Collection of Data, Primary & Secondary Data, Sampling & Sampling Designs. Sampling Errors, Frequency Distribution, Diagrammatic & Graphic Presentation
SEPTEMBER/25	UNIT-II	Central Tendency. Measurement of Mean, Median, Mode, Geometric Mean & Harmonic Mean and their uses.
OCTOBER/21	UNIT-III	Dispersion : Meaning of Dispersion, Properties, good measure of Variation – Methods of Dispersion Range, Quartiles Deviation – Mean Deviation,
NOVEMBER/23	UNIT-III	Standard Deviation, Coefficients of Variation, Lorenz Curve, Skewness & Kurtosis.
DECEMBER/23	UNIT–IV	Coefficient of Correlation – Karl Pearson's Method, Probable Error, Spearman's Rank Correlation Coefficient.
JANUARY/25	UNIT–V	Index Number – Construction of Index Numbers, Simple & weighted Index Number's- Fisher's Ideal Index Number & Reversal Test. Consumer Price Index Numbers and Time Series Analysis – Components of Time-Series.
FREBRUARY/24	UNIT –V	Measurement of Trend – Graphic Method, Semi Average Method. Moving averages, Least Square Method, Measuring Trend by logarithms.

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B.A. – III ENGLISH LITERATURE TEACHING PLAN SESSION: 2016-2017  
PAPER – I INDIAN WRITING IN ENGLISH**

MONTH	PROPOSED PLAN
JULY	History and background of Indian Writing in English UNIT – II POETRY Toru Dutt - Our Casuarina Tree Tagore - Songs 1 and 103 from ‘Gitanjali’
AUGUST	UNIT – III Kamala Das - The Old Playhouse Gauri Deshpandey The Female of the species , Jayant Mahapatra -Dawn at Puri K. N. Daruwala - Death by Burial , Shiv K. Kumar - Indian Women
SEPTEMBER	UNIT – IV-PROSE Nirad C. Chaudhary - My Birth Place Dr. S. Radhakrishnan - The call of the Suffering
OCTOBER	UNIT – V -DRAMA Girish Karnad Hayavadana Tendulkar Silence! The Court is in Session.
NOVEMBER	UNIT – V -DRAMA Girish Karnad Hayavadana
DECEMBER	UNIT – VI FICTION- R.K.Narayan -Guide
JANUARY	UNIT – VII Lyric, Subjective Poetry, Couplet, Fable, Hymn, Allegory ,Autobiography
FEBRUARY	REVISION

**B.A. – III ENGLISH LITERATURE**  
**TEACHING PLAN SESSION: 2016-2017**  
**PAPER – II AMERICAN LITERATURE**

MONTH	PROPOSED PLAN
JULY	History and background of American Literature UNIT – II POETRY Walt Whitman- Oh Captain! My Captain, When the Lilacs lasts in the Dooryard Bloomed.  Carl Sandberg - Who Am I?, 'I am the People, the Mob'
	UNIT – III Emily Dickinson- Hope is the Thing with feather, 'I felt a Funeral in my Brain'  E.E. Cummings- The Cambridge Ladies
SEPTEMBER	UNIT – IV-PROSE William Faulkner- Nobel Award acceptance Speech  W. Carlos Williams- In the American Grain  Walt Whitman- Preface to 'Leaves of Grass'
OCTOBER	UNIT – V -DRAMA Miller- All My Sons  Eugene O' Neil- The Hairy Ape
NOVEMBER	UNIT – V -FICTION Ernest Hemingway- A Farewell to Arms
DECEMBER	UNIT – VI FICTION- W. Faulkner- The Sound and the Fury
JANUARY	UNIT – VII Naturalism, Realism, Art for Art's Sake, Poetic Drama , Symbolism, American Renaissance, Existentialism
FEBRUARY	REVISION

**B.A. – II ENGLISH LITERATURE**  
**TEACHING PLAN SESSION: 2016-2017**  
**PAPER – I MODERN ENGLISH LITERATURE**

MONTH	PROPOSED PLAN
JULY	UNIT – II POETRY W. B. Yeats - A Prayer for my daughter, The Second Coming  T. S. Eliot - Love song of J. Alfred Prufrock.
	UNIT – III POETRY Dylan Thomas - Lament, A Refusal to Mourn the Death  Larkin - Toads, At Grass
SEPTEMBER	UNIT – IV-PROSE Bertrand Russell - On the value of Scepticism  Oscar Wilde - Happy Prince
OCTOBER	UNIT – V -DRAMA G. B. Shaw - Pygmalion
NOVEMBER	UNIT – V -DRAMA G. B. Shaw -  Pygmalion UNIT – V -  SHORT STORIES  Katherine Mansfield – A Cup of Tea
DECEMBER	UNIT – VI FICTION- Rudyard Kipling – Kim
JANUARY	UNIT – VII Elegy, Sonnet, Ode, Morality & Miracle Play, One Act Play, Interlude
FEBRUARY	REVISION

**B.A. – II ENGLISH LITERATURE**  
**TEACHING PLAN SESSION: 2016-2017**  
**PAPER – II MODERN ENGLISH LITERATURE**

MONTH	PROPOSED PLAN
JULY	UNIT – II POETRY Sassoon - At the Grave of Henry Vaughan Owen, W. H. - Strange Meeting
	UNIT – III POETRY Auden - Seascape Ted Hughes - The Howling of the Wolves
SEPTEMBER	UNIT – IV-PROSE Robert Lynd - Forgetting H. Belloc - A conversation with a Reader
OCTOBER	UNIT – V -DRAMA John Galsworthy - Strife J.M. Synge - Riders of the Sea
NOVEMBER	UNIT – V -DRAMA J.M. Synge - Riders of the Sea  <b>FICTION</b> William Golding- Lord of the Flies
DECEMBER	UNIT – VI FICTION- William Golding - Lord of the Flies
JANUARY	UNIT – VII Simile, Metaphor, Alliteration, Onomatopoeia, Ballad, Epic, Dramatic Monologue
FEBRUARY	REVISION

**B.A. – I ENGLISH LITERATURE**  
**TEACHING PLAN SESSION: 2016-2017**  
**PAPER – I- Literature in English from 1550 – 1750**

MONTH	PROPOSED PLAN
JULY	History and background of English Literature UNIT – II <b>POETRY</b> (d) Shakespeare – Sonnet No. – 1 From Fairest Creatures, Sonnet No. 154, The Little Love God. (e) Milton – How Soon Hath Time the Subtle Thief of Youth ... (f) John Donne – Sweetest Love I Don't Go, This is my play's Last Scene.
AUGUST	UNIT – II <b>POETRY</b> (c) John Dryden – Portrait of Shadwell (d) Alexander Pope – From An Essay on Criticism (True case in Writing...) and the world's Victor Stood Subdued by Sound.
SEPTEMBER	UNIT – IV-PROSE (d) Bacon – Of Studies, of Health, of Friendship (e) Addison – Sir Roger at Home (f) Steele – of the Club
OCTOBER	UNIT – V-DRAMA Shakespeare – The Merchant of Venice
NOVEMBER	UNIT – VI- DRAMA Shakespeare – The Merchant of Venice
DECEMBER	UNIT – VII FICTION Swift – The Battle of the Books
JANUARY	UNIT – VII Historical and Literary Topics (vii) The Renaissance (viii) Humanism (ix) Reformation (x) The Restoration (xi) The Earlier Drama (xii) Petrarchism and the Sonnet Cycle
FEBRUARY	UNIT – VII Historical and Literary Topics (v) The influence of Seneca and Classical Dramatic Theory (vi) The Elizabethan and Jacobean Stage (vii) Restoration drama (viii) The rise of periodical essay

**DEPARTMENT OF ENGLISH**  
**B.A. – I ENGLISH LITERATURE**  
**TEACHING PLAN SESSION: 2016-2017**  
**PAPER – II- Literature in English from 1750 – 1900**

MONTH	PROPOSED PLAN
JULY	History and background of English Literature UNIT – II <b>POETRY</b> Blake – Tiger, Tiger Burning Bright.
AUGUST	UNIT – II <b>POETRY</b> Wordsworth – Daffodils and Solitary Reaper Coleridge – Frost at Midnight UNIT – III <b>POETRY</b> Shelley – Ode to Skylark Keats – Ode to Autumn
SEPTEMBER	UNIT – III <b>POETRY</b> Tennyson – Crossing the Bar Browning – Prosopopeia UNIT – IV-PROSE Lamb – Dream Children : A Reverie Hazlitt – On Actors and Acting
OCTOBER	UNIT – V-FICTION Jane Austen – Pride and Prejudice
NOVEMBER	UNIT – VI-FICTION Charles Dickens – David Copperfield
DECEMBER	UNIT – VII Historical and Literary Topics The Reform Act, The Impact of Industrialization, Colonialism and Imperialism ,Scientific thoughts and Discoveries
JANUARY	UNIT – VII Historical and Literary Topics Faith and Doubt Classical and Romantic Concepts of Imagination Varieties of Romantic and Victorian Poetry The Victorian Novel ,Realism and the Novel, Aestheticism
FEBRUARY	UNIT – VII Historical and Literary Topics The Victorian Novel Realism and the Novel Aestheticism REVISION

## DEPARTMENT OF ENGLISH

### BA/B.SC /B.COM– I ENGLISH LANGUAGE (FOUNDATION COURSE) TEACHING PLAN SESSION: 2016-2017 PAPER – II-

MONTH	PROPOSED PLAN
JULY	Unit – 1-Basic language skills: Grammar and Usage- Grammar and Vocabulary based on the prescribed text-Article –Lesson 1,2
AUGUST	<b>Unit – 2-Comprehension of an unseen passage</b> Lesson 3 ,4,5
SEPTEMBER	<b>Unit – 3-Composition:</b> Paragraph writing. Lesson 6,7
OCTOBER	<b>Unit – 4-Letter writing</b> Lesson 8,9
NOVEMBER	<b>Unit – 5-Texts:</b> Lesson 10 11, Grammar- Tenses
DECEMBER	<b>Unit – 5-Texts:</b> Lesson 12.13 Grammar-Direct & indirect Speech
JANUARY	<b>Unit – 5-Texts:</b> Lesson 14.15 Grammar-Active & Passive Voice
FEBRUARY	Grammar-Preposition/Modals etc. REVISION



**BA/B.SC /B.COM– II**  
**ENGLISH LANGUAGE (FOUNDATION COURSE)**  
**TEACHING PLAN SESSION: 2016-2017**  
**PAPER – II-**

MONTH	PROPOSED PLAN
JULY	Unit – 1- Grammar and Vocabulary based on the prescribed text –Lesson 1,2
AUGUST	Unit – 2- Report- writing Lesson 3 ,4,5
SEPTEMBER	Unit – 3 Precis writing , Expansion of an idea Lesson 6,7
OCTOBER	Unit – 4-Comprehension of an unseen passage, expansion of an idea Lesson 8,9
NOVEMBER	Unit – 5- Grammar and Vocabulary based on the prescribed text Lesson 10 11
DECEMBER	Grammar and Vocabulary based on the prescribed text Lesson 12.13
JANUARY	Lesson 14. Grammar and Vocabulary based on the prescribed text
FEBRUARY	Grammar- Modals/Question Tags etc. REVISION

**BA/B.SC /B.COM– III**  
**ENGLISH LANGUAGE (FOUNDATION COURSE)**  
**TEACHING PLAN SESSION: 2016-2017**  
**PAPER – II-**

MONTH	PROPOSED PLAN
JULY	Unit – 1- Grammar and Vocabulary based on the prescribed text-Articles, Preposition –Lesson 1,2
AUGUST	<b>Unit – 2-</b> Essay writing Lesson 3 ,4,5
SEPTEMBER	<b>Unit – 3</b> Precis writing Lesson 6,7
OCTOBER	<b>Unit – 4-Comprehension of an unseen passage</b> Lesson 8,9
NOVEMBER	<b>Unit – 5-</b> Grammar- Tenses Lesson 10 11
DECEMBER	Grammar-Direct & indirect Speech Lesson 12.13
JANUARY	Lesson 14.15 Grammar-Active & Passive Voice
FEBRUARY	Grammar- Modals/Question Tags etc. REVISION

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टीचिंग प्लान "हिन्दी" सत्र 2016-17

प्रस्तावित पाठ्यक्रम बी.ए. प्रथम वर्ष

क्र.	माह/दिन	स्नातक हिन्दी साहित्य	बी.ए./बी.एस.सी./बी.कॉम. बी.एच.एस.सी. I वर्ष
1	जुलाई/25	इकाई, प्रश्न पत्र I, II	(क) पल्लवन, पत्रचार, अनुवाद, परिभाषिक शब्दावली
2	अगस्त/24	इकाई II जायसी, गबन	इकाई I (क) हिंदी के पदनाम (ख) ईदगाह कहानी
3	सितम्बर/25	इकाई III सूर, कफन, कहानी	इकाई II (क) शब्द शुद्धि, वाक्य शुद्धि, पर्यायवाची शब्द, अनेकार्थी शब्द, समश्रुत शब्द
4	अक्टूबर/21	इकाई IV तुलसी, आकाशदीप, परदा	इकाई II (क) अनेक शब्दों के लिए एक शब्द, मुहावरे, लोकोक्ति (ख) भारत वंदना
5	नवम्बर/23	इकाई V तुलसी, धनानंद सेठ, मलवे का मालिक, चीफ की दावत	इकाई III (क) देवनागरी लिपि, नामकरण, स्वरूप एवं देवनागरी लिपि की विशेषता
6	दिसम्बर/23	इकाई V विद्यापति, रहीम, जली हुई रस्सी, गदल	इकाई III (क) अपठित गद्यांश, संक्षेपण (ख) भोलाराम का जीव
7	जनवरी/25	इकाई V रसखान, अश्क, रेड्डी, शिवानी	इकाई V (क) कम्प्यूटर का परिचय एवं कम्प्यूटर का अनुप्रयोग (ख) शिकागो से स्वामी विवेकानंद का पत्र
8	फरवरी/24	पुनरावृत्ति	(क) मानक हिंदी (ख) सामाजिक गतिशीलता पुनरावृत्ति

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सत्र 2016—17

प्रस्तावित पाठ्यक्रम बी.ए. द्वितीय वर्ष

क्र.	माह/दिन	स्नातक हिन्दी साहित्य	बी.ए./बी.कॉम./बी.एस.सी. बी.एच.एस.सी./हिन्दी भाषा
1	जुलाई/25	इकाई I प्रश्न पत्र I, II मैथिलीशरण गुप्त	खण्ड (क) महात्मा गांधी, विनोबा भावे, (ख) हिंदी भाषा के विविध रूप
2	अगस्त/24	इकाई II प्रश्न पत्र I, II सूर्यकांत त्रिपाठी निराला अंधेर नगरी	(क) आचार्य नरेन्द्र देव वर्मा (ख) कार्यालयीन भाषा, मीडिया की भाषा
3	सितंबर/25	इकाई II प्रश्न पत्र I, II पंत, निबंध—क्रोध, बसंत	(क) वासुदेव शरण अग्रवाल (ख) वित्त एवं वाणिज्य की भाषा
4	अक्टूबर/21	इकाई III प्रश्न पत्र I, II चतुर्वेदी, उस अमराई ने राम—राम कही है	खण्ड ग— अनुवाद व्यवहार, अंग्रेजी से हिंदी में अनुवाद
5	नवम्बर/23	इकाई IV प्रश्न पत्र I, II अज्ञेय, एकांकी, स्ट्राईक, एक दिन	खण्ड ग— हिंदी की व्याकरणिक कोटियाँ
6	दिसंबर/23	इकाई V प्रश्न पत्र I, II हरिऔध, सुभद्रा कुमारी चौहान, दस हजार	खण्ड क— हिमालय की व्युत्पत्ति खण्ड ग— संज्ञा, सर्वनाम
7	जनवरी/25	इकाई V प्रश्न पत्र I, II श्रीकांत वर्मा, मम्मी ठकुराइन, राहुल सांकृत्यायन	खण्ड क— डॉ. खूबचंद बघेल खण्ड ग— विशेषण, क्रिया, विशेषण
8	फरवरी/24	पुनरावृत्ति	पुनरावृत्ति

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सत्र 2016-17

प्रस्तावित पाठ्यक्रम बी.ए. तृतीय वर्ष

क्र.	माह/दिन	स्नातक हिन्दी साहित्य	बी.ए./बी.कॉम./बी.एस.सी. बी.एच.एस.सी./टि.या.
1	जुलाई/25	इकाई I प्रश्न पत्र I, II छत्तीसगढ़ी भाषा का इतिहास हिंदी भाषा का स्वरूप	इकाई I (क) भारत माता, परशुराम की प्रतीज्ञा (ख) कथन की शैलियाँ
2	अगस्त/24	इकाई II प्रश्न पत्र I, II संत धर्मदास, हिन्दी साहित्य का इतिहास, भाषा के विभिन्न रूप	इकाई I (क) बहुत बड़ा सक इकाई II (ख) विकासशील देशों की समस्याएँ
3	सितंबर/25	इकाई II प्रश्न पत्र I, II लखनलाल गुप्त, हिन्दी का शब्द भण्डार- तत्सम, तद्भव, देशज, आगत	इकाई II (क) विकासात्मक पुनर्विचार और प्रौद्योगिकी, (ख) विभिन्न संरचनाएँ
4	अक्टूबर/21	इकाई III प्रश्न पत्र I, II अर्वाचीन रचनाकार, युग प्रवृत्तियाँ	इकाई III (क) आधुनिक तकनीकी सभ्यता, पर्यावरण प्रदूषण (ख) कार्यालयीन पत्र और आलेख
5	नवम्बर/23	इकाई III प्रश्न पत्र I, II डॉ. सत्यभामा आड़िल काव्यांग- रस के भेद	इकाई IV (क) जनसंख्या भारत के संदर्भ में और गरीबी तथा बेरोजगारी (ख) अनुवाद
6	दिसंबर/23	इकाई IV प्रश्न पत्र I, II डॉ. विनय पाठक, छंद, अर्थालंकार	इकाई V (क) ऊर्जा और शक्तिमानता का अर्थशास्त्र
7	जनवरी/25	इकाई V प्रश्न पत्र I, II मुकुंद कौशल, द्रुतपाठ, शब्दालंकार	इकाई V (ख) घटनाओं, समारोहों आदि का प्रतिवेदन और विभिन्न प्रकार के निमंत्रण पत्र
8	फरवरी/24	पुनरावृत्ति	पुनरावृत्ति

B A I HISTORY -I PAPER- HISTORY OF INDIA[up to 1206]

SESSION -2016-17

1	JULY	Survey of sources of Indian history Geographical features of India Pre historic age – Early stone age ,Neolithic age Harappan civilization
2	AUGUST	Salient features of Harappan civilization Political, social and economic life of the Harappan age Pre Vedic age [Rigvedic period] Later Vedic period – social ,political and economic life. Civilization and culture of Epic era
3	SEPTEMBER	India of the 6 <sup>th</sup> century B C – Buddhism and Jainism Rise of the Magadha empire Alexander’s invasion of India and their effects
4	OCTOBER	Establishment of Maurya empire- Chandra Gupta Maurya Ashoka- Ashoka’s dharma Maurya administration ,economical arrangement Art and culture
5	NOVEMBER	Post Maurya period -Shunga,Satavahana Kushan dynasty -Kanishka Sangam period- literature and culture Chol dynasty

6	DECEMBER	<p>Chol administration</p> <p>Pandya dynasty</p> <p>Gupta empire – administration.</p> <p>Economic social and cultural condition</p> <p>Rajput period – Pallava and chalukya</p>
7	JANUARY	<p>Vardhan ,Vakataka ,Pratihara</p> <p>Pal ,Sen ,Rashtrakut dynasty</p> <p>India's relations with south east Asia and Shree Lanka</p> <p>Muhammad bin Qasim</p>
8	FEBRUARY	<p>Invasion of Mahmud Gaznabi and Muhammad Gori</p> <p>Status of woman</p> <p>Rivision</p>

**B.A 1<sup>ST</sup> YEAR HISTORY**  
**2<sup>ND</sup> PAPER-WORLD HISTORY (1453 – 1789)**  
**SESSION (2016-17)**

S NO.	MONTH	PLAN
1	JULY	<p>Introduction- General introduction of second paper</p> <p>Feudalism in the medieval world, fall of the Feudalism</p> <p>The beginning of the modern Era, Characteristics of modern era</p> <p>Renaissance (What do you mean by Renaissance) causes and characteristics.</p>
2	AUGUST	<p>Reformation-what do you understand by reformation.</p> <p>Causes of the reformation, form of reformation-reformation in Germany- role of Martin Luther.</p> <p>Reformation in England.</p> <p>Consequences of the reformation movement.</p>
3	SEPTEMBER	<p>Counter reformation.</p> <p>Thirty years war (1618-1648)</p> <p>Causes, events &amp; results.</p> <p>Rise of the Nation states-</p> <p>Nation states in Spain and France.</p> <p>Nation states in England &amp; Russia-Peter the great and Catherine ii.</p>
4	OCTOBER	<p>Partition of Poland (1773-1795)</p> <p>Causes &amp; partition.</p> <p>Economical base of the modern western world-</p> <p>Mercantilism.</p> <p>Commercial Revolution and their impacts.</p>
5	NOVEMBER	<p>Industrial revolution – Causes, nature and their effects.</p> <p>Colonialism and their results.</p>



		<p>Civil war in England – struggle between parliament and monarchy.</p> <p>Causes of the civil war, incidents and their results.</p>
6	DECEMBER	<p>Glorious revolution in England – 1688.</p> <p>Background, causes, incidents and their results.</p> <p>Period of Cromwell's in England.</p> <p>Louise 14<sup>th</sup> (1668-1730) – Home policy, foreign policy.</p>
7	JANUARY	<p>Independence war of America (1776 – 1783 AD) – Causes, incidents and results.</p> <p>French revolution (1789)- Causes, immediate cause, incidents and results.</p> <p>National Assembly (1789 – 1791).</p>
8	FEBRURARY	REVISION

**B.A 2<sup>nd</sup> YEAR HISTORY**  
**1<sup>st</sup>PAPER- HISTORY OF INDIA (1206-1761)**  
**SESSION (2016-17)**

<b>NO</b>	<b>MONTH</b>	<b>PLAN</b>
1	<b>JULY</b>	General introduction of the first paper (medieval India) Sources of Sultanate Period. Sources of Mughal Period. Establishment of Delhi Sultanate – Slave dynasty. QutubuddinAibak Iltutmish (1211 – 1236) – works of Iltutmish.
2	<b>AUGUST</b>	Razia Sultana (1236 – 1240) Balban (1266 – 1288) – administrative principles of Balban, Achievements and estimate of Balban. The Khilzi dynasty – conquest and reforms of AlauddinKhilzi. Administrative arrangements of Khilzi.
3	<b>SEPTEMBER</b>	Tughlaq dynasty – Mohammad - bin – Tughlaq (1325 – 1351) - home policy – Mohammad Tughlaq’s schemes of reforms and their failure. Firoz Shah Tughlaq (1351 – 1388) Reforms of Firoz Shah Tughlaq Foreign policy of Firoz Shah Invasion of Timur in India and its effects
4	<b>OCTOBER</b>	Foundation of the Mughal Empire – Babur – political condition of India at the time of Babur invasion. The Battle of Panipat (1526 A.D), Battle of Khanwa,

		<p>Chanderi and Ghaggar.</p> <p>Sher Shah Suri and his administration.</p> <p>Rajput policy of Akbar.</p>
5	<b>NOVEMBER</b>	<p>Religious policy of the Mughal Emperors (Akbar – Aurangzeb).</p> <p>Religious policy of Akbar- Din - e – Illahi.</p> <p>Religious policy of Jahangir, Shahjahan and Aurangzeb.</p> <p>Political institutions and administration.</p> <p>Social and economical condition of sultanate period.</p> <p>Social and economical condition of Mughal period.</p> <p>Religious and cultural condition of Mughal period.</p>
6	<b>DECEMBER</b>	<p>Bhakti movement – Causes and saints.</p> <p>Peculiarities of Bhakti movement.</p> <p>Sufism in India.</p> <p>Art and architecture of Sultanate period.</p> <p>Art and architecture of Mughal period.</p> <p>Education and literature of Sultanate period.</p> <p>Education and literature of Mughal period.</p>
7	<b>JANUARY</b>	<p>Vijayanagar Kingdom – King Krishnadev Rai – Battle of Talikot.</p> <p>Bahmani Kingdom – achievements of the Mahmood Gava.</p> <p>Rise of the Maratha power.</p> <p>Shivaji and his administration.</p> <p>3<sup>rd</sup> Battle of Panipat – causes, incidents and results.</p>
8	<b>FEBRURARY</b>	<p>Revision.</p>

**B A SECOND .HISTORY II PAPER-WORLD HISTORY-1789 TO 1870****SESSION- 2016-17**

S N.	MONTH	PLAN
1	JULY	French revolution – national convention to region of terror Administration of directory -problem and works Rise of Napoleon and his achievements Napoleon as a emperor – 1804 – 1815 A D.
2	AUGUST	Downfall of Napoleon. Venna congress – 1815 A D -Problems ,principles and works United system of Europe – 1815 -1825 A D Metternich – foreign policy
3	SEPTEMBER	July revolution – 1830 – causes ,incidents and results February revolution – 1848 – causes, ,incidents and results Industrial revolution in England – cause ,nature and results Liberalism in England -
4	OCTOBER	First reform act 1832 – provisions and results Second reform act- 1867 Chartist movement -1838 to1848 and their failure
5	NOVEMBER	Achievements of Napoleon third – 1852 to 1870 Eastern problem – because of the rise Greek freedom struggle – 1821 to 1829.
6	DECEMBER	Crimean war – 1854 to 1856 cause s incidents and results Russia – Jar Alexander second

		Unification of Italy –contribution of the Mazzini ,Cavour and Garibaldi.
7	January	Bismarck ,unification of Germany – background, Problems Bismarck contribution of unification of Germany Meiji restoration – 1868
8	FEBRUARY	RIVISION

**B.A FINAL YEAR HISTORY**  
**1<sup>st</sup>PAPER- HISTORY OF INDIA (1761-1950)**  
**SESSION (2016-17]**

S.NO	MONTH	PLAN
1.	JULY	<p>General introduction of first paper.</p> <p>Expansion of the British Empire – Anglo – French conflict (Karnataka war), reasons for the success of Britishers.</p> <p>Battle of Plassey (1757) – Background, causes, incident and results.</p> <p>Battle of Buxar (1763) – causes, incidents and results</p>
2.	AUGUST	<p>Subsidiary alliance of Lord Wellesley.</p> <p>Provisions of subsidiary alliance, Merit and demerits of subsidiary alliance.</p> <p>Doctrine of lapse (policy of the Lord Dalhousie).</p> <p>Principal and nature of doctrine of lapse.</p> <p>Administrative reforms in British period -</p>
3.	SEPTEMBER	<p>Reforms of Lord William Bentinck, Lord Lytton, Lord Rippon, Lord Curzon.</p> <p>Commercialism – downfall of Indian industries, downfall of trades, downfall of Indian Agriculture, Peasants movements.</p> <p>Land revenue system in British Period – background.</p>
4.	OCTOBER	<p>Permanent settlement, Raiyat Wadi, Mahal Wadi.</p> <p>Indian renaissance – Brahma Samaj – Raja Ram Mohan Roy.</p> <p>Arya Samaj – Swami Dayanand Saraswati, PrathnaSamaj – Mahadev Govind Ranade, Ramakrishna Mission – Swami Vivekananda, Theosophical Society – Smt. Annie Besant, Aligadh movement – Sir Sayyed Ahmed Khan.</p>
5.	NOVEMBER	<p>Western education and praise.</p> <p>Different Social class – Farmer, lebor , middle class, women’s.</p> <p>Rise of Nationalism – causes of nationalism, incidents of nationalism.</p>

		<p>Establishment of Indian National Congress – causes, concepts.</p> <p>Liberalism (1885 – 1904).</p> <p>Extremism (1905 – 1919).</p>
6.	DECEMBER	<p>Revolutionary movements.</p> <p>Gandhian movements – A. Non – cooperation movement (1920 -22), B. Civil disobedience movement (1930-34)</p> <p>C. Quit India movement (1942).</p> <p>Communalism – causes, rise and development.</p>
7.	JANUARY	<p>Subhash Chandra Bose and Azad Hind Fouze.</p> <p>Constitutional development of India – Indian government act 1919(Dyarchy), Indian government act 1935(Provincial Autonomy), Indian Independence act 1947.</p> <p>Independence of India and peculiarities of Indian constitution.</p>
8.	FEBRURARY	REVISION

**B. A. Final ,History second -1871 – 1945.**

**Session -2016-17**

S NO	MONTH	PLAN
1	JULY	Introduction of second paper Third republican of France and their achievements Home and foreign policy of Bismarck Kaiser William second -1890 -1918.
2	AUGUST	World politics of Kaiser William second Partition of Africa (New imperialism) Modernization of Japan
3	SEPTEMBER	Japanese imperialism – Russia Japan war 1904-5 Causes results Chinas revolution – 1911 -causes and results
4	OCTOBER	DR. San-yat-sen ,his contribution Eastern problem – Berlin congress-1878 A D Young Turkish movement- 1908
5	NOVEMBER	Balkan war- 1912-1913-causes and results First world war – 1914- 1918 – causes ,incidents and results. Paris peace conference – 1919 . Russian revolution – 1917 -causes and results .
6	DECEMBER	Treaty of Versailles – provisions and their review Fascism – Mussolini . Nazism – Hitler . Militarism in Japan
7	JANUARY	Establishment of the league of Nation -14 point of Wilsons Second world war -1939 -45 -causes and results



		United nations organization – foundation . Achievements .
8	FEBRUARY	Rivision

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2016-17  
TEACHING PLAN  
B. A. I GEOGRAPHY  
PAPER-I**

**TITLE OF THE PAPER: ELEMENTS OF PHYSICAL GEOGRAPHY**

MONTH	PROPOSED PLAN
JULY	<b>The nature and scope of Physical Geography; Inter relation of Physical Geography with other branches of earth science. The place of Geomorphology in Physical Geography,</b>
AUGUST	<b>Geological Time scale. Earth's interior, Wegner's theory of Continental Drift, Plate Tectonics. Earth movements: - orogenic and epeirogenic</b>
SEPTEMBER	<b>Earthquakes and Volcanoes.</b>  <b>Rocks - Origin and composition of rocks, weathering, formation of regolith and soils, rocks and relief.</b>
OCTOBER	Geomorphic agents and processes-erosion, transportation and deposition, mass wasting. Evolution of Land scape, concept of cycle of erosion, interruption of cycle of erosion.
NOVEMBER	<b>Fluvial, Arid, Glacial, Karst and Coastal Landscapes.</b>
DECEMBER	<b>Application of Geomorphology to Hydrology, Mining, Engineering works.</b>
JANUARY	<b>Hazard management and urbanization.</b>
FEBURARY	Revision

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2016-17  
TEACHING PLAN  
B. A. I GEOGRAPHY  
PAPER-II**

**TITLE OF THE PAPER: INTRODUCTION TO GEOGRAPHY & HUMAN GEOGRAPHY**

<b>MONTH</b>	<b>PRAPOSED PLAN</b>
<b>JULY</b>	The Nature of Geography, objectives and relevance, Place of Geography in the classification of Sciences,
<b>AUGUST</b>	Geography and other disciplines. Geography as the study of environment, man - environment relationship; ecology and ecosystems.
<b>SEPTEMBER</b>	Environmental determinism possibilism Neo - determinism; Dualism in Geography - Systematic / Regional, Physical/Human, Complementarity.
<b>OCTOBER</b>	Definition and scope of Human Geography. Human Races - Their characteristics and distribution. Human adaptation - To the environment; Eskimos, Bushman, Pigmy, Gond, Masai, and Naga
<b>NOVEMBER</b>	Growth of Population; Distribution of Population, world distribution pattern - physical, economic and social factors influencing spatial distribution,
<b>DECEMBER</b>	concept of overpopulation under population and optimum population. Migration - internal and international Settlements - Types and patterns of settlements.
<b>JANUARY</b>	A brief historical overview of Geography as a discipline, recent trends in geography with special reference to India, imperatives for the future, career opportunities for geographers.
<b>FEBURARY</b>	Revision

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2016-17  
TEACHING PLAN  
B.A. I GEOGRAPHY  
PRACTICAL**

MONTH	PRAPOSED PLAN
JULY	
AUGUST	Scale - Plain, Time, Diagonal and Comparative. Methods of showing relief - hachures, contours; Representation of different land forms by contours
SEPTEMBER	Line graph & Bar graph (Simple & Compound), Circle Diagram, wind rose.
OCTOBER	Mean, Median and Mode
NOVEMBER	Chain and tape Survey.
DECEMBER	Chain and tape Survey.
JANUARY	Chain and tape Survey.
FEBURARY	

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2016-17**

**TEACHING PLAN**

**B. A.II GEOGRAPHY**

**PAPER-I**

**TITLE OF THE PAPER: CLIMATOLOGY AND OCEANOGRAPHY**

MONTH	PRAPOSED PLAN
JULY	Weathers and climate; definition and significance of climatology. Elements of weather and climate; their causes. Composition and structure of the atmosphere.
AUGUST	Atmospheric Temperature: Insolation and Global energy budget, vertical, horizontal and seasonal distribution of temperature. : Vertical and horizontal distribution of pressure; planetary, periodic and local winds.
SEPTEMBER	Atmospheric moisture: humidity, evaporation; and condensation; hydrological cycle; types of precipitation, world patterns of rainfall: regional and seasonal distribution
OCTOBER	Atmospheric moisture: humidity, evaporation; and condensation; hydrological cycle; types of precipitation, world patterns of rainfall: regional and seasonal distribution
NOVEMBER	Relevance of oceanography in earth and atmospheric science. Definition of oceanography, Surface configuration of the ocean floor, continental shelf, continental slope, abyssal plain, mid-oceanic ridges and oceanic trenches. Relief of Atlantic, pacific and Indian oceans.
DECEMBER	Distribution of temperature and salinity of oceans and seas Circulation of oceanic waters ; Waves, tides and currents, currents of the Atlantic, Pacific and Indian ocean
JANUARY	storehouse of resources for the future
FEBURARY	Revision

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2016-17**

**TEACHING PLAN**

**B. A.II GEOGRAPHY**

**PAPER-II**

**TITLE OF THE PAPER: REGIONAL GEOGRAPHY WITH SPECIAL REFERENCE TO NORTH AMERICA**

MONTH	PRAPOSED PLAN
JULY	Regional concept, bases of regionalization NORTH AMERICA: Structure, Relief Climate.
AUGUST	Soil, Forest, Mineral and Energy resources
SEPTEMBER	Agriculture - Major crops, Agricultural belts Livestock, Dairy farming
OCTOBER	Industries Localization, development & production - Iron and steel, Cotton Textile, Heavy Engineering,
NOVEMBER	Transport, Trade. Industrial region. Population
DECEMBER	Detailed study of regions: California valley, new England Region, Alaska
JANUARY	Prairie Region, St. Lawrence Valley
FEBURARY	Revision

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2016-17  
TEACHING PLAN  
B. A.II GEOGRAPHY  
PRACTICAL**

MONTH	PROPOSED PLAN
JULY	
AUGUST	Distribution Maps: Dot, Choropleth & Isopleth
SEPTEMBER	Map Projections: Definition and classification, Cylindrical projections- simple, equal area, Gall's, Mercator's
OCTOBER	Interpretation of weather maps : Use of meteorological instruments.
NOVEMBER	Statistical Methods: Quartile: Mean deviation, standard deviation and Quartile deviation; Relative variability and co-efficient of variation.
DECEMBER	Surveying-Prismatic Compass Survey: open and closed traverse, correction of bearing, calculation of interior angles.
JANUARY	Surveying-Prismatic Compass Survey: open and closed traverse, correction of bearing, calculation of interior angles.
FEBURARY	

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2016-17**

**TEACHING PLAN**

**B.A. III GEOGRAPHY**

**PAPER-I**

**TITLE OF THE PAPER: RESOURCE AND ENVIRONMENT**

MONTH	PRAPOSED PLAN
JULY	Meaning, nature and components of resources and environment. Resources and environment interface. Classification of resources: renewable and nonrenewable: biotic (forests, wild-life, live-stock, fisheries, agricultural crops)
AUGUST	abiotic (land, water, mineral) Distribution and utilization of water mineral and energy resources, their economic and environmental significance and conservation. Types and distribution of forests, fauna and fisheries, their economic, and environmental significance and conservation. Major soil types and their distribution; problems of soil erosion and soil conservation
SEPTEMBER	Number, density, growth and distribution of population; population pressure and resource utilization.
OCTOBER	Classification of environment: Natural and Human. Man, environment interrelations with respect to population size, types of economy and technology;
NOVEMBER	exploitation of natural resources and environmental hazards. Emerging environmental issues - population explosion; food security
DECEMBER	deforestation; global warming, conservation of bio-diversity; sustainable development.
JANUARY	deforestation; global warming, conservation of bio-diversity; sustainable development.
FEBURARY	Revision



# GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

SESSION 2016-17

TEACHING PLAN

B. A. III GEOGRAPHY

PAPER-II

**TITLE OF THE PAPER: GEOGRAPHY OF INDIA WITH REFERENCE TO CHHATTISGARHS**

MONTH	PRAPOSED PLAN
JULY	Physical features: Structure, Relief, climate and soils. Physiographic regions, Drainage, Climate-origin and mechanism of monsoon, and regional and seasonal variation
AUGUST	Natural resources: Soils - types, their distribution and characteristics. Water resources (major irrigation and hydel power projects); Forests-types, distribution, economic significance and conservation. Mineral and Power Resources-Iron-ore, Manganese, Copper, Coal, Petroleum and Natural gas, Non-conventional sources of energy
SEPTEMBER	Cultural Features: Agriculture - Major crops, impact of green revolution and agricultural regions
OCTOBER	Industries Localization, development & production - Iron and steel, Cotton Textile, Cement, Sugar, Population - growth, density and distribution. Transport, Foreign Trade.
NOVEMBER	Physical features: Structure, Physiography, Drainage, Climate.  Soils. Forest resources, Water resources hydel power projects. Mineral resources-power resources
DECEMBER	Cultural Features: Agriculture . Population : Density distribution, Tribal Population. Industries, Trade and Transport, Tourism, Socio Economic development.
JANUARY	Revision
FEBURARY	Revision

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2016-17**

**TEACHING PLAN**

**B. A.III GEOGRAPHY**

**PRACTICAL**

MONTH	PROPOSED PLAN
JULY	
AUGUST	Band graph, Hythergraph and Climograph. Square root, cube-root and vernier scales
SEPTEMBER	Map Projection: Conical Projection: one standard parallel, two standard parallels, Bonne's, Polyconic, Polar Zenithal Projections; Gnomonic, Stereographic and Orthographic
OCTOBER	Study and Interpretation of Indian topographical sheets: classification and numbering system, Interpretation of topographical sheets with respect to cultural and physical features.
NOVEMBER	Importance of field work in Geography. Field work and field report: physical, social and economic survey of a micro-region.
DECEMBER	Surveying - Plane Table Survey, Basic Principles of plane table surveying, Plane table survey including intersection and resection.
JANUARY	Surveying - Plane Table Survey, Basic Principles of plane table surveying, Plane table survey including intersection and resection.
FEBURARY	EXAM

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PROPOSED TEACHING PLAN FOR THE SESSION 2016-17

Class B.A.I (Psychology)

Paper -I Title of the Paper -Basic Psychological Processes

MONTH/DAYS	Proposed plan
JULY /25	UNIT-I Introduction-definition and goals of psychology, perspectives-behaviouristic, cognitive, humanistic and cross-cultural,
AUGUST/24	UNIT-I Methods- experimental, observational, interview, questionnaire and case study.
SEPTEMBER/25	UNIT-II Biological basis of behaviour: genes and behaviour, the nervous system-the central nervous system , the autonomic nervous system and the peripheral nervous system, Emotions- types and bodily changes( internal and external).
OCTOBER/21	UNIT-III Perceptual processes: nature and types of sensation and perception, Attention -process, definition, type and determinants, Practical-introduction, test and experiment.
NOVEMBER/23	UNIT-III Principles of perceptual organisation, Illusion- nature and types Practical- test and experiment.
DECEMBER/23	UNIT –IV Learning and Memory: classical and operant conditioning- basic processes, Verbal and Observational learning Practical- test and experiment
JANUARY/25	UNIT –IV Memory- sensory, short term and long term, Forgetting -process and theory. UNIT –V Cognitive and Non- cognitive process: Intelligence- nature and types, Motivation- biogenic and social motives, Thinking process- nature and types, Practical- test and experiment
FREBRUARY/24	UNIT –V Personality- nature and determinants, approaches to study personality- trait and type, Assessment of personality. Practical exam

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## PROPOSED TEACHING PLAN FOR THE SESSION 2016-17

Class B.A.I (Psychology)

Paper –II Psychopathology

MONTH/DAYS	Proposed Plan
JULY /25	UNIT –I Introduction; concept of Normality and Abnormality.
AUGUST/24	UNIT-I Models of Psychopathology- psychodynamic, behavioral and cognitive.
SEPTEMBER/25	UNIT-II Assessment of psychopathology; Diagnostic tests, Rating scales, Clinical interview. Practical –Introduction, Test& Experiment
OCTOBER/21	UNIT-III Unit-II Projective tests. UNIT-III Anxiety disorders, Panic disorder, Phobias, Obsessive-Compulsive disorder. Practical –Test& Experiment
NOVEMBER/23	UNIT-III Generalized Anxiety disorder UNIT –IV Mood disorders; Manic Depressive episode and Dysthymia. Practical –Test& Experiment
DECEMBER/23	UNIT –IV Personality disorder, Paranoid, Schizoid and Dependent Personality disorder. Dissociative disorder and Obesity. Practical –Test& Experiment
JANUARY/25	UNIT –V Management of Psychopathology; Stress management, Medico and Psychosocial Therapy, Shock Therapy, Psychoanalysis, Group Therapy, and Behavior Therapy. Practical –Introduction, Test& Experiment
FREBRUARY/24	Revision and Practical Exam

GOVT.D.B.GIRL'S P.G. (AUTONOMOUS) COLLEGE

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PROPOSED TEACHING PLAN FOR THE SESSION 2016-17

Class B.A.II (Psychology)  
PAPER-I  
Title of the paper -Social Psychology

MONTH/DAYS	Proposed Plan
JULY /25	UNIT-I Introduction of social psychology – nature, scope and goals , Methods of social psychology – experimental, survey, interview, observational and Sociometry
AUGUST/24	UNIT-I Approaches to study social behavior – psychoanalytical cognitive and behavioral UNIT- II Social perception – perception of self and others , Impression formation and its determinants
SEPTEMBER/25	UNIT-II Prosocial behavior– co-operation and helping behavior, determinants of prosocial behavior–personal, situational and socio-cultural Practical- Introduction, test & experiment
OCTOBER/21	UNIT-III Stereotype and Prejudice– nature and determinants, Interpersonal Attraction- nature and determinants Practical- test & experiment
NOVEMBER/23	UNIT-III Attitude- nature and measurements UNIT –IV Group Structure Practical- test & experiment
DECEMBER/23	UNIT –IV Group Function – social facilitation, cohesiveness , conformity and group norms Leadership – nature, types, characteristics and functions, Practical- test & experiment
JANUARY/25	UNIT –V Social Issues – Aggression –nature, determinants, prevention and control , Mob Behavior , Population Explosion- nature and consequences , Pollution and corruption Practical- report writing and checking
FREBRUARY/24	UNIT –V Social Issues - Gender discrimination and Child labor Practical Exam &Revision

GOVT.D.B.GIRL’S P.G. (AUTONOMOUS) COLLEGE  
RAIPUR CHHATTISGARH

## PROPOSED TEACHING PLAN FOR THE SESSION 2016-17

Class -B.A. II

Paper-II Psychological Assessment

MONTH/DAYS	Proposed Plan
JULY /25	UNIT –I I Psychological Assessment; concept, difference between physical and psychological assessment, levels of assessment.
AUGUST/24	UNIT-I Barriers in psychological assessment, unidimensional and multidimensional assessment
SEPTEMBER/25	UNIT-II Psychological test; concept, characteristics and types- standardized and non-standardized, group, performance and verbal, uses of psychological test.
OCTOBER/21	UNIT-III Test construction; steps in test construction and reliability- test-retest split-half, factors affecting reliability. Practical –Test& Experiment
NOVEMBER/23	UNIT-III Validity- content and predictive, factors affecting the validity, norms-age and grade. Practical –Test& Experiment
DECEMBER/23	UNIT –IV cognitive and non-cognitive test; introduction to intelligence, aptitude, and achievement testing, introduction to the personality, interest and value testing Practical –Test& Experiment
JANUARY/25	UNIT –IV Psychological testing in an applied aspect of life; Education, Occupation, Social, Health, and Organization, Social-Cultural factors in Psychological Assessment. Practical –Test& Experiment
FREBRUARY/24	Revision and Practical Exam

GOVT.D.B.GIRL'S P.G. (AUTONOMOUS) COLLEGE

RAIPUR CHHATTISGARH

PROPOSED TEACHING PLAN FOR THE SESSION 2016-17

Class-B.A.III

Paper I Title of the paper -Psychological Statistics

MONTH/DAYS	Proposed Plan
JULY /25	UNIT –I Statistics: meaning and application in psychology, Nature of score, categorical and continuous variable, Frequency distribution.
AUGUST/24	UNIT-I Graphical representation of data. UNIT-II Measures of central tendency- mean, median and mode of ungrouped and grouped data.
SEPTEMBER/25	UNIT-II Measures of variability-range, standard deviation, quartile deviation and average deviation, Applications of measures of central tendency and variability. Practical – Introduction, Tests and Experiments.
OCTOBER/21	UNIT-III Nature and characteristic is of normal probability curve(NPC), the concept of skewness and kurtosis. Practical – Tests and Experiments.
NOVEMBER/23	UNIT-III Correlation- concept, types and methods-rank difference and product moment (ungrouped data). Practical – Tests and Experiments.
DECEMBER/23	UNIT –IV Inferential statistics- concept of null hypothesis, level of significance, type-I error and type-II error. Practical – Tests and Experiments.
JANUARY/25	UNIT –IV t-test for uncorrelated data. UNIT-V Distribution free statistics- chi-square and Median test.Sign test, Application of computer in psychological statistics. Practical – Tests and Experiments.
FREBRUARY/24	Revision practical examination

GOVT.D.B.GIRL’S P.G. (AUTONOMOUS) COLLEGE

RAIPUR CHHATTISGARH

**PROPOSED TEACHING PLAN FOR THE SESSION 2016-17**

**Class B.A.III (Psychology)**

**PAPER-II**

**Title of the paper – Human Development**

<b>MONTH/DAYS</b>	<b>Proposed Plan</b>
<b>JULY/25</b>	UNIT-I Concept of Human Development, Theories of Human Development: Psychoanalytical and Maslow, Determinants of Human Development - Biological, social, cultural factors, Approaches to study human developments: Longitudinal and cross - sectional.
<b>AUGUST/24</b>	UNIT-I Approaches to study human developments : Longitudinal and cross - sectional UNIT-II Socialization : Role of family, peers and school, Media and socialization
<b>SEPTEMBER/25</b>	UNIT-II Cognitive Development : Theoretical Perspectives Piaget, Information Processing, Vyogotsky
<b>OCTOBER/21</b>	UNIT-III Self and Identity : Emergence of self, Development of personal identity, identity crises, Physical and sexual maturation, Sequential development of emotions
<b>NOVEMBER/23</b>	UNIT-IV Development of morality and self concept, Development of gender differences and gender roles. Role of marriage, family and occupation in Human Development.
<b>DECEMBER/23</b>	UNIT-V Problems of Aging - Cognitive, conative, affective, Developmental Disabilities.
<b>JANUARY</b>	Psychological Experiments and Tests
<b>FREBRUARY</b>	Practical Exam & Revision

**GOVT.D.B.GIRL'S P.G. (AUTONOMOUS) COLLEGE**

**RAIPUR CHHATTISGARH**



**B. A.I POLITICAL SCIENCE (2016-17)**  
**PAPER-I**  
**Political Theory**

MONTH	PLAN
JULY	Political Science :- Definition, Nature, Scope, Study Methods :- Traditional and Behavioral. Political Theory :- Importance, Authority, Meaning, Definition, Characteristics and Relations
AUGUST	State :- Meaning, Essential Elements of state various Theories of the origin of state, State in an effective Perspective
SEPTEMBER	Sovereignty: – Meaning, Characteristics, Theory, Importance, Citizenship, Rights, Liberty: – Meaning Definition, Characteristics and theory
OCTOBER	Equality And Justice: – Meaning, Definition, Characteristics, Relations. Democracy: – Meaning, Definition, Characteristics,
NOVEMBER	Essential Circumstances of democracy/ Challenges before democracy.
DECEMBER	Concept of development and welfare state: – Characteristics, Function, Achievement, Challenges, Theory of Social Change :- Meaning, Definition, Characteristics.
JANUARU	State in an effective , Citizenship, Rights Challenges before democracy
FREBRUARY	RIVISION

**B.A. – I POLITICAL SCIENCE**  
**SESSION: (2016-17)**  
**PAPER-II**  
**Indian Government & Politics**

MONTH	PRAPOSED PLAN
JULY	Composition and sources of the Indian constitution. Features of the India constitution preamble. Fundamental rights, fundamental duties and Directive principle of state policy.
AUGUST	Union Government: – The President, Parliament, council of ministers and Prime Minister –Organization / Appointing, Functions, Rights and Real position
SEPTEMBER	The State Government: – Governor, council of ministers and chief minister formation, power and functions and position. <del>Center-state relations – Administrative – Judicial and financial</del>
OCTOBER	Supreme court and the constitutional process: – Organization, power and function – changes in today. Political parties: – National and regional Meaning, Characteristics and kinds
NOVEMBER	Election commission and Electoral – Reforms – Organization, Functions and rights and the study of Electoral reforms.
DECEMBER	Major issues in Indian Politics –Caste, Religion, Language, Regions, Poverty – Alleviation.
JANUARU	Governor, council of ministers and chief minister formation, power and functions and position. Political parties: – National and regional Meaning, Characteristics and kinds
FREBRUARY	REVISION

## **B.A. – II POLITICAL SCIENCE**

**SESSION: (2016-17)**

### **PAPER-I**

MONTH	PRAPOSED PLAN
JULY	Plato - In the Context of Ideal state: Justice. Education, Communism & Philosopher King
AUGUST	Aristote – State, Classification of constitutions, slavery, view on Revolution
SEPTEMBER	Machiavelli - Machiavelli's views on State and Government, views on Religion. Morality & contribution to Political Philosophy. Hobbes - Social Contract Theory
OCTOBER	Locke -Locke's views on social contract Theory. Rousseau -Rousseau's views on social contract Theory, Theory of General will.
NOVEMBER	Bentham -Bentham's Utilitarianism. J.S. Mill -J.S. Mill's views on state, Liberty, Rights & Representative Government
DECEMBER	Hegel -Hegel's views on state, Dialectical method. T.H. Green -Green's view's on state & Government, Liberty & contribution to Political Philosophy. s
JANUARU	Karl-Marx- Marx's Dialectical materialism, Theory of class Struggle. Theory of surplus value, Economic interpretation of History, Contribution of Marx.
FREBRUARY	REVISION

**B.A. – II POLITICAL SCIENCE**  
**SESSION: (2016-17)**  
**PAPER-II**  
**Comparative Government and politics (Britain, America, China, Switzerland)**

MONTH	PRAPOSED PLAN
JULY	Meaning of Comparative Politics, Nature, Scope and Problems
AUGUST	Political system approach (David Eastan, Almond and Pawell) Constitutional Traditions and salient feature of the constitution.
SEPTEMBER	Constitutional Structure - Meaning of Chief Executive, Kinds, Centure of power and functions, Comparative study.
OCTOBER	Constitutional structure: - Legislature organization, Functions, Agreements in favour of second Chamber, comparative study.
NOVEMBER	Constitutional structure :- Judiciary, Organization, Functions, Independence Rule of Law Judicial Review
DECEMBER	Political Culture and Political Socialization Political Parties- Importance, Characteristics
JANUARU	Pressure Groups, Meaning, Kinds, Definition and importance, Role of women in the political process.
FREBRUARY	REVISION

**B.A. – III POLITICAL SCIENCE**  
**SESSION: (2016-17)**  
**PAPER-I**  
**International Politics**

MONTH	PRAPOSED PLAN
JULY	Meaning, Nature and Scope of International politics. Approaches to the study of international Politics.
AUGUST	Various theories of international Politics,
SEPTEMBER	Power: - Definition, Elements, Struggle for Power, Accumulation of Power, Increase of <del>power and exhibition of power</del>
OCTOBER	The concept of balance of power: – Theoretical advantage and evaluation.  The concept of the peace and security: – Theory of collective security
NOVEMBER	Diplomacy: – Definition, Kinds, functions, aims and means. Disarmament: – Meaning, definition and development.
DECEMBER	Disarmament: – Meaning, definition and development. Solution and hindrances in the path of Disarmament.
JANUARU	New paradigm of International Politics:- (1) Environmentalism (2) Globalization (3) Human Rights.
FREBRUARY	REVISION

## **B.A. – III POLITICAL SCIENCE**

**SESSION: (2016-17)**

### **PAPER-II**

#### **Public Administration**

<b>MONTH</b>	<b>PRAPOSED PLAN</b>
JULY	Public administration: – Meaning, nature and scope, importance. Evaluation of public administration as a discipline
AUGUST	Differences and similarities between public administration and personal administration.
SEPTEMBER	Public administration: – Methods of study and approaches, the new public administration.
OCTOBER	Politics and public administration: - Administrative, Behavior, Leadership, Decision making, Communication accountability.
NOVEMBER	The bureaucracy and the budget process, the new trends in public administration in the age of globalization & liberalization.
DECEMBER	Legislative control over administration, judicial, control on administration
JANUARU	Decision making, Communication accountability Evaluation of public administration as a discipline
FREBRUARY	REVISION

**TEACHING PLAN**  
**B.A. PART - I (SOCIOLOGY)**  
**PAPER - I**  
**INTRODUCTION TO SOCIOLOGY**  
**2016-17**

<b>NO.</b>	<b>MONTHS</b>	<b>TEACHING PLAN</b>
1	JULY	UNIT-I- Sociology: Meaning, Natures, Scope subject matter and significance
2	AUGUST	UNIT-II- Social Institution: - Marriage family and kinship.
3	SEPTEMBER	UNIT-II- Culture and Society: - Culture, Socialization, The individual and Society, Social control, Norms & Value.
4	OCTOBER	UNIT-III- Social Stratification: - Meaning, forms and theories.
5	NOVEMBER	UNIT-III- Social Mobility: - Meaning, forms and theories.
6	DECEMBER	UNIT-IV- Social Change:- Meaning and Patterns, Types, Tractors
7	JANUARY	UNIT-IV- Social Change: - Evolution & Progress UNIT-V- Social System: Social system, Meaning Characteristics and Elements.
8	FEBRUARY	UNIT-V- Social Progress: - Meaning, Element, Characteristics and types.

**TEACHING PLAN**  
**B.A. PART - I**  
**PAPER – II**  
**FOUNDATIONS OF SOCIOLOGICAL THOUGHT**  
**2016-17**

<b>MONTH</b>	<b>PLAN</b>
<b>JULY</b>	<b>Unit-I: Emergence of Sociology</b> – Europe before 19 <sup>th</sup> Century; Rise and Development of Sociology in West; <b>Auguste Comte</b> - Theory of Positivism.
<b>AUGUST</b>	<b>Unit-I: Herbert Spencer</b> – Social Darwinism; Social Organicism; <b>Unit-II: Emile Durkheim</b> – Theory of Social Solidarity; Theory of Suicide.
<b>SEPTEMBER</b>	<b>Unit-II: Max Weber</b> – Concept of Authority; Protestant Ethics and the Spirit of Capitalism.
<b>OCTOBER</b>	<b>Unit-III: Karl Marx</b> – Historical Materialism; Theory of Class Struggle
<b>NOVEMBER</b>	<b>Unit-IV: Vilfredo Pareto</b> – Logical and Non-Logical Actions; Circulation of Elites.
<b>DECEMBER</b>	<b>Unit-V: Development of Sociological Thought in India</b>
<b>JANUARY</b>	<b>Unit-V: Mahatma Gandhi</b> – Ahimsa; Satyagraha;
<b>FEBRUARY</b>	<b>Unit-V: Radhakamal Mukerjee</b> – Theory of Social Values.



**TEACHING PLAN**  
**B.A. PART – II**  
**PAPER - I**  
**SOCIETY IN INDIA**  
**2016-17**

NO.	MONTHS		TEACHING PLAN
1	JULY	UNIT – I	<b>Views About Indian Society :</b> The Classical Views, Varna, Ashram, karma & Dharma.
2	AUGUST	UNIT – I	<b>Field Views :</b> M.N. Srinivas & S.C. Dubey. Significance & Interface of Classical & Field Views.
3	SEPTEMBER	UNIT-II	<b>The Structure &amp; Composition of Indian Society :</b> Structure : Villages, Towns, Cities & Rural Urban Linkage.
4	OCTOBER	UNIT-II	<b>Composition :</b> Tribes, Dalits, Woman & Minorities.
5	NOVEMBER	UNIT-III	<b>Basic Institutions of Indian Society :</b> Caste System, Kinship, Family, Marriage.
6	DECEMBER	UNIT-III UNIT-IV	Class, Changing Dimension. <b>Familial Problems :</b> Dowry Domestic Violence & Divorce.
7	JANUARY	UNIT-IV UNIT-V	Intra-Intergenerational Conflict, Problems of Elderly. <b>Social problems :</b> Casteism, Regionalism,
8	FEBRUARY	UNIT-V	Communalism, Youth Unrest. Revision

**TEACHING PLAN**  
**B.A. PART – II**  
**PAPER - II**  
**CRIME & SOCIETY**  
**2016-17**

NO.	MONTHS		TEACHING PLAN
1	JULY	UNIT – I	<b>Conception &amp; Types of Crime:</b> Early Explanation- Classical Positives, Psychological.
2	AUGUST	UNIT – II	<b>Social Structure &amp; Anomie :</b> Criminality- Suicide, Organized Crime.
3	SEPTEMBER	UNIT-II	<b>White Collar Crime :</b> Terrorism : Causes, Effects & Remedies.
4	OCTOBER	UNIT-III	<b>Indian Social Problem :</b> Social Change in India & Crime, Social Disorganization.
5	NOVEMBER	UNIT-III	Alcoholism & Drug Addiction, Begary
6	DECEMBER	UNIT-IV	<b>Punishment :</b> Objectives & Forms – Theories of Punishment, Probation, Parole & Open Prison
7	JANUARY	UNIT-V	<b>Correctional Process:</b> Role of Police & Judiciary in India. Development of Jail Reform in India
8	FEBRUARY	UNIT-V	Sociology of Prison. Revision

**TEACHING PLAN**  
**B.A. PART - III**  
**PAPER – I**  
**SOCIOLOGY OF TRIBAL SOCIETY**  
**2016-17**

<b>MONTH</b>	<b>PLAN</b>
JULY	<b>Unit-I:</b> Sociology of Tribal Society; Concept of Tribe, Tribe and Caste.
AUGUST	<b>Unit-II:</b> Classification of Tribal People; Tribal Economy and Economic Classification of Tribes.
SEPTEMBER	<b>Unit-III:</b> Socio Cultural Profile of Tribe; Kinship System amongst Tribes.
OCTOBER	<b>Unit-III:</b> Tribal Marriage; Tribal Family; Religious Beliefs and Cultural Traditions amongst Tribes.
NOVEMBER	<b>Unit-IV:</b> Social Mobility and Change Sensitization among Tribes; Schemes of Tribal Development.
DECEMBER	<b>Unit-IV:</b> Various Tribal Movements; <b>Unit-V:</b> Tribal Problems: Poverty, Illiteracy, Indebtedness.
JANUARY	<b>Unit-V:</b> Tribal Problems: Agrarian Issues and Exploitation;
FEBRUARY	<b>Unit-V:</b> Tribal Communities in Chhattisgarh: Oraon, Kanwar and Gond.

**TEACHING PLAN**  
**B.A. PART - III**  
**PAPER - II**  
**METHODS OF SOCIAL RESEARCH**  
**2016-17**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>
1	JULY	Unit-I	Meaning And Significance Of Social Research, Meaning And Nature Of Social Research Hypothesis, Formulation Of Hypothesis, Scientific Method And Its Applicability
2	AUGUST	Unit II	Positivism And Ethnography, Observation, Case Study Method
3	SEPTEMBER	Unit II	Case Study Method, Content Analysis
		Unit-III	Types Of Research: Historical, Descriptive, Exploratory, Experimental
4	OCTOBER	Unit-IV	Comparative, Exploratory and Experimental
5	NOVEMBER	Unit-IV	Methods And Techniques Of Data Collection : Survey method
6	DECEMBER	Unit-IV	Questionnaire, Interview, Schedule, Interview Guide
7	JANNUARY	Unit -V	Meaning Of Social Statistics: Importance And Limitations, Graphs And Diagrams
8	FEBRUARY	Unit -V	Measures Of Central Tendency: Mean, Median, Mode, Co-Relation

GOVT.D.B.GIRL'S P.G. (AUTONOMOUS) COLLEGE

RAIPUR CHHATTISGARH

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PROPOSED TEACHING PLAN FOR THE SESSION 2016-17

KATHAK DANCE DEPARTMENT

THEORY and PRACTICAL OF KATHAK DANCE

BAI,BAII and BAIII

TH/DAYS	Graduation (Timeline: Start/End)  BAI	Graduation (Timeline: Start/End)  BAII	Graduation (Timeline: Start/End)  BAIII
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JULY /25	<p><b>PAPER – I (THEORY)</b></p> <p>The Dance related stories of Uma-Shankar and Natwar Shri Krishna according to the Puranas.</p> <p><b>practical</b></p> <p>Tatkar in Teental and its Tah,Dugun and Chougun</p> <p>Practical demonstration of gestures.</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Definition of Abhinaya and brief study of its kinds.</p> <p><b>PRACTICAL</b></p> <p>Tatkar in Teental – practice</p> <p>Hastak      Sanchalan      (hand movements)</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Study of the history of Dance.</p> <p>Brief knowledge of the following classical dances:-</p> <p style="text-align: center;">Kuchipudi Kathak</p> <p><b>PRACTICAL</b></p> <p>Tatkar and its variations in T – practice</p> <p>Hastak      Sanchalan movements)</p>
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AUGUST/24	<p><b>PAPER – I (THEORY)</b></p> <p>The importance of Guru-Vandana in Indian theatre tradition.</p> <p>Description of Sangeet.</p> <p>The place of Dance in Sangeet.</p> <p><b>Practical</b></p> <p>Hastak Sanchalan (hand movements)</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Lakshan and Viniyog of Asamyukta Hasta Mudra according to “Abhinaya Darpan”</p> <p>Study of “Drishti-Bheda” described in Abhinaya Darpan.</p> <p><b>Practical</b></p> <p>Bhav Pradarshan on Krishna Vandana.</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Brief knowledge of the following classical dances:-</p> <p>(a) Odissi (b) Mohini Attam</p> <p>Definition of Rasa and study of its types.</p> <p><b>Practical</b></p> <p>Bhav Pradarshan on Vishnu Vandana or Shiv Vandana.</p>
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MBER/25	<p><b>PAPER – II (THEORY)</b></p> <p>The stories of origin of Natya (described in the first chapter of Natya- Shashtra of Bharat Muni).</p> <p>History of Dance – Sindhu-sabhyata,vedik period,Ramayan and Mahabharat period.</p> <p><b>Practical</b></p> <p>Guru-Vandana Greeva – sanchalan Asamyukta hand gestures</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Study of “Shiro-Bheda”with shloka described in Abhinaya Darpan.</p> <p>Study of Lokadharmi and Natyadharmi.</p> <p><b>Practical</b></p> <p>Presentation on Teentaal (other than learnt in the first year)</p> <p>Aamad,Chakkardar Toda,Chakkardar Paran,Tishra jati Toda or Paran,types of Tatkar.</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Definition of Bhava and stud types.</p> <p>Lakshan and Viniyog of Sar Hasta Mudra according “Abhinaya Darpan”.</p> <p><b>Practical</b></p> <p>Thaat (in detail)</p> <p>Presentation on Teentaal (ot than learnt in the previous ye</p> <p>Aamad,two Tode, Chakkarda</p>
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OBER/21	<p><b>PAPER – II (THEORY)</b> Physical and mental benefits of practicing Dance</p> <p>General introduction of of any two folk dances of Chhattisgarh (based on the festivals -Parva).</p> <p><b>Practical</b> Anchit-Kunchit</p> <p>Teental – Thaat,Aamad,Paran,Tode</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Brief knowledge of the following classical dances:-</p> <p>(a) Kathak (b) Bharata Natyam (c) Kathakali (d) Manipuri</p> <p><b>Practical</b></p> <p>Presentation on Teentaal (other than learnt in the first year)Aamad,Chakkardar Toda,Chakkardar Paran,Tishra jati Toda or Paran,types of Tatkar.</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Study of Bhrikuti Bheda according to “Abhinaya Darpan”.</p> <p>Knowledge of Nritya,Nritya.</p> <p><b>Practical</b></p> <p>Presentation on Teentaal (other than learnt in the previous years)Chakkardar Paran,Primelu,Tihaiya,Kavittas of Tatkar.</p>
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MBER/23	<p><b>PAPER – I (THEORY)</b> Short description of any two folk theatre tradition:-</p> <p>1-Ramleela    2-Rasleela    3-Bhawai    4-Raai    5-Maach    6-Mahabharat Nacha</p> <p><b>PRACTICAL</b></p> <p>Teental – Chakkardar Tode,Kavitta,Gatnikas (any five),Tatkar and its types.</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Position of Dance in the modern society.</p> <p><b>PAPER –II (THEORY)</b></p> <p>Notation of the Theka in Thah,Dugun,Tigun and Chougun of Choutaal and Ektaal.</p> <p>Notation of the compositions learnt in practical (Choutaal and Ektaal).</p> <p><b>PRACTICAL</b></p> <p>Practise of dance presentation on Choutaal or Ektaal – Aamad,Tode,Paran and Kavitta.</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Study of Guru-Shishya-Parampara and institutional education system in the education of Kathak Dance.</p> <p><b>PAPER – II (THEORY)</b></p> <p>Study of the Ten Pranas of Tala.</p> <p><b>PRACTICAL</b></p> <p>Practise of dance presentation on Dhamar or Rupak Taal – Thaata,Aamad,Tode,Paran, Kajari and Tihaiya.</p>
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MBER/23	<p><b>PAPER – II (THEORY)</b></p> <p>Definiton – Hastak,Toda,Salami,Namaskar,Aamad,Paran ,Chakkardar,TatkarTihai,Tukde,Kavitta ,Matra,Sam and Khali.</p> <p><b>PRACTICAL</b></p> <p>Jhaptal – Thaata,Namaskriya,Aamad,Paran,Tode,</p>	<p><b>PAPER – II (THEORY)</b></p> <p>Life sketch and contribution to Kathak Dance of Pt.Bindadin Maharaj,Jaylalji Maharaj,Achchan Maharaj and Lachchu Maharaj.</p> <p>Study of essential aspects of Kathak presentation.</p> <p><b>PRACTICAL</b></p> <p>Gatnikas – Murli and Ghunghat.</p>	<p><b>PAPER – II (THEORY)</b></p> <p>Study of the various Gharas of Kathak Dance.</p> <p>A brief study of Ashta Nayika A brief study of Nayaka</p> <p><b>PRACTICAL</b></p> <p>Gatnikas – Revision of all Gatnikas of previous years and Bindis Rukhsar ki Gat.</p>
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<p>UARY/25</p>	<p><b>PAPER – I (THEORY)</b></p> <p>Introduction of Taal.</p> <p>Importance of Taal in Sangeet.</p> <p>Description of Taal.</p> <p><b>PRACTICAL</b></p> <p>Jhaptal – Thaat,Chakkardar Tode,Tihai,Kavitta, Tatkar and its types</p> <p>Description of Laya and its types.</p>	<p><b>PAPER – II (THEORY)</b></p> <p>Definition – Gatnikas,Gatbhav,Thumri,Tandav and Lasya.</p> <p>Corelation of Dance with other fine arts.</p> <p>Place of literature in Dance.</p> <p><b>PRACTICAL</b></p> <p>Bhav Pradarshan on Thumri or Bhajan.</p>	<p><b>PAPER – II (THEORY)</b></p> <p>Life sketch and contributi Kathak Dance of Narayan Pr and Sundar Prasad ji</p> <p>Notation of the Theka in Thah,Dugun,Tigun and Choug Dhamar and Rupak Taal.</p> <p>Notation of the compo learnt in practical (Dhama Rupak Taal)</p> <p><b>PRACTICAL</b></p> <p>Presentation of Panghat and Gatbhav.</p>
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UARY/24	<p><b>PAPER I THEORY</b></p> <p>Notations of the compositions learnt in practical</p> <p><b>PAPER II THEORY</b></p> <p>Life sketch and contribution – Shri Shambhu Maharaj, Shri Kalika Prasad Maharaj, Sitara Devi, Damyanti Joshi.</p> <p><b>PRACTICAL</b></p> <p>Ability to dance on any song or Bhajan and knowledge of folk dance.</p>	<p><b>PAPER – II (THEORY)</b></p> <p>Study of folkdances of India.</p> <p>Study of folk dances of Chhattisgarh region.</p> <p><b>PRACTICAL</b></p> <p>Practical demonstration of the single hand gestures according to the Abhinaya Darpana.</p>	<p><b>PAPER – II (THEORY)</b></p> <p>Essay writing on the topics related to Dance:-</p> <p>(a) Kathak and other classical dances</p> <p>(b) Kathak and religion</p> <p>(c) Kathak and Yoga</p> <p>(d) Classical and folk dance</p> <p>Kathak dance and Navrasa</p> <p><b>PRACTICAL</b></p> <p>Bhav Pradarshan on Thumri and Bhajan.</p> <p>Practical demonstration of double hand gestures according to the Abhinaya Darpana.</p>
MARCH			
APRIL			
MAY			
JUNE			

**GOVT.D.B.GIRL'S P.G. (AUTONOMOUS) COLLEGE**

**RAIPUR CHHATTISGARH**

**TEACHING PLAN FOR THE SESSION 2016-17**

**B.Sc. Part-I**

**Subject –Biotechnology**

**Paper -1**

**Title of the Paper: Biochemistry, Biostatistics and Computer**

MONTH/DAYS	PROPOSED PLAN
JULY /25	<b>Unit1</b> Introduction to biochemistry: History, Scope and Development. Carbohydrates: Classification, Structure and function of Mono, Oligo & Polysaccharides ,Amino acids and Proteins: Classification, Structure and Properties of amino acids
AUGUST/24	<b>Unit II</b> , types of Proteins and their Classification and Function.. Lipids: Structure, Classification and Function.
SEPTEMBER/25	<b>Unit II</b> Enzyme: Nomenclature and classification of enzyme, Mechanism of enzyme action, Enzyme Kinetics and factors affecting the enzyme action. Immobilization of enzymes and their application Hormones: Plant Hormones- Auxin and Gibberellins and Animal Hormone-Pancreas and Thyroid
OCTOBER/21	<b>Unit III.</b> Carbohydrates, Proteins and Lipid Metabolism- Glycolysis, Glycogenesis, Glyconeogenesis and Krebs cycle. Electron Transport Chain Proteins Metabolism tansaminaion and deamination, Lipid Metabolism - $\beta$ -oxidation of Fatty acid.
NOVEMBER/23	<b>Unit IV</b> Binominal theorem ,logarithm, integration and differentiation
DECEMBER/23	<b>Unit IV</b> Measures of Central Tendency: Mean Median and Mode and Standard Deviation. Probability Calculation : Definition of probability, Theorem on total and compound probability
JANUARY/25	<b>Unit V</b> Computer –General Introduction. Organization of computer, digital and analogue computers, computers algorithm. Concept of Hardware and software, Input and output Devices. Application of computer in co-ordination of solute concentration, pH and Temperature etc. of a fermenter in operation and Internet application.
FREBRUARY/24	Revision

**TEACHING PLAN FOR THE SESSION 2016-17**  
**B.Sc. Part-I**  
**Subject –Biotechnology**  
**Paper -II**  
**Title of the Paper: Cell Biology, Genetics and Microbiology**

MONTH/DAYS	PROPOSED PLAN
JULY /25	<b>Unit I</b> Concept of life, Cell as a basic unit of living system and Cell theory. Diversity of Cell shape and size. Prokaryotic cell structure: Function and ultra structure of cell (Gram positive and Gram negative Bacteria), Plasma membrane, Flagella, Pilli, Endospore and Capsule. Eukaryotic Cell: Plant cell wall and Plasma membrane.
AUGUST/24	<b>Unit II</b> Cytoplasm: Structure and functions of Endoplasmic reticulum, Ribosome, Golgi complex, Lysosomes, Nucleus, Mitochondria and Chloroplast. Cytoskeleton: Microtubules, Microfilaments and Intermediate filaments. Cell division : Mitosis and Meiosis. Programmed Cell Death.
SEPTEMBER/25	<b>Unit III</b> Mendel's Laws of Inheritance. Linkage and Crossing over. Chromosome variation in number and structures: Deletion, Duplication,
OCTOBER/21	<b>Unit III</b> Translocation, Inversion and Aneuploidy, Euploidy (Monoploidy and Polyploidy and its importance).
NOVEMBER/23	<b>Unit 4</b> History, Scope and Development of Microbiology. Basic techniques of Microbial Culture.
DECEMBER/23	<b>Unit IV</b> Microbial growth & Nutrition of Bacteria: Isolation, media sterilization physical and chemical agents, pure culture pour plate method, streak plate method and spread plate method. General features and Economic importance of Fungi, Algae and Protozoa etc.
JANUARY/25	<b>Unit V</b> Bacterial Reproduction: Conjugation, Transduction and Transformation. Mycoplasma- History, Classification, Structure, reproduction & Diseases Viruses- Basic features Structure, Classification, and Multiplication, Bacteriophages (Morphology, life cycle, infection and medicinal importance).
FEBRUARY/24	Revision and Practical Exam

**TEACHING PLAN FOR THE SESSION 2016-17**  
**B.Sc. Part-II**  
**Subject –Biotechnology**  
**Paper -II**  
**Title of the Paper: Molecular Biology and Biophysics**

MONTH/DAYS	PROPOSED PLAN
JULY /25	<b>Unit1</b> <b>DNA</b> :Structure, types and replication <b>RNA</b> : Structure, types and Function Structure of gene ,old and new concept
AUGUST/24	<b>Unit II</b> Genetic code : Properties, Codon assignment, Secondary genetic code Protein Synthesis Mitochondrial genome Chloroplast genome
SEPTEMBER/25	<b>Unit III</b> Gene therapy Transposable elements DNA damage and repair Tissue engineering :General concept
OCTOBER/21	<b>Unit IV</b> Law of Thermodynamics Beer Lambert’s law, Radioisotopes techniques Autoradiography
NOVEMBER/23	<b>Unit V</b> Biophysics introduction, scope and application.
DECEMBER/23	<b>Unit V</b> Principle, structure, function of the following : a. Spectroscopy                      b.Electrophoresis c. Centrifugation
JANUARY/25	<b>Unit V</b> Principle, structure, function of the following d.Colorimeter e. Chromatography      f. ELISA Revision
FREBRUARY/24	Practical Exam and Revision



**TEACHING PLAN FOR THE SESSION 2018-19**

**B.Sc. Part-II**

**Subject –Biotechnology**

**Paper -II**

**Title of the Paper: Recombinant DNA technology**

MONTH/DAYS	PROPOSED PLAN
JULY /25	<b>Unit-I</b> Scope and aim of the Biotechnology Recombinant DNA Technology: General Concept and Application, Strategies of recombinant DNA Technology in prokaryotes. Restriction enzymes: Endonuclease (type, Nomenclature, Restriction, Sequence and Cleavage Pattern).Modifications of cut ends. Steps in gene cloning. Isolation of the desired gene.cDNA Library, Genomic Library.
AUGUST/24	<b>Unit-II</b> Vectors (Animal and Plant vectors) Bacteriophage vectors Introduction of vectors into appropriate host.
SEPTEMBER/25	<b>Unit-III</b> Types of PCR,Applications Advantages and Limitation of PCR,PCR: Procedure ( denaturation , annealing, extension)
OCTOBER/21	<b>Unit-I</b> Monoclonal Antibodies: Structure, production, Application.
NOVEMBER/23	<b>Unit-IV</b> In vitro fertilization and embryo transfer Genome map and Genome project, Apoptosis
DECEMBER/23	<b>Unit-V</b> Stem cell technology Targeted Gene Transfer DNA fingerprinting,
JANUARY/25	<b>Unit-V</b> Transgenic animals and plants and Revision
FREBRUARY/24	Practical Exam and Revision

**TEACHING PLAN FOR THE SESSION 2016-17**  
**B.Sc. Part-III**  
**Subject –Biotechnology**  
**Paper -1**  
**Title of the Paper: Plant, Environment and Industrial Biotechnology**

MONTH/DAYS	PROPOSED PLAN
JULY /25	<b>Unit-I</b> Plant cell and tissue culture: General introduction, history, scope. Application of tissue culture. Concept of cellular differentiation. Agro bacterium. Ti and Ri-plasmid. Bt gene, Molecular marker (RFLP, RAPD), edible vaccines.
AUGUST/24	<b>Unit-II</b> Organogenesis, Embryogenesis, protoplast isolation and fusion. Germplasm storage and Cryopreservation. Anther and ovary culture.
SEPTEMBER/25	<b>Unit-III</b> General introduction and scope of Environmental Biotechnology. Environmental pollution and its types.
OCTOBER/21	<b>Unit-III</b> Control of pollution through biotechnology. Wastewater treatment: - Physical, Chemical and Biological.
NOVEMBER/23	<b>Unit-IV</b> Biofertilizer, Biopesticides, IPR. Global environmental problem-general introduction, Ozone depletion, Acid rain. Green house effect.
DECEMBER/23	<b>Unit V</b> Bioreactors and its types. Fermentation (Lactic acid, alcohol). Maintenance of Industrial micro-organisms
JANUARY/25	<b>Unit-V</b> Food technology – Introduction, canning, packing and food preservation. and Revision
FEBRUARY/24	Practical Exam and Revision

**TEACHING PLAN FOR THE SESSION 2016-17****B.Sc. Part-III****Subject –Biotechnology****Paper -II****Title of the Paper: Immunology**

MONTH/DAYS	PROPOSED PLAN
JULY /25	<b>Unit-I</b> Immunology- general concept, history and development of Immune system and Immunity, organization of immune system
AUGUST/24	<b>Unit I</b> Antigen and antibody and its types <b>Unit-II</b> Cell involved in immune system, type and cells, basic structure and function, Cytokines. Cell mediated immunity interferons, hypersensitivity.
SEPTEMBER/25	<b>Unit-III</b> Antigen- Antibody interaction, principles and types.
OCTOBER/21	<b>Unit –III</b> Immunohaematology – general concept blood group system Rh factor Medical application of blood groups.
NOVEMBER/23	<b>Unit -IV</b> Origin and diversity in immune system. Effectors mechanism.
DECEMBER/23	<b>Unit- V</b> Immunity of infection disease, monoclonal antibodies.
JANUARY/25	<b>Unit- V</b> Autoimmune disease, haemolytic anemia, Rheumatoid arthritis, insulin depend diabetes, Myasthenia gravis, organ transplantation ,immune deficient disease, cancer ,AIDS. and Revision
FEBRUARY/24	Practical Exam and Revision

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**PROPOSED TEACHING PLAN FOR THE SESSION 2016-17**

**DEPARTMENT OF BOTANY**

**B.Sc. Part-I**

**Paper- I ,General Diversity of Microbes and Cryptogams**

Month	Course
<b>July</b>  <b>Unit I</b>	<b>Viruses and Bacteria:</b> General account of viruses and mycoplasma; bacteria- structure, nutrition,
<b>August</b>  <b>Unit II&amp;II</b>	Reproduction and economic importance of Bacteria, general account of cyanobacteria.  <b>Algae:</b> General characters, classification and economic importance of important features and life history of Chlorophyceae - Volvox, Oedogonium, Coleochaete  Xanthophyceae - Vaucheria;
<b>September</b>  <b>Unit II&amp;III</b>	Algae- Phaeophyceae - Ectocarpus, Sargassum; Rhodophyceae Polysiphonia.  <b>Fungi:</b> General characters, classification and economic importance of important features and life history of Mastigomycotina – Pythium, Phytophthora;  Zygomycotina – Mucor,
<b>October</b>  <b>Unit III&amp;IV</b>	Fungi- Ascomycotina – Saccharomyces, Aspergillus, Chaetomium, Pezizomycotina; Basidiomycotina – Puccinia, Agaricus; Deuteromycotina – Cercospora, Colletotrichum; general account of Lichens.
<b>November</b>	<b>Bryophyta: Amphibians of plant kingdom displaying</b> Alternation of generations; structure, reproduction and classification of Hepaticopsida (e.g. Riccia, Marchantia)
<b>December</b>	Bratophyta – structure and Reproduction Of Anthocerotopsida (e.g. Anthoceros); Bryopsida (e.g. Funaria) Pteridophyta -characteristics of Psilopsida
<b>January</b>	Pteridophyta -characteristics of Lycopsida, Sphenopsida
<b>February</b>	Pteropsida; Pteris and Marsilea Structure and reproduction

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PROPOSED TEACHING PLAN FOR THE SESSION 2016-17

DEPARTMENT OF BOTANY

B.Sc.I BOTANY PAPER II M.M.50

MONTH	Cell Biology and Genetics
July Unit I	<b>The Cell envelopes:</b> Plasma membrane; bilayer lipid structure; functions; the cell wall, ultra structure and function of nucleus, nuclear membrane, nucleolus and other cell organelles; Golgi bodies, ER, peroxisomes, vacuoles.
August Unit I & II	nucleolus and other cell organelles; Golgi bodies, ER, peroxisomes, vacuoles. <b>Chromosome Organization:</b> Morphology, centromere and telomeres, Chromosome alternations: deletions, duplications, translocations, inversions
September Unit II & III	variations in chromosome number, aneuploidy, polyploidy, sex chromosomes. Mitosis, Meiosis. <b>DNA the genetic material:</b> DNA structure; replication; DNA-protein interaction, the nucleosome model; genetic code; satellite and repetitive DNA.
October Unit III	<b>Extra nuclear genome:</b> Presence and function of mitochondrial and plastid DNA, Plasmids.
November Unit IV	<b>Gene expression;</b> Structure of gene; transfer of genetic information; transcription, translation protein synthesis;
December Unit IV & V	tRNA, ribosome, regulation of gene expression in prokaryotes and eukaryotes; proteins 1D, 2D and 3D structure. <b>Genetic variations:</b> Mutations, spontaneous and induced.
January Unit V	transposable genetic elements; DNA damage and repair. <b>Genetic inheritance:</b> Mendel's laws of segregation and independent assortment, linkage analysis, allelic and non-allelic interactions.

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**PROPOSED TEACHING PLAN FOR THE SESSION 2016-17**

**DEPARTMENT OF BOTANY**

**B.Sc.- II, PAPER -I**

**DIVERSITY OF SEED PLANTS AND THEIR SYSTEMATICS**

<b>Month</b>	<b>Proposed Topic</b>
JUL Unit-I	Characteristics of seed plants- Evolution of seed habits; seed plants with (angiosperms) & without (gymnosperms) fruits; fossils & living seed plants.  General features of gymnosperms & their classification- Evolution & diversity of gymnosperms, geological time scale, fossilization & fossil gymnosperms.
AUG Unit II	Morphology of vegetative & reproductive parts; anatomy of roots, stem & leaf, reproduction & life cycle of Pinus, Cycas & Ephedra.
SEP Unit III	Angiosperms origin & evolution. Some examples of primitive angiosperms.  Angiosperms taxonomy: brief history, aims & fundamental components; identification, keys taxonomic literature.
OCT Unit III & IV	Botanical nomenclature: Principles & rules; taxonomic ranks; type concept; principle of priority.  Classification of angiosperms; salient features of the systems proposed by Bentham & Hooker, Engler & Prantl.
NOV Unit IV	Major contributions of cytology, phytochemistry & taxometrics to taxonomy.
DEC Unit V	Diversity of flowering plants: general account of families:- Ranunculaceae, Brassicaceae, Malvaceae, Rutaceae, Fabaceae, Apiaceae, Acanthaceae
JAN Unit V	Apocynaceae, Asclepiadaceae, Solanaceae, Lamiaceae, Chenopodiaceae, Euphorbiaceae, Liliaceae & Poaceae.

FEB	Practical exam Practicals done every month as per schedule
MAR	Theory exam
APR	

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**PROPOSED TEACHING PLAN FOR THE SESSION 2016-17**

**DEPARTMENT OF BOTANY**

**B.Sc.-II, PAPER-II**

**STRUCTURE DEVELOPMENT & REPRODUCTION IN FLOWER PLANTS**

Month	Proposed Topic
JULY	The basic body plan of a flowering plant: modular type of growth.
Unit-I	Diversity in plant form in annuals, biennials & perennials: convergence of evolution of tree hab in gymnosperms, monocotyledons & dicotyledons ; trees- largest & longest- lived organisms.
AUG	The shoot system: the shoot apical meristem & its histological organization; vascularization of primary shoot in monocotyledons & dicotyledons; formation of internodes, branching pattern; monopodial & sympodial growth, canopy architecture, cambium & its functions, formation of secondary xylem, a general account of wood structure in relation to conduction of water & minerals, characteristics of growth rings, sapwood & heart wood, role of woody skeleton secondary phloem – structure- function relationships, periderm.
Unit II	
SEP	<b>Leaf:</b> origin, development, arrangement & diversity in size & shape, internal structure in relation to photosynthesis & water loss, adaptations to water stress, senescence & abscission.
Unit III	<b>The root system;</b> the root apical meristem, differentiation of primary & secondary tissues & their roles, structural modifications for storage, respiration, reproduction & interaction with microbe
OCT	Flower: a modified shoot; structure, development & verities of flower, functions, structure of anther & pistil, the male & female gametophytes, types of pollination, attractions & rewards for pollinators, pollen- pistil interaction, self incompatibility, double fertilization, formation of seed- endosperm & embryo, fruit development & maturation.
IV	
NOV	Flower: Types of pollination, attractions & rewards for pollinators, pollen- pistil interaction, self incompatibility, double fertilization, formation of seed- endosperm & embryo, fruit development & maturation.
Unit IV	

DEC Unit V	Significance of seed; suspended animation, ecological adaption: unit of genetic recombination & replenishment, dispersal strategies.
JAN Unit V	Vegetative reproduction: vegetative propagation, grafting & economic aspects.
FEB	Practical exam
MAR APR	Theory exam



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Proposed Teaching Plan ( Session-2016-17)

**DEPARTMENT OF BOTANY**

**B.Sc. –III BOTANY, Paper -I PLANT PHYSIOLOGY, BIOCHEMISTRY AND BIOTECHNOLOGY**

MONTH	PAPER-I-PLANT PHYSIOLOGY, BIOCHEMISTRY AND BIOTECHNOLOGY
<b>JULY</b> <b>UNIT-I</b>	<b>Plant water relations:</b> importance of water to plant life; physical properties of water
<b>AUGUST</b> <b>UNIT-I</b>	<b>Plant water relations:</b> diffusion & osmosis; absorption, transport of water, transpiration; physiology of stomata. <b>Mineral nutrition:</b> Essential macro and micro elements and their role; mineral uptake; Deficiency and toxicity symptoms.
<b>SEPTEMBER</b> <b>UNIT-II</b>	<b>Transport of organic substances:</b> Mechanism of phloem transport; source- sink relationship; factors affecting translocation. <b>Basic of enzymology:</b> Discovery and nomenclature; characteristics of enzymes; concepts of holoenzyme, Apoenzyme, coenzyme and cofactor; regulation of enzyme activity, mechanism of action.
<b>OCTOBER</b> <b>UNIT- II &amp;III</b>	<b>Photosynthesis:</b> Significance; historical aspects; photosynthetic pigments, action spectra and enhancement effects, concept of 2 photosystem, Z- scheme, photophosphorylation; Calvin cycle; C4 pathway, CAM plants, photorespiration. <b>Respiration:</b> ATP- The biological energy currency; aerobic and anaerobic respiration;
<b>NOVEMBER</b> <b>UNIT- III</b>	<b>Respiration:</b> Kreb's cycle, electron transport mechanism (Chemio-Osmotic theory); redox potential, Oxidative phosphorylation, pentose phosphate pathway. <b>Nitrogen and lipid metabolism:</b> biology of nitrogen fixation; importance of nitrate reductase and its regulation; ammonium assimilation; saturated and unsaturated fatty acids; storage and mobilization of fatty acids.
<b>DECEMBER</b>	<b>Growth and development:</b> Definitions; phases of growth and development; kinetics of growth, seed dormancy, seed germination and factors of their regulation; plant movements; the concept of

<b>UNIT-IV</b>	photoperiodism; physiology of flowering; florigen concept; biological clocks; physiology of senescence, fruit ripening; plant hormones: Auxins, gibberellins, cytokinins, abscisic acid, ethylene, history of their discovery, biosynthesis and mechanism of action, photomorphogenesis, phytochromes and cryptochromes, their discovery, physiological role and mechanism of action.
<b>JANUARY</b>	<p><b>Genetic engineering:</b> tools and techniques of recombinant DNA technology; Cloning vectors; Genomic and cDNA library; transposable elements; techniques of gene mapping and chromosome walking.</p> <p><b>Biotechnology:</b> functional definition; basic aspects of plant tissue culture; cellular totipotency, differentiation and morphogenesis; biology of agro bacterium; vectors for gene delivery and marker genes; salient achievements in crop biotechnology.</p>

## PROPOSED TEACHING PLAN FOR THE SESSION 2016-17

### DEPARTMENT OF BOTANY

#### B.Sc.- III, PAPER –II

#### ECOLOGY AND UTILIZATION OF PLANTS

Month	Proposed Topic
JULY Unit-I	<p>Plants and environment: Atmosphere (gaseous composition), water (properties &amp; water cycle), light (global radiation, photosynthetically active radiation), temperature, soil (development of soil profiles, physico-chemical properties), and biota.</p> <p>Morphological, anatomical and physiological responses of plants to water (hydrophytes &amp; xerophytes), temperature (thermoperiodicity), light (photoperiodism in heliophytes &amp; sciophytes) &amp; salinity.</p>
AUG Unit II	<p>Community Ecology: Community characteristics, frequency, density; cover, life forms biological spectrum; ecological succession.</p> <p>Ecosystems: Structure, abiotic &amp; biotic components; food chain, food web, ecological pyramids, energy flow; biogeochemical cycles of carbon, nitrogen and phosphorus.</p>

SEP  Unit III	Population ecology: Growth curves; ecotypes; ecades.  Biogeographical regions of India.  Vegetation types of India: Forests & grasslands.p
OCT  III	Vegetation types of India: Forests & grasslands.
NOV  Unit  IV	Utilization of plants  Food plants: rice, wheat, maize, potato, sugarcane.  Fibers: Cotton & Jute  Vegetable oils: groundnut, mustard and coconut  General account of sources of firewood, timber & bamboos.
DEC  Unit V	Spices: General account.  Medicinal plants: :General account  Beverages :Tea & coffee  Rubber.
JAN	Practical Exam

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PROPOSED TEACHING PLAN FOR THE SESSION 2016-17

B.Sc. PART – ONE (CHEMISTRY)

MONTH	PROPOSED WORK	PAPER - ONE	PAPER – TWO	PAPER - THREE
July	UNIT – I	<b>A. ATOMIC STRUCTURE</b> Idea of de-Broglie matter-waves, Heisenberg Uncertainty principle, Schrodinger wave equation, significance of $\Psi$ and $\Psi^2$ , radial & angular wave functions and probability distribution curves, Atomic orbital and shapes of s, p, d orbital's, Aufbau and Pauli exclusion principles, Hund's Multiplicity rule, electronic configuration of the elements, Effective nuclear charge	<b>STRUCTURE &amp; BONDING</b> <b>A.</b> Resonance. Hyper conjugation, Inductive and other field effects, Aromaticity, hydrogen bonding. <b>B. MECHANISM OF ORGANIC REACTIONS</b> Homolytic & heterolytic bond breaking, types of reagents-electrophiles & nucleophiles	<b>MATHEMATICAL CONCEPTS FOR CHEMIST AND COMPUTER</b> <b>A.</b> Logarithmic relations, curve sketching linear graphs. Properties of straight line, slope and intercept. Differentiation of functions. Partial differentiation. Integration of some useful and relevant functions, Maxima and minima. Permutation and combination. Probability.
August	UNIT – I	<b>B. PERIODIC PROPERTIES</b> Ionization energy, Electron gain enthalpy and Electronegativity,	<b>B. MECHANISM OF ORGANIC REACTIONS</b>	<b>MATHEMATICAL CONCEPTS FOR CHEMIST AND COMPUTER</b> <b>B.</b> General introduction to computers, components of computer, hardware and

		trend in periodic table and applications in predicting and explaining the chemical behavior.	Structure and reactivity of reaction intermediates-Carbocation, carbanions, free radicals, carbenes and nitrenes.	software, input and output devices: binary numbers. Introduction to computer languages. Programming. Operation systems.
<b>September</b>	<b>UNIT – II</b>	<b>CHEMICAL BONDING</b> Valence bond theory and its limitations. Directional character of covalent bond, various types of hybridization and shape of simple inorganic molecules and ions. Valence shell electron pair repulsion theory (VSEPR) to $\text{H}_2\text{O}$ , $\text{NH}_3$ , $\text{SF}_4$ , $\text{H}_3\text{O}^+$ , $\text{ClF}_3$ and $\text{ICl}_2^-$ . Homonuclear and heteronuclear bond strength and bond energy, percentage ionic character from dipole moment and electronegativity difference.	<b>STEREOCHEMISTRY OF ORGANIC COMPOUNDS</b> <b>A.</b> Optical. Isomerism - enantiomers, diastereomers, threo and erythro, meso compound, resolution of enantiomers. inversion, retention and racemization, Relative and absolute configuration. Sequence rules. D and L and R & S systems of nomenclature. <b>B.</b> Geometrical isomerism - Syn and anti-forms, E & Z system of nomenclature, properties of cis-trans isomers.	<b>A. MOLECULAR VELOCITIES</b> Root mean square velocity average and most probable velocities. Maxwell's law of distribution of molecular velocities of gases, (Graphical interpretation), effect of temperature on distribution of molecular velocities, collision frequency, mean free path, Joule-Thompson effect, Liquification of gases. <b>B.</b> Deviation from ideal behaviour, Real gases, Vander Waal's equation of state. Relationship. Vander Waal's constant and critical constants, Law of corresponding state.
<b>October</b>	<b>UNIT – III</b>	<b>CHEMICAL BONDING</b> <b>Ionic solids-</b> Ionic structure, Radius ratio and coordination numbers, limitations of radius ratio rule, lattice defects,	<b>ALIPHATIC AND AROMATIC RING COMPOUNDS</b> <b>A.</b> Cycloalkanes- Nomenclature, methods of formation, chemical reactions, Bayer's strain theory	<b>A. LIQUID STATE</b> Inter molecular forces, magnitude of intermolecular force, structure of liquids. Properties of liquids, viscosity and surface tension.

		semiconductors, lattice energy Born-Haber cycle, Solvation energy and solubility of ionic solids, polarizing power and polarisability of ions, Fajan's rule, Metallic bond, band free electrons, Valence bond and Band theory. ,	and its limitations. Ring's strain in small rings (cyclopropane and cyclobutane), theory of strain less rings. The case of cyclopropane ring: banana bonds. <b>B.</b> Mono-nuclear and polynuclear aromatic ring. Structure of benzene & naphthalene. Molecular formula and Kekule structure.	<b>B.</b> Ideal and non-ideal solutions, modes of representing concentration of solutions, activity and activity coefficient.
<b>November</b>	<b>UNIT – III &amp; IV</b>	<b>UNIT-IV A. s-BLOCK ELEMENTS</b> Comparative study, Saliient features of hydrides, solvation and complexation tendencies including their function in biosystems and introduction to alky & aryl, Derivative of alkali and alkaline earth metals	<b>UNIT- III ALIPHATIC AND AROMATIC RING COMPOUNDS</b> Aromatic electrophilic substitution. General pattern of the mechanism, role of $\sigma$ and $\pi$ complexes. Electrophilic substitution in naphthalene. <b>UNIT- IV ALKENES, DIENES AND ALKYNES</b> <b>A.</b> Mechanism of dehydration of alcohols. <b>B.</b> Chemical reactions of alkenes- Mechanisms involved in electrophilic and free radical additions,	<b>UNIT- III A. LIQUID STATE</b> Dilute solution: Colligative Properties, lowering of vapour pressure of solvent, Raoult's law, Osmosis, van Hoff Theory of dilute solutions, measurements of Osmotic pressure, relationship between lowering of vapour pressure and osmotic pressure. Elevation of boiling point. Depression in freezing point, abnormal molar masses, Depression of dissociation and association of solutes, Vant Hoff factor. <b>UNIT- IV A. LIQUID CRYSTALS</b> Difference between liquid Crystal, solids and liquids, Classification. Structure "of

			hydroboration-oxidation, oxymercuration-reduction, epoxidation. Substitution at the allylic and vinylic positions of alkenes. Structure of allenes and butadiene, chemical Reaction- 1,2 and 1,4 addition.	nematic and cholestric phases, Thermography. Seven segment cell, applications of liquid Crystals.
<b>December</b>	<b>UNIT –IV</b>	<b>UNIT-IV B: CHEMISTRY OF NOBLE GASES</b> Chemical properties of the noble gases, Chemistry of xenon, structure, bonding in xenon compounds.	<b>UNIT- IV ALKENES, DIENES AND ALKYNES</b> Diel-Alder reaction. Chemical reactions of alkynes and acidity of alkynes. Electrophilic and nucleophilic addition reactions, hydroboration and oxidation with ozone and $\text{KMnO}_4$ .	<b>UNIT- IV B. COLLOIDAL STATE</b> Classification, Optical. Kinetic, and Electrical Properties of colloid. Coagulation, Hardy Schulze law, flocculation value. Protection, Gold number, Emulsion, micelle. Gel. Syneresis and thixotrophy. Application of colloid. <b>C. SOLID STATE</b> Space lattices, unit cells. Elements of Symmetry in crystallize solids, X-rays diffraction, Miller's indices, identification of unit cell by Braggs Spectrometer, Powder method, Neutron and electron diffraction (Elementary idea only)

January	UNIT – V	<p><b>UNIT-V p-BLOCK ELEMENTS</b></p> <p>Halides, hydrides, oxides and oxoacids of Boron, Aluminum, Nitrogen and Phosphorus, Boranes, Borazine, fullerenes, and silicates, interhalogens and pseudo halides.</p> <p><b>B. INORGANIC CHEMICAL ANALYSIS</b></p> <p>Chemical principles involved in the detection acids and basic radicals including interfering radicals.</p>	<p><b>UNIT- V ARENES AND AROMATICITY</b></p> <p><b>A. ALKYL HALIDES AND ARYL HALIDES</b></p> <p>Mechanism and stereochemistry of nucleophilic substitution reactions and alkyl halides and aryl halides with energy profile diagrams. <math>SN_1</math>, <math>SN_2</math>, <math>SN_i</math> mechanisms.</p> <p><b>B. Mechanisms and stereochemistry of elimination reaction and alkyl halides.</b></p> <p>Elimination Vs Substitution.</p>	<p><b>UNIT- V A. CHEMICAL KINETICS</b></p> <p>Rate of reaction, Factors influencing rate of reaction, rate constant. Order and molecularity of reactions. Zero, first and second order reaction, methods of determining order of reaction. Complex reactions: Consecutive, opposing and side reactions, Chain reactions. Temperature dependence of reaction rate, Arrhenius theory, Physical significance of Activation energy, collision theory, demerits of collision theory, non-mathematical concept of transition state theory.</p> <p><b>B. CATALYSIS</b></p> <p>Homogeneous and Heterogeneous Catalysis, types of catalyst, characteristics of catalyst. Enzyme Catalysed reactions. Micellar catalysed reactions. Industrial applications of Catalysis</p>
February	DOUBT CLASS	REVISION AND PRACTICAL EXAM.	REVISION AND PRACTICAL EXAM.	REVISION AND PRACTICAL EXAM.

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**TEACHING PLAN COMPUTER SCIENCE SESSION 2016-17**

**B.SC I COMPUTER SCIENCE  
PAPER-I  
COMPUTER HARDWARE**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT I- General Overview Of Computer Hardware :</b> <b>(a) introduction to computer :</b> computer vs-calculator & typewriter ; parts of a computer ; the system unit/inside the system unit, cpu; ram-keyboard storage media floppy & hard disk; monitor, mouse; printer; types of computer, evolution of personal computer from pc-xt,pc-at (286) to Pentium pc . hardware & software, types of software : system software, application software, introduction to programming languages, procedural oriented languages, structured programming, object oriented programming, languages [ex. basic, Cobol, Pascal, c, c++,visual basic, java & c#]. type of operating system “ introduction to dos, Unix, windows, simple dos commands and features of Unix & working of windows.
<b>AUGUST</b>	<b>UNIT I- computer system operation</b> number system: unary system, decimal system, binary system conversions, addition, subtraction by 9's and 10's complements and by 1's and 2's complements. binary multiplication & division ; octal number system & hexadecimal number system and use.  <b>UNIT II- computer digital electronics - part a :</b> <b>(a) computer communication code-</b> ' binary code, 8421 code; excess 3 code; parity code-, grey code ascii & ebcdic codes.
<b>SEPTEMBER</b>	<b>UNIT II- computer logic system logic gates :</b> diode and bjt as switch; response of bjt to square waves, new logic, mathematical logic, basic logic operators/gates,and, or, not operator./ gate, positive and negative logic, nor & nand gates, boolean, equations by logic symbol.  <b>UNIT III- computer digital electronic - part b :</b> <b>(A) integrated circuits for computer logic family :</b> electrical characteristics, propagation delay noise immunity,types of load rtl,dttl,ttl & como bipolar & mos integration circuits, ttl circuits.

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<b>OCTOBER</b>	<b>UNIT III-</b> (b) <b>basic done of digital circuitry, boolean algebra:</b> laws of boolean algebra,demorgans theorem,dual nature of boolean laws, boolean expression and logic diagram. the karnaugh map, truth table to 'k-map, simplification of k-map.  (c) <b>computer logic circuits</b> : ex-or, ex-nor circuitary, half and full adder, half and full subtractor, subtraction by 1's & 2's compliments
<b>NOVEMBER</b>	<b>UNIT IV-</b> computer digital electronics-part c : (a) more computer logic circuit combinational logic circuits : encoder & decoder, four bit binary, decoder, bcd to 7 segment, decoder encoder, multiplexers & demultiplexers, data transmission, logic function generator.
<b>DECEMBER</b>	<b>UNIT IV-(b) multivibrator circuits</b> : monostable, astable & bistable circuits, smitt trigger,rs flip-flop, rs flip-flop using nor gate and nand gate, ' clocked-rs flip-flop,d flip-flop or latch, edge triggered flip-flop, preset and clear, propagation delay-set-up time, hold time master-slave flip flop.
<b>JANUARY</b>	<b>UNIT V- computer digital electronics-part d:</b> (a) <b>computer counters-and shift registers:</b> binary counter, down counter, parallel or synchronous counter, counter with feedback, code-7 precision time interval,monitor horizontal to vertical generator, shift registers in brief, application of shift registers. (b) <b>computer memories</b> :types of memory, ram, rom, prom, eprom, dram, sram.
<b>FEBRUARY</b>	<b>REVISION + PRACTICAL EXAM</b>

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**B.SC I COMPUTER SCIENCE  
PAPER-II  
COMPUTER SOFTWARE**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<p><b>UNIT I- fundamentals for using the computer :</b></p> <p><b>(a) driving the computer</b></p> <p>(1) computer operating system &amp; other software :     (i) windows &amp; unix system software &amp; their versions.     (ii) hll software : basic, cobol, pascal,c,c++, visual basic, java &amp; c#     (iii) package software's - ms-office &amp; foxpro.</p> <p>(2) introduction to dos ver 6.22 &amp; windows-95, windows-98 &amp; windows-2000.</p> <p>(3) windows concept, various features &amp; advantages, windows structure, desktop,taskbar, start menu, my computer, recyclebin.</p> <p>(4) accessories : calculator notepad , paint, wordpad, character map, explorer : creating folders and other explorer facilities.</p> <p>(5) object linking &amp; embedding. communication- dialup networking, phone dialer.</p>
<b>AUGUST</b>	<p><b>UNIT I-</b></p> <p><b>(b) general idea of problem solving with computers</b>     problem analysis &amp; solving scheme, computational procedure, program outline, algorithm pseudo codes, flow chart, testing of flow chart, branching and looping,writing executing &amp; testing the program with examples.</p> <p><b>(c) programming constants and variables</b>-character set, constants (numeric string), variables(numeric &amp; string),rules for arithmetic expression and hierarchy of operations, relational expressions, logical expressions and operator, library functions.</p> <p><b>UNIT II-working with ms-office</b></p> <p><b>introduction to word :</b> basic of wordproccessing ; features and advantages of word processing ; creating, editing, formating &amp; previewing documents ; advanced features; using thesaurus, mail merge, table &amp; charts, implementing ole concept.</p> <p><b>Practical-</b> Giving the general idea of how to start computer. Basic knowledge of computer. How to open ms office and then introduction of ms word and its usage and some practical on ms word.</p>

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<b>SEPTEMBER</b>	<p><b>UNIT II- introduction to excel</b> : worksheet basics, creating, opening &amp; moving in worksheet, working with formula &amp; cell referencing, absolute &amp; relative addressing, working with ranges, formatting of worksheet, graphs &amp; charts, database, function and macros.</p> <p><b>introduction to power point</b> : creating a presentation, modifying visual elements adding objects, applying transitions, animations and linking, preparing, handouts, presenting a slide show</p> <p><b>working on internet</b>  <b>introduction to internet</b> : concept of internet, application of internet, services on internet, world wide web(www) &amp; web browsers, working with internet explorer, introduction to internet search engines, yahoo, alta vista, google etc. surfing the internet, chatting on internet electronic mail (e-mail), working with outlook express; overview of telnet &amp; ftp (file transfer protocol) services. internet security, web security firewalls, type of firewalls.</p> <p><b>Practical-</b> basic skills on ms excel,how to use it and practicing on calculations and how to use formula.          After excel learning about powerpoint presentation, how to make presentation ,usage of transition, animation and many more about presentation.</p>
<b>OCTOBER</b>	<p><b>UNIT III- programming with c : part -a</b>          introduction character set, identifiers and keywords, variables, displaying variables, reading variables, character and character string, qualifiers, type define statements, value initialized variables, constants, constants qualifier, operators and expressions, operator precedence and associativity          basic input output : single character i/o general outputs, types of characters in format string, scanf with specifier,searchset arrangements and supression character, format specifier for scanf control structure : if-statement, if else statement, multiway decision compound statement.</p> <p><b>Practical</b> – learn how to use c environment ,basic of c software and how to write program, compiling and running a program.</p>

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<b>NOVEMBER</b>	<p><b>UNIT III-</b> loops : for-loop, while loop do-while loop, break statement, switch statement continue statement, goto statement, functions function main, function accepting more than one parameter, user defined and library function, concept associatively with functions, function parameter, return value, recursion comparisons, of iteration and recursion variable length argument list.</p> <p><b>UNIT IV- programming with c : part-b</b> scope operator, arrays, strings, multidimensional arrays, strings, array of strings, function in string, pointers: definition and use of pointer, address operator, pointer variable, referencing pointer, void pointers, pointer arithmetic, pointer to pointer.</p> <p><b>Practical-</b> learning about how to deal with error in program ,practicing program on various control structure,looping and arrays.</p>
<b>DECEMBER</b>	<p><b>UNIT IV-</b> pointer and arrays, passing arrays to functions. pointer and functions, accessing array inside functions, pointers and two dimensional arrays, array of pointers, pointer constants, pointer and strings.</p> <p><b>UNIT V- programming with c : part-c</b> structure and union, declaring and using structure, structure initialization, structure within structure.</p> <p><b>Practical-</b> program on pointers and its types ,function, strings.</p>
<b>JANUARY</b>	<p><b>UNIT V-</b> operations of structure, array of structure, array within structure, creating user defined data type, pointer to structure and function. union, difference between union and structure, operation on union, scope of union.dynamic memory allocation, library function for dynamic memory allocation, dynamic multi dimensional arrays, self-referential structure, file:- introduction, structure, file handling, functions file types, unbuffered and buffered file, error handling, low level file input-output.</p> <p><b>Practical-</b> practice on program based on structures and union.</p>
<b>FEBRUARY</b>	<b>REVISION + PRACTICAL EXAM</b>

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**B.Sc – II COMPUTER SCIENCE  
PAPER –I  
COMPUTER HARDWARE**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>Unit I- classification and organization of computers</b> -digital and analog computers and its evolution. major components of digital computers; memory addressing capability of cpu; word length and processing speed of computers; microprocessors single chip microcomputers; large and small computers.
<b>AUGUST</b>	<b>UNIT I-</b> users interface hardware, software and firmware. multiprogramming, multiuser system. dumb smart and intelligent terminals computer network and multi processing, lan parallel processing, flinn"s classification of computers. control flow and data flow computers.  <b>UNIT II- central processing unit</b> -cpu organization, alu, control unit.
<b>SEPTEMBER</b>	<b>UNIT II-</b> registers. instructions of intel 8085. instruction word size, various addressing mode interrupts and exceptions, some special control signals and i/o devices, instruction cycles, fetch and execution operation, time diagram, data flow.  <b>UNIT III- memory of computers</b> -main memory, secondary memory, back up memory, cache memory.
<b>OCTOBER</b>	<b>UNIT III-</b> real and virtual memory. semiconductor memory, memory controller and magnetic memory.ram disks, optical disks, magnetic bubble memory, dasd, destructive and nondestructive readout ,program of data memory and mmu.
<b>NOVEMBER</b>	<b>UNIT IV-</b> i/o devices of microcontroller; processors, i/o devices, printer . other output devices; i/o port, serial data transfer scheme, micro controller, signal processors, i/o processor, arithmetic processors.
<b>DECEMBER</b>	<b>UNIT V- system software and programming technique</b> ml, al, hll, stac subroutine ,debugging of programs, macro micro programming, program design, software development.
<b>JANUARY</b>	<b>UNIT V-</b> flow & chart multi programming, multiuser, multitasking protection, operating system and utility program, application packages.
<b>FEBRUARY</b>	<b>REVISION + PRACTICAL EXAM</b>

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**B.Sc – II COMPUTER SCIENCE  
PAPER –II  
COMPUTER SOFTWARE**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<p><b>UNIT I-</b> html basics &amp; website design principles concept of website, web standards, what is html? html versions, naming scheme for html documents, html document /file, html editor, explanation of the structure of the home page, elements in the html documents, html tags, basic html tags, comment tag in html, viewing the source of a webpage, how to download the web page source? xhtml, css, extensible markup language (xml) extensible style sheet language (xsl), some tips of designing webpages, html document structure. html document structure- head section, illustration of document structure, &lt;base&gt; element, &lt;isindex&gt; element,&lt;link&gt; element, meta, &lt;title&gt; element, &lt;script&gt;. element, practical applications, html document structures- body section:- body elements and its attributes: back ground: back ground color; text: link; active link (alink); visited link (vlink).</p> <p><b>Practical-</b> introduction to html program editor ,how to write html programs, running html program and running html programs.</p>
<b>AUGUST</b>	<p><b>UNIT I-</b> left margin; top margin, organization of elements in the body of the document; text block elements; text emphasis elements; special elements- hyper text anchors, character- level elements; character references, text block elements; hr (horizontal line); hn (headings); p (paragraph); lists; address: blockquote; table; div(html 3.2 and up); pre (preformatted; form, text emphasis elements, special; elements- hypertext anchors, character- level elements; line breaks (bra) and images (img), lists, address element, blockquote elements, table elements, comments in html, character emphasis modes, logical and physical styles, net scape, microsoft and advanced standard elements list, font, basefont, and center.</p> <p><b>Practical-</b> html programs on various tags like body and its elements,using table tag,address tag,image tag,font tag,list tag.</p>

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<b>SEPTEMBER</b>	<p><b>UNIT II-</b> image, internal and external linking between webpages netscape, microsoft and advanced standard elements list, font ,basefont and center ,insertion of images using the element img (attributes; src (source), width, heighth, alt (alternative), align, image (in line images), element and attributes, illustration of img alignment, images as hyper text anchors,internal .</p> <p><b>Practical-</b> practicing program on anchor tag, paragraph tag, heading tag ,links frames and many more.</p>
<b>OCTOBER</b>	<p><b>UNIT II-</b> external linking between web pages hyper text anchor, href in anchors, links to a particular place in a document, name attribute in an anchor, targeting name anchors, title attribute, practical it application designing web pages links with each other, designing frames in html. practical examples.</p> <p><b>UNIT III-</b> introduction to oop advantages of oop, the object oriented approach, characteristics of object oriented languages- object, classes, inheritance, reusability, polymorphism and c++. function: function declaration, calling function.</p> <p><b>Practical-</b> how to use cpp environment ,writing program,running and compiling a program.</p>
<b>NOVEMBER</b>	<p><b>UNIT III-</b> function defines, passing arguments to function, passing constant, passing value, reference argument, returning by reference, inline function, function overloading, default arguments in function.</p> <p><b>UNIT IV-</b> object classes and inheritance object and class, using the class, class constructor, class destructors, object as function argument, copy constructor.</p> <p><b>Practical-</b> programs on inheritance,constructor,class and objects.</p>
<b>DECEMBER</b>	<p><b>UNIT IV-</b>struct and classes, array as class member, static class data, static member functions, friend function, friend class, operator overloading, type of inheritance, base class, derive class, access specifier protected, function overloading, member function, string, template function.</p> <p><b>UNIT V-</b>pointers and virtual function pointers: &amp; and * operator pointer variables, pointer to pointer.</p> <p><b>Practical-</b> programs on array,function,friend class,operator overloading,strings,templates.</p>



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<b>JANUARY</b>	<b>UNIT V</b> -void pointer , pointer and array, pointer and function, pointer and string, memory management, new and delete, pointer to object, this pointer virtual function: virtual function, virtual member function, accesses with pointer, pure virtual function. file and stream: c++ streams, c++ manipulators, stream class, string i/o ,char i/o, object i/o, i/o with multiple object, disk i/o.  <b>Practical-</b> programs on various logics,pointers and many more.
<b>FEBRUARY</b>	<b>REVISION + PRACTICAL EXAM</b>

**B.Sc – III COMPUTER SCIENCE  
PAPER –I  
COMPUTER HARDWARE**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT I- ORGANISATION OF MICRO-PROCESSOR &amp; MICRO COMPUTER:-</b>  <b>1. INTRODUCTION &amp; ORGANIZATION OF MICRO COMPUTER:</b> (a) basic components of micro computer: basic block; prom ram memory;data memory; i/o ports; clock generator; integration of functional blocks. (b) interconnecting components in a micro computer: necessary functional block; bussed architecture for microcomputer; memory addressing; addressing i/o ports; comparison of i/o mapped and memory mapped i/o. (c) input output techniques: non-cpu devices, program & interrupt controlled i/o; hardware controlled i/o or dma.  <b>2. AN INTRODUCTION TO THE VARIOUS AS:</b> (a) general understanding of different $\mu$ p or cpu: intel 8088, 286, 386, 486, 586 pentium, p54c, mmx p55c; motorola 6800 & 88100 series; cyrix & amd cpus.

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<b>AUGUST</b>	<p><b>UNIT I-</b> (b) the registers of cpu: (give example of p-8088) register organization of 8088, scratch pad segment, pointer, index and flag, registers. (c) memory addressing modes of p-8088: segment offset; data addressing modes; addressing for branch instructions. (d) i/o addressing with p-8088: memory mapped i/o &amp; i/o mapped i/o.</p> <p><b>UNIT II- SYSTEM HARDWARE ORGANISATION OF COMPUTERS:</b></p> <p>1. Hardware Organization Of The Personal Computer :</p> <p>(a) block diagram with various parts of pc. (b) the mother board of general p.c.: 8088 cpu; rom &amp; ram; keyboard &amp; its interface; system timer/counters; hardware interrupt vectoring; dma controller &amp; channels; interfacing to audio speaker; bus slots &amp; factory cards. (c) the serial i/o ports, com-1 &amp; com-2. (d) the parallel port for printer. (e) expansion slots for ram. (f) disk controllers: for floppy, hard disk, cd-rom &amp; cassette drives.</p>
<b>SEPTEMBER</b>	<p><b>UNIT II- THE VIDEO DISPLAY OF PCS:</b></p> <p>(a) video monitors ; monochrome and colour. (b) video display adapters &amp; their video modes; monochrome &amp; colour graphics adapters. (c) video control through ansi-sys. (d) video control through rom-bios :int 10h. (e) direct video control; monochrome &amp; colour graphics adapters. (f) installing customized character sets.</p> <p><b>UNIT III- ORGANISATION OF OPERATING SYSTEM WITH SYSTEM HARDWARE:</b></p> <p><b>1. THE ROM-BIOS SERVICES:</b></p> <p>(a) introduction to unix, enix, sun, solaris, dos &amp; mac with special reference to dos &amp; windows it's ver., as dos becomes more popular than others in pcs. (b) the rom-bios diskette services, int 13h. (c) the rom-bios serial port services, int 14h. (d) the rom-bios keyboard services, int 16h. (e) the rom-bios printer services, int 17h. (f) miscellaneous service provided by the rom-bios: int 05h, int 11h, int 12h, int 18h, int 19h, int 1ah.</p>

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<b>OCTOBER</b>	<p><b>UNIT III- 2. the fundamental of operating system viz. dos/windows:</b></p> <p>(a) the loading of dos &amp; its basic structure ; rom bootstrap, io.sys, dos.sys &amp; command.com.</p> <p>(b) the execution of the programs under dos; exec functions , program segment prefix; features of com &amp; exe program files.</p> <p>(c) device handling by dos; fdd,hdd,con, keyboard, prn, aux, clock and nul devices; block devices; character devices; driver installation sequence.</p> <p>(d) file structures of dos;</p> <p>(e) the dos interrupts: int 20h-2fh</p> <p>(f) the dos functions through int 21h; discuss only the understanding part of various other dos function to handle hard &amp; softwares.</p> <p>(g) installation of windows: important system files in windows.</p>
<b>NOVEMBER</b>	<p><b>UNIT IV-ORGANIZATION &amp; HANDLING BY OPERATING SYSTEMS:</b></p> <p><b>1. disk and files under dos;</b></p> <p>(a) logical structure of a disk; organization of disk for use ; boot record; fat files; disk or root directory.</p> <p>(b) file organization on a dos disk; logical volumes; sub directories; volume lables.</p> <p>(c) manipulating files under dos: file attributes; date and time, file access; fcb functions.</p> <p><b>2. memory allocation, program loading and execution;</b></p> <p>(a) memory management under dos; exec loader: memory management and its functions; modifying a program's memory allocation.</p>
<b>DECEMBER</b>	<p><b>UNIT IV- (b) loading and executing programs under dos: the exec function; memory considerations; parameter blocks; calling &amp; returning from exec.</b></p> <p>(c) loading the program overlays through exec.</p>

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<b>JANUARY</b>	<b>UNIT V-organization of hardware by operating systems</b> 1. <b>interrupt handling through dos;</b> (a) types of interrupts.   (b) interrupt vector table in pc. (c) interrupt service routines. (d) special interrupts in pc: clock interrupt; the c or break interrupt; dos reserved interrupt int 28h; patching memory resident routines. 2. <b>filters for dos:</b> (a) filters in operating systems.   (b) redirection of i/o under dos. (c) the filters supplied with dos.   (d) writing filters to run under dos. 3. <b>handling of various versions of windows o.s.:</b> (a) setup installation. (b) troubleshooting. (c) networking features.
<b>FEBRUARY</b>	<b>REVISION + PRACTICAL EXAM</b>

**B.Sc – III COMPUTER SCIENCE  
PAPER –II  
COMPUTER SOFTWARE**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT I-concept of d.b.m.s and data models</b>  (a) introduction of dbms: - purpose of data base systems, views of data , data modeling, database languages, transaction management, storage management, database administrator and user, database system structure.  (b) e-r model: basic concepts, constraints, keys , mapping constraint, e-r diagram, weak and strong entity sets, e-r database schema, reduction of an e-r schema to table.

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<b>AUGUST</b>	<p><b>UNIT II-relational database management system</b></p> <p>(a) relational model: structure of relational database, relational algebra, domain relational calculus, extended relational-algebra operation, modification of database, views.</p> <p>(b) relational database design: pitfalls in relational database design, decomposition functional dependencies, normalization: 1nf, 2nf, bcnf, 3nf, 4nf, 5nf.</p> <p><b>Practical-</b> learning about oracle environment. how to open software, running and debugging a simple program.</p>
<b>SEPTEMBER</b>	<p><b>UNIT III-introduction to rdbms software-oracle</b></p> <p>(a) introduction : introduction to personal and enterprises oracle , data types, commercial query language, sql, sql *plus.</p> <p>(b) ddl and dml: creating table, specifying integrity constraint, modifying existing table, dropping table, inserting deleting and updating rows in as table. where clause, operators, order by, group function, sql function, join, set operation, sql sub queries. views: what is views, create, drop and retrieving data from views.</p> <p>(c) security : management of roles, changing password, granting roles &amp; privilege, with drawing privileges.</p> <p><b>Practical-</b> making tables and performing various operations on table like updating a table, altering a table, deleting a table etc.</p>
<b>OCTOBER</b>	<p><b>UNIT III-</b> pl/sql: block structure in pl/sql, variable and constants, running pl/sql in the sql *plus, data base access with pl/sql, exception handling, record data type in pl/sql, triggers in pl/sql.</p> <p><b>UNIT IV- g.u.i programming</b></p> <p>(a) introduction to visual basic: event driven programming, ide, introduction to object , controlling objects, models and events, working with forms, mdi form working with standard controls.</p> <p><b>Practical-</b> practicing on pl sql programs and vb environment.</p>

## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>NOVEMBER</b>	<p><b>UNIT IV-</b> overview of variables, declaring, scope, arrays, user defined data types, constants, working with procedures: function, subroutine and property. working with data, time, format, string and math's function. controlling program execution: comparison and logical operators , if..then statements, select case statement. looping structures, exiting a loop error trapping and debugging.</p> <p>file organization : saving data to file, sequential and random access file. the designing and coding.</p> <p><b>Practical-</b> practicing vb programs based on conditions ,looping, mdi forms, functions, strings.</p>
<b>DECEMBER</b>	<p><b>UNIT V-DATA BASE PROGRAMMING IN VB:</b></p> <p>(a) introduction :- concept of dao,rdo,ado, input validation : field &amp; form level validation, ado object model: the ado object hierarchy, the connection object, the command object, record set object, parameter object, field object, record object, stream object, error object parameter object.</p> <p>(b) <u>U</u>sing bound control to present ado data; using the ado data control, ado data control properties, binding simple controls: data list, data combo, data grid, data form wizard: single form wizard, grid form, master/detail form. programming the ado data control: refresh method, event, hierarchical flex grid control.</p> <p><b>Practical</b> –programs on various logics using different controls of vb.</p>
<b>JANUARY</b>	<p><b>UNIT V-</b> data environment &amp; data report: creating connection, using command object in the data environment, data environment option and operation, binding form to the data environment, ado events in the data report, print preview, print, export, data report in code: data reports events, binding data reports directly.</p> <p><b>Practical-</b> learning how to use various connectivity ,events and using database through vb programs.</p>
<b>FEBRUARY</b>	<p><b>REVISION + PRACTICAL EXAM</b></p>

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**PGDCA I<sup>ST</sup> SEMESTER**

**PAPER I-INTRODUCTION TO SOFTWARE ORGANISATION**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>AUGUST</b>	<p><b>UNIT I- Introduction to Computers</b></p> <p>Computers – Introduction, Computer System Characteristics, Strength and Limitations of Computer, Development of Computers, Types of Computers, Generations of Computers. Introduction to Personnel Computers – Uses of PC"s, Components of PC"s, Evolution of PC"s, Developments of Processors, Architecture of Pentium IV, Configuration of PC"s; Input Device; Output Devices.</p> <p><b>UNIT II- Computer Organization</b> Central Processing Unit – Arithmetic Logic Unit, Control Unit, Registers, Instruction Set.</p>
<b>SEPTEMBER</b>	<p><b>UNIT II- Storage Devices</b> – Storage and its need, Storage Evaluation Units, Primary Storage, Secondary Storage, Data Storage and Retrieval Systems, SIMM, DIMM, Types of Storage Devices.</p> <p><b>UNIT III-: Computer Software</b> Basics of Software – needs of Software, Types of Software; Free Domain Software; Open Source Software; Compiler, Interpreter and Assembler; Linker and Loader; Debugger; Integrated Development Environment;</p>
<b>OCTOBER</b>	<p><b>UNIT III- Operating System</b> – Introduction, Uses of OS, Functions of OS, Booting process, Types of Reboot, Booting from different OS, Types of OS, DOS, Windows, Linux.</p> <p><b>UNIT – IV : Programming Languages</b> – Introduction, Comparison between Human and Computer Language; Program; Data, Information and Knowledge; Characteristics of Information; Types of Programming Languages; Generations of Languages; Program Development Steps; Programming Paradigms; Object-Oriented Programming; Structured Programming, Functional Programming, Process Oriented Programming</p>

## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>NOVEMBER</b>	<b>UNIT – V : Communication, Networks and Internet</b>  Communication – Introduction, Communication process, Communication Types, Communication Protocols, Communication Channels/Media. Networks – Introduction; Types of Network; Topology; Media - NIC, NOS, Bridges, HUB, Routers, Gateways. Internet –Introduction, Growth of Internet, Owner of Internet, Internet Service Provider, Anatomy of Internet, ARPANET and Internet History of World Wide Web, Services Available on Internet -File Transfer Protocol, Gopher, E-mail, Telnet, Newsgroups, WWW, Applications of Internet.
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### **PAPER II- PROGRAMMING IN ‘C’**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>AUGUST</b>	<b>UNIT I : Introduction :</b>  Introduction Character set, Identifiers and Keywords, Variables, Displaying variables, Reading Variables, Character and Character String, Qualifiers, Type define Statements, Value initialized variables, Constants, Constant Qualifier, Operators and Expressions, Operator Precedence and Associativity, Basic input output: Single Character I/O, Types of Characters in format string, Scanf with specifier.  <b>UNIT II : Control Structures :</b> Control Structure: If - statement, If -else statement, Multi decision, Compound Statement,  <b>Practical-</b> how to use c software, how to run and compile a c program.
<b>SEPTEMBER</b>	<b>UNIT II- Loops:</b> For - loop, While -loop, Do-While loop, Break statement, Switch statement, Continue statement, Go to statement.  <b>UNIT III- Functions &amp; Arrays :</b> Functions : Function main , Functions accepting more than one parameter, User defined and library functions, Concept associatively with functions, function parameter, Return value, recursion comparisons of Iteration and recursion variable length argument list.  <b>Practical-</b> basic c programs like addition of numbers, swapping numbers etc., programs based on control structure and looping.



## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>OCTOBER</b>	<p><b>UNIT III- Arrays :</b> Scope and Extent, Multidimensional Arrays, Array of Strings, Function in String, passing arrays to functions, accessing array inside functions.</p> <p><b>UNIT IV- Pointers :</b></p> <p>Pointers: Definition and use of pointer, address operator, pointer variable, referencing pointer, void pointers, pointer arithmetic, pointer to pointer, pointer and arrays, pointer and functions, pointers and two dimensional arrays, array of pointers, pointers constants, pointer and strings.</p> <p><b>Practical-</b> programs based on array and its types, pointers, function, strings.</p>
<b>NOVEMBER</b>	<p><b>UNIT V- Structure and Union :</b></p> <p>Declaring and using Structure, Structure initialization, Structure within Structure, Operations on Structures, Array of Structure, Array within Structure, Creating user defined data type, pointer to Structure and function. Union, difference between Union and Structure, Operations on Union, Scope of Union.</p> <p><b>Practical-</b> programs based on structure and union.</p>

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**PAPER III- OFFICE AUTOMATION & TALLY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>AUGUST</b>	<p><b>UNIT – I : Windows Concept</b></p> <p>Windows Concepts, Features, Structure, Desktop, Icons, Taskbar, Start Menu, My Computer, Recycle Bin, My document, creating shortcut. Accessories : Calculator, Notepad, Paint, WordPad, Character Map. Windows Explorer : Creating files &amp; folders and other Explorer facilities, Object Linking &amp; Embedding. Communication : Dialup Networking, Phone Dialer. Difference among windows versions.</p> <p><b>UNIT – II : Word Processing &amp; Spreadsheet</b></p> <p><b>Word</b> : Creating, Editing, &amp; Previewing Documents, Formatting, Advanced Features, Using Thesaurus, Mail Merge, Table &amp; Charts, Handling Graphics, Converting Word Documents into other Formats.</p> <p><b>Practical</b>- basic computer knowledge, using of wordpad, notepad. Various program based on microsoft word .</p>
<b>SEPTEMBER</b>	<p><b>UNIT II-Excel</b> : Worksheet Basics, Creating, Opening, &amp; Moving in Worksheet, Working with Formula &amp; Cell referencing, Absolute &amp; Relative addressing, Working with Ranges, Formatting of Worksheet, Graphs &amp; Charts, Database, Function, and Macros</p> <p><b>UNIT – III : Power Point &amp; FoxPro</b> <b>Power Point</b> : Creating a presentation, Modifying visual Elements, Adding objects, Applying Transitions, animations and linking, Preparing handouts, presenting a slide show.</p> <p><b>FoxPro</b> : Preparing Database files, access &amp; retrieval of records in a data base file, inserting &amp; deleting of records. Programming preliminaries. Sorting &amp; Indexing. Development of programs. LOOPING, Branching, report making.</p> <p><b>Practical</b>- programs on ms excel ,how to various functionalities of ms excel, powerpoint and foxpro.</p>

## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>OCTOBER</b>	<p><b>UNIT – VI : Access</b></p> <p>Introduction to MS Access, The Tables of a Database, Introduction to the Record of a Table, Introduction to Controls Design, Details on Controls Design, The Characteristics of a Table, The Characteristics of a Form, The Characteristics of a Window Control, Data Controls, Introduction to Data Expressions, Getting Assistance With Data Entry, Database Strings, Database Numeric Values, Database Conditional Values, Database Date and Time Values, Creating Reports, Characteristics of Reports.</p> <p><b>Practical-</b> learning about basics of database, how to create table in ms access and performing various operations on table.</p>
<b>NOVEMBER</b>	<p><b>UNIT – V : Tally</b></p> <p>Setting up Ledger &amp; Groups. Study of recording of transactions in the *Voucher*. (According to Golden rules). Study of „Final A/C preparation &amp; displaying in different mode/format“. Study of alteration &amp; Deletion of ledger/Groups. Study of cash &amp; fund flow, day book, sales register, purchase register, bills receivable/Payable etc. Study of data security &amp; backing up data. Outline of entry for Income Tax, ED, VAT, ST/CST, PF, Gratuity, Bonus, Loans &amp; Depreciation etc.</p> <p><b>Practical-</b> about tally software and how to use it.</p>

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**PGDCA II<sup>2ND</sup> SEMESTER**

**PAPER I- PROGRAMMING IN VISUAL BASIC**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<p><b>UNIT I- Introduction to visual Basic</b> - Editions of Visual Basic, Event Driven Programming, Terminology, Working environment, project and executable files ,Understanding modules, Using the code editor window, Other code navigation features, Code documentation and formatting, environment options, code formatting option, Automatic code completion features.</p> <p><b>Creating Programs</b> - Introduction to objects, Controlling objects, Properties, methods and events, Working with forms,Interacting with the user: MsgBox function, InputBox function, Code statements, Managing forms, Creating a program in Visual Basic, Printing.</p> <p><b>Practical-</b> learning about vb environment and various controls of vb.</p>
<b>FEBRUARY</b>	<p><b>UNIT II- Variable and Procedures</b> - Overview of variables, Declaring, Scope, arrays, User-defined data types, constants working with procedures, Working with dates and times, Using the Format function, Manipulating text strings.</p> <p><b>Controlling Program Execution</b> - Comparison and logical operators, If...Then statements, Select Case Statements looping structures, Using Do...Loop structures, For...Next statement, Exiting a loop.</p> <p><b>UNIT III- Working with Controls</b> - Types of controls, Overview of standard controls, ComboBox and ListBox, OptionButton and Frame controls Menu, Status bars, Toolbars, Advanced standard controls, ActiveX controls, Insertable objects, Validation.</p> <p><b>Practical-</b> practicing vb programs based on conditions ,looping,mdi forms,programs on different controls.</p>

## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>MARCH</b>	<p><b>UNIT III- Error Trapping &amp; Debugging</b> - Overview of run-time errors, error handling process, The Err object, Errors and calling chain, Errors in an error-handling routine, Inline error handling, Error-handling styles, General error-trapping options Type of errors, Break mode Debug toolbar, Watch window, Immediate window, Local window, Tracing program flow with the Call Stack.</p> <p><b>UNIT IV-Sequential and Random Files</b> - Saving data to file,basic filling, data analysis and file, the extended text editor, Random access file,The design and codeing.<b>Data Access Using the ADO Data Control</b> - Overview of ActiveX data Objects, Visual Basic data access features, Relational database concepts Using the ADO Data control to access data.</p> <p><b>Practical-</b> programs on error handling ,connectivity and making database.using different data access controls through vb programs.</p>
<b>APRIL</b>	<p><b>UNIT IV-</b> Overview of DAO, RDO, Data Control, structured query language (SQL), Manipulating data Using Data Form Wizard.</p> <p><b>UNIT V- Report Generation</b> - Overview of Report, Data Report, Add groups, Data Environment, Connection to database Introduction to Crystal Report Generator.</p> <p><b>Advances Tools</b> - Overview of drag and drop, Mouse events, Drag-and drop basics, Date Time Control, Calendar, Print Dialog, MDI(Multiple Document Interface).</p> <p><b>Practical-</b> various vb programs on dao,rdo etc There is one vb project in 2<sup>nd</sup> sem which is done by student and guided by a subject teacher.</p>

### PAPER II- DATABASE MANAGEMENT SYSTEM

MONTH	PROPOSED PLAN
<b>JANUARY</b>	<p><b>UNIT I:- Introduction To DBMS</b></p> <p>Data, Information and knowledge, concept of DBMS, Advantages of DBMS, data independence, database administration roles, DBMS architecture, different kinds of DBMS users, importance of data dictionary, contents of data dictionary, types of database languages. Data models: network, hierarchical, relational, Introduction to ODBC concept.</p>

## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>FEBRUARY</b>	<p><b>UNIT II- E-R Model</b> Entity - Relationship model as a tool for conceptual design- entities, attributes and relationships.</p> <p>ER diagrams; Concept of keys; Case studies of ER modelling Generalization; specialization and aggregation.</p> <p><b>UNIT III- Relational Model</b> Structure to Relational Database, Relational Algebra, Extended Relational- Algebra Operation, Simple and complex queries using relational algebra.</p>
<b>MARCH</b>	<p><b>UNIT III-</b> The Domain Relational Calculus, Tuple relational calculus.</p> <p><b>UNIT IV- Relational Database Design</b></p> <p>Pitfalls in Relational Database Design, Decomposition, Functional Dependencies, Normalization: 1NF, 2NF, BCNF, 3NF, 4NF, 5NF.</p> <p><b>Practical-</b> basic knowledge of oracle software and how to make database.How to make table and running a oracle program.</p>
<b>APRIL</b>	<p><b>UNIT V- Structured Query Language :</b></p> <p><b>DDL and DML:</b> Creating Table, Specify Integrity Constraint, Modifying Existing Table, Dropping Table, Inserting, Deleting and Updating Rows in as Table, Where Clause, Operators, ORDER BY, GROUP Function, SQL Function, JOIN, Set Operation, SQL Sub Queries. Views: What is Views, Create, Drop and Retrieving data from views.</p> <p><b>Security:</b> -Management of Roles, Changing Password, Granting Roles &amp; Privilege, with drawing privileges.</p> <p><b>Practical-</b> performing various command on table like updating a table,modifying,applying different functions on table.</p>

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**PAPER III- ESSENTIALS OF E -COMMERCE & HTML**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<b>UNIT I- Introduction to Electronic Commerce</b> –The scope of E-commerce; Size, growth and future projection of E-commerce market Worldwide and in India; Internet and its impact on traditional businesses; Definition of E-commerce; Business models in E – Commerce environment; Case studies. <i>Emergence of E-commerce</i> - Ecommerce on private networks, Electronic Data Interchange (EDI), What is EDI, EDI in action, EDI basics, EDI standards, financial EDI, FEDI for international trade transaction, FEDI payment system within the US, ACH credit transfer payment system FEDI, application of EDI, benefits of EDI, Electronics Payment system,E-commerce on the web, E-commerce in India.
<b>FEBRUARY</b>	<b>UNIT II- Internet, Security and E-Commerce:</b> Security of Data/Information in Internet/web environment; Client security, Network security; Virus protection and Hacking; Security Measures: Authentication, Integrity, Privacy, Non-repudiation; Public information, Private information, firewall tunnels, encryption, secret key encryption, public key encryption, digital signature. Business–to-Business (B2B), Business-to-Consumer (B2C); Business-to-Business-to-Consumer (B2B2C) and Consumer-to-Consumer (C2C) ECommerce  <b>UNIT III- HTML Basics &amp; Web Site Design Principles</b> –Concept of a Web Site, Web Standards, What is HTML? HTML Versions, Naming Scheme for HTML Documents , HTML document/file, HTML Editor , Explanation of the Structure of the homepage , Elements in HTML Documents ,HTML Tags, Basic HTML Tags, Comment tag in HTML, Viewing the Source of a web page, How to download the web page source? XHTML, CSS, Extensible Markup Language (XML), Extensible Style sheet language (XSL), Some tips for designing web pages, HTML Document Structure. HTML Document Structure- Head Section, Illustration of Document Structure,<BASE> Element,<ISINDEX>.  <b>Practical-</b> learning about how to use html editor,making programs on it and running a html programs.Making html programs using body tag.

## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>MARCH</b>	<p><b>UNIT III-</b> Element,&lt;LINK&gt; Element ,META ,&lt;TITLE&gt; Element,&lt;SCRIPT&gt; Element ,Practical Applications, <i>HTML Document Structure-Body Section</i>:-Body elements and its attributes: Background; Background Color; Text; Link; Active Link (ALINK); Visited Link (VLINK); Left margin; Top margin ,Organization of Elements in the BODY of the document: Text Block Elements; Text Emphasis Elements; Special Elements -- Hypertext Anchors; Character-Level Elements; Character References ,Text Block Elements: HR (Horizontal Line); Hn (Headings) ; P (Paragraph); Lists; ADDRESS ; BLOCKQUOTE; TABLE; DIV (HTML 3.2 and up) ; PRE (Preformatted); FORM ,Text Emphasis Elements, Special Elements -- Hypertext Anchors ,Character-Level Elements: line breaks (BR) and Images (IMG),Lists ,ADDRESS Element, BLOCKQUOTE Element, TABLE Element ,COMMENTS in HTML ,CHARACTER Emphasis Modes, Logical &amp; Physical Styles ,Netscape, Microsoft and Advanced Standard Elements List, FONT, BASEFONT and CENTER.</p> <p><b>UNIT IV- Image, Internal and External Linking between WebPages</b> - Netscape, Microsoft and Advanced Standard Elements List, FONT, BASEFONT and CENTER. Insertion of images using the element</p> <p><b>Practical-</b> html programs based on various tag like heading tag,paragraph tag,address tag,anchor tag,pre tag etc.</p>
<b>APRIL</b>	<p><b>UNIT IV-</b> IMG (Attributes: SRC (Source), WIDTH, HEIGHT, ALT (Alternative), ALIGN),IMG (In-line Images) Element and Attributes; Illustrations of IMG Alignment, Image as Hypertext Anchor, Internal and External Linking between Web Pages. Hypertext Anchors ,HREF in Anchors ,Links to a Particular Place in a Document ,NAME attribute in an Anchor ,Targeting NAME Anchors ,TITLE attribute, Designing Frames in HTML.</p> <p><b>UNIT V-Creating Business Websites with Dynamic Web Pages</b> – Concept of static web pages and dynamic web pages. Hosting &amp; promotion of the web site, Domain Name Registration, Web Space allocation, Uploading / Downloading the website- FTP, cute FTP. Web Site Promotion Search Engines, Banner Advertisements.</p> <p><b>Practical-</b> html programs based on anchor tag,list tag,form tag,table tag,frame tag etc.</p>



**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**ADD ON (CERTIFICATE COURSE)**

**PAPER –I**

**COMPUTER FUNDAMENTALS & OFFICE AUTOMATION**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>AUGUST</b>	<p><b><u>UNIT I-Introduction to Computer</u></b></p> <p>1. What is Computer? Block diagram of computer. CPU, I/O Devices and Memory (RAM &amp; ROM). Secondary storage devices (Hard disk, Floppy, Magnetic tap etc.). Computer generations, Types of Computer- Analog, Digital, Hybrid &amp; general &amp; special purpose computer. Classification of computer – Micro, Mini, Mainframe &amp; Super computer</p>
<b>SEPTEMBER</b>	<p><b><u>UNIT II--Computer Software &amp; Application</u></b> What is Software? Type of Software. Introduction of System software &amp; application s/w.Generation of languages, Languages Vs Package. Type of Operating System- Single User &amp; Multi User Operating System Function of operating system. DOS software, Internal &amp; External DOS Command.</p> <p><b>Practical-</b> basic knowledge of computer,how to start and shut down the computer.Learning about desktop,icon,files,folders,recycle bin,how to do cut,copy,paste etc.</p>
<b>OCTOBER</b>	<p><b>UNIT II-</b> DOS editor. Window Concept , Multitasking , Desktop, start menu, task bar, My Computer, Accessories, Creating folders, files, Deleting, Hiding , Recycle Bin &amp; Network Neighborhood. Booting Process &amp; File System Structure, Booting Sequences, File Creation and Deletion concept for File System.</p> <p><b><u>UNIT III- Office Software: Word-Processing, Spreadsheets</u></b></p> <p><b>Word:</b> Creating ,Editing &amp; Preview Documents, Formatting ,Advanced Features, Using Thesaurus , Mail Merge, Table &amp; Charts Handling Graphics</p> <p><b>Practical-</b>making program using various ms word functionalities like using table</p>

## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>NOVEMBER</b>	<p><b>UNIT III- Excel:</b> Worksheet Basics, Creating, Opening &amp; moving in worksheet, working with Formula &amp; cell referencing, Absolute &amp; Relative addressing, working with ranges, formatting of worksheet, Graphic &amp; Charts, Database, Function and Macros.</p> <p><b>UNIT IV-<u>MS-Access</u></b></p> <p><b>Creating and working with databases:</b> Designing databases, Working with database objects, Working with Access files.</p> <p><b>Practical-</b> programs on ms excel, learning about how to use formula, different</p>
<b>DECEMBER</b>	<p><b>UNIT IV-</b> retrieval of records in a data base file, modification, insertion &amp; deletion of records, Sorting and Indexing, Working with controls &amp; charts</p> <p><b>UNIT V-<u>Introduction to Internet Application</u></b></p> <p>Concept of Internet, Application of Internet, Services on Internet, World Wide Web (www), Web Browser .</p> <p><b>Practical-</b> how to make tables in ms access and performing various operations on tables in ms access. Also learning about powerpoint presentation and its various functionalities.</p>
<b>JANUARY</b>	<p><b>UNIT V-</b> Internet search Engines: Gopher, Yahoo etc., Surfing the Internet, Electronic mail (e- mail), Internet Security Fire Walls, Type of Firewalls</p>
<b>FEBRUARY</b>	<p><b>REVISION + PRACTICAL EXAM</b></p>

### ADD ON (CERTIFICATE COURSE)

#### PAPER –II

#### Programming With “C “& Introduction to OOPs

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>AUGUST</b>	<p><b>UNIT I-</b>Introduction to “C “, Character set, Identifiers &amp; Keywords, Variables, Variable initialization, Constants, Characters, Strings, Qualifiers, Program structure.</p>

## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>SEPTEMBER</b>	<p><b>UNIT II-Control Structure:</b> - If-Statement, If-else, Nested If statements, Select case, Loops – For-loop, While-loop, Do-while loop, Nested loops, Break Statement, Continue Statement, Go to Statement.</p> <p><b>Practical-</b> how to use c software,making basic c programs ,running and compiling a c program.programs based on control structure</p>
<b>OCTOBER</b>	<p><b>UNIT III- Function:</b> - User define &amp; library function, Function Parameter, Recursive Function.</p> <p>Array: - Array, Array initialization, One dimensional Array, Two &amp; Three dimensional array, Array of Structure .</p> <p><b>Practical-</b> programs based on looping ,functions,array.</p>
<b>NOVEMBER</b>	<p><b>UNIT III- Pointer:</b> - definition &amp; Use of Pointer, Address Operator, Array of Pointers.</p> <p><b>UNIT IV-Structure &amp; Union:</b> - What is structure, declaring &amp; using structure, structure initialization.</p> <p><b>Practical-</b>programs based on pointer,array of pointer,pointer to pointer etc.</p>
<b>DECEMBER</b>	<p><b>UNIT IV- Structure within structure, Union , difference b/w Union &amp; Structure.</b></p> <p><b>UNIT V-</b> Introduction of C++, OOPs Concepts, Objects, Class, Polymorphism, inheritance,function &amp; Operator Overloading.</p> <p><b>Practical-</b>program based on structure and union.</p>
<b>JANUARY</b>	<p><b>UNIT V-</b> Characteristics of Object Oriented Programming language, benefits of OOPs.</p> <p><b>Practical-</b>programs based on various logics used in c and basic knowledge of cpp environment.</p>
<b>FEBRUARY</b>	<b>REVISION + PRACTICAL EXAM</b>

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**ADD ON (DIPLOMA COURSE)  
PAPER –I  
PROGRAMMING IN VISUAL BASIC**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>AUGUST</b>	<p><b><u>UNIT I- Introduction to Visual Basic</u></b></p> <p>Editions of Visual Basic, Event Driven Programming , Terminology, Working environment, Project &amp; executable files, Understand Modules, Working Screen, Using code editor windows, Code documentation and formatting environment options, code formatting option .</p> <p>Introduction to object, Controlling objects, Properties, Methods &amp; Events, Working with forms. Interacting with user, MsgBox function, Input Box Function, Code statements, Managing forms, Creating a program in VB, Printing.</p> <p><b>Practical-</b> about vb environment and introduction of vb controls like command box,text box,labels etc.</p>
<b>SEPTEMBER</b>	<p><b><u>UNIT II-Variable and Procedures and Controlling Program Execution</u></b></p> <p>Overview of Variables, Declaring Variable, Scope of Variables, Arrays, User Defined data type, Constants working with procedure, Working with date &amp; time, using the Format function, Manipulation text strings.</p> <p>Comparison &amp; logical Operators, if.... Then Statement, if .... Then ... Else Statements, Select Case Statement.</p> <p><b>Practical-</b> vb programs based on various control struture,scope of variables and using timer.</p>
<b>OCTOBER</b>	<p><b><u>UNIT II-</u></b>, Looping Structure, Using Do... Loop Structure, for...Next Statement, Exiting a loop.</p> <p><b><u>UNIT III- Working with Controls &amp; Controlling Program Execution</u></b></p> <p>Type of Control, Overview of standard Controls, Combo Box &amp; List Box, Option Button &amp; Check Button, Frame Control, Menus, Status bar, Tool bar, Advanced standard Controls, Active X Controls.</p> <p><b>Practical-</b> vb program based on looping and controls like list box,making menus,combo box etc.</p>

## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>NOVEMBER</b>	<p><b>UNIT III-</b> Overview of Run Time Errors, Error Handling Process, The Error Object, Error handling in routine, Inline Error handling ,Error handling style, General Window, Local Window.</p> <p><b>UNIT IV- <u>Sequential &amp; Random Files &amp; Data Access Using the ADO Data Control</u></b></p> <p>Record Structure, Random Access File, The design and coding, saving data to file.</p>
<b>DECEMBER</b>	<p><b>UNIT IV-</b>Overview of Active X Objects, VB data access features, Relational Database Concepts using the ADO Data Control to access data, Overview of ADO,RDO, Data Control, Structure Query Language (SQL), Manipulating data Using Data Form Wizard.</p> <p><b>Practical-</b> learning about various connectivity methods like ado,dao,rdo and its</p>
<b>JANUARY</b>	<p><b>UNIT V- <u>Report Generation and Advance Tools</u></b></p> <p>Overview of Report, Data Report, Add Groups, Data Environments, Connection to Database, Introduction to Crystal Reports Generator.</p> <p>Overview of drag and drop , Mouse Events, Date- Time Control, Calendar, Print Dialogue, MDI (Multiple Document Interface.)</p> <p><b>Practical-</b> programs on report making and mdi forms.</p>
<b>FEBRUARY</b>	<b>REVISION + PRACTICAL EXAM</b>

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**ADD ON (DIPLOMA COURSE)  
PAPER –II  
DBMS (SQL/Oracle)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>AUGUST</b>	<b>UNIT I- <u>Introduction To DBMS:</u></b> -Purpose of database systems, Views of data, Data Modeling, Database Languages, Transaction Management, Storage Management, Database Administrator and User, Database System Structure.
<b>SEPTEMBER</b>	<b>UNIT II- <u>E-R Model:</u></b> - Basic concepts, Constraints, Keys, Mapping Constraint, E-R Diagram, Weak and Strong Entity sets, E-R Database Schema, Reduction of an E-Schema to Table.  <b>Practical-</b> how to use oracle software.making table and running a program.
<b>OCTOBER</b>	<b>UNIT III-</b> Relational Model: Structure to Relational Database, Relational Algebra, The Domain Relational Calculus, Extended Relational- Algebra Operation, Modification of database, Views. <b>Relational <u>Database Design:</u></b> - Pitfalls in Relational Database Design, Decomposition.  <b>Practical-</b> making table and using various commands like insert,update etc.
<b>NOVEMBER</b>	<b>UNIT III-</b> Functional Dependencies, and Normalization: 1NF, 2NF, BCNF, 3NF, 4NF, 5NF  <b>UNIT IV- <u>Introduction to RDBMS Software - Oracle</u></b> <b><u>Introduction:</u></b> - Introduction to personnel and Enterprises Oracle, Data Types, Commercial Query Language, SQL, SQL* PLUS.  <b>Practical-</b> performing various operations on tables like where clause,like
<b>DECEMBER</b>	<b>UNIT IV-<u>DDL and DML:</u></b> Creating Table, Specify Integrity Constraint, Modifying Existing Table, Dropping Table, Inserting, Deleting and Updating Rows in as Table, Where Clause, Operators, ORDER BY, GROUP Function, SQL Function, JOIN, Set Operation, SQL Sub Queries.  <b>Practical-</b> performing sql function on table like group function,using operators on table,applying different constraints on table.

## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>JANUARY</b>	<b>UNIT V-Views:</b> What is Views, Create, Drop and Retrieving data from Views. <b>PL-SQL/TSQL:</b> Block Structure in PL-SQL/TSQL, Variable and Constraints, Running PL- SQL/TSQL in the SQL *PLUS, Data base Access with PL-SQL/TSQL, Exception Handling, Record Data type in PL-SQL/TSQL Triggers in PL-SQL/TSQL.  <b>Practical-</b> how to create views,dropping views,some pl sql programs.
<b>FEBRUARY</b>	<b>REVISION + PRACTICAL EXAM</b>

### ADD ON (ADVANCE DIPLOMA) PAPER –I PROGRAMMING IN JAVA

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>AUGUST</b>	<b>UNIT I- Introduction :</b> Genesis of java, importance to the Internet, overview of features.  <b>OOP :</b> OOP features, data types, control structures, arrays, methods and classes, nested & inner classes, string and String Buffer class, Wrapper Class, vectors.  <b>Practical-</b> introduction to basic java environment. How to use programming tool
<b>SEPTEMBER</b>	<b>UNIT II- Inheritance :</b> Basics type, method Override, using abstract and final classes, using super.  <b>Packages and Interfaces :</b> Defined CLASSPATH, importing packages, implementing interface.  <b>Practical –</b> practice on basic program based on classes ,objects.inheritance.
<b>OCTOBER</b>	<b>UNIT III- Exception Handling :</b> Fundamental: exception types, using try and catch, throwing exceptions, defined exceptions.  <b>Multithreaded Programming :</b> Java spread model, creating threads, thread priorities, synchronization. Suspending resuming and stopping threads.  <b>Practical-</b> programming based on abstract class,uses of interface and packages.

## GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR

<b>NOVEMBER</b>	<p><b>UNIT IV- Input/Output:</b> Basic Streams, Byte and Character Stream, predefined streams, reading and writing from console and files. Using standard Java Packages (lang, util, io)</p> <p><b>JDBC:</b> Setting the JDBC connectivity with backend database.</p> <p><b>Practical-</b> programming on exception handling, steps for doing various connectivity methods like jdbc.</p>
<b>DECEMBER</b>	<p><b>UNIT V- Applets :</b>Fundamentals, life cycle, overriding update, HTML APPLET tag, passing parameters. Developing single applets.</p> <p><b>Introduction to AWT :</b> Window fundamentals, creating windowed, programs wating with graphics, using AWT controls, menus. Delegation event model, handling mouse and keyboard events.</p> <p><b>Practical-</b>practicing in various programs .</p>
<b>JANUARY</b>	<p><b>JAVA PROJECT</b></p> <p><b>Practicals</b></p>
<b>FEBRUARY</b>	<p><b>REVISION + PRACTICAL EXAM</b></p>



# **TEACHING PLAN OF MATHEMATICS FOR SESSION 2016-17**

**B.Sc. I**

**Mathematics**

**PAPER-I**

## **ALGEBRA AND TRIGONOMETRY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>Unit 1 -</b> Symmetric, Skew Symmetric, Hermitian and Skew Hermitian matrices. Elementary operations on Matrices. Inverse of a matrix, Linear independence of row and column matrices. Cayley Hamilton theorem and its use in finding inverse of a matrix.
<b>AUGUST</b>	<b>Unit 1-</b> Row rank, column rank and rank of a matrix. Equivalence of column and row ranks. Eigenvalues, Eigenvectors and the characteristic equation of matrix.
<b>SEPTEMBER</b>	<b>Unit II-</b> Applications of matrices to a system of linear (both homogeneous and non-homogeneous) equations. Theorems on consistency of a system of linear equations. Relations between the roots and coefficients of general polynomial equation in one variable. Transformation of equations. Descartes's rule of signs, solution of cubic equations (Cardan's method). Biquadratic equations.
<b>OCTOBER</b>	<b>Unit III</b> Mappings, Equivalence relations and partitions. Congruence modulo $n$ . Definition of a group with examples and simple properties. Cyclic groups generators.
<b>NOVEMBER</b>	<b>Unit III</b> Cayley's theorem, Coset decomposition, Lagrange's theorem and its consequences. Fermat's and Euler's theorems, Normal subgroups, Quotient groups. Permutation Groups, even and odd permutations. The alternating groups
<b>DECEMBER</b>	<b>UNIT – IV</b> Homomorphism and Isomorphism The fundamental theorems of homomorphism. Introduction, properties and examples of rings, subrings, Integral domains and Fields. Characteristic of a Ring and field.
<b>JANUARY</b>	<b>UNIT – V</b> ( Trigonometry ) De Moivre's theorem and its applications. Direct and inverse circular and hyperbolic functions. Logarithm of a complex quantity. Expansion of Trigonometrically functions. Gregory's series. Summation of series.
<b>FEBRUARY</b>	<b>REVISION</b>

**B.Sc. I**  
**Mathematics**  
**PAPER-II**  
**CALCULUS**

MONTH	PROPOSED PLAN
JULY	<b>UNIT – I</b> $\epsilon - \delta$ definition of the limit of a function. Basic properties of limits. Continuous functions and classification of Discontinuities. Differentiability, Successive differentiation. Leibnitz's theorem, Maclaurin and Taylor series expansions
AUGUST	<b>Unit I-</b> Differentiability, Successive differentiation. Leibnitz's theorem, Maclaurin and Taylor series expansions
SEPTEMBER	<b>UNIT – II</b> Asymptotes, Curvature, Tests for concavity and convexity. Points of inflexion, Multiple points. Tracing of curves in Cartesian and polar coordinates.
OCTOBER	<b>UNIT – III</b> Integration of irrational algebraic functions and transcendental functions. Reduction formulae, Definite integrals, Quadrature, Rectification, Volumes and surfaces of solids of revolution.
NOVEMBER	<b>UNIT – IV</b> Degree and order of a differential equation. Equations of first order and first degree, equations in which the variables are separable. Homogeneous equations, Linear equations and equations reducible to the linear form. Exact differential equations, First order higher degree equations solvable for $x, y, p$ . Clairaut's form and singular solutions.
DECEMBER	<b>UNIT – IV</b> Geometrical meaning of a differential equation. Orthogonal trajectories. Linear differential equations with constant coefficients. Homogeneous linear ordinary differential equations.
JANUARY	<b>UNIT – V</b> Linear differential equations of second order. Transformation of the equation by changing the Dependent variable / the Independent variable. Method of variation of parameters. Ordinary simultaneous differential equations.
FEBRUARY	REVISION

**B.Sc. I**  
**Mathematics**  
**PAPER-III**  
**VECTOR ANALYSIS AND GEOMETRY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT I –</b> Scalar and vector product of three vectors, Product of four vectors,
<b>AUGUST</b>	<b>Unit I-</b> Reciprocal vectors, Vector differentiation, Gradient, Divergence and Curl.
<b>SEPTEMBER</b>	<b>UNIT II-</b> Vector Integration, Theorems of Gauss, Green, Stokes and problems based on these.
<b>OCTOBER</b>	<b>UNIT III-</b> General equation of second degree. Tracing of conics
<b>NOVEMBER</b>	<b>Unit III –</b> System of conics, Confocal Conics, Polar equation of a Conic.
<b>DECEMBER</b>	<b>UNIT – IV</b> Plane, The Straight line and the plane, Sphere, Cone and Cylinder.
<b>JANUARY</b>	<b>UNIT –V</b> Central Conicoids, Paraboloids, Plane section of Conicoids, Generating lines, Confocal Conicoids, Reduction of second degree equations.
<b>FEBRUARY</b>	<b>REVISION</b>

**B.Sc. II**  
**Mathematics**  
**PAPER-I**  
**ADVANCED CALCULUS**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT – I</b> Definition of a sequence. Theorems on limits of sequences. Bounded and monotonic sequences. Cauchy’s convergence criterion. Series of non-negative terms. Comparison test,
<b>AUGUST</b>	<b>Unit I-</b> Cauchy’s integral test, Ratio test, Raabe’s test, Logarithmic test, De Morgan and Bertrand’s tests. Alternating series, Liebnitz’s theorem, absolute and conditional convergence.
<b>SEPTEMBER</b>	<b>UNIT – II</b> Continuity, sequential continuity, properties of continuous functions, uniform continuity. Chain rule of differentiability, Mean value theorems and their geometrical interpretations, Darboux’s intermediate value theorem for derivatives. Taylor’s theorem with various forms of remainders.
<b>OCTOBER</b>	<b>UNIT – III</b> Limit and continuity of functions of two variables, Partial differentiation, Change of variables,
<b>NOVEMBER</b>	<b>UNIT –III</b> <b>Euler’s</b> theorem on homogeneous functions. Taylor’s theorem for functions of two variables. Jacobians.
<b>DECEMBER</b>	<b>UNIT –IV</b> <b>Envelopes</b> , Evolutes, Maxima, Minima and saddle points of functions of two variables, Lagrange’s multiplier method.
<b>JANUARY</b>	<b>UNIT –V</b> <b>Beta</b> and Gamma functions, Double and triple integrals, Dirichlet’s integrals, change of order of integration in double integrals.
<b>FEBRUARY</b>	REVISION

**B.Sc. II**  
**Mathematics**  
**PAPER-II**  
**DIFFERENTIAL EQUATIONS**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT – I</b> Series solutions of differential equations - Power series method. Bessel and Legendre functions and their properties - convergence, recurrence and generating relations.
<b>AUGUST</b>	<b>Unit I –</b> Orthogonality of functions. Sturm-Liouville problem, Orthogonality of Eigen-functions, Reality of Eigen-values, Orthogonality of Bessel functions and Legendre polynomials.
<b>SEPTEMBER</b>	<b>UNIT – II</b> Laplace Transformation - Linearity of the Laplace transformation. Existence theorem for Laplace transforms. Laplace transforms of derivatives and integrals. Shifting theorems.
<b>OCTOBER</b>	<b>Unit II-</b> Differentiation and integration of transforms. Convolution theorem. Solution of integral equations and systems of differential equations using the Laplace transformation.
<b>NOVEMBER</b>	<b>UNIT – III</b> Partial differential equations of the first order. Lagrange's solution. Some special types of equations which can be solved easily by methods other than the general method, Charpit's general method of solution.
<b>DECEMBER</b>	<b>UNIT – IV</b> Partial differential equations of second and higher orders. Classification of linear partial differential equations of second order. Homogeneous and non-homogeneous equations with constant coefficients. Partial differential equations reducible to equations with constant coefficients. Monge's methods.
<b>JANUARY</b>	<b>UNIT – V</b> Calculus of Variations - Variational problems with fixed boundaries - Euler's equation for functional containing first order derivative and one independent variable. External. Functional dependent on higher order derivatives. Functional dependent on more than one independent variable. Variational problems in parametric form. Invariance of Euler's equation under coordinates transformation. Variational problems with moving boundaries - Functional dependent on one and two functions. One sided variations. Sufficient conditions for an Extremum - Jacobi and Legendre conditions. Second Variation. Variational principle of least action.
<b>FEBRUARY</b>	<b>REVISION</b>

**B.Sc. II**  
**Mathematics**  
**PAPER-III**  
**MECHANICS**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT – I</b> Analytical conditions of equilibrium. Stable and unstable equilibrium.
<b>AUGUST</b>	<b>UNIT - I</b> Virtual work. Catenary.
<b>SEPTEMBER</b>	<b>UNIT –II</b> Forces in three dimensions. Poinso't's central axis. Null lines and planes.
<b>OCTOBER</b>	<b>UNIT – III</b> Simple harmonic motion. Elastic strings
<b>NOVEMBER</b>	<b>UNIT III –</b> Velocities and accelerations along radial and transverse directions, Projectile, Central orbits.
<b>DECEMBER</b>	<b>UNIT – IV</b> Kepler's laws of motion, Velocities and acceleration in tangential and normal directions. Motion on smooth and rough plane curves.
<b>JANUARY</b>	<b>UNIT – V</b> Motion in a resisting medium. Motion of particles of varying mass. Motion of a particle in three dimensions. Acceleration in terms of different co-ordinate systems.
<b>FEBRUARY</b>	<b>REVISION</b>

**B.Sc. III**  
**Mathematics**  
**PAPER-I**  
**ANALYSIS**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT I-</b> Series of arbitrary terms, Convergence, Divergence and Oscillation. Abel's and Dirichlet's test. Multiplication of series. Double series. Partial derivation and differentiability of real valued functions of two variables. Schwarz's and Young's theorem. Implicit function theorem. Fourier series. Fourier expansion of piecewise monotonic functions.
<b>AUGUST</b>	<b>UNIT II –</b> Riemann integral. Integrability of continuous and monotonic functions. The fundamental theorem of Integral Calculus. Mean value theorems of integral calculus. Improper integrals and their convergence, comparison tests. Abel's and Dirichlet's tests. Frullani's integral, Integral as a function of a parameter. Continuity, derivability and integrability of an integral of a function of a parameter.
<b>SEPTEMBER</b>	<b>UNIT III-</b> Complex numbers as ordered pairs. Geometric representation of complex numbers. Stereographic projection. Continuity and differentiability of complex functions. Analytic functions, Cauchy Riemann equations, Harmonic functions.
<b>OCTOBER</b>	<b>UNIT III-</b> Elementary functions, mapping by elementary functions. Mobius transformations, Fixed points, Cross ratio, Inverse points and critical mappings, Conformal mappings.
<b>NOVEMBER</b>	<b>UNIT IV</b> Definition and examples of metric spaces. Neighbourhoods, Limit points, Interior points, Open and Closed sets, Closure and interior. Boundary points, Sub-space of a metric space. Cauchy sequences,
<b>DECEMBER</b>	<b>UNIT IV-</b> Completeness, Cantor's intersection theorem, Contraction principle, Construction of real numbers as the completion of the incomplete metric space of rational. Real numbers as a complete ordered field.
<b>JANUARY</b>	<b>UNIT V –</b> Dense subsets. Baire Category theorem, Separable, second countable and first countable spaces. Continuous functions. Extension theorem. Uniform continuity. Isometry and homeomorphism. Equivalent metrics.
<b>FEBRUARY</b>	<b>UNIT V –</b> Compactness, Sequential compactness. Totally bounded spaces. Finite intersection property. Continuous functions and compact sets. Connectedness, Components, Continuous functions and connected sets.

**B.Sc. III**  
**Mathematics**  
**PAPER-II**  
**ABSTRACT ALGEBRA**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT – I</b> Group-Automorphism, inner automorphisms. Automorphism groups and their computations, Conjugacy relation, Normaliser, Counting principle and the class equation of a finite group. Center for group of prime-order, Abelianizing of a group and its universal property. Sylow's theorems, Sylow's subgroup, structure theorem for finite Abelian groups.
<b>AUGUST</b>	<b>UNIT-II</b> Ring theory- Ring homomorphism, Ideals and Quotient Rings. Field of Quotients of an Integral Domain, Euclidean Rings, Polynomial rings, Polynomials over the Rational Field. The Eisenstein Criterion, Polynomial
<b>SEPTEMBER</b>	<b>UNIT-III</b> Definition and examples of vector spaces. Subspace, Sum and direct sum of subspaces, Linear span. Linear dependence, independence and their basic properties.
<b>OCTOBER</b>	<b>UNIT III</b> Basis Finite dimensional vector spaces, existence theorem for bases, invariance of the number elements of a basis set. Dimension, Existence of complementary subspace of a finite dimensional vector space. Dimension of sums of subspaces. Quotient space and its dimension.
<b>NOVEMBER</b>	<b>UNIT-IV</b> Linear transformations and their representation as matrices. The Algebra of linear transformations. The rank nullity theorem. Change of basis. Dual space, Bidual space and natural isomorphism, forms.
<b>DECEMBER</b>	<b>UNIT IV</b> Adjoint of a linear transformation, Eigenvalues and Eigen vectors of a linear transformation. Diagonalisation. Annihilator of a subspace, Bilinear, Quadratic and Hermitian
<b>JANUARY</b>	<b>UNIT-V</b> Inner product spaces-Cauchy-Schwarz inequality, Orthogonal vectors, Orthogonal complements, Orthonormal sets and bases. Bessel's inequality for finite dimensional spaces, Gram-Schmidt orthogonalization process.
<b>FEBRUARY</b>	<b>REVISION</b>



**B.Sc. III**  
**Mathematics**  
**PAPER-III**  
**DISCRETE MATHEMATICS**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JULY	<b>UNIT –I</b> <b><u>Sets and Propositions</u></b> - Cardinality, Mathematical induction, Principle of inclusion and exclusion. Computability and Formal Languages - Ordered sets, languages, Phrase structure Grammars, Types of Grammars and languages. Permutations, Combinations and Discrete probability.
AUGUST	<b>UNIT-II</b> <b><u>Relations and Functions</u></b> - Binary relations, Equivalence relations and Partitions. Partial Order Relations and Lattices. Chains and Antichains. Pigeon Hole Principle. <b><u>Graphs and Planar Graphs</u></b> - Basic Terminology, Multigraphs, Weighted graphs, Paths and circuits, Shortest paths, Eulerian Paths and circuits. Travelling Salesman Problem, Planner graphs. Trees.
SEPTEMBER	<b>UNIT-III</b> <b><u>Finite State machines</u></b> - Equivalent machines. Finite state machines as language recognizers
OCTOBER	<b>UNIT III</b> Analysis of Algorithms - Time complexity, Complexity of problems, Discrete Numeric functions and Generating functions.
NOVEMBER	<b>UNIT-IV</b> <b><u>Recurrence Relations and Recursive Algorithms</u></b> - Linear Recurrence Relations with constant coefficients. Homogeneous solutions, Particular solutions, Total solutions, Solution by the method of Generating functions, Brief review of Groups and Rings.
DECEMBER	<b>UNIT-V</b> <b><u>Boolean Algebra</u></b> - Lattices and Algebraic structures. Duality, distributive and complemented Lattices. Boolean Lattices and Boolean Algebras. Boolean functions and expressions.
JANUARY	<b>UNIT V</b> Propositional Calculus, Design and implementation of Digital Networks, Switching Circuits.
FEBRUARY	REVISION

GOVT. D. B. GIRL'S P.G. (AUTONOMOUS) COLLEGE, RAIPUR CHHATTISGARH

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PROPOSED TEACHING PLAN FOR THE SESSION 2016-17

Name of the Department: PHYSICS

CLASS B. SC. I

Month/ Days	Paper I	Paper II
July	<b>Admission work</b> Unit-I Mechanics Cartesian, Cylindrical and Spherical co-ordinate system, Inertial and non-inertial frames of reference, uniformly rotating frame, Coriolis force and its applications.	<b>Admission work</b> Unit I Mathematical Background Gauss's divergence theorem. Green's theorem and Stoke's theorem and their physical significance. Repeated integrals of a function of more than one variable,
August	Motion under a central force, Kepler's laws. Effect of centrifugal and Coriolis force due to earth's rotation. Center of mass ( C.M.). Lab and CM frame of reference, motion of C.M. of system of particles subject to external forces, elastic and inelastic collisions in one and two dimensions, Scattering angle in the laboratory frame of reference. Conservation of linear and angular momentum. Conservation of energy.	definition of a double and triple integral. Gradient of a scalar field and its geometrical interpretation, divergence and curl of a vector field and their geometrical interpretation, line , surface and volume integrals, flux of a vector field. Kirchoff's law Ideal constant-voltage and Constant-current Sources. Thevenin theorem, Norton theorem. Superposition theorem, Reciprocity theorem and Maximum Power Transfer theorem. Unit-II Electrostatics
September	<b>Unit-II Oscillations and Rigid body Motion</b> Rigid body motion, rotational motion, moment of inertia and their products, principal moments and axes. Introductory idea of Euler's equations. Potential well and periodic oscillations, case of harmonic oscillations, differential equation and its solution, kinetic and potential energy, examples of simple harmonic oscillations, spring and mass system,	Coulomb's law in vacuum expressed in vector form. Calculations of E for simple distributions of charges at rest, dipole and quadrupole fields. Work done on a charge in an electrostatic field expressed as a line integral, conservative nature of the electrostatic field. Relation between Electric potential and electric field, torque on a dipole in a uniform electric field and its energy.

	simple and compound pendulum, torsional pendulum.	
<b>October</b>	<p><b>Unit-III Superposition of Harmonic Motions</b>  Bifilar oscillations, Helmholtz resonator, LC circuit, vibrations of a magnet, oscillations of two masses connected by a spring. Superposition of two simple harmonic motions of the same frequency, Lissajous figures, case of different frequencies. Damped harmonic oscillator, power dissipation, quality factor, examples, driven (forced) harmonic oscillator, transient and steady states, power absorption, resonance. Unit- IV. Motion of charged Particles in electric and Magnetic Fields (Note: The emphasis here should be on the mechanical aspects and not on the details of the apparatus mentioned which are indicated as applications of principles involved.)</p>	flux of the electric field. Gauss's law and its application for finding E due to (1) an infinite line of charge, (2) a charged cylindrical conductor, (3) an infinite sheet of charge and two parallel charged sheets, capacitors, electrostatic field energy. Force per unit area on the surface of a conductor in an electric field, conducting sphere in a uniform field.
<b>November</b>	E as an accelerating field, electron gun, case of discharge tube, linear accelerator, E as a deflecting field, CRO, sensitivity. Transverse B field, 180 degree deflection, mass spectrograph, curvature of tracks for energy determination, principle of a cyclotron. Mutually perpendicular E and B fields, velocity selector, its resolutions. Parallel E and B fields, positive ray parabolas, discovery of isotopes, elements of mass spectrographs, principle of magnetic focusing (lens).	<p>Unit-III Dielectrics; steady and Alternating Currents  Dielectric constant. Polar and Non Polar dielectrics. Dielectrics and Gauss's Law. Dielectric Polarization. Electric Polarization vector P, electric displacement vector D. Relation between three electric vectors, Dielectric susceptibility and permittivity. Polarizability and mechanism of Polarization .</p>

<b>December</b>	Unit- V. Properties of Matter Elasticity : Strain and stress, elastic limit, Hook's law. Modulus of rigidity. Poisson's ratio. Bulk modulus. Relation connecting different elastic-constants, twisting couple of a cylinder (solid and hollow). Bending moment, Cantilever, Young modulus by bending of beam.	Lorentz local field. Clausius Mossotti equation, Debye equation. Ferroelectric and Paraelectric dielectrics. Steady current , current density J, non-steady currents and continuity equation, rise and decay of current in LR, CR and LCR circuits, decay constants, AC circuits, complex numbers and their applications in solving AC circuit problems, complex impedance and reactance, series and parallel resonance, Q factor, power consumed by an AC circuit, power factor.
<b>January</b>	Viscosity : Poiseuille's equation of liquid flow through a narrow tube, equations of continuity. Euler's equation , Bernoulli's theorem, viscous fluids, streamline and turbulent flow. Poiseuille's law. Coefficient of viscosity, Stoke's law. Surface tension and molecular interpretation of surface tension, surface energy. Angle of contact. Wetting.	Unit-IV Magnetostatics Magnetization Current and magnetization vector M, three magnetic vectors and their relationship. Magnetic permeability and susceptibility. Diamagnetic, paramagnetic and ferromagnetic substances. B.H. Curve, cycle of magnetization and hysteresis, Hysteresis loss. Biot and Savart's law and its applications: B due to (1) a straight Current Carrying Conductor and (2) Current Loop. Current Loop as a Magnetic Dipole and its Dipole Moment (Analogy with Electric Dipole) , Ampere's circuital law (Integral and Differential Forms.
<b>February</b>	<b>Practical examination and Revision</b>	<b>Practical examination and Revision</b>
<b>March</b>	<b>Annual Examination</b>	<b>Annual Examination</b>
<b>April</b>	<b>Annual Examination</b>	<b>Annual Examination</b>
<b>May</b>	<b>Annual Examination</b>	<b>Annual Examination</b>

**GOVT. D. B. GIRL'S P.G. (AUTONOMOUS) COLLEGE, RAIPUR CHHATTISGARH**

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**PROPOSED TEACHING PLAN FOR THE SESSION 2016-17**

**Name of the Department: PHYSICS**

**CLASS B. SC. II**

Month/ Days	Paper I	Paper II
July	<b>Admission work</b> <b>UNIT I</b> The law of thermodynamics: The Zeroeth law, concept of path function and point function, various indicator diagrams, work done by and on the system, first law of thermodynamics, internal energy as a state function,	<b>Admission work</b> <b>UNIT I</b> Waves in media: Speed of transverse waves on a uniform string, speed of longitudinal waves in a fluid, energy density and energy transmission in waves, typical measurements. Waves over liquid surface: gravity waves and ripples.
August	reversible and irreversible change, Carnot's theorem and the second law of thermodynamics. Different versions of the second law. Clausius theorem inequality. Entropy, Change of entropy in simple cases: ( i ) Isothermal expansion of an ideal gas (ii) Reversible isochoric process (iii) Free adiabatic expansion of an ideal gas. Entropy of the universe. Principle of increase of entropy. The thermodynamic scale of temperature, its identity with the perfect gas scale. Impossibility of attaining the absolute zero; third law of thermodynamics.	Group velocity and phase velocity, their measurements. Harmonics and the quality of sound; examples. Production and detection of ultrasonic and infrasonic waves and applications. Reflection, refraction and diffraction of sound: Acoustic impedance of a medium, percentage reflection and refraction at a boundary, impedance matching for transducers, diffraction of sound, Principle of a sonar system, sound ranging.
September	<b>UNIT II</b> Thermodynamic relationships: Thermodynamic variables, extensive and intensive, Maxwell's general relationships, application to Joule - Thomson cooling and adiabatic cooling in a general system, vander Waals gas, Clausius- Clapeyron heat equation. Thermodynamic potentials and equilibrium of thermodynamical systems, relation with thermodynamical variables. Cooling due to adiabatic demagnetization, production and measurement of very low temperatures.	<b>UNIT II</b> Fermat's principle of extremum path, the aplanatic points of a sphere and other applications. Cardinal points of an optical system, thick lens and lens combinations. Lagrange's equation of magnification, telescopic combination, telephoto lenses. Monochromatic aberrations and their reductions; aspherical mirrors and Schmidt corrector plates,

		alpanatic points, oil immersion objectives, meniscus lens. Optical instruments: entrance and exit pupils, need for a multiple lens eyepiece, common types of eyepieces (Ramsden & Huygen's eyepieces).
<b>October</b>	<p>Black body radiation: Pure temperature dependence, Stefan – Boltzmann law, pressure of radiation, spectral distribution of black body radiation, Wien's displacement law, Rayleigh – Jean's law, the ultraviolet catastrophe, Planck's quantum postulates, Plank's law, complete fit with experiment.</p> <p>UNIT III</p> <p>Maxwellian distribution of speeds in an ideal gas: Distribution of speeds and of velocities, experimental verification, distinction between mean, rms and most probable speed values. Doppler's broadening of the spectral lines.</p>	<p>UNIT III</p> <p>Interference of light : The principle of superposition, two slit interference, coherence requirement for the sources, optical path retardation, lateral shift of fringes, Rayleigh refractometer, Localised fringes; thin films. Haidenger's fringes: Fringes of equal inclination, Michelson interferometer, its application for precision determination of wavelength, wavelength difference and width of spectral lines, Twymann. Green Interferometer and its uses. Intensity distribution in multiple beam interference. Tolansky fringes, Fabry – Perot interferometer and etalon.</p>
<b>November</b>	<p>Transport phenomena in gases: Molecular collisions mean free path and collision cross sections. Estimates of molecular diameter and mean free path. Transport of mass, momentum and energy and interrelationship, dependence on temperature and pressure. Liquefaction of gases: Boyle temperature and inversion temperature. Principle of regenerative cooling and of cascade cooling, liquification of hydrogen and helium. Refrigeration cycles, meaning of efficiency.</p>	<p>UNIT IV</p> <p>Fresnel half- period zones, plates, straight edge, rectilinear propagation. Fraunhofer diffraction: Diffraction at a slit, half - period zones, phasor diagram and integral calculus methods, the intensity distribution, diffraction at a circular aperture and a circular disc, resolution of images, Rayleigh criterion, resolving power of telescope and microscopic systems.</p>
<b>December</b>	<p>UNIT IV</p> <p>The statistical basis of thermodynamics: Probability and thermodynamic probability, principle of equal a priori probabilities, statistical postulates. Concept of Gibb's ensemble, accessible and inaccessible states. Concept of phase space, canonical phase space, Gamma phase space and mu phase space. Equilibrium before two systems in thermal contact, Probability and entropy, Boltzmann entropy relation. Boltzmann canonical distribution law and its</p>	<p>Diffraction gratings: Diffraction at N parallel slits, intensity distribution, plane diffraction grating, reflection grating and blazed grating. Concave grating and different mountings, resolving power of a grating and comparison with resolving powers of prism and of a Fabry –Perot etalon. Double refraction and optical rotation:</p>

	applications, law of equipartition of energy. Transition to quantum statistics: 'h' as a natural constant and its implications, cases of particle in a one – dimensional box and one – dimensional harmonic	Refraction in uniaxial crystals, Phase retardation plates, double image prism. Rotation of plane of polarization, origin of optical rotation in liquids and in crystals.
<b>January</b>	oscillator.UNIT V Indistinguishability of particles and its consequences, Bose–Einstein & Fermi–Dirac conditions. Concept of partition function, Derivation of Maxwell - Boltzmann, Bose - Einstein and Fermi - Dirac statistics through canonical partition function. Limits of B–E and F–D statistics to M –B statistics. Application of B –E statistics to black body radiation. Application of F- D statistics to free electrons in a metal.	UNIT V Laser system: Purity of a spectral line, coherence length and coherence time, spatial coherence of a source, Einstein's A and B coefficients, Spontaneous and induced emissions, conditions for laser action, population inversion. Types of lasers: Ruby and He – Ne lasers and Semiconductor lasers. Application of lasers: Application in communication, Holography and non – linear optics. (Polarization P including higher order terms in E and generation of harmonics).
<b>February</b>	<b>Practical examination and Revision</b>	<b>Practical examination and Revision</b>
<b>March</b>	<b>Annual Examination</b>	<b>Annual Examination</b>
<b>April</b>	<b>Annual Examination</b>	<b>Annual Examination</b>
<b>May</b>	<b>Annual Examination</b>	<b>Annual Examination</b>

**GOVT. D. B. GIRL'S P.G. (AUTONOMOUS) COLLEGE, RAIPUR CHHATTISGARH**

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**PROPOSED TEACHING PLAN FOR THE SESSION 2016-17**

**Name of the Department: PHYSICS**

**CLASS B. SC. III**

<b>Month/ Days</b>	<b>Paper I</b>	<b>Paper II</b>
<b>July</b>	<b>Admission work</b> Unit-I Reference system, inertial frames Galilean invariance and conservation laws, propagation of light, Michelson-Morley experiment; search for ether.	<b>Admission work</b> Unit - I Amorphous and crystalline solids, elements of symmetry, seven system, Cubic lattices, Crystal planes, Miller indices, Laue's equations for X- ray diffraction.

<b>August</b>	<p>Postulates for the special theory of relativity, Lorentz transformations, length contraction time dilation, velocity addition theorem, variation of mass with velocity, mass – energy equivalence, particle with zero rest mass ,Compton effect.</p>	<p>Bragg's law. Bonding in solids classification. Cohesive energy of solid.Modelung constant, evaluation of parameters. Specific heat of solids, classical theory (Dulong- Petit's law). Einstein's and Debye theories. Vibrational modes of one dimensional monoatomic lattice, Dispersion relation, Brillouin zone.</p>
<b>September</b>	<p>Unit- II Origin of the quantum theory: Failure of classical physics to explain the phenomena such as black body spectrum, photoelectric effect. Wave particle duality and uncertainty principle: de Broglie's hypothesis for matter waves; the concept of wave and group velocities, evidence for diffraction and interference of particles, experimental demonstration of matter waves. Davisson and Germer's experiment.</p>	<p>Unit- II  Free electron model of a metal, solution of one dimensional Schrodinger's equation in a constant potential. Density of states. Fermi energy , Energy bands in a solid (kronig – penny model without mathematical details). Metals, insulators and semiconductors. Hall effect.</p>
<b>October</b>	<p>Consequence of de Broglie's concepts; quantization in hydrogen atom; energies of a particle in a box, wave packets. Consequence of the uncertainty relation: gamma ray microscope, diffraction at a slit. Unit – III Quantum Mechanics: Schrodinger's equation. Postulatory basis of quantum mechanics; operators, expectation values, transition probabilities,</p>	<p>Die, Para and Ferromagnetism. Langevin's theory of die and para magnetism. Curie – Weiss's law. Qualitative description of Ferromagnetism (Magnetic domains), B – H curve and hysteresis loss.</p>
<b>November</b>	<p>applications to particle in a one and three dimensional boxes, harmonic oscillator in one dimension, reflection at a step potential, transmission across a potential barrier. Hydrogen atom: natural occurrence of</p>	<p>Unit –III Intrinsic semiconductors, Carrier concentration in thermal equilibrium, Fermi level, Impurity, semiconductor, donor and acceptor levels, Diode equation, junctions, junction breakdown, Depletion</p>



	<p>n, l and m quantum numbers, the related physical quantities.</p>	<p>width and junction capacitance, abrupt junction, Tunnel diode, Zener diode. Light emitting diodes, solar cell, bipolar transistors, PNP and NPN transistors, characteristics of transistors, different configurations, current amplification factor, FET.</p>
<b>December</b>	<p>Unit – IV</p> <p>Spectra of hydrogen, deuteron and alkali atoms, spectral terms, double fine structure, screening constants for alkali spectra for s, p, d and f states, selection rules,</p> <p>Discrete set of electronic energies of molecules, quantization of vibrational and rotational</p> <p>Energies, determination of internuclear distance, pure rotational and rotational vibrational spectra.</p> <p>Dissociation limit for the ground and other electronic states, transition rules for pure vibration and electronic spectra. Raman effect, Stokes and anti – Stokes lines complimentary character of Raman and infrared spectra, experimental arrangements for Raman spectroscopy.</p>	<p>Unit – IV</p> <p>Half and full wave rectifier, rectification efficiency, ripple factor, Bridge rectifier, filters, Inductor filter, T and <math>\pi</math> filters, Zener diode, regulated power supply.</p> <p>Application of transistors. Bipolar transistor as amplifier. Single stage and CE small signal amplifiers, Emitter follower, Transistor as power amplifier, Transistor as oscillator. Wein bridge oscillator and Hartley oscillator.</p>
<b>January</b>	<p>Unit - V</p> <p>Interaction of charged particles and neutrons with matter, working of nuclear detectors, G-M counter, proportional counter and scintillation counter, cloud chamber, Spark Chambers emulsions. Structure of nuclei, basic properties (I, <math>\mu</math>, Q and binding energy), deuteron binding energy, p-p and n-p scattering and general concepts of nuclear forces. Beta decay, range of alpha particle, Geiger- Nuttal law. Gamow's explanation of beta decay, alpha decay and continuous and discrete</p>	<p>Unit – V</p> <p>Introduction to computer organization, time sharing and multiprogramming systems, window based word processing packages, MS Word.</p> <p>Introduction to C programming and application to simple problems of arranging number in ascending/descending orders; sorting a given data in an array, solution of simultaneous equation.</p>

	<p>spectra.</p> <p>Nuclear reactions, channels, compound nucleus, direct reaction (concepts). Shell model: liquid drop model, fusion (concepts), energy production in stars by p-p and carbon-nitrogen cycles (concepts).</p>	
<b>February</b>	<b>Practical examination and Revision</b>	<b>Practical examination and Revision</b>
<b>March</b>	<b>Annual Examination</b>	<b>Annual Examination</b>
<b>April</b>	<b>Annual Examination</b>	<b>Annual Examination</b>
<b>May</b>	<b>Annual Examination</b>	<b>Annual Examination</b>

# **TEACHING PLAN OF ZOOLOGY FOR SESSION 2016-17**

**B. Sc. I**

**Zoology**

**PAPER-I**

## **CELL BIOLOGY AND INVERTEBRATE**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>Unit I -</b> The cell (Prokaryotic and Eukaryotic) Methods in cell biology (Microscopy-Light and Electron)  Organization of Cell-extra-nuclear and nuclear
<b>AUGUST</b>	<b>Unit I-</b> Plasma membrane, Endoplasmic reticulum, Golgi bodies, Ribosome, Mitochondria, Lysosomes, Nucleus , Chromosome
<b>SEPTEMBER</b>	<b>Unit II-</b> Cell division (Mitosis and Meiosis). An elementary idea of cell transformation. An elementary idea of Cancer and Immunity
<b>OCTOBER</b>	<b>Unit III</b> General characters and classification of Phylum Protozoa up to orders Protozoa-Type study-Paramecium. Protozoa and diseases
<b>NOVEMBER</b>	<b>Unit III</b> General characters and classification of Phylum Porifera and Coelenterata up to orders Porifera- Type study-Sycon. Coelenterata-Type study-Obelia.
<b>DECEMBER</b>	<b>UNIT – IV</b> General characters and classification of Phylum Helminthes, Annelida and Arthropoda up to orders Platyhelminthes and Nemaehelminthes-Type Study-Fasciola Annelida-Type Study-Pheretima. Arthropoda- Type Study-Palaemone.
<b>JANUARY</b>	<b>UNIT – V</b> General characters and classification of Phylum Mollusca and Echinodermata up to orders Mollusca- Type Study-Pila. Echinodermata- Type Study- Asterias(Starfish). Hemichordata – Type study - Balanoglossus
<b>FEBRUARY</b>	<b>REVISION</b>

**B. Sc. I**  
**Zoology**  
**PAPER-II**  
**VERTEBRATES AND EMBRYOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT – I</b> Chordata-Origin and classification of chordates. Protochordata-Type study-Amphioxus.
<b>AUGUST</b>	<b>UNIT- I</b> A comparative account of Petromyzon and Myxine. <b>UNIT – II</b> Fishes-Skin & Scales, migration in fishes, Parental care in Fishes. Amphibia-Parental care, Neoteny.
<b>SEPTEMBER</b>	<b>UNIT – II</b> Reptilia- Poisonous & Non-poisonous Snakes, Poison apparatus, snake venom <b>UNIT – III</b> Birds- Flight Adaptation, Migration Discuss-Birds are glorified reptiles.
<b>OCTOBER</b>	Mammals-Comparative account of Prototheria, Metatheria, Eutheria and Affinities
<b>NOVEMBER</b>	<b>UNIT –IV</b> Fertilization Gametogenesis, Parthenogenesis.
<b>DECEMBER</b>	<b>UNIT – IV</b> Development of Frog up to formation of three germ layers <b>UNIT –V</b> Embryonic induction, organizer and Regeneration.
<b>JANUARY</b>	<b>UNIT –V</b>  Development of Chick up to formation of three germ layer Placenta in mammals.
<b>FEBRUARY</b>	REVISION

**B. Sc. II**  
**Zoology**  
**PAPER-I**  
**ANATOMY AND PHYSIOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>UNIT I</b> – Integument and its derivatives: structure of scales, hair and feathers Alimentary canal and digestive glands in vertebrates
<b>AUGUST</b>	<b>UNIT I</b> - Respiratory organs : Gills and lung , air-sac in birds
<b>SEPTEMBER</b>	<b>UNIT II</b> - Endoskeleton: (a) Axial Skeleton – Skull and Vertebrae (b) Appendicular Skeleton - Limbs and girdles Circulatory System: Evolution of heart and aortic arches Urinogenital System: Kidney and excretoryducts
<b>OCTOBER</b>	<b>UNIT III</b> -Nervous System: General plan of brain and spinal cord Ear and Eye: structure and function
<b>NOVEMBER</b>	<b>Unit III</b> – Gonads and genital ducts
<b>DECEMBER</b>	<b>UNIT – IVD</b> igestion and absorption of dietary components Physiology of heart, cardiac cycle and ECG Blood Coagulation Respiration: mechanism and control of breathing
<b>JANUARY</b>	<b>UNIT –V-</b> Excretion: Physiology of excretion,osmoregulation Physiology of muscle contraction Physiology of nerve impulse, Synaptic transmission
<b>FEBRUARY</b>	<b>REVISION</b>

**B. Sc. II  
Zoology  
PAPER-II**

**VERTEBRATE ENDOCRINOLOGY, REPRODUCTIVE BIOLOGY  
BEHAVIOUR, EVOLUTION AND APPLIED ZOOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JULY	<b>UNIT I-</b> General Characters of Hormones Hormone receptor Biosynthesis and secretion of thyroid, adrenal, ovarian and testicular hormones Endocrine disorder due to hormones and other glands
AUGUST	<b>UNIT II –</b> Reproductive cycle invertebrates Menstruation, lactation and pregnancy Mechanism of parturition Hormonal regulation of gametogenesis Extra-embryonic membrane
SEPTEMBER	<b>UNIT III-</b> Evidence of organic evolution. Theories of organic evolution.
OCTOBER	<b>UNIT III-</b> Variation, Mutation, Isolation and Natural selection. Evolution of Horse
NOVEMBER	<b>UNIT IV-</b> Introduction to Ethology. Patterns of Behaviour: Taxes, Reflexes, Drives and Stereotyped behaviours.
DECEMBER	<b>UNIT IV-</b> Reproductive behavioural patterns. Hormones, drugs and behaviour
JANUARY	<b>UNIT V –</b> Aquaculture Sericulture Apiculture Pisciculture
FEBRUARY	<b>UNIT V –</b> Poultry keeping Elements of pest control- Chemical control Biological control

**B. Sc. III**  
**Zoology**  
**PAPER-I**  
**ECOLOGY, ENVIRONMENTAL BIOLOGY, TOXICOLOGY,**  
**MICROBIOLOGY AND MEDICAL ZOOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JULY	<b>UNIT – I</b> Aims and scopes of ecology Major ecosystems of the world-Brief introduction Population- Characteristics and regulation of densities Communities and ecosystem Bio-geo chemical cycles Air & water pollution Ecological succession
AUGUST	<b>UNIT-II</b> Laws of limiting factor Food chain in fresh water ecosystem Energy flow in ecosystem- Trophic levels Conservation of natural resources Environmental impact assessment
SEPTEMBER	<b>UNIT-III</b> Definition of toxicity Classification of toxicants Principle of systematic toxicology
OCTOBER	<b>UNIT III</b> Toxic agents & their action-Metallic & inorganic agents Animal poisons- snake venom, scorpion & bee poisoning Food poisoning
NOVEMBER	<b>UNIT-IV</b> General and applied microbiology Microbiology of domestic water and sewage
DECEMBER	<b>UNIT IV</b> Microbiology of milk & milk products Industrial microbiology
JANUARY	<b>UNIT-V</b> Brief introduction to pathogenic microorganisms, Rickettsia, Spirochaetes & Bacteria Brief account of life history & pathogenicity of the following pathogens with reference to man: prophylaxis & treatment Pathogenic protozoans- Entamoeba, Trypanosome & Giardia Pathogenic helminthes-Schistosoma Nematode pathogenic parasites of man Vector insects
FEBRUARY	REVISION

**B. Sc. III**  
**Zoology**  
**PAPER-II**  
**GENETICS, CELL PHYSIOLOGY, BIOCHEMISTRY, BIOTECHNOLOGY AND**  
**BIOTECHNIQUES**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JULY	<b>UNIT – I</b> Linkage & linkage maps Varieties of gene expression- multiple alleles; Lithogenesis, Pleiotropic Gene; Gene interaction; Epistasis Sex chromosomes systems & sexlinkage Mutation & chromosomal alteration; meiotic consequences Human genetics, chromosomal & single gene disorders (somatic cellgenetics)
AUGUST	<b>UNIT-II</b> General idea about pH &buffer Transport across membrane- cell membrane; mitochondria and endoplasmic reticulum Active transport & its mechanism; active transport in mitochondria & endoplasmic reticulum Hydrolytic enzymes-their chemical nature, activation &specificity
SEPTEMBER	<b>UNIT-III</b> Amino acids & peptides- Basic structure & biologicalfunction Carbohydrates & its metabolism- Glycogenesis; Gluconeogenesis; Glycolysis; Glycogenolysis; Cori-cycle
OCTOBER	<b>UNIT III</b> Lipid metabolism- Oxidation of glycerol; Oxidation of fattyacids Protein metabolism- Deamination, transamination, transmethylation; Biosynthesis of protein
NOVEMBER	<b>UNIT-IV</b> Biotechnology- Scope &importance Recombinant DNA & Genecloning
DECEMBER	<b>UNIT IV</b> Cloned genes & other tools ofbiotechnology Applications of biotechnology in (i) Pharmaceutical industry (ii) Food processing industry
JANUARY	<b>UNIT-V</b> Principles & techniques about the following: (i) pHmeter (ii) Colorimeter (iii) Microscopy- Light microscopes, Phase contrast & Electronmicroscopes (iv) Centrifugation (v) Separation of biomolecules by chromatography &electrophoresis (vi) Histo-chemical methods of determination of protein, lipid &carbohydrates
FEBRUARY	REVISION



**GOVT.D.B.GIRLS' P G (AUTONOMOUS) COLLEGE, RAIPUR**  
**TEACHING PLAN / SESSION 2016-17**

**B.SC.HOME SCIENCE PART I GROUP A PAPER II INTRODUCTION TO RESOURCE MANAGEMENT ECOLOGY AND ENVIRONMENT**

- JULY- INTRODUCTION, CONCEPT, PURPOSE OF MANAGEMENT, ACHIEVEMENT OF GOALS
- AUG- OBSTACLE TO IMPROVE MANAGEMENT, FACTORS AFFECTING MANAGEMENT, LIFESTYLE.  
TYPES OF FAMILY, SIZE, STAGES OF FAMILY LIFE CYCLE
- SEPT- DEFINITION, TYPES, UTILITY OF GOALS, IMPORTANCE, SOURCES CLASSIFICATION  
CHARACTERISTICS OF VALUE, CHANGING VALUES, STANDARD DEFINITION, QUANTITATIVE  
QUALITATIVE, CONVENTIONAL, NON CONVENTIONAL, ROLE OF DECISION IN MANAGEMENT ,  
AVAILABILITY OF RESOURCES, AND PRACTICAL
- OCT- MEANING OF MANAGEMENT PROCESSES PLANNING, CONTROLLING, EVALUATION, DECISION  
MAKING ,PLANNING IMPORTANCE, TYPES, TECHNIQUES, CONTROLLING PHASES ENERGIZING  
CHECKING, SUCCESS FACTORS, SUITABLY, PROMPTNESS, NEW DECISIONS, FLEXIBILITY &  
PRACTICAL
- NOV- SUPERVISION DIRECTIONS &GUIDANCE, ANALYSIS OF SUPERVISION, EVALUATION,IMPORTANCE  
RELATION TO GOALS, SELF EVALUATION, EVALUATION OF MANAGEMENT PROCESSES, TYPES  
AND FACTORS OF RESOURCES AND PRACTICAL
- DEC- MEANING, DEFINITION, SCOPE OF ECOLOGY AND ENVIRONMENT, LAND ENERGY, MINERALS  
RESOURCE, POLLUTION, SOURCES, DOMESTIC WASTE, HEALTH HAZARD PREVENTION  
CONTROL,WATER PROBLEM ISSUES, POLLUTION SCARCITY, POLLUTANTS, HEALTH HAZARD,  
CONTROL AND PRACTICAL
- JAN- UTILITY & RESOURCE OF FOREST, DEFORESTATION, CONSERVATION, AIR COMPOSITION,  
POLLUTANTS, SOURCES, HEALTH HAZARD, GREEN HOUSE EFFECT,& PRACTICAL
- FEB- ENERGY SOURCES, ALTERNATIVE, CONSERVATION, U  
NCONTROLLED POLLUTION GROWTH AND  
CONTROL, ENVIRONMENT EDUCATION, NEED, OBJECTIVES, ROLE OF GOVERNMENT, NGOS  
EDUCATION INSTITUTIONS, NATIONAL, INTERNATIONAL AGENCY, ENVIRONMENTAL  
PROTECTION POLICY, PROGRAMME, LEGISLATION

**GOVT.D.B.GIRLS'P G (AUTONOMOUS) COLLEGE, RAIPUR**  
**TEACHING PLAN / SESSION 2016-17**  
**BSc./ B.A. Part- I (FASHION DESIGNING)**  
**Group B / Paper-I**  
**NAME OF PAPER : TEXTILE SCIENCE**

MONTH	TEACHING PLAN
JULY	Introduction of the Subject. A brief historical background of Textile. Common Terminology used in Textile. Physical Properties of Textile fibers.
AUGUST	Chemical properties of Textile fibers. Introduction of Textile fibers Classification of Textile fibers : Natural fiber Vegetative Fiber : Cotton , Linen ( History, Cultivation , Manufacturing process & properties of each fiber )
SEPTEMBER	Animal Fiber : Silk,Wool ( History, Cultivation , Manufacturing process & properties of each fiber ) Mineral Fiber : Gold, Silver, Asbestoss Man-Made Fiber : Rayon ( History , Types, Production & Properties )
OCTOBER	Thermoplastic Fiber: Nylon ( History , Types, Production & Properties) Yarn : Meaning, yarn making. Types of yarn : Simple, Complex, Novelty. Yarn Twist
NOVEMBER	Methods of Fabric Construction:Weaving – Essential parts of Handloom Different types of Weaves. Other Methods of Fabric Construction.
DECEMBER	Identification of Fabric : Appearance test , Microscopic test , Burning test , Creasing test ,Breaking test ,Tearing test and Chemical test. Importance of Clothing
JANUARY	Selection of fabric for Dress according to Climate , Age, Occupation , Personality , Occasion , Figure type , Fashion etc. Wardrobe Planning
FREBRUARY	REVISION

**GOVT.D.B.GIRLS' P G (AUTONOMOUS) COLLEGE, RAIPUR**  
**TEACHING PLAN / SESSION 2016-17**  
**BSc./ B.A. Part- I (FASHION DESIGNING)**  
**Group B / Paper-II**  
**NAME OF PAPER : COLOR THEORY AND CONCEPTS**

MONTH	TEACHING PLAN
JULY	Introduction to Element of Design <ul style="list-style-type: none"> <li>• Color</li> <li>• Line &amp;</li> <li>• Texture</li> </ul>
AUGUST	Color Theories <ul style="list-style-type: none"> <li>• Prang's Color Theory</li> <li>• Munshell's Color Theory</li> </ul> Principles of Design <ul style="list-style-type: none"> <li>• Proportion</li> </ul>
SEPTEMBER	<ul style="list-style-type: none"> <li>• Balance</li> <li>• Harmony</li> <li>• Rhythm</li> <li>• Emphasis</li> </ul>
OCTOBER	Classification of Lines and its Significance. Combination of Lines, Different types of Patterns : Structural , Decorative , Geometrical , Abstract , Floral and Scrawly pattern.
NOVEMBER	Color Wheel ( According to Prang's Color Theory ) <ul style="list-style-type: none"> <li>• Single line design</li> <li>• Double line design</li> <li>• Four fold design</li> </ul>
DECEMBER	Color Scheme : Complementary, Double Complementary, Split Complementary, Traid Color Scheme, Pastel & Dusty Pastel, Contrast color scheme, Analogous color scheme, VIBGYOR color scheme, Neutral color scheme with Metallic colors, Nursery prints.
JANUARY	Enlargement of Pint. Texture : Fevicol texture , Thumb Impression, Rope Impression, Leaf Impression, Smoke and Spray texture, Wax drop & rubbing, Blowing, Stencils, Vegetable blocks, Stone Impression, Marble texture ,Dry brush etc.
FEBRUARY	REVISION

**GOVT.D.B.GIRLS'P G (AUTONOMOUS) COLLEGE, RAIPUR**  
**TEACHING PLAN / SESSION 2016-17**  
**BSc. Part- I ( HOME SCIENCE )**

**Group IV / Paper-B**

**NAME OF PAPER : PERSONAL EMPOWERMENT AND COMPUTER BASICS**

MONTH	TEACHING PLAN
JULY	Personal growth and personality development. The challenges: understanding and managing oneself. Personality development: Factors and influences. Peer pressures: Issues and management. Conflicts and stress, Simple coping strategies
AUGUST	Adjustment and readjustment to changing needs and conditions of contemporary society (technological changes, social changes, changes in values).Empowerment of women- Women and development: personal, familial, societal and national perspective.Capacity building for women: Education, decision-making abilities and opportunities.
SEPTEMBER	Women's organizations and collective strength: Women's action groups Women's participation in development initiatives.Study and discussion of life histories, case studies of illustrious Indian women from different walks of life eg. IndiraGandhi, Jhansi ki Rani, Kiran Bedi, Ha Bhat etc.
OCTOBER	Case studies: Medha Patkar, Vijaylaxmi Pandit, Sudha Chandran, Bhanvari Devi, Anutai Wagh. Home Science Education as Empowerment :The interdisciplinary of Home Science Education, the role of Home Science education for personal growth and professional development.
NOVEMBER	Home Science as holistic education with integration of goals for persons, enhancement and community development.Some Significant Contemporary Issues of Concern -Gender issues: inequities and discriminations, biases & stereotype; myths and facts.
DECEMBER	Substance abuse: Why and how to say no. Healthy habits: In relation to physique, to heterosexual interests. AIDS : Awareness and Education Computer Fundamentals : Overview about computers.
JANUARY	Computer Fundamentals : Components of a computer, Input / Output devices, Secondary storage devices, Number system : Decimal, Binary, Octal, Hexadecimal. Representation of information : BCD, EBCDIC, ASCII. Representation of Data : Files, Records, File organization and access. Security and safety of data. Introduction to operating systems.
FREBRUARY	RIVISION

**GOVT.D.B.GIRLS'P G (AUTONOMOUS) COLLEGE, RAIPUR**  
**TEACHING PLAN / SESSION 2016-17**  
**BSc./ B.A. Part- II (FASHION DESIGNING)**

**Group B / Paper-I**

**NAME OF PAPER: INTRODUCTION TO FASHION ILLUSTRATION & MODEL**

MONTH	TEACHING PLAN
JULY	Fashion : Definition ,Theories Fashion Trends In India. Terms Related To Fashion Industry. Factors Affecting Fashion.
AUGUST	Anatomy Of Human Body Skeleton & Muscular System Joints Of Human Body Normal Body , Abnormal Body
SEPTEMBER	Figure Problems & Different Types Of Figure Defects :Erect, Stooping, Low Shoulder, Square Shoulder, Thin Waist, Stout Waist, Long Body, Short Body, Full Back, Flat Back, Cylindrical, Corpulent, Head Forward, Head Backward
OCTOBER	Deformity : Natural & Accidental Principle Of Figure Drawing Sketching Of Different Body Features
NOVEMBER	Figure Head Theories : 7 ½ (Average Figure) 8 ½ (Average Figure) Drawing Of Human Form In Different Angles : Front , Back , Side .
DECEMBER	Figure Head Theories 10 ½ (Block Figure) 12 ½ (Fashion Figure) Drawing Of Human Form In Different Angles : Front , Back , Side .
JANUARY	Drawing Different Silhouettes Rendering Of Figure In Different Postures Sketching Styles For Different Age Group Male , Female , Kids
FREBRUARY	RIVISION

**GOVT.D.B.GIRLS'P G (AUTONOMOUS) COLLEGE, RAIPUR**

**TEACHING PLAN / SESSION 2016-17**

**BSc./ B.A. Part- II (FASHION DESIGNING)**

**Group B / Paper-II**

**NAME OF PAPER: DESIGN IDEAS IN GARMENTS**

MONTH	TEACHING PLAN
JULY	Body Measurements Anthropometric Measurements Methods Of Taking Body Measurements Standard Measurement Charts Based On Different Age Group
AUGUST	Pattern Making Principles, Techniques, And Application For Different Styles Basic Paper Pattern For : Children Wear (Any 3)
SEPTEMBER	Men's Wear (Any 2) Ladies Wear (Any 3) Preparing Layouts For Above Mention Paper Pattern Cloth Estimation For Different Garments
OCTOBER	Necklines :Study Of Different Types Of Necklines Variations Of Necklines Collars : Study Of Different Types Of Collars Collars Above The Necklines (Band Collars)
NOVEMBER	Collars Below The Necklines (Flat Collars) Tucks : Different Types Of Tucks (Pin, Diagonal, Blind, Cross, Spaced, Diamond, Shell, Corded)
DECEMBER	Pleats : Different Types Of Pleats (Simple, Knife, Box, Accordion, Kick, Reverse, Inverted Box) Seam : French & Counter Seam Gathers : Sheerings & Smocking
JANUARY	Yoke : Different Types Of Yokes (Body, Waist, Hip, Shoulder) Sleeves : Different Types Of Sleeves (Plain, Puff, Raglan, Kimono, Dolman)
FREBRUARY	REVISION

**GOVT.D.B.GIRLS'P G (AUTONOMOUS) COLLEGE, RAIPUR**

**TEACHING PLAN / SESSION 2016-17**

**BSc./ B.A. Part- III (FASHION DESIGNING)**

**Group B / Paper-I**

**NAME OF PAPER : MARKETING & SALES MANAGEMENT**

MONTH	TEACHING PLAN
JULY	Introduction to Marketing : Meaning, Definition, Nature & Scope ,Types, Functions & Method ,Marketing Process Standardization & Grading : Meaning, Definition, Importance & Advantages.
AUGUST	Product Policy Decision , Product Life Cycle Pricing Policies : Pricing Economic Concept & Objects Meaning of cost ,Methods of setting Price ,Factors Affecting Pricing Decisions, Sales Promotion: Meaning, Method, Strategies & Planning
SEPTEMBER	Salesmanship: Meaning,Definition,Characteristics & Scope Essentials of Successful Salesmanship, Duties & Main Qualities of Successful Salesmanship, Salesmanship & Advertisement,Channels of Distribution : Meaning, Definition, Types & Functions .
OCTOBER	Channels of Distribution of Consumer Goods & Industrial Goods,Role of Middleman. Channels of Distribution In India Advertisement: Meaning, Definition, Functions & Principles ,Advantages & Disadvantages, Media of Advertisement
NOVEMBER	Factors to be considered when selecting a medium of Advertisement,Consumer Education. Marketing Research &Information: Meaning,Definition,Object,Types,Procedure Importance & Advantages
DECEMBER	Market Report : Meaning & Types Market Terminology , Consumer Protection Entrepreneurship :Meaning, Definition, Nature & Types Qualities Of A Successful Entrepreneur
JANUARY	Theories & Models Of Entrepreneurship (Psychological, Sociological, Economic & 7 Integrated Models) Factors Affecting The Development Of Entrepreneurship Self Employment Programmes In India Consumer Association In India.
FREBRUARY	RIVISION

**GOVT.D.B.GIRLS'P G (AUTONOMOUS) COLLEGE, RAIPUR****TEACHING PLAN / SESSION 2016-17****BSc./ B.A. Part- III (FASHION DESIGNING)****Group B / Paper-II****NAME OF PAPER: CLOTHING CONSTRUCTION & FASHION DESIGNING**

MONTH	TEACHING PLAN
JULY	Clothing: Origin of Clothing, Meaning & Significance, Costumes of Ancient Age, Costumes of Modern Age. Personality : Meaning, Types & Factors Affecting Personality. Clothing & Personality. Selection of Children Clothing according to Age.
AUGUST	Fabric For Garment Making: Handling Of Different Types Of Fabric, Selection Of Suitable Fabric For Clothing, Suggestions For Persons Of Different Figures, Factors Affecting Clothing Decisions, Industrial Machines & Equipment Used For Cutting, Sewing And Finishing.
SEPTEMBER	Interrelationship Of Needles, Thread, Stitch Length, & Fabric Fitting : Fundamentals Of Fitting, Problems Area In Fitting, Factors Affecting Good Fit. Tailoring : General Principles, Proper Measurements , Principles Of Commercial Tailoring
OCTOBER	Pattern Making : General Instructions For Pattern Making, Method, Types & Layout, Use Of Commercial Paper Pattern, Pattern Alteration, Meaning & Types, Dart Manipulation & Dart Concealment, Drafting & Draping, Trimming Materials Used For Making Garment, Ornamentation Techniques
NOVEMBER	Embroidery : Fundamentals , Techniques , Design Color Combination , Use Of Different Threads , Different Types Of Stitches. Traditional Embroidery Of India: Kutch & Kathiyawar Of Gujrat, Zari Embroidery, Applique Work
DECEMBER	Traditional Embroidery of India: Kashida of Kashmir & Bihar, Kantha If Bengal, Phulkari of Punjab. Chikenkari of Lucknow, Kasuti of Karnataka, Costume of Men For Different States, Details of Costumes, Jewellery & Accessories
JANUARY	Costume of Women For Different States , Details of Costumes Jewellery & Accessories, Marriage Costumes For Different States of India, Various Dance Costumes Of India, Accessories: Importance & Types, Factors Affecting Selection Of Accessories
FREBRUARY	REVISION



PROPOSED TEACHING PLAN FOR THE SESSION OF **2016-17**

**B.SC.HOME SCIENCE PART III GROUP C PAPER I I**

JULY- DESIGN DEFINITION, TYPES STRUCTURAL, DECORATIVE, ELEMENTS OF DESIGN LINE, SIZE, FORM, STRUCTURE,SPACE, PATTERNS, SHAPES

AUG- LIGHT CHARACTERISTICS, CLASSIFICATION, STUDY OF COLOUR, CLASSIFICATION, DIMENSION, COLOUR SCHEMES, EFFECT, PRINCIPLES OF DESIGN DEFINITION CHARACTERISTICS, TYPES OF BALANCE, HARMONY, SCALE, PROPORTIONS, RHYTHM, EMPHASIS

SEPT- INDIAN REGIONAL, TRADITIONAL, CONTEMPORARY ART IN FLOOR DECORATION, HOME DECORATION, ACCESSORIES AND PRACTICAL, APPRECIATION OF ART IN TERMS OF PRINCIPLES OF ART &DESIGN, IN TERMS OF COMPOSITION And AESTHETIC APPEAL And PRACTICAL

OCT- FAMILY HOUSING NEED PROTECTIVE, ECONOMIC, AFFECTIONAL,SOCIAL, STANDARD OF LIVING , HOUSING GOALS, STYLE, FUNCTION, OCCUPATION, FACTORS INFLUENCING SELECTION & PURCHASE OF SITE FOR HOUSE BUILDING LEGAL ASPECT, LOCATION, PHYSICAL FEATURE, SOIL CONDITIONS, COST, SERVICES &PRACTICAL

NOV- HOUSE PLANNING READING HOUSE PLANS, GROUPING OF ROOMS, ORIENTATION, CIRCULATION, FLEXIBILITY, PRIVACY, SPECIOUSNESS, SERVICES, AESTHETIC, ECONOMY LIGHT VACCINATION, PLANNING OF DIFFERENT ROOMS LIVING,SLEEPING, DINING ROOM KITCHEN, STORE TOILET, PASSAGE, STAIRCASE ,LAND SCAPING PRINCIPLES &APPLICATION

DEC- FINANCIAL CONSIDERATIONS AVAILABILITY OF FUND FOR HOUSING HDFC, COOPERATIVE HOUSING SOCIETY, LIC,COOPERATIVE BANK, PF,FCI&PRACTICAL

JAN DISABILITY OF OWNING VERSUS RENTING,  
HOUSING PROBLEMS AND REMEDIES &PRACTICAL

FEB- FURNITURE STYLE TRADITIONAL, CONTEMPORARY, MODERN, SELECTION OF FURNITURE FOR COMFORT, REST, RELAXATION, WORK, STORAGE, ARRANGEMENT OF FURNITURE OF LIVING, SLEEPING, DINING AND MULTIPURPOSE ROOM, UPHOLSTERED FURNITURE MATERIAL TECHNIQUES, DESIGN, TYPES OF CURTAINS, DRAPERIES, FLOOR COVERINGS, RUGS, CARPETS CUSHION COVERS, SELECTION AND USE OF ACCESSORIES AND THEIR ROLE IN INTERIORS

**B.SC.HOME SCIENCE PART III GROUP C PAPER II FOUNDATION OF ART &DESIGN**

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JULY- DESIGN DEFINITION & TYPES STRUCTURAL, DECORATIVE, ELEMENTS OF DESIGN, LINE, SIZE, FORM STRUCTURE, SPACE, PATTERN, SHAPE, LIGHT CHARACTERISTICS CLASSIFICATION

AUG- STUDY OF COLOUR, CLASSIFICATION, DIMENSION, COLOUR SCHEMES, EFFECT, PRINCIPLES OF DESIGN, DEFINITION, CHARACTERISTICS & TYPES OF BALANCE, HARMONY, SCALE, PROPORTIONS. RHYTHM, EMPHASIS

SEPT- INDIAN REGIONAL, TRADITIONAL CONTEMPORARY ART IN FLOOR DECORATION, HOME DECORATION, ACCESSORIES, APPRECIATION OF ART IN TERMS OF PRINCIPLES OF ART & DESIGN IN TERMS OF COMPOSITION & AESTHETIC APPEAL AND PRACTICAL

OCT- FAMILY HOUSING NEED PROTECTIVE, ECONOMIC, AFFECTIONAL, SOCIAL STANDARD OF LIVING HOUSING GOALS, STYLE, FUNCTION OCCUPATION FACTORS INFLUENCING SELECTION &

PURCHASE OF SITE FOR HOUSE BUILDING LEGAL ASPECT LOCATION PHYSICAL FEATURE SOIL

CONDITIONS, COST, SERVICE AND PRACTICAL

NOV- HOUSE PLANNING READING HOUSE PLANS, GROUPING OF ROOMS. ORIENTATION,

CIRCULATION, FLEXIBILITY, PRIVACY, SPACIOUSNESS, SERVICES, AESTHETICS,

ECONOMY, LIGHT, VENTILATION, PLANNING OF DIFFERENT ROOMS LIVING, DINING, BEDROOM KITCHEN, STORE, TOILET, PASSAGE, STAIRCASE, LAND SCAPING PRINCIPLES & APPLICATION AND PRACTICAL

DEC- FINANCIAL CONSIDERATIONS AVAILABILITY OF FUNDS FOR HOUSING HDFC, COOPERATIVE HOUSING SOCIETY, LIC, COOPERATIVE BANK, FCI, PF & PRACTICAL

JAN- DISABILITY OF OWNING VERSUS RENTING, HOUSING PROBLEMS, CAUSES, REMEDIAL MEASURES

PRACTICAL

FEB- FURNITURE STYLE TRADITIONAL, CONTEMPORARY, MODERN, SELECTION OF FURNITURE FOR

COMFORT, REST, RELAXATION, WORK, STORAGE, ARRANGEMENT OF FURNITURE FOR LIVING,

SLEEPING, DINING AND MULTIPURPOSE ROOM, UPHOLSTERED FURNITURE MATERIAL,

TECHNIQUES, DESIGN, TYPES OF CURTAINS, DRAPERIES, FLOOR COVERINGS, RUGS, CARPETS

CUSHION COVERS, SELECTION AND USE OF ACCESSORIES AND THEIR ROLE IN INTERIORS

**DEPARTMENT OF HOME SCIENCE**  
**B.Sc. (H.Sc.)-III**  
**SESSION 2016-17**  
**GROUP-C**  
**PAPER-1**  
**EARLY CHILDHOOD EDUCATION**

Month	Plan
July	<b>UNIT-I</b> Significance and objectives of early childhood care and education. <ul style="list-style-type: none"> <li>1. Significance of early childhood years in individuals development.</li> <li>2. Meaning and need for intervention programmes for better growth and development.</li> <li>3. Objectives of ECCE.</li> <li>4. Different types of programs currently offered. Objectives of the program routine and target group covered by each of the following. ECE programme - Balwadi, anganwadi, Nursery school, Kindergarten, Montessori, laboratory nursery school ECCE Program - ICDS and mobile cretch. Play group : day care.</li> </ul>
August	<b>UNIT-II</b> Current Status and Expansion of Scope of ECE to ECCE <ul style="list-style-type: none"> <li>Expansion from ECE to ECCE.</li> <li>Current Status of ECCE programme.</li> <li>Objectives : staff qualifications, teacher-children ratio, indoor and outdoor play space and play facilities, equipment, curriculum and evaluation.</li> <li>Admission tests and effects on children.</li> <li>Effects of pressures on young children due to formal education.</li> <li>Need for ECCE programmes to provide quality care where mothers are at work.</li> <li>Historical overview of ECCE.</li> <li>Global perspective - views of educationists - Froebel, Mac Millan sister, Deweu and Montessori,</li> <li>ECE in India : Overview of pre.and post independence period.</li> <li>Contributions of Ravindranath Tagore, Mohandas Gandhi, Gijubhai Bodheka, Tarabai Modak, Anutai Wagh</li> </ul>
September	<ul style="list-style-type: none"> <li>Recent Developments : Policies, Institutions and contributions of NGOs</li> <li>national policy on children.</li> <li>National policy on education 1986.</li> <li>Adoption of Ram Joshi Committee Report on Child Education by Government of Maharashtra.</li> <li>Role of Indian Association of Preschool Education, National Institute of Public Cooperation and Child Development, National Council for Educational Research and Training, SCERT and NGOs</li> </ul>
October	<b>UNIT-III</b> <ul style="list-style-type: none"> <li>Meaning of curriculum, Foundation of. curriculum development.</li> <li>Impact of play as means of development and learning.</li> <li>Developmental stages of play. Types of Play - Solitary play, parallel play, associative play and coopertives play.</li> <li>Functions of play - play as a means of assessing children's development.</li> <li>Teachers Role in creating environment and Promoting play.</li> <li>Classical theories of play - Surplus energy theory relaxation theory, Preexercise &amp; recapitulation theory.</li> </ul>
November	<ul style="list-style-type: none"> <li>Programme Planning - Approaches to learning : Incidental and planned learning.</li> <li>Principles of programme planning : - from known to unknown, simple to complex, concrete to abstract.</li> <li>Balance between individual and group activity, indoor and outdoor play, quiet and active plays, guided and free activities.</li> <li>Factors influencing programme planning.</li> </ul>

	<ul style="list-style-type: none"> <li>Formal versus non-formal approach in education : advantages and disadvantages. - Integrated learning approach or project method that is covering various components of curriculum that is focussing on one topic/theme at a time.</li> <li>Short and long term planning.</li> </ul>
December	<p><b>UNIT-IV Languages</b></p> <ul style="list-style-type: none"> <li>Goals of language teaching.</li> <li>Readiness for reading and writing. Meaning of readiness.</li> <li>Factor to be considered for readiness : Age, Vision, Hearing, Physical, emotional, social, experiential background, attention span, finer motor coordination, eye hand coordination, reading from left to right and top to bottom.</li> </ul> <p><b>Mathematics</b></p> <ul style="list-style-type: none"> <li>Importance of number and mathematics.</li> <li>- Number as a language and history of its development.</li> <li>Abstract nature of number.</li> <li>Mathematical readiness.</li> <li>Analysis of prerequisite skill for 'number classification, comparing, seriation, patterning, counting, shape and space, measurement fractions, vocabulary, numeral operations.</li> <li>Decimal system of numeration (base 10)</li> <li>Number line-position and relevance of zero.</li> <li>Operations and relevant rules and properties; subtraction, multiplication and division.</li> <li>Two and three dimension shapes, properties, characteristics.</li> <li>Basic principles of measurements 0 time/distance, weight, capacity and money.</li> </ul>
January	<p><b>Environmental studies</b></p> <ul style="list-style-type: none"> <li>Scope of environmental studies.</li> <li>Importance and goals of environmental studies.</li> <li>Content : to conclude understanding from biological, physical and social environment.</li> </ul> <p><b>UNIT-V Project method</b></p> <ul style="list-style-type: none"> <li>Introduction</li> <li>Meaning and advantages of using project method.</li> <li>Planning .</li> <li>Resource unit.</li> </ul> <p><b>Alternative to Home Work</b></p> <ul style="list-style-type: none"> <li>Disadvantages of learning by role.</li> <li>Suitable alternatives such as observations, exploration, experimentation and reporting orally, picture or at. Something related to the concepts covered in class.</li> </ul>
February	<p><b>Evaluation</b></p> <ul style="list-style-type: none"> <li>Need for evaluation.</li> <li>Formative and summative evaluation.</li> <li>Methods of evaluation : Observations.</li> <li>Evaluation of daly work, tools for evaluation</li> <li>Reporting to parents.</li> <li>Revision</li> </ul>

**Govt. D.B. Girls P.G. Autonomous College , Raipur (C.G.)**  
**Proposed Teaching Plan For the Session 2016-17**  
**B.Com. Part - I**

Month	Financial Accounting	Business Mathematics	Business Communication	Business Regulatory Framework	Business Environment	Business Economics
July	UNIT-I Meaning & Scope of Accounting : Need, development & Definition, OBJECTIVES of accounting, difference between Book – keeping and accounting ; Branches of accounting ; Accounting principles.	UNIT-I Calculus (Problems and theorems involving trigonometrically ratios are not to be done) Differentiation : Partial derivatives up to second order ; Homogeneity of functions and Euler's theorem.	UNIT-I Introducing Business Communication: Definitions, concepts and Significance of communication, Basic forms of communication; Communication models and process, Principles of effective communication; Theories of communication ; Audience analysis.	UNIT-I Law of Contract(1872) : Nature of contract ; Classification ; Offer & Acceptance ; Capacity of parties to contract , free consent , considerations, legality of object ;	UNIT-I Business Environment : Concept , Components and Importance, Economic Trends (over view) : Income ;	UNIT-I Introduction: Basic problems of an economy ; Working of price mechanism . Elasticity of Demand : Concept and measurement of elasticity of demand ; Price , income and cross elasticity's ; Average revenue , marginal revenue and elasticity of demand ; Determinants of elasticity of demand ; importance of elasticity of demand.
August	UNIT-I Accounting Standards : International accounting standards (only outlines); Accounting standards in India. Accounting Transactions: Accounting cycle; Journal; Rules of debit & credit; Compound Journal entry ; Opening entry ; Relationship between journal & Ledger ; Capital & Revenue Classification of Income & Expenditure & Receipts.	UNIT-I Maxima & Minima; Cases of one variable involving second or higher order derivatives; logarithm's.	UNIT-I Self – Development and Communication : Development of positive personal attitudes, SWOT Analysis; Vote's model of interdependence; Whole communication.	UNIT-I <b>Agreement</b> declared void; Performance of contract; Discharge of contract; Remedies for breach of contract.	UNIT-I Savings and investments ; Industry ; Trade and balance of payments , money , Finance , Prices.	UNIT-II Production Function : Law of variable proportions ; Iso-quants ; Expansion path ; Returns to scale ; Internal & External economies and diseconomies.

September	UNIT-II Final accounts : Trial Balance; Manufacturing accounts ; Trading account ; Profit & Loss account; Balance Sheet ; Adjustment entries. Rectification of errors: Classification of errors; Location of errors; Rectification of errors; Suspense account; Effect on profit.	UNIT-II Matrices & Determinants : Definition of a matrix; Types of matrices; Algebra of matrices; Properties of determinants; Calculation o values of determinants upto third order; Adjoint of a matrix, elementary row or column operations;	UNIT-II Corporate communication: Formal and Informal communication networks; Grapevine; Miscommunication (Barriers); improving communication.	UNIT-II Special Contracts: Indemnity; Guarantee; Bailment and pledge; Agency.	UNIT-II Problems of Growth : Unemployment ; Poverty ; Regional imbalance ; Social injustice ; Inflation Parallel economy ; Industrial sickness.	UNIT-II Law of Demand: Meaning and Definitions, Effecting Factors, Types; Exception of Law of Demand
October	UNIT-III Depreciation, Provisions, & Reserves : Concept of depreciation ; Causes of depreciation ; Depreciation, depletion , amortization; Depreciation accounting; Methods of recording depreciation ; Methods of providing depreciation;	UNIT-II Finding inverse of a matrix through adjoint and elementary row or column operations; Solution of a system of linear equations having unique solution and involving not more than three variables.	UNIT-II Practices in business communication: Group discussions; Seminars; Effective listening: Principles of affective listening; Factor affective listening exercises; Oral, Written, and video sessions. Audience analysis and Feedback.	UNIT-III Sale of Goods Act, 1930 : Formation of contract of sale ; Goods and their classification , price , conditions , and warranties ; Transfer of property in goods ; Performance of the contract of sale; Unpaid seller and his rights , sale by auction ; Hire purchase	UNIT-III Role of Government : Monetary and fiscal policy ; Industrial policy ; Industrial Licensing; Privatization ; Devaluation ;	UNIT-III Theory of Costs : Short-run and Long-run cost curves - traditional and modern approaches. Market Structures I Market structures and business decisions; OBJECTIVE of a business firm. a. Perfect Competition: Profit maximization and equilibrium of firm and industry; Short - Run and Long-run supply curves; Price and output determination. Practical Applications.
November	UNIT-III Depreciation of different assets ; Depreciation of replacement cost; Depreciation policy; as per Indian accounting standard : .Provisions & Reserves. Accounts of Non–Trading Institutions	UNIT-III Linear Programming – Formulation of LPP: Graphical method of solution; Problems relating to two variables including the case of mixed constraints ; Cases having no solutions , multiple solutions, unbounded solution and redundant constraints.	UNIT-III Writing Skills : Planning business messages; Rewriting and editing; The first draft; Reconstructing the final draft; Business letters and memo formats; Appearance request letters; Good news & bad news letter's; Persuasive letters ; Sales letters ; Collection letters ; Office memorandum.	UNIT-IV Negotiable Instrument Act (1881) :Definition of negotiable instruments; Features ; Promissory Note ; Bills of Exchange & Cheque ; Holder & Holder in the due course ;	UNIT-III Export – Import policy ; Regulation of Foreign investment; Collaborations in the light of recent changes.	UNIT-III b. Monopoly : Determination of price under monopoly ; Equilibrium of a firm; Comparison between perfect competition and monopoly ; Multi–plant monopoly, Price discrimination. Practical Applications.

December	UNIT-IV Special Accounting Areas : Branch Account : Dependent branch : Debtor system , stock & debtor system; Hire-purchase and instalment purchase system; Meaning of hire-purchase contract; Legal provision regarding hire-purchase contract; Accounting records for goods of substantial sale	UNIT-III Transportation Problem , Ratio & Proportion.	UNIT-IV Report Writing :Introduction to a proposal, short report and formal report, report preparation. Oral Presentation : Principles of oral Presentation , factors effecting presentation, sales presentation , training Presentation , conducting surveys , speeches to motivate , effective Presentation skills.	UNIT- IV Crossing of a cheque , Types of crossing ; Negotiation ;Dishonour and Discharge of negotiable instrument	UNIT- IV Review of Previous Plans, The Current Five Year Plan : Major policy ; Resource allocation..	UNIT-III Returns to scale and Equal product Curve Analysis; Internal & External economies and dis-economies.
January	UNIT-V a. Partnership Accounts : Essentials characteristics of partnership ; Partnership deed: Final accounts; Adjustment after closing the accounts; Fixed and fluctuating capital ; Goodwill ; AS-10 ; Joint Life Policy ; Change in profit sharing ratio	UNIT-IV Compound Interest and Annuities : Certain different types of interest rates; Concept of present value and amount of a sum ; Types of Annuities ; Present value and amount of an annuity, Including the case of continuous compounding;	UNIT-V Non-Verbal Aspects of Communicating : Body language : Kinesics , Proxemics , Para language. Effective Listening: Principles of effective listening ; Factors affecting listening exercises; Oral , Written , and video sessions. Interviewing S kills : Appearing in interview ; Conducting interview ; writing resume and letter of application.	UNIT-V The Consumer Protection Act 1986: Salient features; Definition of consumer ; Grievances Redressal Machinery..	UNIT-V International Environment : International trading environment (over view) ; Trends in World trade and the problems of developing countries ; Foreign trade and economic growth;	UNIT-IV Market Structures: Concept, characteristics, classification. Determination of Price under condition of Perfect Competition, Imperfect Competition and Monopoly, Monopolistic Competition, Oligopoly and Duopoly.
February	b. Reconstitution of a Partnership Firm – Admission of Partner : Retirement of a partner; Death of a partner; Dissolution of a firm, Accounting Entries ; Insolvency of partners - Modes of dissolution of a firm; Accounting Entries; Insolvency of partners distribution.	UNIT-IV Valuation of simple loans and debentures; Problems relating to sinking funds UNIT-V Averages, Percentages, Commission, Brokerage, Profit & Loss.	UNIT-V Modern Forms of Communication : Fax ; E-mail ; Video conferencing , etc. International Communication: Cultural sensitiveness and cultural context; Writing and presenting in international situations ; Inter- cultural factors in interactions ; Adapting to global business.	UNIT -V Foreign Exchange Management Act 2000 : Definitions and main Provisions. Right to Information Act 2005 ( Main Provisions )	UNIT-V International economic groupings. International economic institutions - GATT , WTO , World Bank , IMF , FDI, Counter trade.	UNIT-V Theories of distribution, Marginal Productivity theory of distribution, Concept and theories of Wages, Rent, Interest & Profit.

**Govt. D.B. Girls P.G. Autonomous College , Raipur (C.G.)**  
**Proposed Teaching Plan For the Session 2016-17**  
**B.Com. Part - II**

Month	Corporate Accounting	COST ACCOUNTING	PRINCIPLES OF BUSINESS MANAGEMENT	COMPANY LAW	BUSINESS STATISTICS	FUNDAMENTALS OF ENTREPRENEURSHIP
July	Unit-I Issue , Forfeiture and Re-issue of Shares	Unit-I Introduction : Nature and scope of cost accounting; Cost concepts and classification; Methods and techniques ; Installation of costing system ; Concept of cost audit.	Unit-I Introduction: Concept, nature, process and significance of management ; Management roles (Mintzberg) ;	Unit-I Corporate Personalities : Kinds of companies , Nature & Scope, promotion and Incorporation of companies.	UNIT-I Introduction : Statistics as a subject ; Descriptive Statistics – compared to Inferential Statistics ; Types of data ; Summation operation ; Rules of Sigma $\Sigma$	Unit-I Introduction : The entrepreneur , Definition ; Emergence of entrepreneurial class ; Theories of entrepreneurship ; Role of socio - economic environment
August	Unit-I Redemption of preference shares ; Issue and Redemption of debentures .	UNIT-I Accounting for Material : Material Control and techniques ; Pricing of material Issues ; Treatment of material losses.	UNIT-I An overview of functional areas of management ; Development management thought ; Classical and neo-classical system ; Concept Approaches.	UNIT-II Memorandum of Association ; Articles of Association ; Prospectus ,	UNIT-I Operations ; Analysis of University Data ; Construction of a frequency distribution; Concept of central tendency.	Unit-II Promotion of a Venture : Opportunities analysis ; External environmental analysis : Economic , social and technological ; Competitive factors ;
September	Unit-II Final Accounts (as per company act 2013),	Unit-II Accounting for Labour : Labour cost control procedure; Labour turnover ; Idle time and overtime; Methods of wage payment–time and piece rates; Incentive schemes.	Unit-II Planning : Concept , process and types . Decision making – concept and bounded Rationality; management by objectives ; Corporate planning ; Environment analysis and diagnosis ; Strategy formulation.	UNIT-II Share ; Share Capital – transfer and transmission.	UNIT-II Dispersion and their measurements: Partition values; Moments; Skewness and measures .	UNIT-II Legal requirements for establishment of a new unit and raising of funds ; Venture capital sources and documentation required



October	Unit-II Liquidation of Company	UNIT-II Accounting for overheads ; Classification and departmentalization ; Absorption of Overheads ; Determination of overhead rates ; Under and over absorption and its treatment.	UNIT-III Organizing : Concept , nature , process and significance; Authority and resident Relationships; Centralization and Decentralization ; Departmentalization ; Organization Structure – forms and contingency factor.	UNIT-III Capital Management: borrowing powers , mortgages and charges , debentures.	UNIT-III Analysis of Bivariate Data: Linear regression two variables & correlation.	Unit-III Entrepreneuria I Behavior : Innovation and entrepreneur ; entrepreneurial Behavior and Psycho – Theories , Social responsibility.
November	<b>Unit-III</b> Valuation of Goodwill and Shares.	Unit-III Cost Ascertainment : Unit costing ;	Unit-IV Motivating and Leading People at Work : Motivation – concept ; Theories Herzberg , McGregor and Ouchi ; Financial and non-financial incentives.	UNIT-III Directors – Managing Director, whole time director, Appointment, Remuneration and duties.	Index Number : Meaning , types and uses ; Methods of Constructing price and quantity indices ; Test of adequacy ; Chain - base index numbers; Base shifting , splicing and defaulting ; Problems of constructing index numbers ; Consumer price index. Analysis of time series : Causes of variation in time series data ; Components of time series ;	Unit-IV Entrepreneurial Development Programs ( EDP ) : EDP , their role, relevance and achievements ; Role of government in organizing EDPs ;Critical evaluation.
December	UNIT -IV Accounting for Amalgamation of Companies as per Indian Accounting Standard-14;	UNIT-III Job , batch and contract costing.	UNIT-IV Leadership – concept and leadership styles ; Leadership theories ( Tannenb Schmidt) ; Likert's System Management Communication – nature, process , networks and barriers , Effective communication.	Unit-IV Companies Meetings : Kinds , quorum , voting , resolutions , minutes.	UNIT-IV Decomposition – Additive and multiplicative models; Determination of trend – Moving Averages Method and method of least squares ; Computation of seasonal indices by simple averages, ratio – -to-moving average , and link relative methods.	Unit-V Role of Entrepreneur : Role of Entrepreneur in economic growth as an innovator, generation of employment opportunities , complementing and supplementing economic growth , bringing about social stability and balanced regional development of industries ;

January	UNIT-IV Accounting for Amalgamation of Companies as per Indian Accounting Standard-14;	Unit-IV Operating costing ; Process costing – excluding inter – process profits and joint and by – products.	Unit-V Managerial Control : Concept and process ; Effective control system ; Technical Control – traditional and modern.	Unit-V Majority powers and Minority rights ; Prevention of oppression and	UNIT-V Forecasting and Methods : Forecasting – Concept , types and importance ; General approach to forecasting ; Methods of forecasting ; Demand ; Industry Vs Company sales forecast ; Factors affecting company sales.	UNIT-V Role in export promotion and import substitution, forex earning and augmenting and meeting local demands.
February	UNIT-V Consolidated Balance Sheet of holding companies with one subsidiary only	Unit-V Cost Records : Integral and non-integral system ; Reconciliation of cost and financial accounts ; Break Even Point.	UNIT-V Management of change : Concept , nature , and process of planned Resistance to Change ; Emerging horizons of management in a environment.	UNIT-V mismanagement . Winding up : Kinds and conduct.	UNIT-V Theory of Probability : as a concept ; The three approaches to defining probability ; Addition and Multiplication laws of probability ; Conditional probability ; Bayes' Theorem ; Expectations and variances of a random variable.	

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**Proposed Teaching Plan For the Session 2016-17**  
**B.Com. Part - III**

Month	Income Tax	Indirect Taxes	Management Accounting	Auditing	Principles of Marketing	International Marketing
July	<b>UNIT-I</b> Basic Concepts : Income, agriculture Income , casual income, assessment year, previous year, gross total income, total income, person ; Basis of charge :	UNIT-I Central Excise : Nature & Scope of Central Excise; Important terms and definitions under the Central Excise Act. ; General procedure of Central Excise ; Clearance and excisable goods ; Concession to small scale industries under Central Excise Act.	UNIT-I Management Accounting : Meaning , nature ,scope and function of management accounting ; Role of management accounting in decision making ; Management accounting Vs financial accounting ; Tools and techniques of management accounting ;	UNIT-I Introduction : Meaning and objectives of auditing ; Types of audit ; Internal audit. Audit Process : Audit programme ;	UNIT -I Introduction : Nature and scope of marketing ; Importance of marketing as a business function and in the economy ; Marketing Concepts –traditional and modern ; Selling Vs marketing ; Marketing Mix ; Marketing environment.	UNIT -I International Marketing : Nature , definition and scope of international marketing; Domestic marketing Vs International marketing ; International environment – internal and external.
August	<b>UNIT-I</b> : Scope of total income, residence and tax liability, income which does not form part of total income .	UNIT-II State Excise ; CENVAT. Detail study of State excise during calculation of tax.	UNIT-I Financial statement ; Objectives and methods of financial statements analysis ; Ratio analysis ; Classification of ratio – Profitability ratios ; turnover ratios , liquidity ratios , Advantages of ratio analysis ; Limitations of accounting ratios.	UNIT- I Audit and books ; Working papers and evidences .  UNIT-II Internal Check System : Internal control.	UNIT_II Consumer Behavior and Market Segmentation : Nature , scope and Significance of consumer behavior ; Market segmentation – Concept and Importance ; Bases for market segmentation.	UNIT-II Identifying & Selecting Foreign Market: Foreign market entry mode decisions. Product Planning for international market : Product designing ; Standardization Vs adaptation; Branding & Packaging ; Labeling and quality Issues ;

September	<b>UNIT-II</b> Heads of Income : UNIT-IIe Salaries ;	UNIT-III Customs : Role of Customs in international trade ; Important terms and definitions; Goods ; Duty ; Exporter ; Foreign going vessel ; Aircraft goods Export Manifest ; Letter of credit ; Kinds of duties Basic , auxiliary , additional and countervailing ; Basics of levy-advallorem, Specific duties ; Prohibition of export and import of goods and provisions regarding notified & specified goods;	UNIT-II Funds Flow Statement as per Indian Accounting Standard – 3 ; Cash Flow Statement.	UNIT-II Audit Procedure : Vouching : Verification of assets and liabilities.	UNIT-III Product : Concept of product, consumer and industrial goods ; Product Planning and development ; Packaging role and functions ; Brand name and Trade mark ; after sale service ; product-life-cycle concept.	UNIT-II After sale service . International Pricing : Factors influencing International price; Pricing process and methods ; International price quotations and payment terms.
October	<b>UNIT-II</b> Income from House Property.	UNIT-III Import of goods – Free import and restricted import; Type of import - Import of cargo , import of personal baggage, import of stores. Clearance Procedure : For home consumption, for warehousing for re- export; Clearance Procedure for import by post ; Prohibited export of cargo , export of baggage ; Export of Cargo by land , sea , and air routes.	UNIT -III Absorption and Marginal Costing : Marginal and differential costing as a tool for decision making – make or buy ; Change of price mix ; Pricing ;	UNIT-III Audit of Limited Companies : a) Company auditor – Appointment , powers , duties & liabilities. b) Divisible profits and dividends. c) Auditors report – standard report and qualified report.	UNIT-III Price : Importance of price in the marketing mix ; Factors affecting price of a product/service ; Discounts and rebates.	UNIT-III Promotion of Product and Service Abroad : Methods of international promotion ; Direct mail and sales literature ;
November	<b>UNIT-III</b> Profit and gains of business or profession, including provisions relating to specific Business	Unit-IV Central Sales Tax : Important terms and definitions under the Central Sales Tax Act. 1956 : Dealer , dealer goods ,	UNIT- III Break-even analysis ; Exploring new markets ; Shut down decisions.	UNIT -III d) Special audit of banking companies. e) Audit of	UNIT-IV Distribution channels and Physical Distribution : Distribution channels – Concept and role ; Types of	UNIT-III Advertising ; Personal selling ; Trade fairs and exhibitions.

	Capital gains	place of business , sale , sale price, turnover, year, appropriate Authority ; Nature & scope of Central Sales Tax Act. ;		educational institutions. f) Audit of Insurance companies.	distribution channel ; Factors affecting choice of a distribution channel ; Retailers & wholesalers.	
December	<b>UNIT-III</b> Income from other sources. <b>UNIT-IV</b> Computation of Tax Liability : Set-off and carry forward of Losses ; Deduction from gross total income.	UNIT-IV Provisions relating to inter-state sales; Sales/Purchase in the course of imports and export out of India. Registration of dealers and procedure thereof ; Rate of tax ; Exemption of subsequent sales ; Determination of turnover.	UNIT-IV Budgeting for Profit Planning and Control : Meaning of budget and Budgetary control; Objectives ; Merits and limitations ; Types of budgets; Fixed and flexible budgeting ;	UNIT- IV Investigation : Investigation ; Audit of non profit companies a)Where fraud is suspended , and b)When a running a business is proposed.	UNIT-IV Physical Distribution of goods – Transportation , warehousing , Inventory Control ; Order processing.	UNIT-IV International Distribution : Distribution Channels and logistic decisions ; Selection and appointment of foreign sales agents.
January	<b>UNIT-IV</b> Aggregation of income ; Computation of total income and tax liability of an Individual , H.U.F, and Firm	Unit-V State Commercial Tax Definition , Registration , Tax liability , Procedure of computation & collection of Tax , Penalties & Prosecution calculation of tax .	UNIT- IV Control ratio ; Zero based budgeting ; Responsibility accounting ; Performance budgeting.	<b>UNIT-V</b> Recent Trends in Auditing : Nature and significance of cost audit ; Tax audit;	UNIT -V Promotion : Methods of promotion ; Optimum promotion mix ; Advertising Media – their relative merits and limitations ;	UNIT-V Export Policy and Practices in India : EXIM Policy – an overview ; Trends in India's foreign trade ; Steps in starting an export business ; Product selection ;
February	<b>UNIT-V</b> Tax Management : Tax deduction at source , Advance payment of tax ; Assessment procedures ; Tax planning for individuals. Tax evasion, Tax avoidance and Tax Planning Tax Administration : Authorities , appeals , penalties.	UNIT-V VAT- Preliminary Knowledge.	<b>UNIT-V</b> Standard Costing and Variance Analysis : Meaning of Standard cost and Standard costing; Advantages and application ; Variance analysis – material ; Labour and overhead ( Two-way analysis) ; Variances .	<b>UNIT-V</b> Management audit . Company auditing – Qualification , Appointment ,Resignation and Liabilities.	UNIT -V Characteristics of an effective advertisement ; Personal selling ; Selling as a career ; Classification of successful sales person ; Functions of salesman.	UNIT-V Export pricing; Export finance; Documentation; Export procedures ; Export assistance and incentives.

**CLASS: P.G.DIPLOMA IN DIETETICS**  
**SESSION:2016-17**

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**NAME OF PAPER: BASIC DIETETICS**

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August	<b>CONCEPT OF DIET THERAPY</b>  Growth and source of dietetics, Purpose & principles of therapeutic diets, Modification of Normal Diet, Classification of therapeutic Diets.
September	<b>ROLE OF DIETICIAN</b>  Definition Of Nutritional Care, Inter Personal Relationship with Patient, Planning and Implementing dietary care, Team approach to nutritional care.  <b>INTRODUCTION TO HOSPITAL FOOD SERVICE MANAGRMENT</b>  Types of food services, Selection of food material, Cost Control ,Sanitation and safety(In brief).
October	<b>ROUTINE HOSPITAL DIETS</b>  Per-operative and post-operative diets, study and review of hospital diets, Basic Concepts and methods of (I)Oral Feeding(II)Tube Feeding(III) Parenteral Nutrition.  .
November	<b>DIET IN FEVERS AND INFECTIONS</b>  Types, Metabolism In Fevers, General Dietary Considerations, Diet in Influenza ,Typhoid Fever, Recurrent malaria and Tuberculosis <b>DIET IN BURNS AND FRACTURES</b>  <b>OBSESITY AND LEANNESS</b>  Causes, complications & Health effects, Dietary treatment & other recommendations.
December	<b>1. DIET IN ALLERGY</b>  Definition ,Classifications. Manifestation , Common food Allergy Tests and dietetic treatment.  <b>2. DIET AND DRUG INTERACTION</b>

	<p>A The effects of Drugs on Nutrient intake, Absorption metabolism and requirements.</p> <p>B The effects of Nutrients and Nutritional status on the Absorption and Metabolism of Drugs.</p>
January	<p><b>1. PLANNING AND PREPARTION OF THE FOLLOWING DIET:</b></p> <p>A Sodium – High &amp; Low</p> <p>B Protein - High &amp; Low</p> <p>c. Calorie - High &amp; Low</p> <p>D. Fiber - High &amp; Low</p> <p><b>2. DIET &amp; DENTAL DISEASES:</b> Dental Caries, Periodontal Disease.</p>
February	REVISION

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PROPOSED TEACHING PLAN FOR THE SESSION 2016-17

ECONOMICS

M.A. I & II SEMESTER

PAPER-I MICRO ECONOMICS

MONTH	UNIT	TOPIC
JULY	UNIT-I	Demand Analysis; Economic models. Equilibrium and Disequilibrium Systems. Elasticity of supply. Theories of demand-Utility
AUGUST	UNIT-II	Indifference curve ; Consumer's Surplus, Price formation - Theory of Production and Costs.
SEPTEMBER	UNIT-III	Isoquants- ; Returns to factor; Economies of scale; Elasticity of substitution; Euler's theorem, Monopoly .
OCTOBER	UNIT-IV	Monopolistic Competition, Oligopoly.
NOVEMBER	Seminars & Internal assessment	
DECEMBER	Semester Exam	
JANUARY	UNIT-I	Critical evaluation of marginal analysis.
FEBRUARY	UNIT-II	NEO-Classical Approach of Distribution and General Equilibrium Theory of distribution.
MARCH	UNIT-III	welfare economics.
APRIL	UNIT-IV	Partial and General equilibrium.
MAY	Seminars & Internal assessment	
JUNE	Semester Exam	



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**PROPOSED TEACHING PLAN FOR THE SESSION 2016-17**  
**ECONOMICS**  
**M.A. I & II SEMESTER**  
**PAPER-II MACRO ECONOMICS**

<b>MONTH</b>	<b>UNIT</b>	<b>TOPIC</b>
JULY	UNIT-I	National income and accounts, Social accounting,
AUGUST	UNIT-II	Consumption function
SEPTEMBER	UNIT-III	Investment function
OCTOBER	UNIT-IV	Demand for money – Quantity theory of money
NOVEMBER	Seminars & Internal assessment	
DECEMBER	Semester Exam	
JANUARY	UNIT-I	Theory of Inflation, control of inflation.
FREBRUARY	UNIT-II	Business Cycles.
MARCH	UNIT-III	Monetary Policy.
APRIL	UNIT-IV	Fiscal Policy.
MAY	Seminars & Internal assessment	
JUNE	Semester Exam	

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PROPOSED TEACHING PLAN FOR THE SESSION 2016-17

ECONOMICS

M.A. I & II SEMESTER

PAPER-III QUANTITATIVE METHODS & RESEARCH METHODOLOGY

MONTH	UNIT	TOPIC
JULY	UNIT-I	Skewness Correlation-
AUGUST	UNIT-II	Regression analysis: Interpolation and extrapolation
SEPTEMBER	UNIT-III	Association of Attributes Probability
OCTOBER	UNIT-IV	Index Number Time series
NOVEMBER	Seminars & Internal assessment	
DECEMBER	Semester Exam	
JANUARY	UNIT-I	Research Methodology and Research Methods. Methods of collection of data.
FREBRUARY	UNIT-II	Sampling, Testing reliability of sample.
MARCH	UNIT-III	Test of Significance.
APRIL	UNIT-IV	Computers- Introduction, Types, Characteristics, Generation, Input- Output Devices, Software & its type. Introduction to Internet.
MAY	Seminars & Internal assessment	
JUNE	Semester Exam	

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**ECONOMICS**  
**M.A. I & II SEMESTER**  
**PAPER-IV INDIAN ECONOMICS**

<b>MONTH</b>	<b>UNIT</b>	<b>TOPIC</b>
JULY	UNIT-I	GDP and National Income of India
AUGUST	UNIT-II	Demographic Features of Indian Population
SEPTEMBER	UNIT-III	Agricultural Development in Indian Economy
OCTOBER	UNIT-IV	Industrial Development in India
NOVEMBER	Seminars & Internal assessment	
DECEMBER	Semester Exam	
JANUARY	UNIT-I	Planning in India
FEBRUARY	UNIT-II	Problem of Poverty and Inequality Problem of Unemployment in India
MARCH	UNIT-III	Public Finance in Indian Economy
APRIL	UNIT-IV	External Sector Behavior of Indian Economy
MAY	Seminars & Internal assessment	
JUNE	Semester Exam	

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PROPOSED TEACHING PLAN FOR THE SESSION 2016-17

ECONOMICS

M.A. I & II SEMESTER

PAPER-V LABOUR & INDUSTRIAL ECONOMICS

MONTH	UNIT	TOPIC
JULY	UNIT-I	Industrialization pattern, Market Structure, Theories of Industrial Localization.
AUGUST	UNIT-II	Size & Growth of the firm, Industrial Productivity Industrial Policy of India, Industrial Policy of Chhattisgarh. Role of Public & Private Sectors. Liberalization and privatization. Regional industrial growth in India.
SEPTEMBER	UNIT-III	Industrial Finance.
OCTOBER	UNIT-IV	Industrial Labour and Labour Legislation.
NOVEMBER	Seminars & Internal assessment	
DECEMBER	Semester Exam	
JANUARY	UNIT-I	Labour Market, Employment and development relationship - Poverty, Unemployment – concept, types and measurement.
FREBRUARY	UNIT-II	Impact of rationalization, public sector and employment in agricultural sector; analysis of educated employment policy in five year plans its evaluation. Wage Determination
MARCH	UNIT-III	Productivity and wage relationship. Asymmetric information and efficiency of labour markets in wage determination; National wage policy,
APRIL	UNIT-IV	Labour legislation in India.
MAY	Seminars & Internal assessment	
JUNE	Semester Exam	

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**PROPOSED TEACHING PLAN FOR THE SESSION 2016-17**

**ECONOMICS**

**M.A. III & IV SEMESTER**

**PAPER-I ECONOMICS OF GROWTH**

<b>MONTH</b>	<b>UNIT</b>	<b>TOPIC</b>
JULY	UNIT-I	Economic Growth and Development, Physical Quality of Life Index, Human development index,
AUGUST	UNIT-II	Capital Output Ratio, input-output Analysis, Project evaluation and Cost – Benefit Analysis.
SEPTEMBER	UNIT-III	The Adam Smith model, The Ricardian model, The Marxian model. The Schumpeterian model, Keynesian, Mahalanobis .
OCTOBER	UNIT-IV	Harrod-Domar Model, Kaldor model, John Robinson model, Meads, Solow .
NOVEMBER	Seminars & Internal assessment	
DECEMBER	Semester Exam	
JANUARY	UNIT-I	Economic Planning- Objective. Achievements and Failures of Indian Plans
FREBRUARY	UNIT-II	Vicious circle of Poverty, Unlimited Supply of labour model, Big-Push Theory, Theory of critical minimum efforts, Balanced and unbalanced growth. Ranis and Fai model
MARCH	UNIT-III	Investment criterion in economic development
APRIL	UNIT-IV	measuring poverty and Income inequalities, unemployment, The choice of techniques, sustainable development, Role of state in Economic development. Problem of Price-rise in India.
MAY	Seminars & Internal assessment	
JUNE	Semester Exam	

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PROPOSED TEACHING PLAN FOR THE SESSION 2016-17

ECONOMICS

M.A. III & IV SEMESTER

PAPER-II International Trade

MONTH	UNIT	TOPIC
JULY	UNIT-I	Theory of International Trade
AUGUST	UNIT-II	Heckschar-Ohlin Theory of International Trade, Terms of Trade & Economic Development.
SEPTEMBER	UNIT-III	The Theory of Intervention – Tariffs, Quotas, and nontariff barriers.
OCTOBER	UNIT-IV	Balance of Payments, Foreign Exchange Rate.
NOVEMBER	Seminars & Internal assessment	
DECEMBER	Semester Exam	
JANUARY	UNIT-I	The Theory of Regional Blocks-Forms of Economic Co-operation, reforms for the emergence of trading blocks at the Global level
FREBRUARY	UNIT-II	Regionalism of European Union, NAFTA, Multilateralism and WTO,
MARCH	UNIT-III	Theory of short term & long term capital movement and international trade
APRIL	UNIT-IV	WTO and World Bank, Export policies of India, working and regulations of MNCs in India.
MAY	Seminars & Internal assessment	
JUNE	Semester Exam	

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PROPOSED TEACHING PLAN FOR THE SESSION 2016-17

ECONOMICS

M.A. III & IV SEMESTER

PAPER-III Public Finance

MONTH	UNIT	TOPIC
JULY	UNIT-I	Role of Government in organized Society. Principles of maximum social advantages, Taxation.
AUGUST	UNIT-II	Indian tax System, Indirect & direct tax, personal income tax..
SEPTEMBER	UNIT-III	Public Expenditure.
OCTOBER	UNIT-IV	Fiscal Federation in India.
NOVEMBER	Seminars & Internal assessment	
DECEMBER	Semester Exam	
JANUARY	UNIT-I	Fiscal Policy,
FREBRUARY	UNIT-II	Public Debt.
MARCH	UNIT-III	Federal Finance.
APRIL	UNIT-IV	Analysis of Chhattisgarh Govt. Financial Responsibilities and budget management Act.
MAY	Seminars & Internal assessment	
JUNE	Semester Exam	

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PROPOSED TEACHING PLAN FOR THE SESSION 2016-17

ECONOMICS

M.A. III & IV SEMESTER

PAPER-IV ENVIRONMENTAL ECONOMICS

MONTH	UNIT	TOPIC
JULY	UNIT-I	Pollution – Classification of pollution.
AUGUST	UNIT-II	Environmental Protection- Environmental laws.
SEPTEMBER	UNIT-III	Classification of Resource, social forestry.
OCTOBER	UNIT-IV	Economics of Education, Human Capital, Human Capital Vs. Physical capital. Health Economics- Prospective HDI, GDI, GEM and HPI.
NOVEMBER	Seminars & Internal assessment	
DECEMBER	Semester Exam	
JANUARY	UNIT-I	Welfare Economics – Definition of welfare Economics. Criterion of Social Welfare-Bentham Criteria, Cardinalize Criterion, Pareto
FREBRUARY	UNIT-II	Social Welfare function, Maximization of social welfare, Maximization in perfect competition, public goods and private goods. Market failure & public goods.
MARCH	UNIT-III	Environmental Economics – Definition of Environmental Economics, Relation between Environmental Economics and Economics
APRIL	UNIT-IV	Theories of Externalities –Pigouvian Taxes and Subsidies. Environmental values , international carbon Tax, Environment and W.T.O.
MAY	Seminars & Internal assessment	
JUNE	Semester Exam	



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PROPOSED TEACHING PLAN FOR THE SESSION 2016-17

ECONOMICS

M.A. III & IV SEMESTER

PAPER-V DEMOGRAPHY

MONTH	UNIT	TOPIC
JULY	UNIT-I	Demography – Meaning and importance, Theories of Population – Theory of optimum population and Theory of demographic transition.
AUGUST	UNIT-II	Migration.
SEPTEMBER	UNIT-III	Mortality.
OCTOBER	UNIT-IV	Fertility.
NOVEMBER	Seminars & Internal assessment	
DECEMBER	Semester Exam	
VIVA		

**DEPARTMENT OF ENGLISH**  
**TEACHING PLAN, SESSION 2016-2017**  
**M.A. ENGLISH LITERATURE**  
**SEMESTER -I**  
**PAPER-I**  
**POETRY-I**

<b>MONTH</b>	<b>PLAN</b>
<b>JULY</b>	<b>UNIT-I</b> A brief survey of English poetry from Chaucer to Romantic age <b>UNIT-II</b> Geoffrey Chaucer: Prologue to the Canterbury Tales (Detailed)
<b>AUGUST</b>	<b>UNIT-II</b> Geoffrey Chaucer: Prologue to the Canterbury Tales (Detailed) <b>UNIT-III</b> John Donne: Death Be not Proud, Valediction, Forbidden Mourning, Extasie, (Detailed) Shakespeare: Sonnets 1,18,26,54, 116 (Non- detailed) Andrew Marvell: To His Coy Mistress (Non - detailed)
<b>SEPTEMBER</b>	<b>UNIT-IV</b> John Milton: Paradise Lost – Book 1 Lines 1-100 only (Detailed) John Dryden: Absalom and Achitophel (Non - detailed) <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>UNIT - V</b> Alexander Pope: Rape of the Lock (Non-Detailed Study) Thomas Gray: Elegy Written in a Country Churchyard (Detailed) William Collins: Ode to Evening (Detailed) <b>Internal Test 2</b>
<b>NOVEMBER</b>	<b>SEMINAR/EXAM</b>
<b>DECEMBER</b>	<b>EXAM /SEMESTER BREAK</b>

**DEPARTMENT OF ENGLISH**  
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**M.A. ENGLISH LITERATURE**  
**SEMESTER -I**  
**PAPER-II**  
**DRAMA-I**

MONTH	PLAN
JULY	<b>UNIT-I</b> A brief survey of English drama upto Romantic age <b>UNIT-II</b> Christopher Marlowe: Dr. Faustus (Detailed)
AUGUST	<b>UNIT-III</b> John Webster: The Duchess of Malfi (Detailed) Ben Jonson: The Alchemist (Non-Detailed)
SEPTEMBER	<b>UNIT-IV</b> William Congreve: The Way of the World (Non- detailed) Oliver Goldsmith: She Stoops to Conquer (Detailed) <b>Internal Test 1</b>
OCTOBER	<b>UNIT-V</b> William Shakespeare: The Tempest (Detailed) King Henry IV- Part I (Non- detailed) <b>Internal Test 2</b>
NOVEMBER	SEMINAR/EXAM
DECEMBER	SEMESTER BREAK

**DEPARTMENT OF ENGLISH**  
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**M.A. ENGLISH LITERATURE**  
**SEMESTER -I**  
**PAPER-III**  
**PROSE-I**

<b>MONTH</b>	<b>PLAN</b>
<b>JULY</b>	<b>UNIT-I</b> A brief survey of English drama upto Romantic age <b>UNIT-II</b> Francis Bacon: Selected Essays: Of Studies, Of Friendship,
<b>AUGUST</b>	<b>UNIT-III</b> Thomas Browne: Urn Burial (Detailed) John Milton: Aeropagitica (Non -detailed)
<b>SEPTEMBER</b>	<b>UNIT-IV</b> Joseph Addison: Sir Roger at Home, Sir Roger at Assizes, Sir Roger at Church (All Detailed) Richard Steele: Recollections of Childhood, A Day in London, The Spectator Club (Non-Detailed) Rousseau: Confessions (Non -detailed) <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>UNIT-IV</b> Rousseau: Confessions (Non -detailed) <b>UNIT-V</b> Samuel Johnson: Life of Milton (Non-Detailed) R. L. Stevenson: Walking Tours, An Apology for Idlers, El Dorado (All Detailed) <b>Internal Test 2</b>
<b>NOVEMBER</b>	<b>SEMINAR/EXAM</b>
<b>DECEMBER</b>	<b>SEMESTER BREAK</b>

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**M.A. ENGLISH LITERATURE**  
**SEMESTER - I**  
**PAPER-IV**  
**FICTION-I**

<b>MONTH</b>	<b>PLAN</b>
<b>JULY</b>	<b>UNIT-I</b> Rise of English fiction from Bunyan to Modern Age.
<b>AUGUST</b>	<b>UNIT-II</b> John Bunyan: The Pilgrim's Progress Daniel Defoe: Robinson Crusoe <b>UNIT-III</b> Henry Fielding: Joseph Andrews
<b>SEPTEMBER</b>	<b>UNIT-III</b> Oliver Goldsmith: The Vicar of Wakefield <b>UNIT-IV</b> Sir Walter Scott: Ivanhoe Jane Austen: Pride and Prejudice <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>UNIT-V</b> Charles Dickens: Great Expectations Thomas Hardy: Tess of Du'bervilles <b>Internal Test 2</b>
<b>NOVEMBER</b>	<b>SEMINAR/EXAM</b>
<b>DECEMBER</b>	<b>EXAM /SEMESTER BREAK</b>

**DEPARTMENT OF ENGLISH**  
**TEACHING PLAN, SESSION 2016-17**  
**M. A. ENGLISH LITERATURE**  
**SEMESTER - II**  
**PAPER-I**  
**POETRY - II**

<b>MONTH</b>	<b>PLAN</b>
<b>JANUARY</b>	<b>UNIT-I</b> A Brief Survey of English poetry from Romantic age to Modern A age <b>William Wordsworth:</b> Immortality Ode (Non-Detailed) Tintern Abbey (Detailed) <b>Samuel Taylor Coleridge:</b> Dejection an Ode (Non-Detailed) Kubla Khan (Detailed)
<b>FEBRUARY</b>	<b>UNIT-II</b> <b>P. B. Shelly:</b> Ode to the Westwind (Detailed) To the Skylark (Non-Detailed) <b>John Keats:</b> Ode to Autumn, Ode to Nightingale (Detailed) Ode to Grecian Urn (Non-Detailed)
<b>MARCH</b>	<b>UNIT-III</b> <b>Alfred Tennyson:</b> Lotus Eaters (Detailed) Ulysses (Non-Detailed) <b>Robert Browning:</b> Prospice, The Last Ride Together (Detailed)
<b>APRIL</b>	<b>UNIT-IV</b> <b>Mathew Arnold:</b> Scholar Gypsy (Non-Detailed) <b>Gerard Manley Hopkins:</b> The Windhover, Pied Beauty, Felix Randal (Detailed) <b>Seminar</b>
<b>MAY</b>	<b>SEMESTER EXAM</b>

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**SEMESTER - II**  
**PAPER-II**  
**DRAMA**

<b>MONTH</b>	<b>PLAN</b>
JANUARY	<b>UNIT-I</b> A Brief Survey of English drama from Romantic age to Modern age <b>William Shakespeare:</b> Hamlet (Detailed) Macbeth (Non-Detailed)
FEBRUARY	<b>UNIT-II</b> <b>George Bernard Shaw:</b> St. Joan (Detailed) <b>J. M. Synge:</b> Riders to the Sea (Non-Detailed)
MARCH	<b>UNIT-III</b> <b>Thomas Stearns Eliot:</b> Murder in the Cathedral (Detailed)
APRIL	<b>UNIT-IV</b> <b>Henrik Ibsen:</b> A Doll's House (Detailed) <b>Anton Chekov:</b> The Cherry Orchard (Non-Detailed) <b>Seminar</b>
MAY	SEMESTER EXAM

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**M. A. ENGLISH LITERATURE**  
**SEMESTER - II**  
**PAPER-III**  
**PROSE-II**

<b>MONTH</b>	<b>PLAN</b>
<b>JANUARY</b>	<b>UNIT-I</b> A Brief Survey of English prose from Romantic age to Modern age <b>Charles Lamb:</b> Dream Children, A Bachelor's Complaint, Dissertation upon a Roasted Pig (Detailed) <b>William Hazlitt:</b> On going on a Journey, Indian Jugglers (Non-Detailed)
<b>FEBRUARY</b>	<b>UNIT-II</b> <b>Thomas Carlyle:</b> Hero as a Poet (Detailed) <b>John Ruskin:</b> Sesame and Lilies (Non-Detailed)
<b>MARCH</b>	<b>UNIT-III</b> <b>Robert Lynd:</b> On Forgetting, The Pleasure of Ignorance (Non-Detailed) <b>A.G. Gardiner:</b> On saying "Please", On the rule of the Road (Detailed)
<b>APRIL</b>	<b>UNIT-V</b> <b>Thomas Moore:</b> Utopia (Detailed) <b>Machiavelli:</b> The Prince (Non-Detailed) <b>Seminar</b>
<b>MAY</b>	<b>SEMESTER EXAM</b>



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**SEMESTER - II**  
**PAPER-IV**  
**FICTION-II**

<b>MONTH</b>	<b>PLAN</b>
<b>JANUARY</b>	<b>UNIT-I</b> <b>James Joyce:</b> Portrait of the Artist as a Young Man <b>Virginia Woolf:</b> Mrs. Dalloway <b>UNIT-II</b> <b>D. H. Lawrence:</b> Sons and Lovers
<b>FEBRUARY</b>	<b>UNIT-II</b> <b>George Orwell:</b> Animal Farm <b>UNIT-III</b> <b>Joseph Conrad:</b> Heart of Darkness <b>William Golding:</b> Lord of the Flies
<b>MARCH</b>	<b>UNIT-IV</b> <b>Chinua Achebe:</b> Things Fall Apart <b>Bapsi Sidhwa:</b> Ice Candy Man
<b>APRIL</b>	<b>UNIT-V</b> <b>J.M. Coetzee:</b> Disgrace <b>Doris Lessing:</b> The Grass is Singing <b>Seminar</b>
<b>MAY</b>	<b>SEMESTER EXAM</b>

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**M. A. ENGLISH LITERATURE**  
**SEMESTER - III**  
**PAPER-I**  
**CRITICAL THEORY- I**

<b>MONTH</b>	<b>PLAN</b>
<b>JULY</b>	<b>UNIT-I</b> Aristotle: Poetics
<b>AUGUST</b>	<b>UNIT-II</b> Longinus: On the Sublime
<b>SEPTEMBER</b>	<b>UNIT-III</b> Philip Sidney: An Apology for Poetry John Dryden: Essay on Dramatic Poesy <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>UNIT-IV</b> William Wordsworth: Preface to Lyrical Ballads S. T. Coleridge: Biographia Literaria chapter XIII to XVII <b>UNIT-V</b> Mathew Arnold: The Study of Poetry, The Function of Criticism in Present Times <b>Internal Test 2</b>
<b>NOVEMBER</b>	<b>UNIT-V</b> New Bearings in English Poetry <b>SEMINAR/EXAM</b>
<b>DECEMBER</b>	<b>EXAM /SEMESTER BREAK</b>

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**M. A. ENGLISH LITERATURE**  
**SEMESTER - III**  
**PAPER-II**  
**INDIAN WRITING IN ENGLISH - I**

<b>MONTH</b>	<b>PLAN</b>
<b>JULY</b>	<b>UNIT-I</b> Sri Aurobindo: Savitri- Book I, Canto I Rabindranath Tagore: Songs 1 to 15 from Gitanjali
<b>AUGUST</b>	<b>UNIT-II</b> Kamla Das: The Freaks, A Hot Noon IN Malabar, The Looking Glass, The Sunshine Cat Nissim Ezekiel: Enterprise, Poet Lover and Birdwatcher Night of the Scorpion
<b>SEPTEMBER</b>	<b>UNIT-III</b> Girish Karnad: Nagmandala Vijay Tendulkar: Silence 'The Court is in Session' <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>UNIT-IV</b> Raja Rao: Kanthapura R.K.Narayan : The Guide <b>UNIT-V</b> Mulk Raj Anand: Coolie
<b>NOVEMBER</b>	<b>UNIT-V</b> V.S. Naipaul: A House for Mr.Biswas <b>SEMINAR/EXAM</b>
<b>DECEMBER</b>	<b>EXAM /SEMESTER BREAK</b>

**DEPARTMENT OF ENGLISH**  
**TEACHING PLAN, SESSION 2016-2017**  
**M. A. ENGLISH LITERATURE**  
**SEMESTER - III**  
**PAPER-III**  
**AMERICAN LITERATURE - I**

<b>MONTH</b>	<b>PLAN</b>
<b>JULY</b>	<b>UNIT-I</b> A brief survey of American literature, Puritanism, Democracy in America, Romanticism in America, Indian Thought in Emerson, Thoreau and Whitman, New England Renaissance,
<b>AUGUST</b>	<b>UNIT-II</b> Walt Whitman: When Lilacs last in the Dooryard Bloomed There was a child went forth everyday Edgar Allan Poe: Dreamland, The Raven. <b>UNIT-III</b> Robert Frost: Birches, Stopping by the Woods on a Snowy Evening, Departmental Emily Dickinson: Bring Me the Sunset in a Cup (128); The Soul selects her own Society (303); Some keep the Sabbath Going to Church (324)
<b>SEPTEMBER</b>	<b>UNIT-III</b> Wallace Stevens: Peter Quince at the Clavier, Of Modern Poetry, Sunday Morning, A Postcard from the Volcano <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>UNIT-IV</b> Ralph Waldo. Emerson: Self-Reliance Henry David Thoreau: Civil Disobedience <b>Internal Test 2</b>
<b>NOVEMBER</b>	<b>SEMINAR/EXAM</b>
<b>DECEMBER</b>	<b>EXAM /SEMESTER BREAK</b>

**DEPARTMENT OF ENGLISH**  
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**M. A. ENGLISH LITERATURE**  
**SEMESTER - III**  
**PAPER-IV**  
**LINGUISTICS - I**

<b>MONTH</b>	<b>PLAN</b>
<b>JULY</b>	<b>UNIT-I</b> Language: Definition, Human Language and its difference with Animal Communication, Speech and Writing as manifestations of Language, Characteristics of Human Language.
<b>AUGUST</b>	<b>UNIT-II</b> Linguistics: Definition, Objective, Branches of Linguistics: Phonetics, Phonology, Morphology, Syntax and Semantics, Linguistics and its Related Disciplines.
<b>SEPTEMBER</b>	<b>UNIT-III</b> Phonetics: Definition, Branches: Articulatory /Acoustic Phonetics, Auditory Phonetics, The Organs of Speech and their Functions. <b>UNIT-IV</b> Classification of Human Speech Sounds: Characteristics of Vowels and Consonants, Similarities and Dissimilarities between Vowels and Consonants, Phonetics Symbols (IPA). <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>UNIT-V</b> Classification of Vowels: On the Basis of Height of the Tongue, Parts of the Tongue, Position of Soft Palate, Position of Muscles and Length. Classification of Consonants: On the Basis of Place and Manner of articulation, aspiration and voicing. <b>Internal Test 2</b>
<b>NOVEMBER</b>	<b>UNIT-V</b> Sound Attributes: Length, Stress, Pitch, Intonation and Juncture. <b>SEMINAR/EXAM</b>
<b>DECEMBER</b>	<b>EXAM /SEMESTER BREAK</b>

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**M. A. ENGLISH LITERATURE**  
**SEMESTER IV**  
**PAPER-I**  
**CRITICAL THEORY-II**

<b>MONTH</b>	<b>PLAN</b>
JANUARY	<b>UNIT-I</b> <b>Bharata:</b> Natyashastra (Rasa and Bhava Theory) <b>Anandavardhanacharya:</b> Dhvanyaloka
FEBRUARY	<b>UNIT-II</b> <b>T. S. Eliot:</b> Tradition and Individual Talent
MARCH	UNIT-III <b>I. A. Richards:</b> 'Poetry for Poetry's Sake' Analysis of a Poem UNIT-IV <b>Ferdinand S Sassure:</b> Nature of Linguistic sign
APRIL	<b>UNIT-IV</b> <b>Michael Foucault:</b> What is an Author? <b>Northrop Fry:</b> The Function of Criticism <b>Elaine Showalter:</b> Feminist Criticism in Wilderness <b>Seminar</b>
MAY	SEMESTER EXAM

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**M. A. ENGLISH LITERATURE**  
**SEMESTER IV**  
**PAPER-II**  
**INDIAN WRITING IN ENGLISH-II**

<b>MONTH</b>	<b>PLAN</b>
JANUARY	<b>UNIT-I</b> <b>A.K. Ramanujan:</b> Obituary, Love Poem for a Wife <b>Jayant Mahapatra:</b> Indian Summer, A Missing Person, Dawn at Puri
FEBRUARY	<b>UNIT-II</b> <b>N. C. Choudhary:</b> The Autobiography of an Unknown Indian <b>J. L. Nehru:</b> The Discovery of India (chapter 1 to 5)
MARCH	<b>UNIT-III</b> <b>M. K. Gandhi:</b> The Story of my Experiments with Truth <b>A.P.J. Kalam:</b> Ignited Minds <b>UNIT-IV</b> <b>Shashi Deshpande:</b> The Dark Holds no Terror
APRIL	<b>UNIT-IV</b> <b>Anita Desai:</b> Cry the Peacock <b>UNIT-V</b> <b>Arundhati Roy:</b> The God of Small Things <b>Arvind Adiga:</b> The White Tiger <b>Seminar</b>
MAY	SEMESTER EXAM

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**M. A. ENGLISH LITERATURE**  
**SEMESTER IV**  
**PAPER-III**  
**AMERICAN LITERATURE-II**

<b>MONTH</b>	<b>PLAN</b>
<b>JANUARY</b>	<b>UNIT-I</b> Expressionism, Naturalism, Realism, Existentialism, The Theatre of Absurd <b>UNIT-II</b> <b>Eugene O' Neill:</b> The Emperor Jone
<b>FEBRUARY</b>	<b>UNIT-II</b> <b>Tennessee Williams:</b> The Glass Menagerie <b>UNIT-III</b> <b>Arthur Miller:</b> All My Sons <b>Edward Albee:</b> Who's Afraid of Virginia Woolf?
<b>MARCH</b>	<b>UNIT-IV</b> <b>William Faulkner:</b> The Sound and the Fury <b>Ernest Hemingway:</b> The Old Man and the Sea
<b>APRIL</b>	<b>UNIT-V</b> <b>Nathaniel Hawthorne:</b> The Scarlet Letter <b>Mark Twain:</b> The Adventures of Huckleberry Finn <b>Seminar</b>
<b>MAY</b>	<b>SEMESTER EXAM</b>



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**M. A. ENGLISH LITERATURE**  
**SEMESTER IV**  
**PAPER-IV**  
**LINGUISTICS-II**

<b>MONTH</b>	<b>PLAN</b>
JANUARY	<b>UNIT-I</b> <b>Phoneme:</b> Definition, Distinctive features of Sounds, Allophones and Classification of English, Phonemes <b>UNIT-II</b> <b>Morphology:</b> Morpheme, Morph, Allomorph, Types of Morphemes, Word-Classes
FEBRUARY	<b>UNIT-III</b> <b>Syntax:</b> Sentence types- Simple, Compound, Complex, Constituents, Immediate Constituents, I C Analysis
MARCH	<b>UNIT-IV</b> <b>Semantics:</b> Semene, Types of meaning: Synonymy, Antonymy, Polysymy, Homonymy, Collocation, Sets.
APRIL	<b>UNIT-V</b> Introduction to Phrase Structure Grammar Limitation to Phrase Structure Grammar
MAY	SEMESTER EXAM

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**M. A. ENGLISH LITERATURE**  
**SEMESTER IV**  
**PAPER-V**  
**MODERNIST LITERATURE-II**

<b>MONTH</b>	<b>PLAN</b>
JANUARY	<b>UNIT-I</b> <b>Samuel Beckett:</b> Waiting for Godot <b>UNIT-II</b> <b>John Osborne:</b> Look Back in Anger
FEBRUARY	<b>UNIT-III</b> <b>Alice Walker:</b> The Color Purple <b>Ralph Allison:</b> The Invisible Man
MARCH	<b>UNIT-IV</b> <b>Edward Said:</b> Orientalism
APRIL	<b>UNIT-V</b> <b>Toni Morrison:</b> Beloved <b>George Lamming:</b> The Pleasures of Exile
MAY	SEMESTER EXAM

**प्राचार्य शास. दू.ब. महिला स्नात.(स्वशासी) महाविद्यालय**  
**कालीबाड़ी चौक रायपुर(छ.ग.)**

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**टीचिंग प्लान हिंदी स्नातकोत्तर सेमेस्टर परीक्षा**

**सत्र 2016-17**

क्र.	माह/दिन	स्नातकोत्तर I, II सेमेस्टर	स्नातकोत्तर III, IV सेमेस्टर
1	जुलाई/25	इकई 1 प्रश्न पत्र I, II, III, IV स्नातक हिन्दी साहित्य का इतिहास कबीर ग्रंथावली, गुप्त नाटक	इकई I प्रश्न पत्र I, II, III, IV भारतीय काव्यशास्त्र, भाषा और भाषाविज्ञान, हिंदी के विभिन्न रूप, भारतीय साहित्य
2	अगस्त/24	इकई II आदिकाल चंद्रवरदाई, प्रसाद, राकेश	इकई II प्रश्न पत्र I, II, III, IV अलंकार, रूपन, परिभाषिक शब्द
3	सितम्बर/25	इकई III काल, जायसी, निराला, निबंध	इकई III प्रश्न पत्र I, II, III, IV पाश्चात्य काव्यशास्त्र, व्याकरण, इन्टरनेट
4	अक्टूबर/21	इकई III सूफी काव्य, रहीम, रैदास, निबंध	इकई IV प्रश्न पत्र I, II, III, IV लॉजाइनस, अर्थ विज्ञान, पत्रकारिता
5	नवम्बर/23	इकई IV भक्ति, खुसरो, मीराबाई, रत्नाकर, महादेवी वर्मा, आंतरिक मूल्यांकन, सेमिनार	इकई IV प्रश्न पत्र I, II, III, IV लेखन कला, संपादन, पत्रकार वार्ता, आंतरिक मूल्यांकन, सेमिनार
6	दिसम्बर/23	सेमेस्टर परीक्षा	सेमेस्टर परीक्षा
क्र.	माह/दिन	II, IV सेमेस्टर	
1	जनवरी/25	इकई I प्रश्न पत्र I, II, III, IV उत्तर मध्यकाल, सूरदास, गोदान	इकई I प्रश्न पत्र I, II, III, IV अभिसाव्यवाद, भाषाएँ, मीडिया, छत्तीसगढ़ का इतिहास
2	फरवरी/24	इकई II प्रश्न पत्र I, II, III, IV आधुनिककाल, तुलसीदास, मुक्तिबोध, मैला आँचल	इकई II प्रश्न पत्र I, II, III, IV काव्यशास्त्रीय चिंतन, बोली, दृश्य, श्रव्य माध्यम, छत्तीसगढ़ के साहित्यकार
3	मार्च	इकई III प्रश्न पत्र I, II, III, IV द्विवेदी युग, बिहारी, नागार्जुन कहानी	इकई III प्रश्न पत्र I, II, III, IV आलोचना, हिंदी के विविध रूप, अनुवाद, क्षया उपन्यास
4	अप्रैल	इकई IV प्रश्न पत्र I, II, III, IV गद्य द्रुतपाठ, द्रुतपाठ कहानी	इकई IV प्रश्न पत्र I, II, III, IV समीक्षा, लिपि. अनुवाद प्रकार, करमछड़हा नाटक
5	मई	इकई IV प्रश्न पत्र I, II, III, IV आन्तरिक मूल्यांकन, सेमिनार	इकई IV प्रश्न पत्र I, II, III, IV आन्तरिक मूल्यांकन, सेमिनार
6	जून	सेमेस्टर परीक्षा	सेमेस्टर परीक्षा

M A I ,II SEM. HISTORY , 1<sup>st</sup> PAPER

HISTORY MATHOD WRITING

SESSION – 2016-17

S.NO.	MONTH	PLAN
1	AUGUST	History meaning and definition . The extent and types of history. History relation to other social sciences. Utility of history.
2	SEPTEMBER	Cause of Action in history. Objectivity in history. Facts in history. Is history a science or an art.
3	OCTOBER	Relativistic theory of history . The cyclist theory of history . Sociological theory of history . Idealistic theory of history .
4	NOVEMBER	Comparative theory of history . Critical theory of history . Materialistic theory of history . Etihasvad .
5	DECEMBER	RIVISION
1	JANUARY	II SEM Greek and Roman historiography . Chinese historiography . Arab and Persian historiography . The tradition of writing historiography in ancient India .
2	FEBRUARY	Medieval Indian historiography . Modern Indian historiography . Themes ofindian history - economic history . Thimes ofindian history - social and cultural history .
3	MARCH	Imperialist interpretation ofindian history . Nationalist interpretation of indian history . Marxist interpretation of indian history . Nationalist interpretation of indian history . Democratic interpretation of indian history .
4	April	Ancient indian history –nomenclature of Indus valley civilization , Origin of Rajput's . Medieval indian history – Muhammad Bin Tughlaq ,Aurangzeb's religious fanaticism .  Modern indian history – Form of revolution 1857 ,partition of india .

M A I , II SEM ,HISTORY  
SECOND PAPER – WORLD HISTORY 1871 -1919  
SESSION 2016-17

S. NO.	MONTH	PLAN
1	AUGUST	New imperialism – partition of Africa . Development of Capitalism . Rise of Labaralism in England ,France. Rise of Socialism .
2	SEPTEMBER	Home and foreign policy of Bismark . Foreign policy of Kaiser William II . Foreign policy of Italy [1871 -1914] Industrial development in United State of America .
3	October	Meiji Restoration in Japan . Russio –Japanese war –1904-5 . Chinese revolution – 1911 . Eastern problem –1878 -1913—Berlin congress – 1878
4	NOVEMBER	Balkan war – 1912 -13. First world war – 1914 -1918 –causes incidents and results . Russian revolution -1917—causes and results Peace treaties of Paris .
1	JANUARY	II SEM Achievement and failure of league of nations . Problem of compensation . Problem of disarmament . World recession - 1929
2	FEBRUARY	Fascism in Italy - Mussolini Nazism in Germany – Hitler . Second world war – causes Incidents and results .
3	MARCH	Communism in China National movement in Indochina . National movement in Indonesia . Arab nationalism .
4	April	United Nations Organization Cold war Non –Alignment movement. Role of India in non alignment movement

M A I,II SEM 3<sup>rd</sup> PAPER – HISTORY OF CHHATTISGARH

SESSION 2016-17

S N	MONTH	I SEM PLAN
1	AUGUST	Introduction of Chhattisgarh – nomenclature and geographical location Vedic to Maurya period Chhattisgarh -political social economic and cultural condition . Chhattisgarh during the Satavahana period Gupta vakataka era Chhattisgarh
2	SEPTEMBER	Nala and Rajershitulya dynasty Sharabhpuriya dynasty Pandu dynasty Chindacknagvansh and Phaninagvansh
3	OCTOBER	Establishment of Kalchuri rule Early Kalchury king Post Kalachuri king- arrival before Marathas Social economic and cultural condition of Kalchuris
4	NOVEMBER	Maratha invasion Bimbaji Bhosle Suba administration Socio economic and cultural condition of Maratha period
1	JANUARY	II SEM Chhattisgarh under British protection and Raghuji 3 <sup>rd</sup> [1818-1830] British administration in Chhattisgarh Governance system after the formation of the central provinces British land revenue system
2	FEBRUARY	Social change in British era Chhattisgarh Economic condition in British era Chhattisgarh Cultural condition in British era Chhattisgarh British policy towards the princely states of chhattisgarh
3	MARCH	The Revolt of 1857 in Chhattisgarh National movement in Chhattisgarh – 1885-1919 National movement in Chhattisgarh – 1920-1947 Peasant ,lebar and tribal movement in Chhattisgarh
4	APRIL	Religious faith of chhattisgarh -Shaiva, shakta, Vaishnav ,Jain Buddha Kabir sect, Satnam sect Folk culture of Chhattisgarh Background of Chhattisgarh state formation

M A I,II SEM,HISTORY,4<sup>th</sup> PAPER- Tourism theory and practice  
SESSION 2016-17

1	AUGUST Unit -1	Explanation of tourism Principles and objectives of tourism . Concept of tourism. Tourism information.
2	SEPTEMBER Unit - 2	History of tourism . Travel agency formation . Functions of travel agencies . Tour operators and guides .
3	OCTOBER Unit -3	Impact of tourism on the industry . Tourism – Accommodation and Hotel industry . Tourism and Handicrafts industry . Shops ,emporium and Fair.
4	NOVEMBER Unit -4	Tourism and folk culture . Important historical tourist center of India --Agra ,Ajanta Ellora Caves, Bhimbetka Caves ,Hampi ,Sun temple- Konark ,Khajuraho ,Rameshwaram . Important historical tourist center of Chhattisgarh – Sirpur, Giroudpuri ,Bhoramdev ,Dantewada, DongargarhRatanpurRamgiri . Vibrant culture and performing spiritual arts .
1	JANUARY Unit -1	Tourism organization . Central tourism organization of india. Tourism department and organization of Chhattisgarh . State government tourism -encouragement plans-with reference of Chhattisgarh.
2	FEBRUARY	Tourism Marketing . International tourism. Tourism and transport. Wildlife of Chhattisgarh -Barnawapara ,Achanackmarga.
3	MARCH	Tourism and environment . Importance of national parks in tourism . Tourism and fair- in a national perspective. Monuments and Museums.
4	APRIL	Tourism prospects in Chhattisgarh . Major tourist places of Chhattisgarh.

M A III ,IV SEM ,HISTORY – I PAPER – Ancient India

SESSION -2016-17

S NO	MONTH	II SEM PLAN
1	AUGUST	A review of sources related to ancient Indian history Stone age culture Megalithic civilization Harappan civilization
2	SEPTEMBER	Pre Vedic society – political ,economic ,social and religious life Later Vedic society – political economic social and religious life Culture of Epic era Religious movement – Jainism and Buddhism
3	OCTOBER	Mahajanapada period – sixteen Mahajanapadas Republic system Urban centers and economic development Body corporate -castsystem ,Aashram system, tradition ,marriage Status of woman
4	NOVEMBER	Agricultural development of ancient India Development of industry and trade Scientific advancement in ancient times Ancient religious architecture
1	JANUARY	IV SEM Rise of Magadha empire -Haryak to Nand dynasty Alexander's invasion -causes and result Sangam era – social economic and religious condition of south India Administrative arrangement in Maurya period
2	FABRUARY	Art and architecture Ashoka's dhamma Downfall of Maurya empire Culture of Kushan satavahana period
3	MARCH	Gupta period administrative system Scientific ,literary and cultural development in Gupta period Harshvardhan period Development of Vaishnavism and Shaivism in ancient India
4	APRIL	Rise of cast system in ancient India ,untouchability Social and religious status of woman Development of education in ancient India Development of Temple architect sculpture art



M A III & IV SEM HISTORY -II PAPER- HISTORY OF INDIA[650 to  
SESSION -2016-17

S N	MONTH	III SEM PLAN
1	AUGUST	Means of knowing history Political changes Economic and social changes Eastern India – Pal ,Sen dynasty
2	SEPTEMBER	Indian state – Pratihara, Chauhan , Parmar dynasty Kalchuri ,Chandel dynasty Pallava ,Chalukya dynasty Rashtrakoot, Chol dynasty
3	OCTOBER	Origin of Rajput Raj system and administration of Rajput Socio, economic ,religious condition of Rajput period Trade relation with south east Asia and western Asia
4	NOVEMBER	Early contact with Arab , Arab invasion in Sindh Arrival of Turks in India – Mahmud Ghaznavi Muhammad Gori -invasion -causes and result Success of Turks
1	JANUARY	IV SEM Agricultural economic arrangement – land donation Development of agricultural technology Urban economy -craft and trade Contribution of 'Guild' in economic arena
2	FEBRUARY	Development of new Trade and craft class Origin of caste system Untouchability Social status of woman
3	MARCH	Educational development and teaching institution Development of regional languages and literatures Temple architecture Development of Sculpture art
4	APRIL	Bhakti movement -with special reference of south India – Shaivism , Vaishnavism and Tantricism Vedanta ,Mimamsa philosophy Sufi movement

M A III ,IV SEM – III PAPER- INDIANs NATIONAL MOVEMENT

SESSION 2016-17

S N.	MONTH	III SEM PLAN
1	AUGUST	Revolt of 1857 – causes , nature results and failure Indian Renaissance -means and cause Social religious reform movement -Bramhasamaj, Arya samaj Ramacrishana mission, theosophical socity ,Aligarh movement
2	SEPTEMBER	Political organization of pre congress Establishment of national congress Liberalism Militancy
3	OCTOBER	Swadeshi movement Revolutionary movement -first step- Bengal Maharashtra Panjab " " step Marle -Minto reforms -1909
4	NOVEMBER	Home -rule movement Gandhian political thought Khilafat movement Indian government act 1919
1	JANUARY	IV SEM Non co operation movement Swaraj party Civil dis obedience movement Indian government act - 1935
2	FEBRUARY	Development of Indian industries Peasant and labor movement Tribes movement Quit India movement and Subhash Chandra Bos
3	MARCH	Communalism in Indian politics Cripps mission Cebinet mission plan Mount batton plan
4	APRils	Integration of Indian princely states -contribution of Sardar Patel Great leaders of india Twenty years of post independence -internal change ,foreign policy Five years plans

M A III ,IV SEM – IV PAPER- INDIANs NATIONAL MOVEMENT

SESSION 2016-17

S N.	MONTH	III SEM PLAN
1	AUGUST	SOURCE OF WOMAN STUDIES IDEOLOGY OF WOMAN STUDIES- LIBRILIST , EXTRIMIST IDEOLOGY OF WOMAN STUDIES- SOCILIST , COMMUNIST IDEOLOGY OF WOMAN STUDIES- PHYCISOLOGIEST
2	SEPTEMBER	POSITION OF WOMANS IN DIFFERENT RELIGIONS – HINDU RELIGION IN BUDDHISM AND JAINISM POSITION OF WOMANS IN ISLAM POSITION OF WOMAN IN SIKH RELIGION
3	OCTOBER	LIGEAL POSITION OF WOMANS- IN ANCIENT INDIA LIGEAL POSITION OF WOMANS -IN MEDIVAL INDIA SOCIAL RIGHTS-PROPERTY RIGHTS WOMAN ORGANISATION IN REFERENCE OF 20 <sup>TH</sup> CEN.
4	NOVEMBER	WOMANS AND FREEDOM MOMENT GANDHIAN MOMENT AND WOMANS WOMANS LIBERATION MOMENT WOMANS AND POLITICS IN POST INDEPENDECE INDIA
1	JANUARY	IV SEM WOMANS AND THERE WORK AREA DOMESTIC WORK AREA AGRICULTURE AND INDUSTRIAL AREA , TRADE WORK AREA EMPLOYED WOMAN
2	FEBRUARY	WOMANS AND CULTURE CENEMA THEATER AND MEDIA AREA LITRATURE AND RELIGION AREA LITRARY WRITING AND HISTEREOGRAPHY
3	MARCH	REFORM MOMENT AND WOMANS- BHAKTI MOMENT RELIGIOUS REFORM MOMENT AND WOMANS- BRAMH SAMAJ ARYA SAMAJ REFORM MOMENT AND WOMANS- ALIGARH MOMENT REFORM MOMENT AND WOMANS- THIOSOPHICAL SOCEITY , SELF RESPECT MOMENT
4	APRIL	ROLE OF WOMANS IN MOMENT AND POLITICS AREA- TRIBLE MOMENT PEASANT MOMENT LABOUR MOMENT ROLE OF MOMENTS IN LOCAL BODIES

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**SESSION 2016-17**

**TEACHING PLAN**

**M. A.I SEMESTER GEOGRAPHY**

**PAPER-I**

**TITLE OF THE PAPER: GEOMORPHOLOGY**

MONTH	PLAN
JULY	Nature and scope of geomorphology, fundamental concepts. Interior of the earth.
AUGUST	Earth movements: Endogenic movement: Plate tectonics, volcanic with special reference to Himalayas. Exogenic process: concept of gradation agents and processes of gradation
SEPTEMBER	weathering mass wasting, Normal cycle of erosion, Interruption of the cycle of erosion, Drainage patterns
OCTOBER	Glacial, Aeolian and Marine (Coastal) River, Karst: processes and resulting landforms, slope, Analysis by penck wood & king
NOVEMBER	Geological structure and landforms: development of drainage and landscape on folded and domal structure, Applied geomorphology.

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**SESSION 2016-17**

**TEACHING PLAN**

**M. A.I SEMESTER GEOGRAPHY**

**PAPER-II**

**TITLE OF THE PAPER: CLIMATOLOGY**

MONTH	PROPOSED PLAN
JULY	Nature and scope of climatology and its relationship with meteorology. Composition of atmosphere; Insulation, heat balance of the earth, stability and instability, green house effect, vertical and horizontal distribution of temperature; Jet stream
AUGUST	General circulation in the atmosphere, acid rain, concept of air masses and atmospheric disturbances, ocean- atmospheric interaction, El Nino and La Nino; Monsoon winds & cyclones.
SEPTEMBER	application of general principles of elementary, physical and synoptic meteorology to the study and classification of climate, climatic classification of Koppen and Thornthwaite.
OCTOBER	Major climates of the world: Tropical, Temperate, Desert and Mountain climate; Climatic change and Global warming, Environment impact and Society's response.
NOVEMBER	Applied climatology.

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2016-17**

**TEACHING PLAN**

**M. A.I SEMESTER GEOGRAPHY**

**PAPER-III**

**TITLE OF THE PAPER: GEOGRAPHICAL THOUGHT**

MONTH	PROPOSED PLAN
JULY	Definition, scope and function of geography, geography as a science of aerial differentiation. Environmentalism, Determinism, Possibilism and Neo- determinism. Laws and theories in geography
AUGUST	The growth of geographical knowledge from earliest time up to 15 <sup>th</sup> century, contribution of Greek and Roman thinkers, <b>Arab</b> geographers:- Al- baruni. Al-masudi, Ibn-e-batuta and Al- idarsi . Geographical information in ancient Indian literature. The Dark Age in geography. The great age of maritime discovery and exploration.
SEPTEMBER	Contribution of Various Schools of thought in modern geography.  German school -Humbolt, Ritter, Ratzel. 2. French school - Vidal -de- la-blache.3. British school - Mackinder.4.American - Davis and Huntington. Models in geography, quantitative revolution, positivism.
OCTOBER	Behaviouralism, Humanistic geography-relevance and the movement, Radical geography. Changing paradigm, status of Indian geography. Dualism in geography. :- Physical and Human, Systematic VS regional
NOVEMBER	Inductive VS Deductive.

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2016-17**

**TEACHING PLAN**

**M. A.I SEMESTER GEOGRAPHY**

**PAPER-IV**

**TITLE OF THE PAPER: ADVANCED GEOGRAPHY OF INDIA**

MONTH	PROPOSED PLAN
JULY	Physical & Biological elements in the geography of India, Geological structure, relief, climate water resources. Vegetation and Soils
AUGUST	Agriculture : major characteristics and problems, Important crops : wheat. rice, cotton, sugarcane, oil seeds, tea and coffee: Agricultural regions.
SEPTEMBER	Population : distribution density and growth, problems and policies. Sources of power coal, petroleum, natural gas, hydroelectricity .Mineral resources with specific reference to Iron-ore. Manganese. Bauxite and Copper
OCTOBER	Industrial development with special reference to Iron and steel. Cement. Cotton Textile and Sugar. Industrial regions Industrial Policy.
NOVEMBER	Trade Transport & Communication.

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2016-17**

**TEACHING PLAN**

**M. A.I SEMESTER GEOGRAPHY**

**PAPER-PRACTICAL**

**TITLE OF THE PAPER: ADVANCED CARTOGRAPHY**

MONTH	PROPOSED PLAN
JULY	
AUGUST	Thematic maps- Chorochromatic and choropleth map, isolines, dot map, routed map. flow map,
SEPTEMBER	Morphometric analysis: Profiles, Slope analysis, Altimetric and Hypsometric curves, Drainage analysis, Block diagram
OCTOBER	Map projection: Properties and principles of construction of world projection
NOVEMBER	Interpretation of maps: Topographical sheets



**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2016-17**

**TEACHING PLAN**

**M. A.III SEMESTER GEOGRAPHY**

**PAPER-I**

**TITLE OF THE PAPER: ECONOMIC GEOGRAPHY**

MONTH	PLAN
JULY	Nature, scope and systematic development of Economic geography. Fundamental concepts in economic geography. Approaches and methods to study of Economic Geography
AUGUST	Mineral: - Iron - ore, Bauxite, Manganese .Energy resource: - Coal, Hydro-electricity, Petroleum and Non conventional resource
SEPTEMBER	Weber 's Theory of industrial location. Case studies of selected industries: Iron and Steel; Chemical, Engineering Textile; Industrial Regions, Transport and trade. Trade blocks: EEC, LAFTA and ASIAN
OCTOBER	Distribution factors of Economic Activities: - Primary and Secondary Economic Activities, World economies and economic regions, Market orientated economy.
NOVEMBER	Globalization and with special reference to India.

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**SESSION 2016-17**

**TEACHING PLAN**

**M. A.III SEMESTER GEOGRAPHY**

**PAPER-II**

**TITLE OF THE PAPER: RESEARCH METHODOLOGY**

MONTH	PLAN
JULY	Research Methodology : An over view Procedure of Scientific Research, Defining research problem, formulating Hypothesis, Research Design.
AUGUST	Methods of data collection : Observation, Questionire, Schedule and Interview, Sampling : sampling Methods, Si, of samples.
SEPTEMBER	Processing and analysis of Data : Processing, Editing, Coding, Classification and Tabulation. Analysis, Measurement of Central Tendency, Disperssion, Correlation
OCTOBER	Preparation of Research Reports; Steps layout Types of Report
NOVEMBER	Revision

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2016-17**

**TEACHING PLAN**

**M. A.III SEMESTER GEOGRAPHY**

**PAPER-III**

**TITLE OF THE PAPER: REGIONAL DEVELOPMENT AND PLANNING**

	PLAN
JULY	Concept of Planning, Region and Planning regions, Origin Definition and scope of Regional Planning. Evolution, Functions and Objectives of Regional Planning
AUGUST	Spatial Organisation: Von Thunen's Isolated State, Industrial Location Theory of Weber. Central Place theory: Single Function Central Place System, Multiple Functions and Hierarchies, Loschian Modification,
SEPTEMBER	Regional Development Theories: Export Base Theory, Neoclassical Exogeneous Growth Theory, Cumulative Causation Theory of Myrdal, Regional Development Theory of Hirschman., Core –periphery theory of Friedmann, Growth Pole Theory , New Economic Geography.
OCTOBER	Concept of Development. Planning for special areas: River basins- Damodar Valley Corporation, National Capital Region,
NOVEMBER	Development programme (HADP)/ Western Ghats Development programme (WGDP) and Tribal area of Chhattisgarh,

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2016-17**

**TEACHING PLAN**

**M. A.III SEMESTER GEOGRAPHY**

**PAPER-IV**

**TITLE OF THE PAPER: POPULATION GEOGRAPHY**

MONTH	PLAN
JULY	Definition and scope of Population geography. Historical development of population geography in western countries and in India. Sources of demographic data. Census and its history.
AUGUST	: Population density and its types, factors affecting population distribution. Population distribution in the world with special reference to Europe and Asia. Distribution of population in India
SEPTEMBER	Prehistoric and modern trends of population growth in the world. Regional aspect of population growth in India. Population theories. Demographic transition, future growth of population.
OCTOBER	Population composition in terms of age and sex, rural-urban, educational status and occupational structure, Significance of these elements in population analysis,
NOVEMBER	Migration of population: causes, characteristics and types. Methods of estimating internal migration. Internal migration in India. Important international migration

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2016-17**

**TEACHING PLAN**

**M. A.III SEMESTER GEOGRAPHY**

**PRACTICAL**

**Quantitative Techniques, Remote Sensing and Aerial Photographs**

MONTH	PLAN
JULY	
AUGUST	<b>Quantitative Techniques</b>  (i) Measures of Central tendency. Dispersion and Variability. Product Moment and Rank Correlation Coefficient, Linear Regression.  (ii) Hypothesis Testing: Chi-Square and 't' tests, Analysis of Variance and F test: Sampling,
SEPTEMBER	Running mean. Mean centre, Nearest Neighbour Analysis Lorenz Curve, Normal Distribution curve, probability
OCTOBER	<i>Remote Sensing and GIS</i> Air Photos and Photogrammetry: Elements of Photographic Systems: types, scales and ground coverage resolution, films with aerial Cameras, vertical photographs, relief displacement, airphoto interpretation.
NOVEMBER	Image Processing; types of imagery, basic concepts and techniques of visual interpretation, ground verification and transfer of interpreted thematic information to base maps. Remote sensing programme of India: image interpretation, mapping of land use and study of water resources. Application of remote sensing , elements of GIS

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2016-17**

**TEACHING PLAN**

**M. A.II SEMESTER GEOGRAPHY**

**PAPER-I**

**TITLE OF THE PAPER: GEOGRAPHY OF CHHATTISGARH**

MONTH	PLAN
JANUARY	Physical setting- location, extent, geology, physical, features, climate, drainage, soil and vegetation.
FEBURARY	Socio-economic-, major crops and agriculture region Water resources, irrigation, major irrigation projects, mineral and power resources [renewable and non- renewable] and power projects.
MARCH	Major industries - Iron and Steel, Cement, Aluminium, Agro and Forest-industries.  Population: Distribution of Population, Social, Cultural characteristics of population and tribes of Chhattisgarh
APRIL	Urbanization.Transport and Trade, Tourist places of Chhattisgarh, National parks, wild LIFE

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2016-17**

**TEACHING PLAN**

**M. A.II SEMESTER GEOGRAPHY**

**PAPER-II**

**TITLE OF THE PAPER: OCENOGRAPHY**

MONTH	PLAN
JANUARY	Nature and scope of oceanography, Detailed study of distribution of land and water, major features of ocean basins: continental shelf, continental slope oceanic plain and deeps, composition of sea water.
FEBURARY	Inter link between atmospheric circulation and circulation pattern in. the oceans, oceanic currents; Temperature, Salinity, Density, waves and tides.
MARCH	Marine sediments: Marine-biological environments, Bio- geo- chemical cycle in the ocean, bio-zones, types of organisms, food and mineral resources of the sea.
APRIL	Major marine environments: coastal, estuary, delta barrier Island, rocky coasts Pelagic environment impact of humans on the marine environment. Exclusive Economic Zone: with special reference to Indian ocean. Applied oceanography.

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2016-17**

**TEACHING PLAN**

**M. A.II SEMESTER GEOGRAPHY**

**PAPER-III**

**TITLE OF THE PAPER: AGRICULTURAL GEOGRAPHY**

MONTH	PLAN
JANUARY	Definition, nature, scope and significance of agricultural geography, approaches to the study of agriculture in geography commodity, deterministic, systematic, regional, behavioral and ecosystem Origin and dispersal of agriculture.
FEBURARY	Determinants of agricultural land use – Physical, economic, social, and technological, Land holding and land tenure systems, Land reforms, land use policy and planning. Cropping pattern, crop concentration, intensity of cropping, degree of commercialization, diversification and specialization efficiency and productivity, crop combination regions and agricultural development.
MARCH	Theories of agricultural location :- Von Thunen's theory of agricultural location and its recent modifications; Whittlesey's classification of agricultural regions; land use and land capability
APRIL	Agriculture in India : Landuse pattern, regional pattern of productivity : Green Revolution, Food deficit and food surplus regions; Specific Problems in Indian agriculture and their management; Agricultural policy in India.



**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2016-17  
TEACHING PLAN  
M.A. II SEMESTER GEOGRAPHY  
PAPER- IV  
TITLE OF THE PAPER: URBAN GEOGRAPHY**

MONTH	PLAN
JANUARY	Definition and scope of urban geography. Centrifugal and centripetal forces in urban Geography , urban morphology and landuse pattern :- Burgess concentric zone theory , Hoyt sector model ,Ullman and Harris multiple Nuclei model.
FEBURARY	Evolution and growth of urban settlement . the geographical setting of urban centers :- site, situation and location , rank size rule. Functional classification of towns-Harris and Nelsion,
MARCH	Central place theory:- Christaller theory . Growth centre theory. Umland. Rural-urban fringe. Economic bases of Town. Basic -Non Basic concept.
APRIL	Urban Planning : Types and elements ,Urban Problem, Blight and renewal Urbanization in World and in India, Urban planning with reference to Naya Raipur.

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2016-17**

**TEACHING PLAN**

**M.A. II SEMESTER GEOGRAPHY**

**PAPER-PRACTICAL**

**TITLE OF THE PAPER: ADVANCED CARTOGRAPHY AND SURVEYING**

MONTH	PLAN
JANUARY	Graphs and Diagrams: Triangular graph. Ergograph, Snail diagram climatograph ; Pie- diagram and divided rectangles, proportional circles, spheres and cubes. Interpretation of Maps :-Geological maps and Thematic maps
FEBURARY	Principles and Methods of topographical survey involving the use of Theodolite and Dumpy level

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2016-17**

**TEACHING PLAN**

**M. A.IV SEMESTER GEOGRAPHY**

**PAPER- I**

**TITLE OF THE PAPER: SOCIAL GEOGRAPHY**

MONTH	PLAN
JANUARY	Definition meaning and scope of Social geography . Nature and Relationship with other social sciences. Development of social geography. Approaches to the study of social geography, Evolution of Man. , Definition , Origin and Types of Society and Human Races.
FEBURARY	Society and Environment , Quality of Social Environment, Man's impact on Social environment-environmental pollution. Social well being and human development. Cultural Realms , Cultural Regions of Asia
MARCH	Indian Society in Historical Perspective, Traditional Hindu Social Organisation. Human Race of India .Religious and Linguistic groups of India .Backward and Scheduled Castes. Tribes Of India
APRIL	Social Change in India , Status of Woman in India , Human Development in India, Social Planning In India, Gender Inequality , Woman Empowerment, Urbanization and Related Problems in India.

**SESSION 2016-17**

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**TEACHING PLAN  
M. A.IV SEMESTER GEOGRAPHY  
PAPER-II**

**TITLE OF THE PAPER: POLITICAL GEOGRAPHY**

MONTH	PLAN
JANUARY	Nature, scope, history and recent development in Political geography; approaches to study, major schools of political thought. Global Strategic Views.
FEBURARY	Geographic Elements and the State: Physical Elements; Human elements: Economic elements; Cultural elements and Political geography and environment interface .Concept of State , Nation, Frontiers and Boundaries
MARCH	Capital and Core Area , Geographical studies of Election , Supra - Nationalism i.e Emergance of International Organisation and their Role in World Politics, The changing patterns of World Powers.
APRIL	Geopolitical significance of Indian Ocean: Political geography of SAARC Region. Political geography of contemporary India with special reference to its spirit: Unity in Diversity. Emerging Politico - geographical issues in modern World.

**GOVT.D.B. GIRLS P.G. AUTONOMOUS COLLEGE, RAIPUR**

**SESSION 2016-17**

**TEACHING PLAN**

**M. A.IV SEMESTER GEOGRAPHY**

**PAPER-III**

**TITLE OF THE PAPER: ENVIRONMENT GEOGRAPHY**

MONTH	PLAN
JANUARY	Meaning, definition, Concepts and theories related to environment. Environment and its components, Man environment relationship, Ecology and Ecosystem.
FEBURARY	Plant and Animal Kingdom, Bio-diversity. Biomes. Food Chains, Tropic level and productivity, Energy flow, Circulation of Elements, hydrological cycle.
MARCH	Soil system-erosion, Man and Climate, Environment Degradation. Environment Planning and Management, Pollution.
APRIL	Deforestation and Desertification, Hazards and Disaster. Environment Problem- global and in Indian scenario, Global Co-operation, World Summit on Sustainable development.

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**TEACHING PLAN  
SESSION 2016-17  
M.A. IV SEMESTER GEOGRAPHY  
PAPER-IV  
TITLE OF THE PAPER: DISASTER MANAGEMENT**

MONTH	PLAN
JANUARY	Disaster meaning and concept- hazard, risk, vulnerability, disaster management, plans, managing environment. Disaster its effect on different social group. Poverty and vulnerability. Disaster management prevention, preparedness and mitigation.
FEBRUARY	Disaster - Classification of disaster; Natural disaster - earthquake, floods, drought and global warming causes consequences and mitigation, natural disaster prone areas of world and India
MARCH	manmade disasters, their types-technological and industrial disasters. Social disaster: cause consequences and mitigation. With special reference to India.
APRIL	Disaster management- relief and response, reconstruction and rehabilitation. Disaster - Strategies for survival, types of strategies. Importance of information in disaster management, significance of Remote Sense and GIS. Planning in the context of Disaster management.

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**SESSION 2016-17**

**TEACHING PLAN**

**M. A.IV SEMESTER GEOGRAPHY**

**PROJECT WORK**

**TITLE OF THE PAPER: SOCIO ECONOMIC SURVEY**

MONTH	PLAN
JANUARY	Physical aspect- Location, Physical feature, Climate, Vegetation, Drainage, Soil and Land use. Cultural aspect- Population, Economic activities, Services and Settlements. Analysis of the findings and report writing.
FEBURARY	
MARCH	
APRIL	

JULY /25 SEM-I	UNIT-I Introduction and Social Psychological Perspective Social Psychology- Nature And Scope , Historical Background and Methods of Social Psychology, Theoretical Perspectives- Cognitive Dissonance, Attribution, Field and Psychodynamic, Symbolic Interaction and Socio-Biology
AUGUST/24	UNIT-II Social Cognition and Person Perception Sources of Errors in Social Cognition, Social Perception and Person Perception, Determinants of Person Perception, Impression Formation and Management, Role of Stereotypes in Person Perception
SEPTEMBER/25	UNIT-III Process of Social Influences Meaning and Nature of Social Influence , Social Facilitation, Conformity, Compliance and Obedience, Social Power , Reactance Attitude– Nature and Characteristics, Development and Formation of Attitudes, Theories of Attitude Change
OCTOBER/21	UNIT-IV Social Psychology and Social Situations Prosocial Behavior, Aggression and Violence- nature, characteristics, determinants and theories, Management of Aggression
NOVEMBER/23	Seminars &Project work Practical- Psychological Experiments
DECEMBER/23	Semester Exam (Theory &Practical)
JANUARY/25 SEM-II	UNIT-I Intergroup Relations Group Dynamics and Group Behavior, Group Effectiveness and Group Cohesiveness-Meanings, Formation, Decision Making, Problem Solving and Group Level Behaviors
FREBRUARY/24	UNIT-II leadership Leadership –meaning, nature and functions, Styles and Effectiveness of Leadership, Psychology of Followers
MARCH	UNIT-III Social Issues Poverty, Caste, Gender and Population Issues in India Communal Tension and Harmony Culture and Behavior-I Culture, Cognition and Emotions, Culture and Organization
APRIL	UNIT-IV Culture And Behavior-II Culture And Health, Culture and Personality, Health , Environment and Law Practical – Psychological Tests
MAY	Seminars &Project work
JUNE	Semester Exam



## PROPOSED TEACHING PLAN FOR THE SESSION 2016-17

Class - M.A. Psychology ( I<sup>st</sup> & II<sup>nd</sup> Semester ) Paper- III<sup>rd</sup>Title of the paper- BASIC RESEARCH METHODOLOGY & ADVANCE RESEARCH  
METHODOLOGY

MONTH/DAYS	PROPOSED PLAN
JULY /25	UNIT-I Introduction to Psychological Research Meaning, Purpose and Dimensions of Research. Types of Psychological Research: Qualitative and Quantitative. Parametric and Non-Parametric Statistics. Methods of Psychological Research: Experimental. Quasi-Experimental. Case Studies, Field Studies. Variables: Nature and Types. Techniques of experimental manipulation, controlling experiment.
AUGUST/24	UNIT-II Research Process Research Process: Consideration of Research Problem and Hypothesis, Operationalization .Sampling: Probability and Non probability Sampling. Sources of Bias. Ethical Issues in Psychological Research.
SEPTEMBER/25	UNIT-III Research Designs: Cross Sectional and Longitudinal, Experimental, Correlational. Single Factor, Quasi - Experimental.
OCTOBER/21	UNIT-IV Central Tendencies, Measures of Dispersion, Normal Probability Curve, its properties and utility. Null Hypothesis, Type-I and Type-II Errors, Level of Significance. Inferential Statistics: t -Test. Method of Data Collection Survey and Observation Method: Questionnaire, Interview. Tests and Scales.
NOVEMBER/23	Seminars & Project work
DECEMBER/23	Semester Exam (Theory & Practical)
JANUARY/25	UNIT-I Experimental Design; Randomized groups, Matched Groups, Factorial Designs; Between and within Groups, Repeated Measures (One Factors).
FREBRUARY/24	UNIT-II Analysis of Variance; ANOVA; One Way and Two-Way
MARCH	UNIT-III Measures of Relationships; Bi-serial, point Bi-serial, Tetra choric and Phi, Multiple and partial Correlations
APRIL	UNIT-IV Regression and Factor Analysis: Simple and Multiple, factor Analysis: Assumptions, Methods, Rotation and Interpretation. Report Writing; Uses of computer in Psychological Researches, Research Report Writing.(APA Style)
MAY	Seminars & Project work
JUNE	Semester Exam

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PROPOSED TEACHING PLAN FOR THE SESSION 2016-17

Class - M.A. Psychology (I<sup>st</sup>&II<sup>nd</sup>Semester)

Title of the paper – Psychopathology and Physiological Psychology and Health Behavior

MONTH/DAYS	PROPOSED PLAN
JULY /25 I <sup>st</sup>	UNIT-I Concept of Psychopathology and Classification System Diagnosis: Purpose, diagnostic system: Mental Status Examination (MSE). Clinical Interview and Diagnostic Tools. Classification Systems: ICD and DSM .Evaluation of Classification System. Theoretical Models of Psychopathology Psychodynamic, Behavioral, Cognitive, Humanistic, Biological and Socio-Cultural.
AUGUST/24	UNIT – II Disorders of Anxiety, Somatoform, and Behavioural Syndromes Panic, Phobic, OCD, Post-Traumatic, GAD, Somatoform Disorders, Impulse Control Disorder, Eating Disorder, Sleep Disorder. Dissociative Disorder: Types, Characteristics, Etiology and Management.
SEPTEMBER/25	UNIT – III Psychotic Spectrum Disorders Schizophrenia, Mood Disorder. Personality Disorders: Clinical Characteristics, Etiology and Management.
OCTOBER/21	UNIT – IV Substance Related Disorders and Developmental Disorders of Childhood Mental Retardation. Disorders of Childhood: Autism Spectrum Disorder (ASD), Attention Deficit Disorder (ADD), Attention Deficit and Hyperactive Disorder (ADHD). Learning disabilities.
NOVEMBER/23	Seminars & Project work
DECEMBER/23	Semester Exam (Theory & Practical)
JANUARY/25 II <sup>nd</sup>	UNIT – I Methods and Basic Concepts Methods of Physiological Psychology: Lesion and Brain Stimulation. Receptors, Effectors and Adjuster Mechanisms. Neural Impulse: Origin. Conduction and Measurement.
FREBRUARY/24	UNIT – II Sensory System Vision and Audition. Human Nervous System: Structure and Functions.
MARCH	UNIT – III Sleep and Waking: Stages of Sleep, Disorders of Sleep and Physiological Mechanisms of Sleep and Waking. Drinking and its Neural Mechanism; Hunger and its Neural Mechanism. Endocrine System: Chemical and Glandular.
APRIL	UNIT - IV Approach to Therapy Psychoanalytic, Biological, Behavioral, Behavioral Medicine and Spiritual Therapy. Mental Health-Mental Health Promotion and Maintenance. Current Issues and Trends in Health Psychology.
MAY	Lab work, Seminars & Project work
JUNE	Semester Exam

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PROPOSED TEACHING PLAN FOR THE SESSION 2016-17

Class - M.A. Psychology (III<sup>rd</sup> & IV<sup>th</sup> Semester)

Paper- I<sup>ST</sup> Personality and Indigenous Psychology-I & Life Span Development  
(Compulsory)

MONTH/DAYS	PROPOSED PLAN
JULY /25 III <sup>th</sup>	UNIT-I Personality; Meaning, Perspective and measurement of Personality Concept of Mature Personality, Personality Theory-Problems and Procedures.
AUGUST/24	UNIT – II Approaches to Personality- I Psychodynamic Perspectives of Personality: Theories of Personality: Freud, Erikson, Adler. Structure, Dynamics and Development of Personality. Methods to study Personality. Approaches to Personality –II Theories of Personality: Cattell and Eysenck - Structure, Dynamics and Development of Personality. Research Methods.
SEPTEMBER/25	UNIT – III Approaches to Personality-III Cognitive, Behavioral and Humanistic. Kelly, Bandura and Roger's. Structure, Dynamics and Development of Personality. Research Methods.
OCTOBER/21	UNIT – IV Approaches to Personality-IV Indigenous Concept and Models of Personality – Yogic, Samkhya. Current Researches in the Field of Personality.
NOVEMBER/23	Seminars & Project work
DECEMBER/23	Semester Exam (Theory & Practical)
JANUARY/25 IV <sup>TH</sup>	UNIT-I Scope, Nature and Principles of development, Concepts-maturity, experience factors in development: Biogenic, Psychogenic and Sociogenic. Factors influencing development: Heredity, Environment, Motivation and Learning. Development processes: Nature, Principles and related.
FREBRUARY/24	UNIT-II Methods; Cross-sectional, longitudinal approach, Research strategies: Co relational, Experimental and other sequential techniques. The Developmental tasks and theories of Development. Psychoanalytic, Behaviorist and cognitive.

MARCH	UNIT-III How life begins Infancy, baby hood and childhood. The Characteristics, adjustment, hazards and Personality Development.
APRIL	UNIT-IV Adolescence and Adulthood. Characteristic, Physical, Social and Cognitive development psychosocial Changes and adjustment. Middle and Old age, Characteristics, problems. Personal social and vacation adjustment.
MAY	Seminars & Project work
JUNE	Semester Exam

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**PROPOSED TEACHING PLAN FOR THE SESSION 2016-17**

**M.A. Psychology (III<sup>rd</sup> & IV<sup>th</sup> Semester)**

**PAPER- II PSYCHOLOGICAL ASSESSMENT I**

MONTH/DAYS	Proposed Plan
JULY /25	UNIT-I Nature of psychological assessment: difference between physical and psychological assessment, problems in psychological assessment. Levels of assessment
AUGUST/24	UNIT-II SCALING- Unidimensional and multidimensional scale. Scale construction technique. Difference between tests, scales, questionnaires and schedule. Characteristics of a good psychological test. Difference between psychometric and projective tests.
SEPTEMBER/25	UNIT-III Construction of a psychological tool: steps in test construction, item writing, pre try- out, item difficulty, discrimination power, types of psychological tests.
OCTOBER/21	UNIT-IV Adaptation of Tests. Test taking Response Styles: Social Desirability, Acquiescence and Faking. Use of Psychological tests in Applied Field of Life: Diagnosis, Psychotherapy, Education, Occupations and Organizations.
NOVEMBER/23	Lab work, Seminars & Project work
DECEMBER/23	Semester Exam (Theory & Practical)
JANUARY/25	UNIT-I Concept and Measurement of Intelligence, Major Tests of Intelligence developed under Western and Indian Cultural set up.
FREBRUARY/24	UNIT-II Concept and Measurement of Aptitude; Major Test of Aptitude developed under Western and Indian Cultural set up. Achievement; concept and measurement of Achievement Test; Major Test of Achievement developed under Indian Cultural set up.
MARCH	UNIT-III Test of Personality: Projective and Psychometric Approaches, Major Test of Personality, developed under Western and Indian Cultural set up.
APRIL	UNIT-IV Test of Adjustment, Values, Interest, Stress and Anxiety development under Indian condition. Psychological Testing in Applied Field: Neuropsychological Testing: Objectives and Major Neuropsychological Test. Emotional Intelligence: Concept and Major Test of emotional Intelligence developed under western and Indian cultural set up.
MAY	Lab work, Seminars & Project work
JUNE	Semester Exam

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PROPOSED TEACHING PLAN FOR THE SESSION 2016-17

Class - M.A. Psychology (III<sup>st</sup>&IV<sup>rd</sup>Semester )

Paper III – Cognitive Psychology

Psychology of Cognitive Abilities

MONTH/DAYS	PROPOSED PLAN
JULY /25	UNIT-I Theories of thought processes: Associationism, Gestalt, Information processing. Concept formation: Rules and Strategies.
AUGUST/24	UNIT-I Problem- Solving: Type and strategies. Role of concepts in thinking. Cognitive Strategies: Algorithms and heuristics. Convergent and divergent thinking. Decision- making; impediments to problem-solving.
SEPTEMBER/25	UNIT-III Models of memory: Atkinson and Shiffrin, Craik and Lockhart, Tulving. Semantic memory: Episodic, trace model and network model.
OCTOBER/21	UNIT-IV Biological basis of memory: The search for the engram, PET scan, and biochemical factors in memory. Improving memory: Strategies.
NOVEMBER/23	Lab work, Seminars & Project work
DECEMBER/23	Semester Exam (Theory & Practical)
JANUARY/25	UNIT-I Creative thinking and problem - solving. Language and thought. Theories of intelligence: Cattell, Jensen, Sternberg Goleman. Creativity: Views of Torrance, Getzels, Guilford.
FEBRUARY/24	UNIT-II Intelligence and creativity: Relationship. Abilities and achievement: Concept and role of emotional intelligence.
MARCH	UNIT-III Intelligence; Biological, Social, Eco- cultural determinants. Theories of intelligence: Spearman, Thurston, Guilford.
APRIL	UNIT-IV Individual and group differences: Extent and causes. Measurement of human abilities.
MAY	Internship ,Seminars & Project work
JUNE	Semester Exam

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**PROPOSED TEACHING PLAN FOR THE SESSION 2016-17**

Class - M.A. Psychology (III<sup>st</sup>&IV<sup>th</sup>Semester )

Paper IV(Elective ) –Educational Instructional Psychology&  
Basics of Psychological Guidance and Counseling

MONTH/DAYS	PROPOSED PLAN
JULY /25	UNIT-I Conceptual and Theoretical Perspectives in Educational Psychology. Theories: Behaviouristic, Social Learning and Cognitive Applications in Teaching.
AUGUST/24	UNIT-II Instructional Models Programmed Learning, Concept, Characteristics and Models.
SEPTEMBER/25	UNIT-III Learning Styles: Nature, Approaches to Learning Style, Measurement of Learning Styles. Attempt to Modify Learning Styles.
OCTOBER/21	UNIT-IV Individual and Group Differences in Intelligence. Theories of Intelligence, Gender Differences issues in the Classroom. Learning and Motivation, Study Habit, importance, Levels of Learning.
NOVEMBER/23	Seminars &Project work
DECEMBER/23	Semester Exam (Theory &Practical)
JANUARY/25	UNIT-I Nature, Need and Functions of Counseling. Counseling and Psychotherapy. Intervention, Goal and objectives of Counseling. Approaches of Counseling: Directive, Non-directive, Eclectic. Individual and group counseling. Evaluation of counseling. Follow up and placement services. Techniques of appraising the client: Standardized Techniques, Intelligence, Personality, Aptitude and Interest Interview.
FREBRUARY/24	UNIT-II Characteristics of a good Counselor. Counselors, Training, Issues and trends in guidance and counseling. Ethical standards. Nature, Need and Functions of Guidance. Principles of Guidance. Techniques of appraising the client: Non-Standardized Methods. Anecdotal Record, Auto biography, Case study, Sociometric, Observation, Rating scale, Questionnaire.
MARCH	UNIT-III Guidance service: - Kinds of guidance services. Various services in guidance programme- 1. Information 2. Self inventory 3. Preparation follow up4 . Placement 5. Individual data collection 6. Counseling 7. Research Services. Organization of a guidance program Relevance of Guidance under 10+2+3 educational patterns.
APRIL	UNIT-IV Special areas of Guidance and Counseling: Marital, Family. Counseling for the pre-school and elementary school children adolescent. Special areas of Guidance- Vocational Guidance, Educational Guidance, personal Guidance Problems of Guidance in India.
MAY	Seminars &Project work
JUNE	Semester Exam

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PROPOSED TEACHING PLAN FOR THE SESSION 2016-17

Class - M.A. Psychology (III<sup>rd</sup>&IV<sup>th</sup>Semester)

Paper –IV (Elective) – Clinical Diagnosis and Psychotherapeutic Counseling



MONTH/DAYS	PROPOSED PLAN
JULY /25 III <sup>RD</sup>	UNIT-I History And Current trends, Growth of the Branch; Growth in numbers, Differentiation. Professionals spiral of growth. Growth in India, Approach of Clinical Psychology: Psychodynamic, Behaviouristic, Humanistic, Cognitive and Socio- Cultural.
AUGUST/24	UNIT- II Personality assessment: Projective, psychometric and behavioral measures. Projective tests: Characteristics and clinical use, Rorschach & TAT.
SEPTEMBER/25	UNIT – III Human Diversity and Education Psychometric tests: MMPL, WAIS & WISC.
OCTOBER/21	UNIT – IV Individual and Group Differences Dynamic diagnosis: Observation, Case history, and Interview. Neuropsychological examination: Approaches; Approaches; Halstead Neuropsychological test battery, Luria Nebraska.
NOVEMBER/23	Internship, Seminars & Project work
DECEMBER/23	Semester Exam (Theory & Practical)
JANUARY/25 IV <sup>th</sup>	UNIT-I Methods for preventing problems and developing resourcefulness: Training family members, sibling's behavior change agents, Maintenance of parent raining. Development of academic skills- Teaching study skills to adults, improving study behavior through self- control technique. Assertiveness Training, Developing Assertive Behavior through Converts Modeling Training, Developing Assertive Behavior through Converts Modeling. Personal Appearance, Improving clients grooming.
FREBRUARY/24	UNIT-II Methods for Promoting Wise Decision- Making: With Children, Career Decision Making Evaluation of Problem Solving Competence. Social Interaction: Conversational Skills, Weight: Control: Psychological techniques, improving Physical Fitness, Cardio Vascular Problems: Psychological prevention. Drug Abuse: Drug abuse perception Reinforcerment of alternatives Peer Counseling: Peer Guidance program and behavioral interventions, Counselor Accountability System.
MARCH	UNIT-III Psychotherapeutic Counseling: Psychoanalytic Technique, Behavioral. Technique, Client centered technique, Community Interventions and Group therapeutic techniques. Methods for Altering Maladaptive Behavioral deficits: Shyness, delinquency, depression, Speech and sexual dysfunctions.
APRIL	UNIT-IV Methods of altering inappropriate behavior: Marital maladjustment, child-misbehavior, homosexuality, and exhibitionism. Methods for altering maladaptive behavioral excesses: Excessive smoking, alcoholism, drug addiction and temper-outburst, physical aggression. Methods for altering fears and anxiety and treating psycho physiological disorders: test-anxiety, generalized anxiety, stress, school phobia, snake phobia, combination of fears, CHD, asthma and peptic ulcer

MAY	Seminars & Project work
JUNE	Semester Exam

**TEACHING PLAN**  
**M.A. SEMESTER – I**  
**PAPER – I**  
**CLASSICAL SOCIOLOGICAL TRADITION**  
**SESSION 2016-17**

<b>MONTH</b>	<b>PLAN</b>
JULY	<b>Unit-I: Historical Development of the Emergence of Sociology</b> – Historical development of social thought; Tradition feudal economic and social structure.
AUGUST	<b>Unit-I: Historical Development of the Emergence of Sociology</b> – Impact of Industrial Revolution and New Mode of production on society and Economy; Emergence of Capitalist mode of production: Nature and Feature of Capitalism; Enlightenment and it's impact on thinking and reasoning.
SEPTEMBER	<b>Unit-II: August Comte</b> – Social Static's and Dynamics; Law of three stages; Hierarchy of Sciences; Positivism; Scheme of Social Reconstruction.
OCTOBER	<b>Unit-III: Emile Durkheim</b> – Social Facts; Mechanical and Organic Solidarity; Division of Labour; Theory of Suicide; Collective Representation.
NOVEMBER	<b>Unit-IV: Velfredo Pareto</b> – Theory of Social Change; Contribution of Methodology; Theory of the Circulation of Elite; Theory of Logical and Non-Logical Action.
DECEMBER	<b>Seminars and Projects Semester Exam</b>

**TEACHING PLAN**  
**SEMESTER - I SOCIOLOGY**  
**PAPER - II**  
**PHYLOSOPHICAL AND CONCEPTUAL FOUNDATION OF**  
**RESEARCH METHODOLOGY**  
**2016-17**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>
1	July	Unit-I	Philosophical Roots Of Social Research: Issues In The Theories Of Epistemology Forms And Types Of Knowledge
2	August	Unit-I	Validation Of Knowledge, Positivism And Its Critique Research Design, Steps And Process
3	September	Unit-II	Objectivity In Social Science: Scientific Methods In Social Science, Objectivity, Problems Of Objectivity Problems Of Concept And Theory, Hypothesis
4	October	Unit-III	Qualitative Methods In Social Research: Techniques And Methods Of Qualitative Research: Observation And Interview Guide, Case Study, Content Analysis, Experiences In Field Work
5	November	Unit-IV	Issues In Social Research: Issues In Qualitative Research, Theoretical Vs. Applied Research, Interdisciplinary Research
6	December		Semester Exam & Project Work

**TEACHING PLAN**  
**SEMESTER - I SOCIOLOGY**  
**PAPER - III**  
**SOCIAL CHANGE IN INDIA**

**2016-17**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>
1	July	Unit-I	<b>Conceptual &amp; Theoretical Frame Work :</b> a. Social change concepts, Characteristics & Forms b. Linear Theory & Cyclical Theory, Evolution & Progress
2	August	Unit-I	c. Economic Factors & Biotech Factors of Social Change d. Culture & Development
3	September	Unit-II	<b>Trends &amp; Processes of change in Modern India :</b> a. Sanskritization b. Westernization c. Globalization d. Mass Media
4	October	Unit-III	<b>Changes in Tribal &amp; Rural India :</b> a. Changes in Tribal Society b. Changes in Rural Society c. Rural economy d. Tradition & Modernity
5	November	Unit-IV	<b>Changes in Urban &amp; Industrial India :</b> a. Migration b. Development of Slums c. Development of Criminal Activities d. Welfare Measures & Consequent changes
6	December		Project Work & Semester Exam

**TEACHING PLAN**  
**SEMESTER - I SOCIOLOGY**  
**PAPER - IV**  
**RURAL SOCIOLOGY**  
**2016-17**

No.	MONTH		TEACHING PLAN
1	July	Unit-I	Characteristics & Approaches a. Rural Social Structure b. Characteristics of rural Society
2	August	Unit-I	c. Subltern Approaches d. Land Ownership and its types
3	September	Unit-II	Planned Change a. Panchayati raj b. Five Years Plan in India c. Changing Scenario of Indian Village d. Rural Leadership & Functionalism
4	October	Unit-III	<b>Rural Development &amp; Change</b> a. Agrarian Legislation & Land Reform b. Green Revolution c. Globalization & its impacts on Agriculture d. Power Structure in Rural India
5	November	Unit-IV	Welfare Measures & Consequents changes a. Community Development Projects b. Self Help Group c. MANREGA(Mahatma Gandhi Rural Employment Guarantee Act) d. Diversification of Occupation e. SSA (Sarv Siksha Abhiyan)
6	December		Project Work & Semester Exam

**M.A. SEMESTER – II**  
**PAPER – I**  
**CLASSICAL SOCIOLOGICAL THINKERS**  
**2016-17**

<b>MONTH</b>	<b>PLAN</b>
JANUARY	<b>Unit-I: Karl Marx</b> – Materialistic Interpretation of History; Class and Class Struggle; Alienation; Theory of Ideology; Theory of Surplus Value.
FEBRUARY	<b>Unit-II: Max Weber</b> – Theory of Social Action; Concept of Status, Class and Power; Sociology of Religion and Economic Development; Contribution to Methodology; Bureaucracy.
MARCH	<b>Unit-III: Talcott Parsons</b> – Social Action; Pattern Variables; Social Stratifications-Class, Gender & Race; Social System.
APRIL	<b>Unit-IV: Robert K. Merton</b> – Reference Group; Social Conformity and Anomie; Middle Range Theory; Functional Paradigm.
MAY	<b>Seminars and Projects</b>
JUNE	<b>Semester Exam</b>

**TEACHING PLAN**  
**SEMESTER - II SOCIOLOGY**  
**PAPER - II**  
**QUANTITATIVE RESEARCH TECHNIQUES IN SOCIOLOGY**  
**2016-17**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>
1	Jan	Unit-I	Tools And Techniques Of Social Research: Techniques Of Survey Research, Interview, Preparations Of Questionnaire And Interview Schedule, Sampling Design, Sampling Error
2	Feb	Unit-II	Measurement And Scaling Techniques: Levels Of Measurement, Types Of Scales: Nominal And Ordinal Reliability And Validity Of Scaling, Measures Of Social Distance: Thurston, Lickert, And Bogardus Scale
3	March	Unit-III	Statistics In Social Research: Measures Of Central Tendency: Mean Median And Mode, Measures Of Dispersion: Stander
4	April	Unit-IV	Commuter Application And Social Research: Application Of Computer In Social Research, MS Office, Ethical Issues In Social Research: Use Of Computer In Data Processing, Processing Of Data: Classification, Tabulation, And Interpretation,
5	May		Project Work & Semester Exam



**TEACHING PLAN**  
**SEMESTER - II SOCIOLOGY**  
**PAPER – III**  
**SOCIOLOGY OF DEVELOPMENT**  
**2016-17**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>
1	Jan	Unit-I	Perspective on development a. Modernization b. Social Transformation c. Change in Social Structure in Contemporary India d. Economic Aspects of Human Development & Social Development
2	Feb	Unit-II	Indian Experiences on Development a. Sociological Appraisal of Five Year Plan b. Social Consequences of Economic Reforms c. Socio Culture Impact of Globalization d. Social Implication of Info Tech & Biotech Revolution
3	March	Unit-III	Consequences of Development : a. Indicators of Social Development b. Development & Socio Economic Disparities c. Ecological Perspectives of Development d. Development & Migration
4	April	Unit-IV	Issues & Development in Contemporary India a. Gender Discrimination b. Privatization c. Sustainable Development d. Issues of Community Development in India
5	May		Project Work & Semester Exam

**TEACHING PLAN**  
**SEMESTER - II SOCIOLOGY**  
**PAPER - IV**  
**INDIAN RURAL SOCIETY**  
**2016-17**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>
1	Jan	Unit-I	Tribal Society as Agrarian Society a. Structure & Characteristics of Tribal Society b. Tribe Cast & changing problems of Tribal's c. Agriculture & Landless Labor
2	Feb	Unit-II	Social Issues a. Migration b. Land Alienation c. Inequalities d. Rural Poverty
3	March	Unit-III	Contemporary Issues a. Health & Education b. Depeasantisation c. Changing Status of Rural Women d. Rural & Urban Community
4	April	Unit-IV	Peasant Women e. Cause & Types f. Tebhaga, Telangana, Naxalwadi g. Naxalite Movement in Contemporary India its origin & Causes h. Present Status Government Measures & People Response.
5	May		Project Work & Semester Exam

**M.A. SEMESTER – III**  
**PAPER – I**  
**CLASSICAL SOCIOLOGICAL THEORIES**  
**2016-17**

<b>MONTH</b>	<b>PLAN</b>
JULY	<b>Unit-I: Positivism</b> – Origin and basic postulates; Contribution of Comte; Contribution of Durkheim.
AUGUST	<b>Unit-I: Positivism</b> -Contribution of Max Weber; Criticism and present status.
SEPTEMBER	<b>Unit-II: Conflict Theory</b> – Origin and basic Postulates; Contribution of Karl Marx; Contribution of Dahrendorf; Contribution of Coser; Criticism and Present Status.
OCTOBER	<b>Unit-III: Structuralism</b> – Origin and basic Postulates; Contribution of Levistrauss; Contribution of Goldiner; Contribution of M. Foucault; Criticism and Present status.
NOVEMBER	<b>Unit-IV: Social Exchange Theory</b> – Intellectual Roots; Contribution of Levi-Strauss; Contribution of George C. Homans; Contribution of Peter M. Blau; Criticism and Present status.
DECEMBER	<b>Seminars and Projects, Semester Exam</b>

**TEACHING PLAN**  
**SEMESTER-III**  
**PAPER-II**  
**PERSPECTIVES OF STUDY TO INDIAN SOCIETY**  
**2016-17**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>	<b>PLAN</b>
1	July	Unit-1	<b>Distinctive Characteristics of Indian Society :</b>	
2	August	Unit-I	a. Configuration of Indian Society b. Consequences of Increasing Linkages & Network in Indian Society c. Village in Relation to the Wider World	
3	September	Unit-II	<b>Textual &amp; Structural Functionalism Perspective :</b> a. G.S. Ghurye b. S.C. Dubey c. M.N. Srinivas	
4	October	Unit-III	<b>Marxism :</b> a. D.P. Mukherjee b. A.R. Desai c. Criticism & Present Status	
5	November	Unit-IV	<b>Subaltern Perspective &amp; Civilization Perspective:</b> a. B.R. Ambedkar b. David Hardiman c. N.K. Bose d. Surjeet Sinha e. Criticism & Present Status	
6	December		Project Work & Semester Exam	

**TEACHING PLAN**  
**SEMESTER-III**  
**PAPER-III**  
**INDUSTRY AND SOCIETY IN INDIA**  
**2016-17**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>	<b>PLAN</b>
1	July	Unit-I	Industrial Sociology And Classical Sociological Tradition	
2	August	Unit-I	A-Development Of Industrial Sociology, Industry, Industrialization B-Division Of Labour C- Bureaucracy And Rationality D-Production Relation And Alienation	
3	September	Unit-II	Industrial Organization: A-Industrial Organization :Formal, Informal B-Industrial Management C-Scientific Management D-Sociology Of Work: Work Innovation ,Motivation Culture, Work, Satisfaction, Incentives And Its Effects	
4	October	Unit-III	Concept Of Industrialization And Social Problems Of Industrialization A-Migration B-Habitat And Settlement C-Environment D- Indebtedness of Industrial Workers	
5	November	Unit-IV	Technology Change And Automation A-Technology And Social Structure In Industry B-Socio Technological System C-Organisational change And Technological Change D-Automation And Its Consequences	
6	December		Project Work & Semester Exam	

**TEACHING PLAN**  
**SEMESTER - III**  
**PAPER - IV**  
**CRIMINOLOGY**

**2016-17**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>	<b>PLAN</b>
1	July	Unit-1	<b>Conceptual &amp; Theoretical Approaches :</b> a. Conceptual Approaches to Crime b. Legal & Sociological Approach	
2	August	Unit-I	c. Crime Deviance : Causes, Prevention & Control d. Theories on Crime Causation : Classical & Positivist	
3	September	Unit-II	<b>Types of Criminal &amp; Crime :</b> a. Types of Crime b. Juvenile Delinquency c. Women & Crime d. White Collar Crime	
4	October	Unit-III	<b>Changing Profile of Crime &amp; Criminals :</b> a. Corruption : Types, Causes & Consequences b. Cyber Crime : Causes, Prevention & Control c. Crime against Women : Causes, Prevention & Control d. Terrorism in India : Its Origin & Causes	
5	November	Unit-IV	<b>Theories of Punishment :</b> a. Retributive, Deterrent : Theories & Criticism b. Reformatory Theory : Probation & Parole c. Open Prison : Its Success & Failure d. Futility & Cost of Punishment	
6	December		Project Work & Semester Exam	

**M.A. SEMESTER – IV**  
**PAPER – I**  
**MODERN SOCIOLOGICAL THEORIES**  
**2016-17**

<b>MONTH</b>	<b>PLAN</b>
JANUARY	<b>Unit-I: Symbolic Interactionism</b> – Origin and Basic Postulates; Contribution of G.H. Mead; Contribution of H. Blumer; Contribution of E. Goffman; Criticism and Present status.
FEBRUARY	<b>Unit-II: Phenomenology</b> – Origin, Basic postulates of phenomenology; Contribution of Schutz; Contribution of Berger; Contribution of E. Husserl; Criticism and Present status.
MARCH	<b>Unit-III: Ethnomethodology</b> – Origin Basic postulates of Ethnomethodology; Contribution of Garfinkel; Contribution of Goffman; Contribution of Ckorel; Criticism and present status.
APRIL	<b>Unit-IV: Post Modernism</b> – Origin and Development; Contribution of Foucault; Contribution of Derrida; Contribution of Baudrillard; Criticism and present status.
MAY	<b>Seminars and Projects, Semester Exam</b>

**TEACHING PLAN**  
**SEMESTER - IV**  
**PAPER - II**  
**COMPARATIVE SOCIOLOGY**  
**2016-17**

<b>No.</b>	<b>MONTH</b>		<b>TEACHING PLAN</b>	<b>PLAN</b>
1	JANUARY	Unit-I	<b>Historical &amp; Social Context of Emergence of Sociology in the West :</b> a. <b>Emergence of Growth of Sociology in India</b> b. <b>Western Sociological Tradition</b> c. <b>Americanization of Sociology</b>	
2	FEBRUARY	Unit-II	<b>Central Themes in Comparative Sociology:</b> a. Modernity & Development b. Diversity & Multiculturalism c. Environment d. Globalization	
3	MARCH	Unit-III	<b>Theoretical Concern in Comparative Sociology :</b> a. Problems of Theoring in Sociology b. Theoretical & Methodological Approaches in Sociology c. Sociology in India d. Trends of Sociology in India	
4	APRIL	Unit-IV	<b>Current Debates :</b> a. Contextualization b. Indigenization c. Use of Native Categories in The Analysis of Indian Society d. Text & Context	
5	MAY		Project Work & Semester Exam	



**SEMESTER - IV**  
**PAPER - III**  
**INDUSTRY AND SOCIETY IN INDIA**  
**2016-17**

No.	MONTH		TEACHING PLAN	PLAN
1	JAN.	UNIT-I	Industrial Relation: A-Importance Of Human Relation At Work B-Conflict: Causes And Types, Resolution Of Conflict C-Collective Bargaining D-Worker Participation In Management E-Education Training And Development Of Manpower F-Labour Welfare In India	
2	FEB	UNIT-II	Contemporary Issues: A-Industrialization And Women Labour B-Industrialization And Child Labour C-Industrialization And Environment D-Problems Of Industrialization In Developing Countries	
3	MARCH	UNIT-III	A-History Of Trade Unionism In India B-Objectives And functions Of Trade Union C-ILO D-Trade Unionism And Globalization	
4	APRIAL	UNIT-IV	A-MNCS And Third World B-FDI And Third World C-International Agencies: World Bank And Third World Countries D-Status Of Industries In Third World Countries	
5	MAY		Project Work & Semester Exam	

**SEMESTER - IV**  
**PAPER - IV**  
**CRIMINOLOGY**  
**2016-17**

No.	MONTH		TEACHING PLAN	PLAN
1	JAN.	UNIT-I	<b>Roots of Correction to Prevent Crime:</b> <ul style="list-style-type: none"> <li>a. Socialization, Role of Family Values &amp; Education</li> <li>b. Correctional Programs in Prison : history of Prison, Reform in India</li> <li>c. Correctional Program : Meditational &amp; Recreation</li> <li>d. After Care &amp; Rehabilitation Program</li> </ul>	
2	FEB	UNIT-II	<b>Problems of Correctional Administration :</b> <ul style="list-style-type: none"> <li>a. Antiquated Jail manual &amp; Prison Act</li> <li>b. Over Crowding Lack of Inter Agency Coordination among Police Prosecution Judiciary &amp; Prison</li> <li>c. Prison Offenses</li> <li>d. Problem of Criminal Justice Administration</li> </ul>	
3	MARCH	UNIT-III	<b>Victimological Perspectives :</b> <ul style="list-style-type: none"> <li>a. Historical Background of Victimology</li> <li>b. Victims Responsibility in Crime</li> <li>c. Compensation to Victims</li> <li>d. Violation of Prisoners Human Rights</li> </ul>	
4	APRIAL	UNIT-IV	<b>Community Policing:</b> <ul style="list-style-type: none"> <li>a. Concept of Police</li> <li>b. Role of Police</li> <li>c. Concept of Judiciary</li> <li>d. Role of Judiciary</li> </ul>	
5	MAY		Project Work & Semester Exam	

**M.A. I SEM.  
SESSION 2016-17  
TEACHING PLAN**

**PAPER-I**

**पाश्चात्य राजनीतिक चिंतन**

MONTH	PLAN
JULY	प्लेटो, अरस्तु
AUGUST	मैकियावली, जेरेमी, बेन्थम
SEPTEMBER	टॉमस हाब्स, जॉन लाक, जीन जैक्स,रुसो
OCTOBER	जॉन स्टुअर्ट मिल, थामस हिल ग्रीन
NOVEMBER	कार्ल मार्क्स एवं मार्क्सवाद

**SESSION 2016-17**  
**TEACHING PLAN**

**PAPER-II**  
**तुलनात्मक राजनीति**

MONTH	PLAN
JULY	राजनीतिक व्यवस्था के अध्ययन में तुलनात्मक पद्धति। तुलनात्मक राजनीति का अर्थ, प्रकृति
AUGUST	तुलनात्मक राजनीति का क्षेत्र। तुलनात्मक राजनीति का विकास। राजनीतिक व्यवस्था की अवधारणा
SEPTEMBER	तुलनात्मक राजनीति के अध्ययन के विविध उपागम – परम्परागत, मार्क्सवादी
OCTOBER	तुलनात्मक राजनीति के अध्ययन के विविध उपागम—निवेश—निर्गत। संरचनात्मक :- प्रकार्यात्मक, राजनीतिक समाजशास्त्रा उपागम।
NOVEMBER	राजनीतिक संस्कृति एवं राजनीतिक समाजीकरण। राजनीतिक संचार

**SESSION 2016-17**  
**TEACHING PLAN**

**PAPER-III**  
**लोक प्रशासन**

MONTH	PLAN
JULY	लोक प्रशासन :- परिभाषा, प्रकृति, क्षेत्र । निजी प्रशासन एवं लोक प्रशासन में अंतर ।
AUGUST	अध्ययन के उपागम :- व्यावहारवादी, तुलनात्मक, निर्णयपरक, विकास प्रशासन एवं नवीन प्रशासन
SEPTEMBER	संगठन के सिद्धांत:- नियंत्रण का क्षेत्र, पदसोपान, प्रत्यायोजन, समन्वय, केन्द्रीयकरण एवं विकेन्द्रीयकरण ।
OCTOBER	मुख्य कार्यपालिका :- प्रकार एवं भूमिका , सूत्रा एवं स्टॉफ अभिकरण,
NOVEMBER	विभागीय संगठन, स्वतंत्रा नियामकीय आयोग, लोक निगम

**SESSION 2016-17**  
**TEACHING PLAN**

**PAPER-IV**  
**भारत की विदेश नीति**

MONTH	PLAN
JULY	विदेशनीति :- अर्थ एवं निर्धारक तत्व । भारतीय विदेशनीति :- सिद्धांत एवं उद्देश्य ।
AUGUST	भारत की विदेशनीति के आंतरिक निर्धारक :- भूगोल, इतिहास, संस्कृति
SEPTEMBER	भारतीय विदेशनीति के बाह्य निर्धारक :- वैश्विक, क्षेत्रीय एवं द्विपक्षीय । विदेशनीति निर्माण प्रक्रिया की संरचना
OCTOBER	भारतीय विदेशनीति में नैरन्तर्य एवं परिवर्तन । भारतीय विदेशनीति तुलनात्मक परिपेक्ष्य में
NOVEMBER	पड़ोसी देशों के प्रति भारतीय नीति, प्रमुख वैश्विक मुद्दों के प्रति भारतीय दृष्टिकोण, सीमापार आतंकवाद, पर्यावरण एवं मानव अधिकारों का प्रश्न ।

**SESSION 2016-17**  
**TEACHING PLAN**  
**PAPER-I**  
**भारतीय शासन एवं राजनीति**

MONTH	PLAN
JULY	संविधान सभा की पृष्ठभूमि, संगठन (संरचना) एवं कार्यप्रणाली, वैचारिक आधार, प्रस्तावना
AUGUST	मौलिक अधिकार एवं मौलिक कर्तव्य, राज्य के नीति निर्देशक सिद्धांत, सामाजिक परिवर्तन के उपकरण के रूप में संविधान संशोधन प्रक्रिया
SEPTEMBER	संघीय सरकार – राष्ट्रपति, प्रधानमंत्री, मंत्रीपरिषद, संसद
OCTOBER	सर्वोच्च न्यायालय एवं न्यायिक पुनरीक्षण, न्यायिक सक्रियतावाद
NOVEMBER	दलपद्धति की प्रकृति, राष्ट्रीय एवं क्षेत्रीय दल, दबाव समूह

**SESSION 2016-17**  
**TEACHING PLAN**  
**PAPER-II**  
**अंतर्राष्ट्रीय राजनीति के सिद्धांत**

MONTH	PLAN
JULY	अंतर्राष्ट्रीय राजनीति का विषय के रूप में विकास, प्रकृति एवं क्षेत्रा । अध्ययन पद्धतियों :- परम्परागत एवं वैज्ञानिक
AUGUST	अंतर्राष्ट्रीय राजनीति के सिद्धांत :- (वृहत्) यथार्थवाद, आदर्शवाद, साम्यावस्था, निर्णय-निर्माण, खेल, संचार, व्यवस्था सिद्धांत
SEPTEMBER	शक्ति संकल्पना :- तत्व एवं सीमाएं । शक्ति प्रबंधन – शक्ति संतुलन । सामूहिक सुरक्षा
OCTOBER	अंतर्राष्ट्रीय राजनीति में राष्ट्रीय हित । निःशस्त्रीकरण । परमाणु अप्रसार – सी.टी.बीटी. एन.पी.टी. ।
NOVEMBER	क्षेत्रवाद, क्षेत्रीय संगठन । साम्राज्यवाद, नव-साम्राज्यवाद



**SESSION 2016-17**  
**TEACHING PLAN**  
**PAPER-III**  
**शोध प्रविधि**

MONTH	PLAN
JULY	सामाजिक अनुसंधान – अर्थ एवं प्रकृति, वैज्ञानिक पद्धति
AUGUST	वैज्ञानिक पद्धति एवं सामाजिक विज्ञानों में उपयुक्तता, सामाजिक विज्ञान में अध्ययन की कठिनाईयों, शोध के चरण।
SEPTEMBER	सामाजिक सर्वेक्षण – उद्देश्य, महत्व, प्रमुख चरण, वैयक्तिक अध्ययन पद्धति।
OCTOBER	अनुसंधान, अभिकल्पना, उपकल्पना, तत्वों के प्राथमिक एवं द्वितीयक स्रोत।
NOVEMBER	तथ्य संग्रहण के एवं प्रविधियाँ : अवलोकन पद्धति, साक्षात्कार पद्धति :- गुणदोष एवं सीमाएं

**SESSION 2016-17**  
**TEACHING PLAN**  
**PAPER-IV**  
**अंतर्राष्ट्रीय संगठन**

MONTH	PLAN
JULY	अंतर्राष्ट्रीय संगठनों की प्रकृति एवं विकास। अंतर्राष्ट्रीय संगठन – राष्ट्र राज्य एवं अंतर्राष्ट्रीय व्यवस्था का समन्वय
AUGUST	राष्ट्रसंघ – उत्पत्ति संरचना कार्य एवं असफलता
SEPTEMBER	संयुक्त राष्ट्र संघ – संरचना एवं कार्य
OCTOBER	विवादों का शांतिपूर्ण समाधान एवं बाध्यकारी उपाय, अंतर्राष्ट्रीय न्यायालय
NOVEMBER	आर्थिक एवं सामाजिक विकास में संयुक्त राष्ट्र संघ की भूमिका। उत्तर शीत युद्धकाल और संयुक्त राष्ट्रसंघ

**SESSION 2016-17**  
**TEACHING PLAN**

**PAPER-I**  
**राजनीतिक चिंतन**

MONTH	PLAN
JANUARY	मनु, कौटिल्य
FEBURARY	महात्मा गांधी, डॉ. भीमराव अम्बेडकर जार्ज बिल्हेलम
MARCH	फ्रेडरिक हीगल, हेरल्ड जे. लास्की एवं बहुलवाद परम्परागत राजनीतिक सिद्धांत एवं आधुनिक राजनीतिक सिद्धांत की विशेषताएं
APRIL	परम्परागत राजनीतिक सिद्धांत एवं आधुनिक राजनीतिक सिद्धांत की विशेषताएं

## SESSION 2016-17

### TEACHING PLAN

#### PAPER-II

विकासशील देशों की राजनीति एवं तुलनात्मक राजनीति

MONTH	PLAN
JANUARY	राजनीतिक विकास । राजनीतिक अभिजन
FEBURARY	सरकार का वर्गीकरण :- एकात्मक व संघात्मक, संसदीय व अध्यक्षतात्मक
MARCH	नौकरशाही :- संरचना, कार्य व भूमिका । राजनीतिक दल, दबाव समूह  राजनीतिक संस्थाएँ :- व्यवस्थापिका – संरचना, कार्य व भूमिका । कार्यपालिका :- संरचना, कार्य व भूमिका
APRIL	न्यायपालिका :- न्यायिक पुनरीक्षण । शक्ति पृथक्करण । अवरोध एवं संतुलन

## SESSION 2016-17

### TEACHING PLAN

#### PAPER-III

#### लोक प्रशासन (स्थानीय स्वायत्त शासन)

MONTH	PLAN
JANUARY	कार्मिक प्रशासन : भर्ती पदोन्नति, प्रशिक्षण, सेवानिवृत्ति
FEBURARY	संघ लोक सेवा आयोग, नौकरशाही, कार्मिकों की समस्याओं के निवारण की व्यवस्था।
MARCH	वित्तीय प्रशासन :- अर्थ प्रकृति, विशेषताएं। बजट :- सिद्धांत एवं महत्व, भारत में बजट निर्माण प्रक्रिया  कार्यपालिका, व्यवस्थापिका, न्यापालिका एवं जन समूह का प्रशासन पर नियंत्रण
APRIL	लोक प्रशासन में भ्रष्टाचार, आम्बुड्समेन, लोकपाल, लोकायुक्त एवं लोक संपर्क स्थानीय स्वायत्तशासी संस्थाओं की भूमिका

**SESSION 2016-17**

**TEACHING PLAN**

**PAPER-IV**

**प्रमुख शक्तियों की विदेशनीति**

MONTH	PLAN
JANUARY	विदेशनीति के अध्ययन के उपागम । अमेरिका की विदेशनीति
FEBURARY	ब्रिटेन एवं फ्रांस की विदेशनीति जर्मनी एवं जापान की विदेशनीति
MARCH	सोवियत संघ / रूस की विदेशनीति, चीन की विदेशनीति
APRIL	प्रमुख वैश्विक मुद्दों के प्रति भारतीय दृष्टिकोण – वैश्वीकरण, निःशत्रुीकरण एवं शस्त्र नियंत्रण ।

**SESSION 2016-17**

**TEACHING PLAN**

**PAPER-I**

**भारतीय शासन में राज्यों की राजनीति**

MONTH	PLAN
JANUARY	निर्वाचन आयोग, संघ लोक सेवा आयोग भारतीय संघवाद तथा केन्द्र राज्य संबंध, राज्यपाल, मुख्यमंत्री एवं मंत्रीमंडल
FEBURARY	राज्य विधान मंडल, राष्ट्रीय राजनीति का राज्य, राजनीति पर प्रभाव
MARCH	राज्यों की स्वायत्ता की मांग – गठबंधन की राजनीति
APRIL	दलबदल की राजनीति, भारतीय राजनीति में जाति, धर्म, क्षेत्रवाद, भाषा का प्रभाव ।

**SESSION 2016-17**

**TEACHING PLAN**

**PAPER-II**

**अंतर्राष्ट्रीय राजनीति के सिद्धांत (समकालीन मुद्दे)**

MONTH	PLAN
JANUARY	अंतर्राष्ट्रीय राजनीति में असंलग्नता – आधार, भूमिका, महत्व एवं प्रासंगिकता । शीतयुद्ध एवं शीतयुद्ध की समाप्ति – कारण एवं परिणाम । नई विश्व व्यवस्था
FEBURARY	उत्तर शीत युद्धकालीन महत्वपूर्ण मुद्दे – वैश्वीकरण, मानवधिकार  उत्तर शीत युद्धकालीन महत्वपूर्ण मुद्दे – पर्यावरण, आतंकवाद
MARCH	प्रमुख राष्ट्रों की विदेश नीतियां – भारत, संयुक्त राज्य अमेरिका
APRIL	चीन एवं रूस की विदेश नीति



**SESSION 2016-17**

**TEACHING PLAN**

**PAPER-III**

**शोध प्रविधि – क्षेत्रीय कार्य**

MONTH	PLAN
JANUARY	प्रश्नावली एवं अनुसूची :- प्रकार, गुण, दोष, सीमाएं ।  निदर्शन :- अर्थ, प्रकार, सारणीयन, प्रतिवेदन लेखन, अनुमापन प्रविधियाँ
FEBURARY	अनुसंधान दल, अनुसंधान की समस्याएँ, प्रक्षेपी प्रविधियाँ
MARCH	सामाजिक अनुसंधान में साँख्यिकी की उपयोगिता एवं सीमाएँ – मीन, मोड, मीडियन
APRIL	कम्प्यूटर का उपयोग एवं संकेतन

**SESSION 2016-17**

**TEACHING PLAN**

**PAPER-IV**

**अंतराष्ट्रीय कानून**

MONTH	PLAN
JANUARY	अंतराष्ट्रीय कानून :- प्रकृति क्षेत्रा, विकास, स्रोत एवं संहिताकरण । राष्ट्रीय एवं अंतराष्ट्रीय कानून ।
FEBURARY	अंतराष्ट्रीय कानून एवं राष्ट्र उत्तराधिकार एवं मान्यता । राज्यों के अधिकार एवं कर्तव्य । क्षेत्राधिकार समानता एवं आत्मरक्षा
MARCH	युद्ध :- परिभाषा, प्रकृति, लक्षण, घोषणा, प्रभाव । स्थल युद्ध के नियम :- समुद्री युद्ध के नियम एवं वायु युद्ध के नियम, आणविक युद्ध, अधिग्रहण न्यायालय  युद्ध की समाप्ति, शांति संधि एवं पूर्वावस्था । युद्ध अपराध, युद्धबंदी एवं दण्ड
APRIL	तटस्थता :- परिभाषा, प्रकार, लक्षण । तटस्थ राज्यों के अधिकार एवं कर्तव्य ।  नाकाबंदी, राजनयिक उन्मुक्तियों एवं विशेषाधिकार । अंतराष्ट्रीय कानून एवं आर्थिक विकास, तटीय विश्व के संदर्भ में

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**PROPOSED TEACHING PLAN FOR THE SESSION 2016-17**

**DEPARTMENT OF BOTANY**

**SEMESTER 1, PAPER 1 -CELL BIOLOGY M.M. 80**

MONTH	CELL BIOLOGY
JULY Unit-I	<b>The dynamic cell:</b> Structural Organization of the plant cell, specialized plant cell type, chemical foundation, and biochemical energetic. <b>Cell wall</b> – Structure and functions, biogenesis growth.
AUGUST Unit-I & Unit II	<b>Plasma membrane:</b> Structure, models and functions, site for ATPases, ion carries, channels and pumps, receptors. <b>Chloroplast:</b> Structure, Genome organization, Gene expression, RNA editing
September Unit II & Unit III	<b>Mitochondria:</b> Structure, Genome organization, Biogenesis. <b>Plant Vacuole:</b> Tonoplast membrane, ATPases, transporters as a storage organelle. <b>Nucleus:</b> Structure, Nuclear Pore.
October Unit III	<b>Ribosome:</b> Structure and functional significance <b>Cell cycle and Apoptosis:</b> Control mechanisms, Role of cyclins dependent kinases Retinoblastoma and E2F proteins, cytokinesis and cell plate formation, mechanism of programmed cell death.
November Unit IV	<b>Other cell organelles:</b> Structure and functions of microtubules, Microfilaments, Golgi apparatus, Lysosome, Endoplasmic Reticulum. <b>Techniques in cell biology:</b> Immuno-techniques, in situ hybridization to locate transcripts in cell types FISH, GISH, Confocal microscopy, Flow Cytometry.
DECEMBER	<b>Revision,</b> Practicals done every month as per schedule

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**DEPARTMENT OF BOTANY**

**SEMESTER-I, PAPER- II –Genetics**

<b>MONTH</b>	<b>PAPER-II, GENETICS</b>
<b>JULY</b> <b>UNIT-I</b>	❖ <b>Chromatic Organization:</b> Chromosome structure and packaging of DNA, Nucleosome organization, molecular organization of centromere and telomere, nucleolus and ribosomal RNA genes, Euchromatin and heterochromatin, karyotype, banding pattern.
<b>AUGUST</b> <b>UNIT-I</b>	❖ <b>Chromatic Organization:</b> Specialized type of chromosomes, polytene, lamp brush, B chromosomes and sex chromosomes Molecular basis of chromosome pairing, chromosomal aberration and polyploidy.
<b>SEPTEMBER</b> <b>UNIT-II</b>	❖ <b>Mapping of Bacteriophage genome,</b> Phage phenotype, and recombination in phage, genetic transformation and transduction in bacteria.
<b>OCTOBER</b> <b>UNIT-III</b>	❖ <b>Genetic recombination &amp; genetic mapping:</b> Mechanism of crossing over, molecular mechanism of recombination, role of Rec-A and Rec-B, C, D enzyme, site specific recombination, linkage group, genetic marker
<b>NOVEMBER</b> <b>UNIT-IV</b>	❖ <b>Alien gene transfer through chromosome manipulation:</b> Transfer of whole genome, examples from Wheat, Arachis & Brassica. Transfer of individual chromosomes & chromosome segment, methods for detecting Alien chromatin production.  ❖ Characterization and utility of Alien addition & substitution lines, genetic basis of breeding and heterosis, exploitation of hybrid vigour.

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**PROPOSED TEACHING PLAN FOR THE SESSION 2016-17**

**DEPARTMENT OF BOTANY**

**SEMESTER I PAPER- III – Microbiology, Phycology and Mycology**

**Max.Marks 80**

Month	<b>Microbiology, Phycology and Mycology</b>
JULY Unit-I	<b>Archaeobacteria and Eubacteria:</b> General account, ultra structure nutrition and reproduction, biology and economic importance. <b>Cyanobacteria:</b> Salient feature and biological importance.
AUGUST Unit-I & II	<b>Viruses:</b> Characteristics and ultra structure of virus, isolation and purification of viruses, chemical nature, replication, transmission of viruses, economic importance. <b>Phytoplasma:</b> General characteristic and role in causing plant diseases.
SEPTEMBER Unit – III	<b>Phycology:</b> Algae in diversified habitats (terrestrial, freshwater, marine), thallus organization, cell ultra structure, reproduction (vegetative, asexual, sexual)  General account of Chlorophyta, Xanthophyta, Bacillariophyta, Phaeophyta and Rhodophyta.  Economic importance of algae.
OCTOBER Unit-IV	<b>Mycology:</b> General character of fungi, substrate relationship in fungi, cell structure, unicellular and multicellular, organization, cell wall composition, nutrition (saprobic, biotrophic, symbiotic)
NOVEMBER Unit -IV	<b>Mycology:</b> Reproduction, vegetative, asexual, sexual) heterothallism, heterokaryosis, Parasexuality, recent account of Mastigomycotina, Zygomycotina, Ascomycotina, Basidiomycotina, Deuteromycotina, Mycorrhiza, Fungi as biocontrol agent.

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**DEPARTMENT OF BOTANY**

**SEMESTER I PAPER- IV – Bryophyta, Pteridophyta and Gymnosperm**

**Max.Marks 80**

Month	<b>Bryophyta, Pteridophyta and Gymnosperm</b>
JULY  Unit-I	<b>Bryophyta:</b> General characters, distribution and classification.  General account of following orders: - Marchantiales, Jungernanniales
AUGUST  Unit-I & II	Anthocerotales, Sphagnales, Funariales & Polytrichales. <b>II</b> <b>Pteridophyta:</b> General characters and classification. Evolution of stele in Pteridophytes. General account of – Psilopsida, Lycopsida, Sphenopsida and Pteropsida
SEPTEMBER  Unit – II & III	Sphenopsida and Pteropsida <b>Gymnosperms:</b> General characters and classification.  Resemblances and difference between Gymnosperms, Pteridophyta and Angiosperms.  Distribution of Gymnosperms in India and their economic importance.
OCTOBER  Unit-III	Brief account of following families: Lygnopteridaceae, Medullosaceae, Glossopteridaceae, Caytoniaceae General account of order Pentoxylales.
NOVEMBER  Unit -IV	General account of following orders:  Cycadales, Ginkgoales, Coniferales, Ephedrales, Gnetales, Welwitchchiales.  Note : Life cycle of individual genera is not expected

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**PROPOSED TEACHING PLAN FOR THE SESSION 2016-17**

**DEPARTMENT OF BOTANY**

**M.Sc.BOTANY, SEMESTER -III, PAPER- I**

**Plant Development and Resource Utilization**

<b>MONTH</b>	<b>Course</b>
<b>JULY</b>  <b>UNIT I</b>	Introduction: Unique features of plant development  Seed germination and seedling growth, Metabolism of nucleic acids, proteins and Fat
<b>AUGUST</b>  <b>UNIT I ,UNIT II</b>	Mobilization of food reserves; tropisms; hormonal control of seedling growth; gene expression; use of mutants in understanding seedling growth  Leaf growth and differentiation: Determination, Phyllotaxy; control of leaf form; differentiation of epidermis (with special reference to stomata and trichomes) and mesophyll.
<b>SEPTEMBER</b>  <b>UNIT II UNIT III</b>	Root development, Organization of the Root Apical Meristem (RAM); lateral roots; root hairs; root-microbe interactions.  Shoot development, Organization of the Shoot Apical Meristem (SAM); cytological and molecular analysis of SAM; control of cell division and cell to cell communication; control of tissue differentiation, especially xylem and phloem.
<b>OCTOBER</b>  <b>UNIT III &amp; IV</b>	Secretory ducts and laticifers; wood development in relation to environmental factors.  Origin of Agriculture, Origin, evolution, botany, cultivation and uses of (i) Food, Forage and Fodder crops, (ii) Fiber crops, (iii) Medicinal and Aromatic Plants &
<b>NOVEMBER</b>  <b>UNIT IV</b>	(iv) Vegetable oil-yielding crops. Important fire-wood and timber-yielding plants and Non-wood Forest Products (NFPs) such as bamboos, rattans, raw materials for paper-making, gums, tannins, dyes, resins and fruits.  Practicals done every month as per schedule

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**DEPARTMENT OF BOTANY**

**M.Sc. BOTANY, SEMESTER- III, PAPER- II**

MONTH	Course
<b>JULY</b>  <b>UNIT- I</b>	<b>Ecosystem Organization:</b> Structure and functions; primary production (methods of measurement, global pattern, controlling factors); energy dynamics (trophic organization energy flow pathways, ecological efficiencies);
<b>AUGUST</b>  <b>UNIT -I</b>  <b>UNIT- II</b>	<b>Ecosystem Organization:</b> Litter fall and decomposition (mechanism, substrate quality and climatic factors) global biogeochemical cycles of C, N, P and S; mineral cycles (pathways, processes, budgets) in terrestrial and aquatic ecosystems.  <b>Vegetation organization:</b> Concepts of community and continuum; analysis of communities (analytical and synthetic characters); community coefficients, inter-specific association ordination, concept of ecological niche.
<b>SEPTEMBER</b>   <b>UNIT- II</b>  <b>UNIT- III</b>	<b>Vegetation development:</b> Temporal changes (cyclic and non-cyclic); mechanism of ecological succession (relay floristic and initial floristic composition; facilitation, tolerance and inhibition models); changes in ecosystem properties during succession.  <b>Biological diversity:</b> Concept and levels; role of biodiversity in ecosystem functions and stability; speciation and extinction; IUCN categories of threat; distribution and global patterns; terrestrial biodiversity hot spots; inventory.
<b>OCTOBER</b>  <b>UNIT -III</b>  <b>UNIT-IV</b>	<b>World centers of primary diversity of domesticated plants:</b> The Indo-Bumese center, plant introductions and secondary centers.  <b>Climate, Soil and Vegetation patterns of the world:</b> Life zones, major biomes and major vegetation and soil types of the world.
<b>NOVEMBER</b>  <b>UNIT- IV</b>	<b>Climate, Soil and Vegetation patterns of India:</b> Life zones, major biomes and major vegetation and soil types of India.



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**PROPOSED TEACHING PLAN FOR THE SESSION 2016-17**

**DEPARTMENT OF BOTANY**

**SEMESTER III, PAPER III Biotechnology I- Genetic Engineering of Plants and Microbes**

MONTH	Biotechnology I- Genetic Engineering of Plants and Microbes
<b>JANUARY</b>  <b>UNIT I</b>	<b>Biotechnology:</b> Basic concepts, Principles and scope.  <b>Recombinant DNA technology:</b> Gene cloning, Principles and Techniques.  Construction of Genomics/ cDNA libraries, choice of vectors, DNA synthesis and sequencing.
<b>FEBRUARY</b>  <b>UNIT II</b>	Polymerase chain reaction, DNA fingerprinting, Basic concepts of Bioinformatics, Functional Genomic, Micro array, Protein profiling and its significance.
<b>MARCH</b>  <b>UNIT III</b>	<b>Genetics Engineering of plants:</b> Aims, strategies for development of transgenics (with suitable examples).  <b>Agro Bacterium:</b> The Natural Genetic Engineer,  T-DNA and Transposon mediated gene tagging,  Chloroplast transformation and its utility, Intellectual Property Rights (IPR)
<b>APRIL</b>  <b>UNIT III &amp; IV</b>	<b>Microbial Genetic Manipulation:</b> Bacterial transformation, selection of recombinant and transformation, genetic improvement of industrial microbes and nitrogen fixers type and design of fermenters, immobilization of enzymes.
<b>MAY</b>	Revision    Practicals done every month as per schedule

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**PROPOSED TEACHING PLAN FOR THE SESSION 2016-17**

**DEPARTMENT OF BOTANY**

**M.Sc.-BOTANY SEMESTER III, PAPER IV - Ethnobotany**

<b>MONTH</b>	<b>Topic</b>
<b>JULY</b>  <b>UNIT I</b>	<b>Ethnobotany</b> : History, general account and its sub disciplines. Interdisciplinary approaches & aim of ethno botany. Main world centers of Ethnobotanical studies, workers & literature of Ethno botany Ethnobotany with special reference to Chhattisgarh.
<b>AUGUST</b>  <b>UNIT I ,UNIT II</b>	Ethnobotany in relation to national priorities and health care programme. Ethnobotanical Research done in India: Ethnobotany in relation to national priorities and health care programme. Practical application of ethnobotany for tribal development programme. Methods and techniques in ethnobotany. General account of major and minor tribes of Chhattisgarh with special reference to Gond ,Kamar ,Baiga , Abujhmara.
<b>SEPTEMBER</b>  <b>UNIT II UNIT III</b>	Ethnobotanical aspect of Art & literature. Abstract ethnobotany with special reference to folklore, Taboos, Majico-religious beliefs. Ethnobotanical importance of Bacteria, Algae, Fungi, Bryophyta, Pteridophyta and Gymnosperm.
<b>OCTOBER</b>  <b>UNIT III</b>	Ethnoveterinary medicines from plants. Major & Minor Forest Products (NWFPs) of Chhattisgarh. Ethnobotany in relation to livelihood security reference to tribes.
<b>NOVEMBER</b>  <b>UNIT IV</b>	Ethnobotanical study of following plants with special reference to their medicinal importance 1. <i>Azadirachta indica</i> (Neem) 2. <i>Emblica officinalis</i> (Amla) 3. <i>Ricinus communis</i> (Andi) 4. <i>Madhuca indica</i> (Mahuaa) 5. <i>Cassia fistula</i> (Amaltash) 6. <i>Ficus religiosa</i> (Pipal) 7. <i>Oscimum sanctum</i> (Tulsi) 8. <i>Asparagus racemosus</i> (Satavar) 9. <i>Aloe vera</i> (Ghrit kumari) 10. <i>Andographis paniculata</i> (Bhui neem). Practicals done every month as per schedule

## TEACHING PLAN

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### DEPARTMENT OF BOTANY

#### SEMESTER-III PAPER- IV Elective Course- ( Microbial Ecology)

MONTH	PAPER- IV ( Microbial Ecology)
<b>JULY</b> <b>UNIT-I</b>	<b>Ecological Groups:</b> ❖ Ecological groups of microorganism. Microbial growth. Effect of the environment on microbial growth.
<b>AUGUST</b> <b>UNIT-I&amp;II</b>	❖ Gram positive and Gram negative bacteria, Cyanobacteria, sulphur and iron oxidizing bacteria, Methanotrophs, Mycobacterium, Spore forming bacteria Unit  <b>❖ Microbial interaction and industrial Microbiology:</b> A. Plant-microbe (Phyllosphere and phylloplane
<b>SEPTEMBER</b> <b>UNIT-II</b>	<b>❖ Microbial interaction and industrial Microbiology:</b> B. Microbe-microbe.  <b>❖ Animal microbe interaction. ❖ Microbes in Industry:</b> • Acid production • Alcohol production • Antibiotic production
<b>OCTOBER</b> <b>UNIT-III</b>	<b>❖ Soil Microbiology:</b> Soil as a habitat for micro-organisms  ❖ Rhizosphere and Rhizoplane microorganisms.  ❖ Organic matter decomposition.  ❖ Role of micro-organisms in Biogeochemical Cycles, Nitrogen fixation by microorganisms
<b>NOVEMBER</b> <b>UNIT-IV</b>	<b>❖ Water Microbiology:</b> Types of water and water micro-organisms  ❖ Microbial Water Pollution, Water Treatment, Bacteriological analysis of water.  ❖ Air Microbiology: Distribution of microbes in air.  ❖ Indoor aero microbiology, Aeroallergens and allergic disorders by air microflora.  ❖ Collection and enumeration of aeroallergen.

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**PROPOSED TEACHING PLAN FOR THE SESSION 2016-17**

**DEPARTMENT OF BOTANY**

**M.Sc.-SEMESTER - II, PAPER 1 – Taxonomy and Diversity of Angiosperms**

<b>MONTH</b>	<b>Course</b>
JANUARY  Unit-I	Origin of Intrapopulation Variations: population and the environment, ecades and ecotypes; Taxonomic hierachy major and minor categories; the species concept. Plant Nomenclature- Salient features of international code of Botanical Nomenclature, Binomial Nomenclature.
FEBRRUARY  Unit II	Taxonomic evidence: Morphology, Anatomy, Palynology, Embryology, Cytology, Photochemistry, Genome analysis and Nucleic acid hybridization.  Taxonomic tools- Herbarium, Flora, Taxonomic Literature  GIS (Geographical information system).
MARCH  Unit III & UNIT-IV	Fossil Angiosperms, Sustainable utilization of Bio- rurces. Systems of Angiosperm classification- Bentham and Hooker, Hutchinson, Takhatjan & Cronquist. Study of following families with particular reference to systematic position, phylogeny, Evolutionary trends and economic importance. Dicot families: Ranunculaceae, Magnoliaceae, Nymphaeaceae, Capparidaceae, Meliaceae, Tiliaceae, Cucurbitaceae, Leguminosae (Fabaceae) (Caesalpinoideae, Mimosoideae, Papileonoideae)
APRIL  Unit IV	,Umbelliferae (Apiaceae), Lythraceae, Mytraceae, Rubiaceae, Apocynaceae, Asclepiadaceae, Solanaceae, Labiateae (Lamiaceae), Verbinaceae, Euphorbiaceae; Compositeae. Monocot families- Orchidaceae, Zingiberaceae, Liliaceae, Cyperaceae, Gramineae (Poaceae).
MAY	Revision & Practical Exam
	Practicals done every month as per schedule

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### DEPARTMENT OF BOTANY

#### SEMESTER-II, PAPER- II - Molecular Biology

MONTH	PAPER-II Molecular Biology
<b>JANUARY</b> <b>UNIT-I</b>	RNA and DNA structure A, B and Z Forms, replication, Transcription, Translation, DNA damage and repair mechanism, Inherited human diseases –causes.
<b>FEBRUARY</b> <b>UNIT-II</b>	Molecular cytogenetics : Nuclear DNA concept, C-value paradox, Cot curve and its significance, restriction mapping – concept and techniques, multi-gene families and their evolution, in situ hybridization and techniques, chromosome, microdissection and microcloning.
<b>MARCH</b> <b>UNIT-III</b>	<b>Gene structure and expression:</b> Fine structure of gene, cis-trans test, fine structure analysis of eukaryotes introns and their significance, RNA splicing, regulation of gene expression in prokaryotes and eukaryotes.  ❖ <b>Protein sorting:</b> Targeting of proteins to organelles.
<b>APRIL</b> <b>UNIT-IV</b>	<b>Mutation:</b> Spontaneous and induced mutation, physical and chemical mutagens, molecular basis of gene, transposable elements in prokaryotes and eukaryotes, mutation induced by transposones, site-directed mutagenesis, translocation tester sets, Robertsonian translocation, B-A translocation.

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**DEPARTMENT OF BOTANY**

**SEMESTER- II , PAPER- III –Plant Physiology**

**Max.Marks 80**

MONTH	Course- Plant Physiology
<b>July</b> <b>Unit-I</b>	<b>Membrane transport and translocation of water and solutes:</b> Plant-water relation, mechanism of water transport through xylem, root microbe interactions in facilitating nutrient uptake,
<b>August</b> <b>Unit I &amp; II</b>	comparison of xylem and phloem transport, phloem loading and unloading, passive active active solute transport, membrane transport.  Structure and Mechanism of opening & closing of stomata, factors affecting transpiration. <b>Signal transduction:</b> Overview, receptors and G proteins, Phospholipids signaling, role of cyclic nucleotides, calcium
<b>September</b> <b>Unit-II &amp; III</b>	calcium-calmodulin cascade, diversity in protein kinases and phosphatases, specific signaling mechanism, two component sensor regulator system in  <b>Stress Physiology:</b> Plant responses to biotic and a-biotic stress, mechanisms of biotic and abiotic stress tolerance, HR fundamental and SAR, water deficit and drought resistance, salinity stress, metal toxicity, freezing and heat stress
<b>October</b> <b>Unit -III</b>	<b>Fundamentals of enzymology:</b> General aspect, allosteric mechanism regulatory and active sites, isozymes, kinetics of enzymatic catalysis, Michaelis-Menton equation and its significance.
<b>November</b> <b>Unit -IV</b>	<b>Sensory Photobiology:</b> History of discovery of phytochromes and cryptochrome  light induced responses, cellular localization, and molecular mechanism of action of photomorphogenic receptors.

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**DEPARTMENT OF BOTANY**

**SEMESTER II, PAPER IV -**

**PLANT METABOLISM**

Month	Course
JAN Unit-I	<b>Photosynthesis:</b> General concepts and historical background, evolution of photosynthetic apparatus, photosynthetic pigments and light harvesting complexes, photo-oxidation of water mechanism of electron and proton transport, carbon assimilation – The Calvin cycle, photorespiration and its significance, the C <sub>4</sub> cycle, the CAM pathway, biosynthesis of starch and sucrose, physiological and ecological considerations.
FEB Unit II	<b>Respiration and Lipid Metabolism:</b> Overview of plant respiration, glycolysis, the TCA cycle, electron transport and ATP synthesis, Pentose phosphate pathway, glyoxylate cycle, alternative oxidase system, structure and function of lipids, fatty acid biosynthesis, synthesis of membrane lipid and storage lipids and their catabolism.
MAR UNIT III	<b>Nitrogen and Sulphur Metabolism:</b> Overview, biological nitrogen fixation, nodule formation and nod factors, mechanism of nitrate uptake and reduction, ammonium assimilation, sulphur uptake, transport and assimilation.
APRIL Unit IV	<b>Plant growth regulator and elicitors:</b> Physiological effect and mechanism of action of auxins, gibberellins cytokinins, ethylenes, abscissic acid, brassinosteroids, polyamines, jasmonic acid and hormone receptors.  <b>The Flowering Process:</b> Photoperiodism and its significance, endogenous clock and its regulation, floral induction and development – Genetic molecular analysis, role of vernalization.
MAY	Practicals done every month as per schedule.  Theory and practical exams.

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**DEPARTMENT OF BOTANY**

**M.Sc.BOTANY SEMESTER IV, PAPER I**

**Plant Reproduction**

MONTH	Topic
JANUARY UNIT I	Reproduction: Vegetative options and sexual reproduction; flower development; genetics of floral organ differentiation; homeotic mutant in <i>Arabidopsis</i> and <i>Antirrhinum</i> ; sex determination.
FEBRUARY UNIT I ,UNIT II	Male Gametophyte: Structure of anthers; microsporogenesis, role of Tapetum; Pollen development and Gene expression; Male sterility; Sperm dimorphism pollen germination, Pollen storage; Pollen allergy Female Gametophyte: Ovule development; megasporogenesis; organization of the embryo sac, structure of the embryo sac cells.
MARCH UNIT II UNIT III	Pollen-pistil interaction and Fertilization: Global Characteristics, Pollination mechanisms ; breeding systems; commercial considerations; structure of the pistil; Pollen-stigma interactions, Sporophytic and Gametophytic self compatibility (cytological, biochemical and molecular aspects); double fertilization, in-vitro fertilization.
APRIL UNIT III	Seed development and Fruit growth: Endosperm development during early, maturation and desiccation stages; embryogenesis, ultra structure and nuclear cytology; cell lineages during late embryo development; storage proteins of endosperm and embryo; Polyembryony; Apomixis; Embryo culture; Dynamics of fruit growth; Biochemistry and Molecular biology of fruit maturation.  Latent life-dormancy: Importance and types of dormancy; Seed dormancy; overcoming seed dormancy; Bud dormancy;
MAY UNIT IV	Senescence and programmed Cell death (PCD): Basic concepts, types of cell death, PCD in the life cycle of plants, metabolic changes associated with senescence and its regulation; influence of hormones and environmental factors on Senescence.  Practicals done every month as per schedule



**PROPOSED TEACHING PLAN FOR THE SESSION 2016-17**

**DEPARTMENT OF BOTANY**

**M.Sc.BOTANY SEMESTER IV, PAPER- II**

**Plant Ecology & Conservation**

<b>MONTH</b>	<b>Topic</b>
<b>JANUARY</b>  <b>UNIT- I</b>	<b>Air Pollution:</b> Kinds, sources, quality parameters; Effects on plants and ecosystems. Climate change, Green house gases (CO <sub>2</sub> , CH <sub>4</sub> , NO <sub>2</sub> , CFCs: sources, trends and role) Ozone layer and Ozone hole, consequences of climate change (CO <sub>2</sub> fertilization, Global Warming, Sea level rise, UV radiation).
<b>FEBRUARY</b>  <b>UNIT- II</b>	<b>Water Pollution &amp; Soil Pollution:</b> Kinds, source, quality parameters, effects on plants and ecosystems. Radioactive pollution. Noise Pollution.
<b>MARCH</b>  <b>UNIT- III</b>	<p>Plant used in Social forestry, Agro forestry and in pollution control, Extinction, Environmental status of plants based on International Union for Conservation of Nature (IUCN), Air conditioning by plants.</p> <p><b>Ecosystem Stability:</b> Concept (resistance and resilience), Ecological perturbances (natural and anthropogenic) and their impact on plants and ecosystems, Plant invasion, Environmental impact assessment, Ecosystem restoration.</p>
<b>APRIL</b>  <b>UNIT- IV</b>	<p><b>Ecological Management:</b> Concepts, Conservation and management of natural resources, Principles of Conservation Sustainable development &amp; Sustainability Bio-indicators</p> <p><b>Strategies for conservation, <i>in-situ conservation</i></b> :International efforts and India initiatives; protected areas in India-sanctuaries, national parks, biosphere reserves, wetlands, mangroves and coral reefs for conservation of wild biodiversity.</p> <p><b>Strategies for conservation, <i>Ex-situ conservation</i></b>: Principles and practices, botanical garden, field gene banks, seed banks, in vitro repositories, cryobanks and general account of the activities of botanical survey of India {BSI} National bureau of plant genetic resources {NBPGR} Indian council of agriculture research {ICAR} Council of scientific and industrial research {CSIR} and the department of biotechnology {DBT} for conservation, non formal conservation efforts.</p>

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**PROPOSED TEACHING PLAN FOR THE SESSION 2016-17**

**DEPARTMENT OF BOTANY**

**SEMESTER IV, PAPER III, Plant Cell, Tissue and Organ Culture**

<b>MONTH</b>	<b>Plant Cell, Tissue and Organ Culture</b>
<b>JANUARY</b>  <b>Unit – I</b>	<b>PLANTS CELL AND TISSUE CULTURE:</b> General introduction, history, scope, concept of cellular differentiation totipotency.  <b>TISSUE CULTURE MEDIA:</b> Media constituents, Media selection, Media preparation.  <b>CELL CULTURE:</b> Isolation of single cells, Suspension cultures, Culture of Single cell, Plant cell reactors, application of cell culture.  <b>CLONAL PROPAGATION-</b> Auxillary bud proliferation, Meristem and shoot tip culture, bud culture.
<b>FEBRUARY</b>  <b>UNIT I &amp; II</b>	<b>ORGANOGENESIS AND ADVENTIVE EMBRYOGENESIS:</b> Fundamental aspects of morphogenesis via callus formation, direct adventitive organ formation.  <b>SOMATIC EMBRYOGENESIS AND ANDROGENESIS:</b> Mechanism, techniques and utility.  <b>SOMATIC HYBRIDIZATION:</b> Methods of Protoplast isolation, Spontaneous and induced methods of protoplasm fusion, identification and selection of hybrid cells, Regeneration of hybrid plants, Vertification and Characterization of somatic hybrids, Cybrids, Possibilities achievements and limitation of protoplast research.
<b>MARCH</b>  <b>UNIT – III</b>	<b>CRYOPRESERVATION AND GERMPLASM STORAGE:</b> Raising sterile tissue cultures, Addition of cryoprotectants and pre-treatment, freezing, storage, thawing, determination of survival viability. Plant growth and generation, vertification, encapsulation and dehydration, slow growth method.
<b>APRIL</b>  <b>UNIT IV</b>	<b>APPLICATION OF PLANT TISSUE CULTURE:</b> artificial seeds, Production of hybrids and somaclones.  <b>PRODUCTION OF SECONDARY METABOLITES/ NATURAL PRODUCTS:</b> Morphological and chemical differentiation, medium composition for secondary product formation, Growth production patterns, Environmental factors, Selection of cell lines producing high amounts of a useful metabolite, Problems associated with secondary metabolite production, Immobilized cell system.  <b>TRANSGENICS IN CROP IMPROVEMENT:</b> Transgenic for Resistance of biotic and abiotic stresses, Transgenic for quality modification, Terminator seed technology.
<b>MAY</b>	Revision, Practicals done every month as per schedule

**PROPOSED TEACHING PLAN FOR THE SESSION 2016-17**

**DEPARTMENT OF BOTANY**

**M.Sc.BOTANY SEMESTER IV, PAPER IV**

**Elective Course – Ethnobotany**

<b>MONTH</b>	<b>Topic</b>
<b>JANUARY</b>  <b>UNIT I</b>	Plant Conservation by Tribes & role of Joint Forest Management Programme in Plant Conservation specially People's Protected Area  Ethnobotany and its role in domestication and conservation of native plant and genetic resources.
<b>FEBRUARY</b>  <b>UNIT I ,UNIT II</b>	The protection of plant varieties and Intellectual Properties Rights. General account of conservation of medicinal plants. General role of Aromatic plants. General ideas of various system of medicine using plants. Basic knowledge of Ayurvedic, Homeopathic, Allopathic system of medicine.
<b>MARCH</b>  <b>UNIT II UNIT III</b>	General idea of active principles of Plants. Herbal Cosmetics. General account of toxic plants and Harmful effect of plants on human society with special reference to allergic plants of Chhattisgarh. Endemic plants of Chhattisgarh. Endangered plants of Chhattisgarh
<b>APRIL</b>  <b>UNIT III</b>	Techniques of cultivation and marketing of Aromatic plants –Podina, Lemon grass Kasturibhindi, Palmarosa. Techniques of cultivation ,marketing and importance of mushroom Techniques of cultivation, extraction of juice and importance of wheat grass. Ethnobotanical study of the following plants with special reference to their medicinal importance- 1. <i>Allium sativum</i> (Lahsun) 2. <i>Aegle marmelos</i> (Bel) 3. <i>Terminallia arjuna</i> (Arjun)
<b>MAY</b>  <b>UNIT IV</b>	4 <i>T. bellerica</i> (Bahera) 5. <i>T chebula</i> (Harra) 6. <i>Calendula officianallis</i> (Calendula) 7. <i>Thuja occidentalis</i> (Vidhya) 8 <i>Dhatura alba</i> (Dhatura) 9. <i>Argemone maxicana</i> (Pili kateli) 10. <i>Ephedra</i> sps. ( Ephedra).  Practical's done every month as per schedule

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**PROPOSED TEACHING PLAN FOR THE SESSION 2016-17**

**DEPARTMENT OF BOTANY**

**SEMESTER IV, PAPER IV -**

**ELECTIVE COURSE MICROBIAL ECOLOGY**

Month	Topic
JAN Unit-I	<b>Environmental Microbiology:</b> Waste as a resource, Biogas production. Sewage Treatment. Heavy metal tolerance in microbes & mechanism of heavy metal resistance Biodegradation. Biodeterioration, Bioremediation, Biofertilizers , Biopesticides
FEB Unit II	<b>Diseases:</b> symptoms and types of bacterial disease- citrus canker, bacterial blight of rice, scab of potato, angular leaf spot of cotton, leaf spot of mango. <b>Etiology of Nematodal diseases</b> -ear cockle of wheat, molyar disease of barley, root knot of vegetable crops. <b>Etiology transmission of viral diseases</b> -Leaf curl of papaya, mosaic of bhindi, yellow mosaic of legumes, bunchy top of banana. <b>Etiology mycoplasmal diseases</b> -grassy shoot of sugarcane, mycoplasmal disease of potato, citrus greening, little leaf of brinjal. <b>Etiology of fungal diseases</b> - Downey mildews, powdery mildews, rusts, smuts & wilt.
MAR UNIT III	<b>Medical Microbiology:</b> <b>Protozoan Disease:</b> Name of diseases-Malaria, Giardiasis, Trypanosomiasis, Amoebiasis. <b>Fungal Disease:</b> Phycomycosis, Candidiasis, Actinomycosis, Dermatophytosis, Aspergillosis, Penicilliosis. <b>Bacterial Disease:</b> Tuberculosis, Diphtheria, Cholera, Shigellosis, Typhoid, and Tetanus. <b>Viral Disease:</b> Influenza, Polio
APRIL Unit IV	<b>Instrumentation &amp; Techniques</b> <b>Microscopy:</b> Light microscope, Electron Microscope (Transmission & Scanning), Colorimeter, Spectrophotometry, Chromatography, Electrophoresis, Laminar air flow, Collection sampling and identification of indoor microflora special reference to Library and Class rooms.
MAY	Practicals done every month as per schedule. Theory and practical exams.

## RAIPUR CHHATTISGARH

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### PROPOSED TEACHING PLAN FOR THE SESSION 2016-17

### SEMESTER-I

Month	Paper-I	Paper-II
July  UNIT-I	<b>SYMMETRY AND GROUP THEORY IN CHEMISTRY:</b> Symmetry elements and symmetry operation, definitions of group, subgroup, relation between orders of a finite group and its subgroup. Conjugacy relation and classes. Point symmetry group. Schoenflies symbols, representations of groups by matrices (representation for the $C_n$ , $C_{nv}$ , $C_{nh}$ , $D_{nh}$ , etc. Groups to be worked out explicitly). Character of a representation. The great orthogonality theorem (without proof) and its importance. Character tables and their use; spectroscopy.	A. <b>NATURE OF BONDING IN ORGANIC MOLECULES:</b> Delocalized chemical bonding, conjugation, cross-conjugation bonding in fullerenes. Bonds weaker than covalent, alternant and non-alternant hydrocarbons, Crown ether complexes and cryptands. B. <b>AROMATICITY:</b> Aromaticity in benzenoid and non-benzenoid compounds. Huckel's rule, annulenes, anti-aromaticity, homo-aromaticity. PMO approach for Aromaticity, Annulenes.
August  UNIT-II	A. <b>METAL-LIGAND BONDING:</b> Limitation of crystal field theory, molecular orbital theory, octahedral, tetrahedral and square planar complexes, bonding and molecular orbital theory. B. <b>METAL <math>\pi</math> COMPLEXES:</b> Metal carbonyls, structure and bonding, vibrational spectra of metal carbonyls for bonding and structural elucidation, important reactions of metal carbonyls; preparation, bonding, structure and important reactions of transition metal nitrosyl, di-nitrogen and di-oxygen complexes; tertiary phosphine as ligand.	A. <b>CONFORMATIONAL ANALYSIS:</b> Conformational analysis of cycloalkanes, decalins, effect of conformation on reactivity, conformation of sugars, steric strain due to unavoidable crowding. B. <b>STEREOCHEMISTRY:</b> Elements of symmetry, chirality, molecules with more than one chiral center, methods of resolution, optical purity, stereospecific and stereoselective synthesis. Asymmetric synthesis. Optical activity in the absence of chiral carbon (Biphenyls, allenes and spiranes), chirality due to helical shape.
September	A. <b>METAL-LIGAND EQUILIBRIA IN SOLUTION:</b> stepwise and overall formation constants and their interaction, trends in stepwise	A. <b>REACTION INTERMEDIATES:</b> Generation, structure, stability and reactivity of carbocations, carbanions, free radicals,

UNIT-III	<p>constants, factors affecting the stability of metal complexes with reference to the nature of metal ion and ligand, chelate effect and its thermodynamic origin, determination of binary formation constants by pH-metry and spectrophotometry.</p> <p>B. <b>ISOPOLY ACID AND HETEROPOLY ACID:</b> Isopoly and heteropoly acids of Mo and W. Preparation, properties and structure. Classification, preparation, properties and structures of Borides, Carbides, Nitrides and Silicides, Silicates-classification and structure, Silicones-preparation, properties and application.</p>	<p>carbenes and nitrenes. Sandmeyer reaction, Free radical rearrangement and Hunsdiecker reaction.</p> <p>B. <b>ELIMINATION REACTIONS:</b> THE <math>E_2</math>, <math>E_1</math> and <math>E_{1cB}</math> mechanism. Orientation of the double bond. Reactivity, effects of substrate structures, attacking base, the leaving group and the medium.</p>
October UNIT-IV	<p>A. <b>METAL CLUSTERS:</b> Higher boranes, carboranes, metalloboranes and metallocarboranes, metal carbonyl and halide cluster, compounds with metal-metal multiple bonds.</p> <p>B. <b>CHAINS:</b> Catenation, Heterocatenation, Interactenation.</p> <p>C. <b>RINGS:</b> Borazines, Phosphazines.</p>	<p><b>PERICYCLIC REACTIONS:</b> Classification of pericyclic reactions. Woodward-Hoffmann correlation diagrams. FMO and PMO approach. Electrocyclic reactions conrotatory and disrotatory motions, <math>4n</math>, <math>4n+2</math> and allyl systems. Cycloadditions – antarafacial and suprafacial additions, <math>4n</math> and <math>4n+2</math> system, <math>2+2</math> addition of ketenes, <math>1, 3</math> dipolar cycloadditions and cheletropic reactions. Sigmatropic rearrangements – suprafacial and antarafacial shifts of H, sigmatropic shifts involving carbon moieties, <math>3, 3</math>- and <math>5, 5</math>-sigmatropic rearrangements. Claisen, Cope and Aza-Cope rearrangements. Ene reaction.</p>
November	Revision	
Remark	Practicals done every month as per schedule	

Month	Paper-III	Paper-IV
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July  UNIT-I	<p>A. <b>INTRODUCTION TO EXACT QUANTUM MECHANICAL RESULTS:</b> Vector, Dot Cross and triple products. Complex numbers and co-ordinate transformations (Cartesian to Spherical Polar in Quantum Chemistry). The Schrodinger equation and the postulates of quantum mechanics. Discussion of solutions of the Schrodinger equation to some model systems viz., particle in a box, the harmonic oscillator, the rigid rotor, the hydrogen atom.</p> <p>B. <b>ANGULAR MOMENTUM OF QUANTUM CHEMISTRY:</b> Angular Momentum, Ordinary Angular Momentum, Generalized Angular Momentum, Eigen-functions for Angular Momentum, Eigen values of Angular Momentum, Operator using ladder operator.</p>	<p>A. <b>EVALUATION OF ANALYTICAL DATA:</b> Accuracy and precision, Standard deviation, Variance and coefficient of variation Student 't' test, Confidence limits, Estimation of detection limit. Error; Classification, distribution, propagation, causes and minimation of errors. Significant figures and computation rules. Correlation analysis; Scatter diagram, Correlation coefficient 'r'. Calculation of 'r' by the method of least squares.</p> <p>B. <b>PROBABILITY:</b> Sampling measurement and distribution of attributes, normal poisson and binomial distributions; arithmetic geometric and harmonic means; moments; expectations mode, median, skewness, dispersion and kurtosis; statistical inference; planning and analysis of experiments.</p> <p>C. <b>PERMUTATION AND PROBABILITY:</b> Permutations and combinations, probability and probability theorems, probability curves, average, root mean square and most probable errors, examples from the kinetic theory of gases, curve fitting (including least squares fit) with a general polynomial fit.</p>
August  UNIT-II	<p><b>BASICS OF THERMODYNAMICS:</b> Maxwell's thermodynamic relations and its applications. Reaction isotherm, Vant Hoff hypothesis. Partial molar properties; partial molar free energy, partial molar volume and partial molar heat content. Chemical potential, Gibbs Duhem equation, variation of chemical potential with temperature and pressure. Chemical potential of ideal gases, pure solids, liquids and mixture of ideal gases.</p>	<p>A. <b>DIFFERENTIAL CALCULUS:</b> Functions, continuity and differentiability, rules for differentiation, applications of differential calculus including maxima and minima (examples related to maximally populated rotational energy levels, Bohr's radius and most probable velocity from Maxwell's distribution etc.) exact and inexact differentials with their applications to thermodynamics properties.</p> <p>B. <b>INTEGRAL CALCULUS:</b> Basic rules for integration, integration by parts, partial fraction and substitution. Reduction formulae, applications of integral calculus. Functions of several</p>

		variables, partial differentiation, co-ordinate transformations (e.g. Cartesian to spherical polar), curve sketching.
September  UNIT-III	<b>ELECTROCHEMISTRY:</b> Electrochemistry of solution, Debye-Huckel Onsager treatment and its extension, ion solvent interactions. Debye-Huckel-Limiting Law. Debye-Huckel theory for activity coefficient of electrolytic solutions. Determination of activity and activity coefficient, ionic strength, Thermodynamics of electrified interface equations. Derivation of electrocapillarity, Lippmann equation (surface excess), methods of determination.	<p>A. <b>UNIFYING PRINCIPLES:</b> Electromagnetic radiation, interaction of electromagnetic radiation with matter-absorption, emission, transmission, reflection, refraction, dispersion, polarization and scattering. Uncertainty relation and natural line width and natural line broadening, transition probability, results of the time dependent perturbation theory, transition moment, selection rules, intensity of spectral lines, Born-Oppenheimer approximation, rotational, vibrational and electronic energy levels. Regions of spectrum, representation of spectra, F.T. spectroscopy, computer averaging, lasers.</p> <p>B. <b>MICROWAVE SPECTROSCOPY:</b> Classification of molecules, rigid rotor model, and intensity of spectral lines, effect of isotopic substitution on the transition frequencies, intensities, non-rigid rotor. Stark effect, nuclear and electron spin interaction and effect of external field. Applications including analysis by microwave spectroscopy, determination of bond lengths, and determination of transition frequency in term of B and J structures, O<sub>3</sub>, OCS, HCN and NH<sub>3</sub> molecules.</p>
October  UNIT-IV	<b>CHEMICAL DYNAMICS:</b> Methods of determining rate laws, collision theory of reaction rates, steric factor, Activated complex theory, kinetic salt effects, steady state kinetics, and thermodynamic and Kinetic control of reactions. Dynamic chain (Hydrogen-Bromine and Hydrogen-chlorine reactions) and Oscillatory reactions (Belousov-Zabolonsky reaction).	<p>A. <b>ULTRAVIOLET AND VISIBLE SPECTROSCOPY:</b> Instrumentation, Various electronic transitions (185-800 nm), Beer – Lambert law, effect of solvent on electronic transitions, ultraviolet bands for carbonyl compounds, unsaturated carbonyl compounds, dyes, conjugated polyenes. Fieser-Woodward rules for conjugated dienes and carbonyl compounds, ultraviolet spectra of aromatic and heterocyclic compounds. Steric effect in biphenyls.</p> <p>B. <b>INFRARED SPECTROSCOPY:</b> Instrumentation and sample handling. Characteristic vibrational frequencies of alkanes, alkenes, alkynes, aromatic compounds, alcohols, ethers, phenols and amines. Detailed study of vibrational frequencies of carbonyl compounds (Ketones, Aldehydes, Esters, Amides, Acids,</p>



		<p>Anhydrides, Lactones, Lactams and Conjugated Carbonyl Compounds) Effect of hydrogen bonding and solvent effect on IR of gaseous, solids and polymeric materials.</p> <p><b>C. FOURIER TRANSFORM INFRARED SPECTROSCOPY:</b>  Introduction, instrumentation, Michelson interferometer, slow scan, stepped scan and rapid scan interferometers, sources and detectors, resolution and wave number measurements, sources of error, computation and recording advantages.</p>
November	Revision	
December	Practicals done every month as per schedule	

## SEMESTER-II

Month	Paper-I	Paper-II
January  UNIT-I	<b>REACTION MECHANISM OF TRANSITION METAL COMPLEXES:</b> Energy profile of a reaction, reactivity of metal complexes inert and labile complexes, kinetic application of valence bond and crystal field theories, kinetics of octahedral substitution, anation reactions, without metal ligand bond cleavage. Substitution reactions in square planar complexes, the trans effect. Redox reactions, electron transfer reactions, mechanism of one electron transfer reactions, outer sphere type reactions, cross reactions and Marcus-hush theory, inner sphere type reactions.	<b>A. ALIPHATIC NUCLEOPHILIC SUBSTITUTION:</b> The SN 2, SN 1 mechanisms. The neighbouring group mechanism, neighbouring group participation by and bond, anchimeric assistance. Reactivity effects of substrate structure, attacking nucleophile, leaving group and reaction medium, phase transfer catalysis, ambident nucleophile and regioselectivity.  <b>B. AROMATIC NUCLEOPHILIC SUBSTITUTION:</b> The S <sub>N</sub> Ar, SN 1 and benzyne mechanisms. Reactivity – effect of substrate structure, leaving group and attacking nucleophile. The von Richter, Sommelet-Hauser, and Smiles rearrangements.
February  UNIT-II	<b>ELECTRONIC SPECTRA AND MAGNETIC PROPERTIES OF TRANSITION METAL COMPLEXES:</b> Spectroscopic ground states, Correlation, Orgel and Tanabe-Sugano diagrams for transition metal complexes (d1-d9 states), Selection rules, mechanism for breakdown of the selection rules. Intensity of absorption, band width, spectra of d-d metal complexes of the type [M (H <sub>2</sub> O)] <sup>n+</sup> spin free and spin paired ML <sub>6</sub> complexes of other geometries, Calculations of Dq, B and parameters, spin forbidden transitions, effect of spin-orbit coupling, Spectrochemical and Nephelouxetic series. Magnetic properties of complexes of various geometries based on crystal field model, spin free-spin paired equilibria in octahedral stereochemistry.	<b>A. ALIPHATIC ELECTROPHILIC SUBSTITUTION:</b> Mechanisms of SE <sub>2</sub> , SE <sub>1</sub> , electrophilic substitution accompanied by double bond shifts. Effect of substrates, leaving group and the solvent polarity on the reactivity.  <b>B. AROMATIC ELECTROPHILIC SUBSTITUTION:</b> The arenium ion mechanism, orientation and reactivity. The ortho/para ratio, ipso attack, orientation in other ring systems. Vilsmeier reaction and Gattermann-Koch reaction
March	<b>A. TRANSITION METAL COMPLEXES:</b> Transition metal complexes with unsaturated organic molecules, alkanes, allyl, diene dienyl, arene and trienyl complex, preparations, properties, nature of bonding and	<b>ADDITION TO CARBON-CARBON MULTIPLE BONDS:</b> Mechanistic and stereochemical aspects of addition reactions involving electrophiles, nucleophiles and free radicals, regio-and

UNIT-III	<p>structure features, important reaction relating to nucleophilic and electrophilic attack on ligands and organic synthesis.</p> <p><b>B. TRANSITION METALS COMPOUND WITH BOND TO HYDROGEN:</b> Transition Metals Compounds with Bond to Hydrogen.</p>	chemoselectivity. Addition to cyclopropane ring. Hydrogenation of double and triple bonds, hydrogenation of aromatic rings Hydroboration, micheal reaction, shrapless asymmetric epoxidation.
April UNIT-IV	<p><b>A. ALKYL AND ARYL OF TRANSITION METALS:</b> Types, routes of synthesis, stability and decomposition pathways, organocopper in organic synthesis.</p> <p><b>B. COMPOUNDS OF TRANSITION METAL – CARBON MULTIPLE BONDS:</b> Alkylidenes, low valent carbenes nature of bond and Structural characteristics.</p> <p><b>C. FLUXIONAL ORGANOMETALLIC COMPOUNDS:</b> Fluxionality and dynamic equilibria in compounds such as olefin, - allyl and dienyl complexes.</p>	<b>ADDITION TO CARBON-HETERO MULTIPLE BONDS:</b> Mechanism of metal hydride reduction of saturated and unsaturated carbonyl compounds, acids, esters, nitriles. Addition of Grignard Reagent, Organo-Zn, Organo-Li reagent to carbonyls and unsaturated carbonyl compounds, Wittig reaction. Mechanism of condensation reactions involving enolates – Aldol, Knoevenagel and Stobbe reactions. Hydrolysis of esters and amides, ammonolysis of esters.
Remark	Practicals done every month as per schedule	

Month	Paper-III	Paper-IV
January UNIT-I	<p><b>A. APPLICATION OF MATRICES IN QUANTUM CHEMISTRY:</b> Addition and multiplication, inverse and transpose of matrices. Determinants, in quantum chemistry.</p> <p><b>B. APPROXIMATE METHOD:</b> The variation theorem, linear variation principle. Perturbation theory (first order and nondegenerate). Applications of variation method and perturbation theory to the Helium atom.</p>	<b>A. NUCLEAR MAGNETIC RESONANCE SPECTROSCOPY:</b> Chemical shift values & correlation for protons bonded to carbon (aliphatic, olefinic & aromatic) & other nuclei (Alcohols, Phenol ends Carbonylic acids amines, amides and marcapto) chemical exchange effect of deuteration. Nuclear magnetic double resonance, contact shift reagents, solvent effects. Faurier transform techniques.

		<p><b>B. CARBON – <sup>13</sup>C NMR SPECTROSCOPY:</b> General considerations, chemical shift (aliphatic, olefinic, alkyne, aromatic, heteroaromatic, and carbonyl carbon) coupling constants.</p> <p><b>C. RAMAN SPECTROSCOPY:</b> Classical and quantum theories of Raman effect. Pure rotational, vibrational and vibrational rotational Raman spectra, selection rules, mutual exclusion principle. Resonance Raman spectroscopy, coherent anti Stokes Raman spectroscopy (CARS), techniques and instrumentation, applications.</p>
February UNIT-II	<p><b>A. THERMODYNAMICS OF NON-IDEAL GASES:</b> Activity and Fugacity, Determination of Fugacity, Variation of Fugacity with Temperature and Pressure.</p> <p><b>B. NON-EQUILIBRIUM THERMODYNAMICS:</b> Fundamental concepts, forces and fluxes, Entropy production, Phenomenological Laws and Onsager's reciprocity relations.</p>	<p><b>A. MASS SPECTROMETRY:</b> Introduction, basic principles, separation of the ions in the analyzer, resolution, molecular ion peak, mass spectral fragmentation of organic compounds, factors affecting fragmentation, McLafferty rearrangement. Examples of mass spectral fragmentation of organic compounds with respect to their structure determination.</p> <p><b>B. MOSSBAUER SPECTROSCOPY:</b> Basic principles, spectral parameters and spectrum display. Application of the technique to the studies of (1) bonding and structures of Fe<sup>2+</sup>, and Fe<sup>3+</sup> compounds including those of intermediate spin, (2), Sn<sup>2+</sup> and Sn<sup>4+</sup> compounds.</p>
March UNIT-III	<p><b>ELECTROCHEMISTRY – II:</b> Structure of electrified interfaces. Gouy-Chapman, Stern, Over potentials and exchange current density, Derivation of Butler – Volmer equation, Tafel plot. Semiconductor interfaces, Theory of double layer at semiconductor, electrolyte solution interfaces, structure of double layer interfaces. Effect of light at semiconductor solution interfaces. Electro catalysis influence of various parameters. Hydrogen electrode.</p>	<p><b>A. INTRODUCTION TO COMPUTERS:</b> Block diagram of a computer, CPU, I/O Devices, Primary and Secondary Memory, Software – System software and application software, Low-level and high-level language. Problems analysis &amp; solving schemes, Computational procedure, program, outline, algorithm and flow charts, branching and looping, writing executing &amp; testing the program with examples.</p> <p><b>B. WORKING WITH MS-OFFICE:</b> Introduction to word: Basic of word-processing; Features and Advantages of Word Processing, Creating, editing, formatting &amp; previewing documents. Advanced</p>

		features; using thesaurus, Mail Merge, Table and Chart Introduction to Excel: Worksheet Basics, Creating, Opening & Moving in Worksheet, working with formula & cell referencing, Absolute & Relative addressing, Working with Ranges, Formatting of worksheet, Graphs & Charts, Database, Function and Macros.
April  UNIT-IV	<b>CHEMICAL DYNAMICS - II:</b> General features of fast reactions by flow method, relaxation method, flash photolysis and the nuclear magnetic resonance method. Dynamics of molecular motions, probing the transition state, dynamics of barrier less chemical reactions in solutions, dynamics of unimolecular reaction. [Lindemann – Hinshelwood and Rice-Ramsperger-Kassel-Marcus {RRKM}] theories of unimolecular reactions.	<p>A. <b>PROGRAMMING WITH C: PART - I:</b> Introduction to C: Character set, Identifiers and Keywords, Variables, Displaying variables, Reading Variables, Character and Character String, Qualifiers, Type define statements, Value initialized Variables, Constants, Constants Qualifier, Operators and Expressions, Operator precedence and Associativity, Basic input output operations. Control Structure: If-statement, If else statement, Multiway decision, compound statements, Loops: For-loop, While loop Do-while loop, Break statement, Switch statement, Continue statement, Goto statement.</p> <p>B. <b>PROGRAMMING WITH C: PART – II:</b> Functions: Function accepting more than one parameters, User defined and library functions, concept associativity with functions, function parameters, Return value, recursion, comparisons of Iteration and recursion variable length argument list. Arrays and Pointers: Elementary idea of one-dimensional and multi-dimensional Arrays, Strings, Array of Strings. Definition and elementary use of Pointers. Structure and Union: Declaring and using Structure and Union. Difference between Union and Structure.</p>
Remark	Practicals done every month as per schedule	

## SEMESTER-III

Month	Paper-I	Paper-II
July  UNIT-I	<p><b>A. ELECTRON SPIN RESONANCE SPECTROSCOPY:</b> Hyperfine coupling, polarization for atoms and transition metal ions, spin-orbit coupling and significance of g-tensors, application to transition metal complexes (having one unpaired electron)</p> <p><b>B. NUCLEAR QUADRUPOLE RESONANCE SPECTROSCOPY:</b> Quadrupole nuclei, quadrupole moments, electric field gradient, coupling constant, splittings, applications.</p>	<p>A. <b>BIOENERGETICS:</b> Standard free energy changes in biochemical reactions, exergonic, endergonic, Hydrolysis of ATP, synthesis of ATP from ADP.</p> <p>B. <b>ELECTRON TRANSFER IN BIOLOGY:</b> Structure and function of metalloproteins in electron transport processes – cytochromes and ion-sulphur proteins, synthetic models.</p> <p>C. <b>TRANSPORT &amp; STORAGE OF DIOXYGEN:</b> Heme proteins and oxygen uptake, structure and function of haemoglobin, myoglobin, haemocyanins and haemerythrin, model synthetic complexes of iron, cobalt and copper.</p>
August  UNIT-II	<p>A. <b>PHOTOELECTRON SPECTROSCOPY:</b> Basic principle both for atoms and molecules; Photo-electric effect, ionization process, Koopman's theorem, photoelectron spectra of simple molecules, Debye and Clausius-Mossotti equation, Auger electron spectroscopy, Determination of Dipole moment.</p> <p>B. <b>PHOTOACOUSTIC SPECTROSCOPY:</b> Basic Principle of Photo acoustic Spectroscopy(PAS), PAS – gases and condensed system Chemical and Surface application.</p>	<p>A. <b>METALLOENZYMES:</b> Zinc enzymes – carboxypeptidase and carbonic anhydrase. Iron enzymes – catalase, peroxidase and cytochrome P-450. Copper enzymes – superoxide dismutase. Molybdenum oxatransferase enzymes-xanthine oxidase.</p> <p>B. <b>ENZYME MODELS:</b> Host-guest chemistry, chiral recognition and catalysis, molecular recognition, molecular asymmetry and prochirality. Biomimetic chemistry, Cyclodextrin-based enzyme models, calixarenes, ionophores, synthetic enzymes of synzymes.</p>
September  UNIT-III	<p>A. <b>PHOTOCHEMICAL REACTION:</b> Interaction of electromagnetic radiation with matter, types of excitations, fate of excited molecule, quantum yield, transfer of excitation energy, Actinometry.</p> <p>B. <b>DETERMINATION OF REACTION MECHANISM:</b> Classification, rate constants and life times of reactive energy states –</p>	<p>A. <b>ENZYMES:</b> Nomenclature and classification of Enzyme. Fischer's lock and key and Koshland's induced fit hypothesis, concept and identification of active site by the use of inhibitors.</p> <p>B. <b>CO-ENZYME CHEMISTRY:</b> Structure and biological functions of coenzyme A, Thiamine pyrophosphate, pyridoxal</p>

	<p>determination of rate constants of reactions. Effect of light intensity on the rate of photochemical reactions.</p> <p>C. <b>MISCELLANEOUS PHOTOCHEMICAL REACTIONS:</b> Photo-Fries reactions of anillides, Photo-Fries rearrangement. Barton reaction. Singlet molecular oxygen reactions. Photochemical formation of smog. Photodegradation of polymers, Photochemistry of vision.</p>	<p>phosphate, NAD<sup>+</sup>, NADP<sup>+</sup>, FMN, FAD, lipoic acid, vitamin B<sub>12</sub>.</p> <p>C. <b>BIOTECHNOLOGICAL APPLICATION OF ENZYMES:</b> Techniques and methods of immobilization of enzymes, effect of immobilization on enzyme activity, application of immobilization enzymes in medicine and industry. Enzymes and Recombinant DNA Technology.</p>
October UNIT-IV	<p>A. <b>PHOTOCHEMISTRY OF ALKENES:</b> Intramolecular reaction of the olefinic bond – geometrical isomerism, cyclisation reactions, rearrangement of 1, 4 &amp; 1, 5 dienes.</p> <p>B. <b>PHOTOCHEMISTRY OF CARBONYL COMPOUNDS:</b> Intramolecular reactions of carbonyl compounds, Cyclohexadienones. Intermolecular Cycloaddition reactions – dimerisations and oxetane formation.</p> <p>C. <b>PHOTOCHEMISTRY OF AROMATIC COMPOUNDS:</b> Isomerisations, additions and substitutions.</p>	<p>A. <b>BIOPOLYMER INTERACTIONS:</b> Forces involved in biopolymer interaction. Electrostatic charges and molecular expansion, hydrophobic forces, dispersion force interactions. Multiple equilibria and various types of binding processes in biological systems. Hydrogen ion titration curves.</p> <p>B. <b>THERMODYNAMICS OF BIOPOLYMER SOLUTIONS:</b> Thermodynamics of biopolymer solution, osmotic pressure, membrane equilibrium, muscular contraction and energy generation in mechanochemical system.</p> <p>C. <b>CELL MEMBRANE AND TRANSPORT OF IONS:</b> Structure and functions of cell membrane, ion transport through cell membrane, irreversible thermodynamic treatment of membrane transport and nerve conduction.</p>
November	Revision	
Remark	Practicals done every month as per schedule	

Month	Paper-III	Paper-IV
July  UNIT-I	<b>AIR POLLUTION:</b> A. Introduction, Composition of atmosphere, vertical temperature, chemical composition of atmosphere, Biogeochemical cycle of C, N, P, S and O. Biodistribution of elements. B. Chemical composition of aerosols, trace gases, outdoor and indoor air pollutants, urban air pollution, air quality index. C. Air Pollution monitoring techniques, monitoring of trace gases i.e. SO <sub>2</sub> , H <sub>2</sub> S, Oxides of nitrogen, NH <sub>3</sub> , CO <sub>2</sub> , CO, Volatile organic compounds (VOC), air pollution control devices.	<b>STATISTICAL THERMODYNAMICS:</b> Concepts of probability, Maxwell Boltzmann distribution. Different ensembles and Partition functions. Thermodynamic function using appropriate partition function. Fermi-Diraic and Bose-Einstein Statistics and statistical basis of entropy. Heat capacity of Solids Debye and Einstein Models.
August  UNIT-II	<b>WATER POLLUTION</b> A. Chemical composition of Water bodies, rivers, lakes, streams, wetlands, ground water pollution, Waste Water Pollution, aquatic pollution: river pollution, lake pollution, inorganic, organic pesticides, industrial sewage, detergents and oil pollution. B. Water quality monitoring and treatment, DO, COD, BOD, Color. Water quality standards, Treatment of waste water.	<b>POLYMER CHEMISTRY:</b> A. Importance of basics polymers, Basic concept monomers, Degree of polymerization linear branched and network polymers, classification of polymers polymerization, Condensation, addition, radical chain-ionic and co-ordination & copolymerization polymerization conditions and polymer reactions polymerization in homogenous and heterogenous system. B. Polymer structure and physical properties-crystalline melting point, T <sub>m</sub> -melting points of homogenous series, effect of chain flexibility and other steric factors, entropy and heat of fusion. The glass transition temperature T <sub>g</sub> relationship between T <sub>m</sub> & T <sub>g</sub> effect of molecular weight, diluents, chemical structure chain topology, branching & cross-linking property requirements and polymer utilization.
September	<b>SOIL POLLUTION</b>	<b>SOLID STATE CHEMISTRY:</b>



UNIT-III	<p>A. Soil composition, micro and macro nutrient pollution: Fertilizers, pesticides, plastics and metals, fly ash, radioactive and biomedical waste.</p> <p>B. Analysis of soil: moisture, pH, total nitrogen, phosphorus, silica, lime, magnesia, manganese, sulphur. Monitoring of soil characteristics such as pH, N, P, K, organic carbon. Methods of analysis of toxicants, i.e. As, Pb, Cd, Hg, Tl. Remediation of the contaminated soil</p>	<p>Crystal defects and Non-stoichiometry-Perfect and imperfect crystals, intrinsic and extrinsic defects – point defect, line and plane defects, vacancies – Schottky defects and Frankel defects. Thermodynamics of Schottky and Frenkel defect, formation of color centers, non-stoichiometry and defects.</p>
October UNIT-IV	<p><b>INDUSTRIAL POLLUTION</b></p> <p>A. Cement, Sugar, Distillery, Drug, Paper and Pulp, Thermal Power Plants, Nuclear power Plants, Disposal of waste and their management.</p> <p>B. Chemical solutions to environmental problems, biodegradability, Acid rain, photochemical smog, greenhouse effect, global warming, ozone hole.</p> <p>C. Bhopal gas tragedy., Chernobyl, Minimata disaster.</p>	<p><b>ELECTRONIC PROPERTIES &amp; BAND THEORY:</b></p> <p>A. Metal insulators and semiconductors, electronic structure of solids band theory, band structure metals, insulators and semiconductors intrinsic and extrinsic semiconductors, doping semiconductors P-n junction, super conductors.</p> <p>B. Optical properties – Optical reflectance, photoconduction, photoelectric effects.</p> <p>C. Magnetic properties – Classification of materials, quantum theory of paramagnetic-cooperative phenomena-magnetic domains hysteresis.</p>
November	Revision	
Remark	Practicals done every month as per schedule	

## SEMESTER-IV

Month	Paper-I	Paper-II
January  UNIT-I	<p>A. <b>TERPENOIDS AND CAROTENOIDS:</b> Occurrence, isolation classification, nomenclature, general methods of structure determination of and synthesis Citral, Geraniol, Terpeneol, Menthol, Farnesol, Zingiberene, Santonin, Phytol, Abietic acid and Carotene.</p> <p>B. <b>ALKALOIDS:</b> Occurrence, isolation nomenclature and physiological action stereochemistry of steroids general methods of structure elucidation, degradation, classification, synthesis of the following alkaloids: Ephedrine, (++) Conine, Nicotine, Atropine, Quinine and Morphine</p>	<p><b>ACID BASES, ELECTROPHILES, NUCLEOPHILES AND CATALYSIS:</b> Acid-base dissociation, Electronic and structural effects, acidity and basicity. Acidity functions and their applications. Hard and soft acids and bases. Nucleophilicity scales. Nucleofugacity. The <math>\alpha</math>-effect. Ambivalent nucleophiles. Acid-base catalysis – specific and general catalysis. Bronsted catalysis, Enzyme Catalysis.</p>
February  UNIT-II	<p>A. <b>STERIODS:</b> Introduction, structural features, structure determination, stereochemistry and synthesis of Cholestrol, Biosynthesis of cholesterol, Bile acids, Androsterone, Testosterone, Estrone, Progesterone, Aldosterone.</p> <p>B. <b>PLANT PIGMENTS:</b> Occurrence, nomenclature and general method of structure determination. Synthesis of Quercetin, Myricetin, Diadzin, Cyanidin, Hisutin.</p>	<p><b>MATERIAL CHEMISTRY:</b> Preparation and Properties of Nanoparticles, Materials-Metals, Semiconductors, Ceramics (Oxide, carbides, sulphides, nitrides). Physical and Chemical methods. Reduction method, size and shape-controlled synthesis, Sol-gel methods, Optical properties, Electrical and Magnetic properties, Application of Nanoparticles.</p>
March  UNIT-III	<p>A. <b>DRUG DESIGN:</b> Development of new drugs, procedures followed in drug design, concept of lead compound and lead modifications, concept of prodrug and soft drug, structure activity relationship (SAR), factors affecting bioactivity, resonance, inductive effect. Theories of Drug Activity – Occupancy theory, rate theory and induced fit theory.</p> <p>B. <b>PHARMACOKINETICS AND PHARMACODYNAMICS:</b> Definition and general introduction.</p>	<p><b>NUCLEAR THEORY:</b> Nuclear cross section and nuclear radii, nuclear shells and magic numbers, theory of nuclear shell model, nuclear potentials, square well and simple harmonic oscillator potentials, application, liquid drop model. Semi-empirical mass equation, application and limitations.</p> <p><b>NUCLEAR FISSION:</b> Mass, energy and charge distribution of fission products, decay chains, prompt and delayed neutrons, liquid drop model of nuclear fission.</p> <p><b>NUCLEAR ENERGY:</b> Nuclear fission, chain reaction, multiplication factor, nuclear reactors.</p>

April  UNIT-IV	<p>A. <b>ANTIBIOTICS:</b> Constitution and synthesis of Penicillins, chloramphenicol, tetracycline and streptomycin, cephalosporin.</p> <p>B. <b>ANTI MALARIALS:</b> Synthesis and properties of the following Antimalarial: 8-amino quinoline derivatives – Pamaquine, Primaquine, Pentaquine, Isopentaquine, 4-amino quinoline derivatives – Santoquine, camaquine, Acridine derivatives – Mepacrine, Azacrin, Pyrimidine and Biguanid derivatives – Paludrine, Pyremethamine.</p>	<p><b>APPLIED RADIOCHEMISTRY:</b> Radioactive isotopes, purity and strength of radioisotopes. Radiochemical principle in the use of tracers, application of tracers in chemical investigations, Physico-chemical methods, Analytical applications, Age determinations, Medical applications, Agricultural application.</p> <p><b>DETECTION OF NUCLEAR RADIATIONS:</b> Techniques, Equipments, G.M&gt; counter, proportional counter, Scintillation counter, Counting Statistics.</p>
Remark	Practicals done every month as per schedule	

Month	Paper-III	Paper-IV
January  UNIT-I	<p>A. <b>ATOMIC EMISSION SPECTROPHOTOMETRY (AES):</b> Theory, instrumentation and application of flame photometer, emission spectroscopy, induced couple plasma (ICP) – AES.</p> <p><b>ATOMIC ABSORPTION SPECTROPHOTOMETRY (AAS):</b> Theory instrumentation and application of flame – AAS, graphite furnace – AAS, cold vapor – AAS, and hydride generation – AAS.</p> <p>B. <b>AUTOMATED METHODS:</b> Principle and theory of automated methods, segmented &amp; non-segmented continuous (flow injection analysis, FIA). Instrumentation &amp; fabrication of FIA in separation, preconcentration, reduction, oxidation and reaction kinetics. FIA – spectrophotometry, FIA – AAS /ICP-AES, IC-AAS/CP – AES/MS. Application of FIA methods for analysis of anions and cations.</p>	<p><b>CLINICAL ANALYSIS:</b></p> <p>A. Concepts and principles of analytic methods commonly used in the clinical species: i.e. ammonia, blood urea Nitrogen, Ca, Cl, CO<sub>2</sub>, Fe, K, Li, Mg, Na, P, urea, glucose.</p> <p>B. Method for analysis of proteins (i.e. albumin, bilirubin, creatinine, cholesterol, HDL-cholesterol, triglycerides, creatinine) and Enzymes (i.e. Alanine Aminotransferase, acid phosphatase, alkaline phosphatase, amylase, aspartate aminotransferase, cholinesterase, lactate, and lipase)</p>
February	<p>A. <b>THERMAL METHODS:</b> Principles, techniques and common applications of different thermo analytical methods: TGA, DTA, DTG. <b>SCATTERING METHODS:</b> Principles, instrumentation and application of nephelometry, turbidimetry.</p>	<p><b>FOOD ANALYSIS:</b></p> <p>A. Moisture ash, crude protein, fat, crude fibre, carbohydrate, calcium, potassium, sodium and phosphate. Food adulteration:</p>

UNIT-II	<p><b>B. METHODS FRO STRUCTURE DETERMINATION:</b></p> <p>Spectroscopic techniques for structure studies, Neutron and X-ray scattering spectroscopy, X-ray fluorescence spectroscopy. Principle and theory of chromatographic techniques i.e. paper, thin layer, ion exchange, gas chromatography, high-pressure liquid and ion chromatography. Analytical applications of GC and HPLC in analysis of pesticides. Application of IC in analysis of anions i.e. <math>F^-</math>, <math>Cl^-</math>, <math>Br^-</math>, <math>NO_2</math>, <math>NO_3</math>, <math>PO_4^{3-}</math>, <math>CH_3COO^-</math>.</p>	common adulterants in food, contamination of foodstuffs, microscopic examination of foods for adulterants, pesticides analysis in food products, HPLC, Gas chromatographic technique for analysis of organic phosphates in food products, TLC technique for identification of pesticides in food products.
March UNIT-III	<p>A. Electrode polarization dissolution potential concentration polarization, decomposition potential, over potential, influence of various factors on over potential.</p> <p><b>B. APPLIED POLAROGRAPHIC TECHNIQUES:</b> Principles, general treatment and applications of following techniques in trace level analysis – Oscillographic polarography, Square wave polarography.</p> <p>C. General consideration and measurement of conductivity, high frequency conductometric titration's –Principle, theory, applications, advantages and disadvantages.</p>	<p><b>DRUG ANALYSIS:</b></p> <p>Narcotics and dangerous drugs, classification of drugs, Mode of action of narcotics, Sedatives, Hypnotics and tranquilizers, Screening by gas and thin layer chromatography, spectrophotometric measurements.</p>
April UNIT-IV	<p>A. Ion selective electrode (ISE) constitution of ISE, Electrode for <math>I^-</math>, <math>I^-</math>, <math>Na^+</math>, and <math>K^+</math>.</p> <p>B. Theory of electro-gravimetric analysis, Electrode reactions, over potential electrolytic separation of metals with controlled cathode potential, electrolytic determinations at constant current.</p> <p>C. Potentiometry – Reference electrodes, indicator electrode, ion sensitive electrodes, instrumentation and measurement of cell e.m.f., potentiometers and pH meters and selective ion meters and potentiometric titrations.</p>	<p><b>FUEL ANALYSIS:</b></p> <p>Solid, liquid and gas fuels, ultimate and proximate analysis, heating values, grading of coal, liquid fuels, flash and fire point, octane number and carbon residue, gaseous fuels, producer gas and water gas, calorific value.</p>
Remark	Practicals done every month as per schedule	

**M.Sc. I<sup>st</sup> Semester  
Mathematics  
PAPER-I**

**Advanced Abstract Algebra (I)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JULY	<b>Unit-I</b> Groups - Normal and Subnormal series. Composition series
AUGUST	<b>Unit I .</b> Jordan-Holder theorem. Solvable groups. Nilpotent groups. <b>Unit-II</b> Field theory- Extension fields. Algebraic and transcendental extensions. Separable and inseparable extensions. Normal extensions.
SEPTEMBER	<b>Unit-III</b> Perfect fields. Finite fields. Primitive elements. Algebraically closed fields. <b>Internal Test 1</b>
OCTOBER	<b>Unit-IV</b> Automorphisms of extensions. Galois extensions. Fundamental theorem of Galois theory. <b>Internal Test 2</b>
NOVEMBER	<b>Unit-V</b> Solution of polynomial equations by radicals. Insolvability of the general equation of degree 5 by radicals. <b>Seminar</b>

**M.Sc. I<sup>st</sup> Semester**  
**Mathematics**  
**PAPER-II**  
**Real Analysis (I)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JULY	<b>Unit-I</b> Sequences and series of functions, pointwise and uniform convergence, Cauchy criterion for uniform convergence, Weierstrass M-test, Abel's and Dirichlet's tests for uniform convergence, uniform convergence and continuity,
AUGUST	<b>Unit I</b> Definition and simple properties of Riemann-Stieltjes integral, uniform convergence and Riemann-Stieltjes integration, uniform convergence and differentiation, Weierstrass approximation theorem. <b>Unit-II</b> Power series, uniqueness theorem for power series, Abel's and Tauber's theorems. Rearrangements of terms of a series, Riemann's theorem.
SEPTEMBER	<b>Unit-III</b> Functions of several variables, linear transformations, Derivatives in an open subset of $\mathbb{R}^n$ , Chain rule, Partial derivatives, interchange of the order of differentiation, Derivatives of higher orders, Taylor's theorem, Inverse function theorem, Implicit function theorem.  <b>Internal Test 1</b>
OCTOBER	<b>Unit-IV</b> Jacobians, extremum problems with constraints, Lagrange's multiplier method, Differentiation of integrals.  <b>Internal Test 2</b>
NOVEMBER	<b>Unit-V</b> Partitions of unity, Differential forms, Stoke's theorem.  <b>Seminar</b>

**M.Sc. I<sup>st</sup> Semester**  
**Mathematics**  
**PAPER-III**  
**Topology**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>Unit-I</b> Countable and uncountable sets. Infinite sets and the Axiom of Choice. Cardinal numbers and its arithmetic. Schroeder-Bernstein theorem. Cantor's theorem and the continuum hypothesis. Zorn's lemma, well-ordering theorem. Definition and examples of topological spaces.
<b>AUGUST</b>	<b>Unit I</b> Closed sets. Closure. Dense subsets. Neighbourhoods. Interior, exterior and boundary. Accumulation points and derived sets. Bases and sub-bases. Subspaces and relative topology.  <b>Unit-II</b> Alternate methods of defining a topology in terms of Kuratowski Closure Operator and Neighbourhood Systems. Continuous functions and homeomorphism. First and Second Countable spaces. Lindelof's theorems. Separable spaces. Second countability and reparability.
<b>SEPTEMBER</b>	<b>Unit-III</b> Separation axioms; their Characterizations and basic properties. Urysohn's lemma, Tietze extension theorem. <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>Unit-IV</b> Compactness. Continuous functions and compact sets. Basic properties of Compactness. Compactness and finite intersection property. Sequentially and countably compact sets. Lococompactness and one point compactification. Stone-Cech compactification.  <b>Internal Test 2</b>
<b>NOVEMBER</b>	<b>Unit-V</b> Compactness in metric spaces. Equivalence of compactness, countable compactness and sequential compactness in metric space. Connected spaces. Connectedness on the real line. Components. Locally connected spaces. <b>Seminar</b>

**M.Sc. I<sup>st</sup> Semester  
Mathematics  
PAPER-IV**

**Complex Analysis (I)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JULY	<b>Unit-I</b> Complex integration, Cauchy-Goursat. Theorem. Cauchy's integral formula. Higher order derivatives. Morera's Theorem. Cauchy's inequality and Liouville's theorem..
AUGUST	<b>Unit I</b> The fundamental theorem of algebra. Taylor's theorem. Laurent's series. Isolated singularities. Meromorphic functions  <b>Unit-II</b> Maximum modulus principle. Schwarz lemma. The argument principle. Rouché's theorem Inverse function theorem
SEPTEMBER	<b>Unit-III</b> Residues. Cauchy's residue theorem. Evaluation of integrals. Branches of many valued functions with special reference to $\arg z$ , $\log z$ and $z^a$ . <b>Internal Test 1</b>
OCTOBER	<b>Unit-IV</b> Bilinear transformations, their properties and classifications. Definitions and examples of Conformal mappings. <b>Internal Test 2</b>
NOVEMBER	<b>Unit-V</b> Spaces of analytic functions. Hurwitz's theorem. Montel's theorem Riemann mapping theorem.  <b>Seminar</b>



**M.Sc. I<sup>st</sup> Semester  
Mathematics  
PAPER-V**

**Advanced Discrete Mathematics (I)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JULY	<b>Unit-I</b> Formal Logic-Statements. Symbolic Representation and Tautologies. Quantifiers, Predicates and Validity. Propositional Logic.
AUGUST	<b>Unit I</b> Semigroups & Monoids-Definitions and Examples of Semigroups and monoids (including those pertaining to concatenation operation). <b>Unit-II</b> Homomorphism of semigroups and monoids. Congruence relation and Quotient Semigroups. Subsemigroup and submonoids. Direct Products. Basic Homomorphism Theorem.
SEPTEMBER	<b>Unit-III</b> Lattices-Lattices as partially ordered sets. Their properties. Lattices as Algebraic Systems. Sublattices, Direct products, and Homomorphisms. Some Special Lattices e.g., Complete, Complemented and Distributive Lattices. Boolean Algebras-Boolean Algebras as Lattices. Various Boolean Identities. The Switching Algebra example. Subalgebras, <b>Internal Test 1</b>
OCTOBER	<b>Unit-IV</b> Direct Products and Homomorphisms. Join-Irreducible elements, Atoms and Minterms. Boolean Forms and Their Equivalence. Minterm Boolean Forms, Sum of Products Canonical Forms. Minimization of Boolean Functions. Applications of Boolean Algebra to Switching Theory (using AND,OR & NOT gates). The Karnaugh Map Method. <b>Internal Test 2</b>
NOVEMBER	<b>Unit-V</b> Grammars and Languages-Phrase-Structure Grammars. Rewriting Rules. Derivations. Sentential Forms. Language generated by a Grammar. Regular, Context-Free, and Context Sensitive Grammars and Languages. Regular sets, Regular Expressions and the Pumping Lemma. Kleene's Theorem. Notions of Syntax Analysis, Polish Notations. Conversion of Infix Expressions to Polish Notations. The Reverse Polish Notation. <b>Seminar</b>

**M.Sc. II<sup>nd</sup> Semester  
Mathematics  
PAPER-I**

**Advanced Abstract Algebra (II)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JANUARY	<b>Unit-I</b> Modules - Cyclic modules. Simple modules. Semi-simple modules. Schuler's Lemma. Free modules. Noetherian and artinian modules and rings-Hilbert basis theorem. Wedderburn Artin theorem. Uniform modules, primary modules, and Noether-Lasker theorem.
FEBRUARY	<b>Unit-II</b> Linear Transformations - Algebra of linear transformation, characteristic roots, matrices and linear transformations. <b>Unit-III</b> Canonical Forms - Similarity of linear transformations. Invariant subspaces. Reduction to triangular forms. <b>Internal Test 1</b>
MARCH	<b>Unit III</b> Nilpotent transformations. Index of nilpotency. Invariants of a nilpotent transformation. The primary decomposition theorem. Jordan blocks and Jordan forms. <b>Unit-IV</b> Smith normal form over a principal ideal domain and rank. <b>Internal Test 2</b>
APRIL	<b>Unit IV</b> Fundamental structure theorem for finitely generated modules over a Principal ideal domain and its applications to finitely generated abelian groups. <b>Unit-V</b> Rational canonical form. Generalized Jordan form over any field. <b>Seminar</b>

**M.Sc. II<sup>nd</sup> Semester**  
**Mathematics**  
**PAPER-II**  
**Real Analysis (II)**

MONTH	PROPOSED PLAN
JANUARY	<b>Unit-I</b> Definition and existence of Riemann-Stieltjes integral, Properties of the Integral, integration and differentiation, the fundamental theorem of Calculus, integration of vector-valued functions, Rectifiable curves. <b>Unit-II</b> Lebesgue outer measure. Measurable sets. Regularity.
FEBRUARY	<b>Unit II</b> Measurable functions. Borel and Lebesgue measurability. Non-measurable sets. Integration of Non-negative functions. The General integral. Integration of Series. <b>Unit-III</b> Measures and outer measures, Extension of a measure. <b>Internal Test 1</b>
MARCH	<b>Unit III</b> Uniqueness of Extension. Completion of a measure. Measure spaces. Integration with respect to a measure. Riemann and Lebesgue Integrals. <b>Unit-IV</b> The Four derivatives. Lebesgue Differentiation Theorem. <b>Internal Test 2</b>
APRIL	<b>Unit IV</b> Differentiation and Integration. <b>Unit-V</b> Functions of Bounded variation. The $L^p$ -spaces. Convex functions. Jensen's inequality. Holder and Minkowski inequalities. Completeness of $L^p$ , Convergence in Measure, Almost uniform convergence. <b>Seminar</b>

**M.Sc. II<sup>nd</sup> Semester  
Mathematics  
PAPER-III**

**General and Algebraic Topology**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JANUARY	<b>Unit-I</b> Tychonoff product topology in terms of standard sub-base and its characterizations. Projection maps. Separation axioms. <b>Unit-II</b> Product spaces. Connectedness and product spaces.
FEBRUARY	<b>Unit II</b> Compactness and product spaces (Tychonoff's theorem). Countability and product spaces. <b>Unit-III</b> Embedding and metrization. Embedding lemma and Tychonoff embedding. The Urysohn metrization theorem. Metrization theorems and Paracompactness-Local finiteness. <b>Internal Test 1</b>
MARCH	<b>Unit III</b> The Nagata-Smirnov metrization theorem. Paracompactness. The Smirnov metrization theorem. <b>Unit-IV</b> Nets and filter. Topology and convergence of nets. Hausdorffness and nets. Compactness and nets. Filters and their convergence. <b>Internal Test 2</b>
APRIL	<b>Unit IV</b> Canonical way of converting nets to filters and vice-versa. Ultra-filters and Compactness. <b>Unit-V</b> The fundamental group and covering spaces-Homotopy of paths. The fundamental group. Covering spaces. The fundamental group of the circle and the fundamental theorem of algebra <b>Seminar</b>

**M.Sc. II<sup>nd</sup> Semester  
Mathematics  
PAPER-IV**

**Advanced Complex Analysis (II)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JANUARY	<p><b>Unit-I</b> Weierstrass' factorisation theorem. Gamma function and its properties. Riemann Zeta function. Riemann's functional equation. Runge's theorem. Mittag-Leffler's theorem.</p> <p><b>Unit-II</b> Analytic Continuation. Uniqueness of direct analytic continuation.</p>
FEBRUARY	<p><b>Unit II</b> Uniqueness of analytic continuation along a curve. Power series method of analytic continuation Schwarz Reflection Principle. Monodromy theorem and its consequences.</p> <p><b>Unit-III</b> Harmonic functions on a disk. Harnack's inequality and theorem.</p> <p><b>Internal Test 1</b></p>
MARCH	<p><b>Unit III</b> Dirichlet Problem. Green's function.</p> <p><b>Unit-IV</b> Canonical products. Jensen's formula. Poisson-Jensen formula. Hadamard's three circles theorem. Order of an entire function. Exponent of Convergence. Borel's theorem. Hadamard's factorization theorem.</p> <p><b>Internal Test 2</b></p>
APRIL	<p><b>Unit-V</b> The range of an analytic function. Bloch's theorem. The Little Picard theorem. Schottky's theorem. Montel Caratheodory and the Great Picard theorem. Univalent functions. Bieberbach's conjecture (Statement only) and the "1/4-theorem.</p> <p><b>Seminar</b></p>

**M.Sc. II<sup>nd</sup> Semester  
Mathematics  
PAPER-V**

**Advanced Discrete Mathematics (II)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JANUARY	<b>Unit-I</b> Graph Theory-Definition of (Undirected) Graphs, Paths, Circuits, Cycles, & Subgraphs. Induced Subgraphs. Degree of a vertex. Connectivity. Planar Graphs and their properties. Trees. Euler's Formula for connected planar Graphs. Complete & Complete Bipartite Graphs. Kuratowski's Theorem (statement only) and its use.
FEBRUARY	<b>Unit-II</b> Spanning Trees, Cut-sets, Fundamental Cut -sets, and Cycle. Minimal Spanning Trees and Kruskal's Algorithm. Matrix Representations of Graphs. Euler's Theorem on the Existence of Eulerian Paths and Circuits. <b>Unit-III</b> Directed Graphs. In degree and Out degree of a Vertex. Weighted undirected Graphs. <b>Internal Test 1</b>
MARCH	<b>Unit III</b> Dijkstra's Algorithm.. strong Connectivity & Warshall's Algorithm. Directed Trees. Search Trees. Tree Traversals. <b>Unit-IV</b> Introductory Computability Theory-Finite State Machines and their Transition Table Diagrams. Equivalence of finite State Machines <b>Internal Test 2</b>
APRIL	<b>Unit IV</b> Reduced Machines. Homomorphism. <b>Unit-V</b> Finite Automata. Acceptors. Non-deterministic Finite Automata and equivalence of its power to that of Deterministic Finite Automata. Moore and mealy Machines. Turing Machine and Partial Recursive Functions. <b>Seminar</b>

**M.Sc. III<sup>rd</sup> Semester**  
**Mathematics**  
**PAPER-I**

**Integration Theory and Functional Analysis (I)**

MONTH	PROPOSED PLAN
JULY	<b>UNIT I</b> Signed measure. Hahn decomposition theorem, mutually singular measures. Radon-Nikodym theorem.
AUGUST	<b>UNIT I</b> Labesgue decomposition. Riesz representation theorem. Extension theorem (Caratheodory). <b>UNIT II</b> e-Stieltjes integral, product measures, Fubini's theorem. Differentiation and Integration. Decomposition into absolutely continuous and singular parts.
SEPTEMBER	<b>UNIT III</b> Baire sets. Baire measure, continuous functions with compact support. Regularity of measures on locally compact spaces. Integration of continuous functions with compact support, Riesz-Markoff theorem. <b>Internal Test 1</b>
OCTOBER	<b>UNIT IV</b> Normed linear spaces. Banach spaces and examples. Quotient space of normed linear spaces and its completeness, equivalent norms. Riesz Lemma, basic properties of finite dimensional normed linear spaces and compactness.
NOVEMBER	<b>UNIT V</b> Convergence and bounded linear transformations, normed linear spaces of bounded linear transformations, dual spaces with examples. <b>Seminar</b>

## M.SC.III<sup>rd</sup> SEMESTER

### Mathematics PAPER-II

#### Partial Differential Equations and Mechanics (I)

MONTH	PROPOSED PLAN
JULY	<b>Unit-I</b> Examples of PDE. Classification. Transport Equation-Initial value Problem. Non-homogeneous Equation. Laplace's Equation-Fundamental Solution
AUGUST	<b>UNIT I</b> Mean Value Formulas, Properties of Harmonic Functions, Green's Function, Energy Methods. <b>UNIT II</b> Heat Equation-Fundamental Solution, Mean Value Formula, Properties of Solutions, Energy Methods. Wave Equation-Solution by Spherical Means, Non-homogeneous Equations, Energy Methods.
SEPTEMBER	<b>Unit-III</b> Generalized coordinates. Holonomic and Non-holonomic systems. Scleronomic and Rheonomic systems. Generalized potential. Lagrange's equations of first kind. Lagrange's equations of second kind. Uniqueness of solution. Energy equation for conservative fields. Hamilton's variables. Donkin's theorem. Hamilton canonical equations. Cyclic coordinates. Routh's equations. <b>Internal Test 1</b>
OCTOBER	<b>Unit-IV</b> Poisson's Bracket. Poisson's Identity. Jacobi-Poisson Theorem. Motivating problems of calculus of variations, Shortest distance. Minimum surface of revolution. Brachistochrone problem. Isoperimetric problem. Geodesic. Fundamental lemma of calculus of variations. Euler's equation for one dependent function and its generalization to (i) 'n' dependent functions, (ii) higher order derivatives. Conditional extremum under geometric constraints and under integral constraints. <b>Internal Test 2</b>
NOVEMBER	<b>Unit-V</b> Attraction and potential of rod, disc, spherical shells and sphere. Surface integral of normal attraction (application & Gauss' theorem). Laplace and Poisson equations. Work done by selfattracting systems. Distributions for a given potential. Equipotential surfaces. Surface and solid harmonics. Surface density in terms of surface harmonics. <b>Seminar</b>



## M.SC.III<sup>rd</sup> SEMESTER

### Mathematics PAPER-III

#### Fundamentals of Computer Science-Theory and Practical (Object Oriented Programming and Data Structure)

MONTH	PROPOSED PLAN
JULY	<b>Unit-I</b>  Object Oriented Programming-Classes and Scope, nested classes, pointer class members; Class initialization, assignment and destruction.  <b>Practical:-</b> Practical based on class and constructor
AUGUST	<b>Unit-II</b>  Overloaded functions and operators; Templates including class templates; class inheritance and virtual functions. <b>Practical :-</b> Practical based on function and operator overloading Inheritance, virtual function
SEPTEMBER	<b>Unit-III</b>  Data Structures-Analysis of algorithms, q, W, O, o, w notations ; Sequential and linked representations, Lists, <b>Practical :-</b> Practical based on array
OCTOBER	<b>UNIT III</b> Stacks, and queues; <b>Unit-IV</b> Trees: Binary tree- search tree implementation, B-tree (concept only); <b>Practical :-</b> Practical based on stack ,queue and tree
NOVEMBER	<b>Unit-V</b>  Sorting: Insertion sort, shell sort, quick-sort, heap sort  and their analysis; Hashing-open and closed.  <b>Practical :-</b> practical based on searching and sorting .

## **M.SC.III<sup>rd</sup> SEMESTER**

### **Mathematics PAPER-IV**

#### **Operations Research (I)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>Unit-I</b> Operations Research and its Scope. Necessity of Operations Research in Industry. Linear Programming-Simplex Method. Theory of the Simplex Method. Duality and Sensitivity Analysis.
<b>AUGUST</b>	<b>Unit-II</b> Other Algorithms for Linear Programming-Dual Simplex Method.
<b>SEPTEMBER</b>	<b>Unit-III</b> Parametric Linear Programming. Upper Bound Technique. Interior Point Algorithm. Linear Goal Programming. <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>Unit-IV</b>  Transportation and Assignment Problems.  <b>Internal Test 2</b>
<b>NOVEMBER</b>	<b>Unit-V</b>  Network Analysis-Shortest Path Problem. Minimum Spanning Tree Problem. Maximum Flow I Problem. Minimum Cost Flow Problem. Network Simplex Method. Project Planning and Control I with PERT-CPM.  <b>Seminar</b>

## M.SC.III<sup>rd</sup> SEMESTER

### Mathematics PAPER-V

#### Programming in C (with ANSI features) Theory and Practical

MONTH	PROPOSED PLAN
JULY	<b>Unit-I</b> An overview of programming. Programming language, Classification .C Essentials-Program Development. Functions. Anatomy of a C Function. Variables and Constants. Expressions. Assignment Statements. Formatting Source Files. Continuation Character. The Preprocessor. <b>Practical:-</b> Practical based on Arithmetic operator
AUGUST	<b>Unit-II</b> Scalar Data Types-Declarations, Different Types of Integers. Different kinds of Integer Constants. Floating-Point Types. Initialization. Mixing Types. Explicit Conversions-Casts. Enumeration Types. The Void Data Type. Typedefs. Finding the Address of an object. Pointers. <b>Practical :-</b> Practical based on working of different datatypes
SEPTEMBER	<b>Unit-III</b> Control Flow-Conditional Branching. The Switch Statement. Looping. Nested Loops. The break and continue Statements. The goto statement. Infinite Loops. <b>Practical :-</b> Practical based control statement
OCTOBER	<b>Unit-IV</b> Operators and Expressions-Precedence and Associativity. Unary Plus and Minus operators. Binary Arithmetic Operators. Arithmetic Assignment Operators. Increment and Decrement Operators. Comma Operator. Relational Operators. Logical Operators. Bit - Manipulation Operators. Bitwise Assignment Operators. Cast Operator. Size of Operators. Conditional Operator. Memory Operators. <b>Practical :-</b> Practical based on different operator
NOVEMBER	<b>Unit-V</b> Arrays -Declaring an Array. Arrays and Memory. Initializing Arrays. Encryption and Decryption. <b>Practical :-</b> practical based on Array .

**M.Sc. IV<sup>th</sup> Semester  
Mathematics  
PAPER-I**

**Functional Analysis (II)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JANUARY	<p><b>Unit-I</b> Uniform boundedness theorem and some of its consequences. Open mapping and closed graph theorems.</p> <p><b>Unit-II</b> Hahn-Banach theorem for real linear spaces, complex linear spaces and normed linear spaces. Reflexive spaces. Weak Sequential Compactness. Compact Operators.</p>
FEBRUARY	<p><b>Unit II</b> Solvability of linear equations in Banach spaces. The closed Range Theorem.</p> <p><b>Unit-III</b> Inner product spaces. Hilbert spaces. Orthonormal Sets. Bessel's inequality. Complete orthonormal sets and Parseval's identity.</p> <p><b>Internal Test 1</b></p>
MARCH	<p><b>Unit-IV</b> Structure of Hilbert spaces. Projection theorem. Riesz representation theorem. Adjoint of an operator on a Hilbert space. Reflexivity of Hilbert spaces.</p> <p><b>Internal Test 1</b></p>
APRIL	<p><b>Unit-V</b></p> <p>Self-adjoint operators, Positive, projection, normal and unitary operators. Abstract variational boundary-value problem. The generalized Lax-Milgram theorem.</p> <p><b>Seminar</b></p>

**M.Sc. IV<sup>th</sup> Semester**  
**Mathematics**  
**PAPER-II**  
**Partial Differential Equations and Mechanics (II)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<b>Unit-I</b> Nonlinear First Order PDE-Complete Integrals, Envelopes, Characteristics, HamiltonJacobi Equations (Calculus of Variations, Hamilton's ODE, Legendre Transform, Hopf-Lax Formula, Weak Solutions, Uniqueness), Conservation Laws (Shocks, Entropy Condition, LaxOleinik formula, Weak Solutions, Uniqueness, Riemann's Problem, Long Time Behaviour)
<b>FEBRUARY</b>	<b>Unit-II</b> Representation of Solutions-Separation of Variables, Similarity Solutions (Plane and Travelling Waves, Solitons, Similarity under Scaling), Fourier and Laplace Transform, Hopf-Cole Transform, Hodograph and Legendre Transforms, Potential Functions. <b>Unit III</b> Asymptotics (Singular Perturbations, Laplace's Method, Geometric Optics, Stationary Phase, Homogenization), <b>Internal Test 1</b>
<b>MARCH</b>	<b>Unit-III</b> Power Series (Non-characteristic Surfaces, Real Analytic Functions, Cauchy-Kovalevskaya Theorem) <b>Unit-IV</b> Hamilton's Principle. Principle of least action. Poincare Cartan Integral invariant. Whittaker's equations. Jacobi's equations. Lee Hwa Chung's theorem, canonical transformations and properties of generating functions. <b>Internal Test 2</b>
<b>APRIL</b>	<b>Unit-V</b> Hamilton-Jacobi equation. Jacobi theorem. Method of separation of variables. Lagrange Brackets. Condition of canonical character of a transformation in terms of Lagrange brackets and Poisson brackets, invariance of Lagrange brackets and Poisson brackets under canonical transformations. <b>Seminar</b>

**M.Sc. IV<sup>th</sup> Semester**  
**Mathematics**  
**PAPER-III**  
**Operating System and Database Management System**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JANUARY	<b>Unit-I</b> Database Systems-Role of database systems, database system architecture and data modeling. <b>Unit-II</b> Introduction to relational algebra and relational calculus.
FEBRUARY	<b>Unit-III</b> Introduction to SQL: Basic features including views; Integrity constraints; Database design-normalization up to BCNF. <b>Practical :-Practical based on SQL</b>
MARCH	<b>Unit-IV</b> Operating Systems- Overview of operating system, user interface, processor management, memory management.
APRIL	<b>Unit-V</b> I/O management, concurrency and Security, network and distributed systems.

**M.Sc. IV<sup>th</sup> Semester  
Mathematics  
PAPER-IV**

**Operations Research (II)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JANUARY	<p><b>Unit-I</b> Dynamic Programming-Deterministic and Probabilistic Dynamic programming.</p> <p><b>Unit II</b> Game Theory-Two-Person, Zero-Sum Games. Games with Mixed Strategies.</p>
FEBRUARY	<p><b>Unit-II</b> Graphical . Solution. Solution by Linear Programming.</p> <p><b>Unit-III</b> Integer Programming-Branch and Bound Technique.</p> <p><b>Internal Test 1</b></p>
MARCH	<p><b>Unit-IV</b> Applications to Industrial Problems-Optimal product mix and activity levels. Petroleum. refinery operations. Blending problems. Economic interpretation of dual linear programming. problems. Input-output analysis. Leontief system. Indecomposable and Decomposable economies.</p> <p><b>Internal Test 2</b></p>
APRIL	<p><b>Unit-V</b> Nonlinear Programming-One/and Multi-Variable Unconstrained Optimization. Kuhn-Tucker Conditions for Constrained Optimization. Quadratic Programming. Separable Programming. I Convex Programming. Non-convex Programming.</p> <p><b>Seminar</b></p>

**M.Sc. IV<sup>th</sup> Semester**  
**Mathematics**  
**PAPER-V**

**Programming in C (with ANSI features) (II)**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JANUARY	<p><b>Unit-I</b>  Storage Classes-Fixed vs. Automatic Duration. Scope. Global variables. The register Specifier. ANSI rules for the syntax and Semantics of the storage-class keywords.</p> <p><b>Unit-II</b>  Pointers Pointer Arithmetic. Passing Pointers as Function Arguments.</p> <p><b>Practical :-</b>practical based on storage classes and pointer</p>
FEBRUARY	<p><b>Unit II</b>  Accessing Array Elements through Pointers. Passing Arrays as Function Arguments. Sorting Algorithms. Strings. Multidimensional Arrays. Arrays of Pointers. Pointers to Pointers.</p> <p><b>Unit-III</b>  Functions-Passing Arguments. Declarations and Calls. Pointers to Functions. Recursion. The main Function. Complex Declarations.</p> <p><b>Practical :-</b> practical based on Array and Function</p>
MARCH	<p><b>Unit III</b>  The C Preprocessor-Macro Substitution. Conditional Compilation. Include Facility. Line Control.</p> <p><b>Unit-IV</b>  Structures and Unions-Structures. Dynamic Memory Allocation. Linked Lists. Unions, enum Declarations.</p> <p><b>Practical :-</b> practical based on Macro, Structure and Union</p>
APRIL	<p><b>Unit-V</b>  Input and Output-Streams, Buffering. The &lt;Stdio.h&gt; Header File. Error Handling. Opening and Closing a File. Reading and Writing Data. Selecting an I/O Method. Unbuffered I/O Random Access. The standard library for Input/Output.</p> <p><b>Practical :-</b> practical based on File handling</p>



**M. Sc. I Semester**  
**Zoology**  
**Paper I**  
**BIOSYSTEMATICS, TAXONOMY AND BIODIVERSITY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>Unit-I</b> Definition and basic concepts of biosystematics and taxonomy. Historical resume of systematics. Importance and applications of biosystematics in biology
<b>AUGUST</b>	<b>Unit I</b> Trends in biosystematics concepts of different conventional and newer aspects, Chemotaxonomy, Cyto taxonomy, Molecular taxonomy  <b>Unit-II</b> Dimensions of speciation and taxonomic characters, Mechanisms of speciation in panmictic and apomictic species, Species concepts and species category, Theories of biological classification, Taxonomic characters and different kinds.
<b>SEPTEMBER</b>	<b>Unit-III</b> Procedure keys in taxonomy, Taxonomic procedures-taxonomic collections, preservation, curation, Taxonomic keys-different kinds of taxonomic keys, their merits and demerits, Process of typification and different Zoological types, International code of Zoological Nomenclature (ICZN) <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>Unit-IV</b> Procedure keys in taxonomy, Taxonomic procedures-taxonomic collections, preservation, curation, Taxonomic keys-different kinds of taxonomic keys, their merits and demerits. <b>Internal Test 2</b>
<b>NOVEMBER</b>	<b>Unit-IV</b> Process of typification and different Zoological types, International code of Zoological Nomenclature (ICZN) <b>Seminar</b>

**M. Sc. I Semester**  
**Zoology**  
**Paper II**  
**GENERAL PHYSIOLOGY AND ENDOCRINOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>Unit-I 1.Digestion</b> 1.1Nutrition 1.2 Histology and function of digestive tract 1.3Digestive juices [i Saliva ii Gastric juice iii Pancreatic juice iv Bile juice v Succus entericus] Composition, function and mechanism of various digestive juice 1.4 Mechanism and physiology of digestion 1.5 Mechanism of absorption 2. Circulation of body fluid and its regulation 2.1Structure of heart and properties of cardiac muscle 2.2 Structure, function, synthesis and composition of blood 2.3Blood group, cardiac cycle and blood fibrinization and defibrinization
<b>AUGUST</b>	<b>Unit I 3. Gas exchange and physiology of respiratory tract</b> 3.1 Structure of respiratory tract 3.2 Breathing physiology and aerodynamic pulmonary volume 3.3 Transport of gases [Oxygen and carbon dioxide]  <b>Unit-II Nervous System</b> 3.1Histological structure of neurons and neuroglia and physiological properties of nerve fibre 3.2 Neurotrophins, cerebrospinal fluid and its function 3.3Mechanism of conduction of nerve impulses in non medullated and medullated nerve fibres 3.4 Synapse- structure, properties and its re uptake mechanism 3.5 Neurotransmitters- classification, receptors function and metabolism 4. Muscle function and movements 4.1 Anatomy, structure and properties of muscle 4.2 Theories and physiology of muscle contraction mechanism 4.3 Changes during muscle contraction 1. Mechanical 2. Chemical 3. Thermal 4. Electrical 4.4 Enzyme uses in muscle contraction mechanism 5. Sensory transduction 5.1 Auditory receptors 5.2 Chemoreceptors, taste and smell 5.3 Vision and photo receptors

SEPTEMBER	<b>Unit-III</b> Patterns of nitrogen excretion and its physiology 6.1 Excretory substance and physiology of liver for excretion 6.2 Excretory physiology of kidney and micturition 6.3 Regulation of acid-base balance [ Acidemia and alkalaemia] 6.4 Detoxication 7. Thermoregulation and Cold Tolerance 7.1 Heat balance and exchange 7.2 Endotherms Vs Ectotherms 7.3 Torpor, hibernation and aestivation 7.4 Pyrexia and hypothermia 8. Aims and scope of endocrinology 8.1 Discovery of hormones 8.2 Experimental methods of hormone research 8.3 Classification of endocrine glands and hormones  <b>Internal Test 1</b>
OCTOBER	<b>Unit-IV</b> 9.1 Structure and functions of endocrine glands (Pituitary, pineal, pancreas, adrenal, thyroid etc.) 9.2 Biosynthesis of hormones (adrenal, thyroid and gonadal) 9.3 Releasing mechanism, transport mechanism and metabolism of Hormones  <b>Internal Test 2</b>
NOVEMBER	<b>Unit-IV</b> 9.4 Receptors and action mechanism of hormones 9.5 Neurohormone [releasing stimulating factor of hypothalamus and endorphin]  <b>Seminar</b>

**M. Sc. I Semester**  
**Zoology**  
**Paper III**  
**STRUCTURE AND FUNCTION OF INVERTEBRATES**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JULY	<b>Unit-I</b> 1. Organization of coelom 1.1 Acoelomates and Pseudo coelomates 1.2 Coelomates: Protostomia and Deuterostomia. 2. Locomotion 2.1 Flagellar and ciliary movement in Protozoa.
AUGUST	<b>Unit I</b> 2.2 Hydrostatic movement in Coelenterata, Annelida and Echinodermata <b>Unit-II</b> 3. Nutrition and Digestion 3.1 Patterns of feeding and digestion in Protozoa 3.2 Filter feeding in polychaeta. 4. Respiration 4.1 Organs of respiration Gills, lungs and trachea. 4.2 Respiratory pigments.
SEPTEMBER	<b>Unit-III</b> 5. Excretion 5.1 Organs of excretion. 5.2 Excretion and osmoregulation 6. Nervous System 6.1 Primitive nervous system: Coelenterata and Echinodermata. 6.2 Advanced Nervous system: Annelida, Arthropoda (Crustacea and insecta) and Mollusca (Cephalopoda) <b>Internal Test 1</b>
OCTOBER	<b>Unit-IV</b> 7. Invertebrate larvae 7.1 Larval forms of free-living and parasitic invertebrates  <b>Internal Test 2</b>
NOVEMBER	<b>Unit-IV</b> 8. Minor Phyla 8.1 Organization and general characters of (Ctenophore, Rotifera, Ectoprocta, Endoprocta)  <b>Seminar</b>

**M. Sc. I Semester**  
**Zoology**  
**Paper IV**  
**MOLECULAR BIOLOGY AND BIOTECHNOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JULY	<b>Unit-I</b> Biomembranes Molecular composition and arrangement Transport across membrane 2. Structure and function Mitochondria Golgi complex
AUGUST	<b>Unit I</b> Lysosome Ribosome <b>Unit-II</b> 3. DNA replication 4. Transcription 5. Translation 5.1 Genetic code 5.2 Mechanisms of initiation, elongation and termination 5.3 Regulation of translation
SEPTEMBER	<b>Unit-III</b> 6. Genome organization 6.1 Chromosomal organization: morphological and structural types. 7. Molecular mapping of genome 7.1 Genetic and physical maps 7.2 Polymerase Chain Reaction (PCR) and blotting techniques 7.3 Introduction to Human Genome. <b>Internal Test 1</b>
OCTOBER	<b>Unit-IV</b> 8. Transgenic animals and knock-outs 8.1 Production and applications 8.2 Embryonic stem cells <b>Internal Test 2</b>
NOVEMBER	<b>Unit-IV</b> 9. Application of genetic engineering 9.1 Medicine 9.2 Agriculture 9.3 Industry <b>Seminar</b>

**M. Sc. II Semester**  
**Zoology**  
**Paper-I**  
**QUANTITATIVE BIOLOGY AND COMPUTER APPLICATION**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<b>Unit-I</b> 1. Introduction to digital computer and application 1.1 Basic knowledge of hardware and software 1.2 CPU (Central Processing Unit) 1.3 Input and Output devices 1.4 Auxiliary storage system 1.5 Operating system and Binary number system
<b>FEBRUARY</b>	<b>Unit-II</b> 2. Computer application 2.1 Introduction to MS office 2.1.1 Word 2.1.2 Excel 2.1.3 Power point 3. Computer application in biostatistics 4. Simple computation and elementary knowledge of flow chart <b>Internal Test 1</b>
<b>MARCH</b>	<b>Unit III</b> 5. Types of biological data 6. Representation of data 7. Sample and sampling 8. Measures of central tendency 9. Measures of dispersion 10. Hypothesis testing: Null and alternate hypothesis <b>Unit-IV</b> 11. Tests of significance 11.1 Chi-square test 11.2. Student's t-test 12. Analysis of Variance <b>Internal Test 2</b>
<b>APRIL</b>	<b>Unit IV</b> 13. Simple linear regression 14. Correlation 15. Probability distribution: normal and binomial <b>Seminar</b>

**M. Sc. II Semester**  
**Zoology**  
**Paper-II**  
**GAMETE BIOLOGY AND DEVELOPMENT BIOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<b>Unit-I</b> 1. Sex differentiation and development 1.1 Chromosomal (genetic) basis of sex determination 1.2 Gonadal differential 1.3 Phenotype (internal) 1.4 Brain sex differentiation 2. Spermatogenesis 2.1 Spermatogenesis and development of spermatozoa 2.2 ultra structure of sperm 2.3 Capacitation 3. Oogenesis 3.1 Differentiation and growth of oocytes. 3.2 Organization of egg cytoplasm and egg cortex. 3.3 Vitellogenesis <b>Unit-II</b> 4. Fertilization 4.1 Biological role of fertilization. 4.2 Basic requirements of fertilization. 4.3 Mechanism of fertilization
<b>FEBRUARY</b>	<b>Unit II</b> 4.4 Biochemistry of fertilization 4.5 Post fertilization event 5. Parturition, lactation and hormonal contraception 6. Cleavage -Characteristics and mechanisms of cleavages <b>Unit-III</b> 7. Formative movements 8. Fate maps <b>Internal Test 1</b>
<b>MARCH</b>	<b>Unit III</b> 8.1 Utility and comparative topographical relationship of the Presumptive areas in early embryos of 8.1.1 Amphioxus 8.1.2 Fishes 8.1.3 Amphibian 8.1.4 Birds 9. Differentiation <b>Unit-IV</b> 10. Cell and tissue interactions in development 10.1 Primary embryonic induction 10.2 Competence <b>Internal Test 2</b>
<b>APRIL</b>	<b>Unit IV</b> 10.3 Concept of organizer 11. Metamorphosis 12. Teratology <b>Seminar</b>

**M. Sc. II Semester**  
**Zoology**  
**Paper-III**  
**POPULATION GENETICS AND EVOLUTION**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JANUARY	<b>Unit-I</b> 1. Concepts of evolution and theories of organic evolution: Lamarckism, Darwinism and Synthetic theory of evolution 2. Evidences of evolution: anatomical, embryological, palaeontological, physiological and Bio-chemical <b>Unit-II</b> 3. Hardy-Weinberg law of genetic equilibrium 4. Detailed account of destabilizing forces. 4.1 Natural selection
FEBRUARY	<b>Unit II</b> 4.2 Mutation 4.3 Genetic drift 4.4 Meiotic drive 5. Phenotypic variation  <b>Unit-III</b> 6. Patterns and mechanisms of reproductive isolation 7. Phylogenetic and biological concepts of species <b>Internal Test 1</b>
MARCH	<b>Unit III</b> 8. Gene Evolution, Evolution of gene families 9. Factors affecting human disease frequency  <b>Unit-IV</b> 10. Origin of higher categories 11. Micro-and Macro-evolution <b>Internal Test 2</b>
APRIL	<b>Unit IV</b> 12. Evolution of horse, elephant, camel, man  <b>Seminar</b>



**M. Sc. II Semester**  
**Zoology**  
**Paper-IV**  
**TOOLS AND TECHNIQUES IN BIOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
JANUARY	<b>Unit-I</b> 1.Principles and application of 1.1 Ultracentrifugation 1.2 Electrophoresis 1.3 Chromatography (various types) 1.4 Lambert-Beers Law and colorimetry and spectrophotometry 1.5 Flow cytometry. <b>Unit-II</b> 2. Principles and Application of 2.1 Light Microscopy and micrometry 2.2 Phase Contrast microscopy 2.3 Interference microscopy
FEBRUARY	<b>Unit II</b> 2.4 Fluorescence microscopy 2.5 Transmission Electron microscopy. 2.6 Scanning Electron microscopy.  <b>Unit-III</b> 3. Assay 3.1 Chemical assays 3.2 Biological assays-in vivo and in vitro 4. Principles of cytological and cytochemical techniques <b>Internal Test 1</b>
MARCH	<b>Unit III</b> 4.1 Fixation: chemical basis of fixation by formaldehyde, gluteraldehyde, chromium salts, mercury salts, osmium salts, alcohol and acetone 4.2 Chemical basis of staining of carbohydrate, protein lipids and nucleic acids.  <b>Unit-IV</b> 5. Principle and techniques of 5.1 Nucleic acid hybridization and cot curve 5.2 Sequencing of proteins and nucleic acids  <b>Internal Test 2</b>
APRIL	<b>Unit-IV</b> 6. Freeze techniques 7. Media preparation and sterilization 8. Inoculation and growth monitoring  <b>Seminar</b>

**M. Sc. III Semester**  
**Zoology**  
**Paper-I**  
**COMPARATIVE ANATOMY OF VERTEBRATES**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>Unit-I</b> 1. Origin of Chordates 1.1 Amphibians, Reptiles, Birds and Mammals. 2. Classification of Vertebrates 2.1 Amphibians 2.2 Reptiles 2.3 Birds 2.4 Mammals.
<b>AUGUST</b>	<b>Unit-II</b> 3. Vertebrate integument and its derivatives. 3.1 General structure and functions of Integument. 3.2 Structure and functions of glands, scales, horns, claws, nails, hoof, feather and hair. 4. Skeletal system in vertebrates. 4.1 Comparative account of (i) Jaw suspensorium, (ii) Limbs and Girdles
<b>SEPTEMBER</b>	<b>Unit-III</b> 5. Respiration in Vertebrates. 5.1 Comparative account of respiratory organs (structure and functions) 6. Circulation in Vertebrates. 6.1 Structure and function of blood. 6.2 Evolution of heart. 6.3 Evolution of aortic arches. <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>Unit IV</b> 7. Nervous System – Central, Peripheral and Autonomic. <b>Internal Test 2</b>
<b>NOVEMBER</b>	8. Sense organs. 8.1 Comparative account of Sensory Receptors. 9. Evolution of Urinogenital system in vertebrates. <b>Seminar</b>

**M. Sc. III Semester**  
**Zoology**  
**Paper-II**  
**BIOLOGICAL CHEMISTRY**

MONTH	PROPOSED PLAN
JULY	<b>UNIT I</b> 1. Properties of Proteins 1.1 Structure and properties of amino acids. 1.2 Classification of proteins. 1.3 Structure of proteins.
AUGUST	<b>UNIT I</b> 1.4 Biological Functions of Proteins. 1.5 Protein Metabolism. <b>UNIT II</b> 2. Carbohydrates 2.1 Classification of carbohydrates. 2.2 Structure and Functions of Carbohydrates. 2.3 Carbohydrate metabolism. 2.4 Utilization of Krebs cycle 3. Lipid 3.1 Lipid structure and functions 3.2 Lipid metabolism.
SEPTEMBER	<b>UNIT III</b> 4. Vitamins 4.1 Water and Fat soluble vitamins, 4.2 Chemistry, occurrence and physiological role. 5. Enzymes 5.1 Classification and nomenclature. 5.2 Mechanism of action 5.3 Regulation of enzyme activity and functions of Co-enzymes. <b>Internal Test 1</b>
OCTOBER	<b>UNIT IV</b> 6. Nucleic acid 6.1 Chemistry of DNA. 6.2 Chemistry of RNA
NOVEMBER	<b>UNIT IV</b> 6.3 Biological importance of nucleic acids. 6.4 Nucleoproteins. 6.5 Metabolism of nucleic acids. <b>Seminar</b>

**M. Sc. III Semester**  
**Zoology**  
**Paper-III**

**ENVIRONMENTAL BIOLOGY AND POPULATION ECOLOGY**

MONTH	PROPOSED PLAN
JULY	<b>Unit-I</b> 1. Ecology 1.1 Definition, concept and scope of ecology. 2. Structure and components of ecosystem.
AUGUST	<b>UNIT I</b> 1. Types and functions of ecosystem. 4. Ecological modeling. <b>Unit-II</b> 1. 5. Limiting factors 5.1 Energy flow, food chain, food web and trophic levels, ecological pyramids. 5.2 Ecological succession
SEPTEMBER	<b>UNIT II</b> 5.3 Biogeochemical cycles: water cycle, carbon, oxygen and nitrogen cycles. <b>Unit-III</b> 6. Population dynamics 6.1 Dynamics of population growth. 6.2 Factors that increase or decrease population. <b>Internal Test 1</b>
OCTOBER	<b>Unit-III</b> 7. Community dynamics 7.1 Characteristics and composition 7.2 Development and classification of communities. <b>Internal Test 2</b>
NOVEMBER	<b>Unit-IV</b> 8. Renewable and non-renewable resources: Forest, water and mineral resources. 9. Conservation of energy sources. 10. National Parks, Wild life sanctuaries and biosphere reserves <b>Seminar</b>

**M. Sc. III Semester**  
**Zoology**  
**Paper-IV**  
**ANIMAL BEHAVIOUR**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JULY</b>	<b>Unit-I</b> 1. Historical perspectives- Ethology 2. Behavioral patterns 3. Innate behavior 4. Biological rhythms 4.1 Types of biological rhythm 4.2 Biological clock
<b>AUGUST</b>	<b>Unit-II</b> 5. Communications 5.1 Auditory 5.2 Visual 5.3 Chemical 6. Learning and Memory 6.1 Conditioning 6.2 Habituation 7. Reasoning 8. Reproductive behaviour.
<b>SEPTEMBER</b>	<b>Unit-III</b> 9. Orientation 10. Echolocation in bats 11. Bird migration and navigation. 12. Fish migration. <b>Internal Test 1</b>
<b>OCTOBER</b>	<b>UNIT III</b> 13. Neural and hormonal control of behaviour <b>Unit-IV</b> 14. Hormonal effect on behavioural patterns. 15. Social behaviour 15.1 Social organization in insects and primates 15.2 Schooling in fishes and Flocking in birds <b>Internal Test 2</b>
<b>NOVEMBER</b>	<b>Unit-IV</b> 15.3 Homing, territoriality, dispersal 15.4 Altruism 15.5 Host–parasite relation <b>Seminar</b>

**M. Sc. IV Semester**  
**Zoology**  
**Paper-I**  
**ENVIRONMENTAL PHYSIOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<b>Unit-I</b> 1. Adaptations 1.1 Levels of adaptation. 1.2 Mechanisms of adaptation. 2. Adaptations to different environments. 2.1 Marine, shores and estuaries. 2.2 Freshwater. 2.3 Terrestrial Life.
<b>FEBRUARY</b>	<b>Unit-II</b> 2. Adaptations to different environments. 3.1 Aerial 3.2 Polar 3.3 Deep sea environment 3.4 Desert, Cave 3.5 Wet land 3.6 Parasitic habitats. <b>Unit-III</b> 1. 4. Stress Physiology 4.1 Basic concepts of environmental stress and strain, Concept of elastic and plastic strain. <b>Internal Test 1</b>
<b>MARCH</b>	<b>Unit-III</b> 4.2. Stress avoidance, stress tolerance and stress resistance. 4.3. Acclimatization, acclimation and adaptation. 4.4. Endothermic and physiological mechanism of regulation of body temperature <b>Internal Test 2</b>
<b>APRIL</b>	<b>Unit-IV</b> 5. Stress physiology in different conditions 5.1 Osmoregulation in aqueous and terrestrial habitats. 5.2 Physiological response to oxygen deficient stress. <b>Seminar</b>

**M. Sc. IV Semester**  
**Zoology**  
**Paper-II**  
**IMMUNOLOGY AND PARASITISM**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<b>Unit-I</b> 1. Cells of immune system 1.1 B-Lymphocytes, T-lymphocytes, Null Cells 1.2 Mononuclear cells 1.3 Granulocytic cells (Neutrophils, Eosinophils and Basophils) 1.4 Mast cells 1.5 Dendritic cells 2. Organs of immune system 2.1 Primary lymphoid organs (Thymus, bone marrow) 2.2 Secondary lymphoid organs (Lymph nodes, spleen, mucosal associated lymphoid tissue, cutaneous associated lymphoid tissue)
<b>FEBRUARY</b>	<b>Unit-II</b> 2. Immunoglobulin structure and function 3.1 Molecular structure of Ig, Light chain and Heavy chain 3.2 Immunoglobulin classes 3.2.1 IgG 3.2.2 IgM 3.2.3 IgE 3.2.4 IgD 3.3 Monoclonal antibodies <b>Unit-III</b> 1. 4. Antigens 4.1 Immunogenicity 4.2.1 Complement System: Classical & Alternative Pathways 4.2.2 Contribution of the immunogens. 4.2.3 Contribution of Biological system. 5. Antigen - Antibody Interaction <b>Internal Test 1</b>
<b>MARCH</b>	<b>Unit-III</b> 6. Vaccine 6.1 Active and passive immunization 6.2 Whole organism vaccine 6.4 Recombinant vector vaccines 6.5 DNA vaccines <b>UNIT IV</b> 7. Immune system in Health disease 7.1 Immune response to infectious disease 7.2 Immune response in cancer <b>Internal Test 2</b>
<b>APRIL</b>	<b>UNIT IV</b> 8. Pathophysiology of parasitic infection 8.1 Viral infections 8.2 Bacterial infection 8.3 Helminths infection 9. AIDS <b>Seminar</b>

**M. Sc. IV Semester**  
**Zoology**  
**Paper-III**  
**ICHTHYOLOGY**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<b>Unit-I</b> 1. Skin and its derivatives in fishes. 2. Skeleton in fishes. 3. Fins-Types, structure, modification, functions 4. Locomotion in fishes. 5. Food, feeding habit and alimentary canal of fishes.
<b>FEBRUARY</b>	<b>Unit-II</b> 6. Respiration and accessory respiratory organs. 7. Swim bladder and Weberian ossicles. 8. Blood, heart and blood vascular system of fishes. 9. Excretion and Osmoregulation in fishes.  <b>Internal Test 1</b>
<b>MARCH</b>	<b>Unit-III</b> 10. Nervous system and sense organs in fishes 11. Specialized organs in fishes (organs of sound production & electric organs). 12. Reproduction in fishes 13. Development in fishes 14. Endocrine glands  <b>Internal Test 1</b>
<b>APRIL</b>	<b>Unit-IV</b> 15. Adaptation: 15.1 Colouration 15.2 Deep sea fishes 15.3 Hill stream fishes 16. Larvivorous fishes 17. Exotic fishes 18. Fish products and by-products 19. Setting and maintenance of an aquarium <b>Seminar</b>



**M. Sc. IV Semester**  
**Zoology**  
**Paper-IV**  
**AQUACULTURE AND FISHERIES**

<b>MONTH</b>	<b>PROPOSED PLAN</b>
<b>JANUARY</b>	<b>Unit-I</b> 1. General characteristics, classification, evolution and phylogeny of the following: Placoderms Elasmobranchs Holocephali Dipnoi. Teleostomi.
<b>FEBRUARY</b>	<b>Unit-II</b> 2. Fish culture in fresh water Physicochemical condition of water and its effect on fishes. Construction and maintenance of fish farm, management of ponds Fresh water fish breeding (dry and wet bundh breeding, induced breeding) Stocking and transport of fish seed and brood fish. Intensive culture of air breathing fishes. Fish cum paddy culture.  <b>Internal Test 1</b>
<b>MARCH</b>	<b>Unit-III</b> 3. Composite fish culture 4. Integrated fish farming 5. Sewage fisheries 6. Prawn fishery 7. Inland fisheries 8. Marine fisheries  <b>Internal Test 2</b>
<b>APRIL</b>	<b>Unit-IV</b> 9. Fish diseases 9.1 Viral diseases 9.2 Bacterial and protozoan diseases 9.3 Helminth parasites of fishes 9.4 Prophylaxis and treatment of fish diseases  <b>Seminar</b>

**Govt. D.B. Girls P.G. Autonomous College , Raipur (C.G.)**  
**Proposed Teaching Plan For the Session 2016-17**  
**M.Com. Part - I Semester**

Month	Managerial Economics	Advanced Accounting	Management Accounting	Statistical Analysis	Corporate Legal Framework
July	<p>UNIT-1 Nature and Scope of Managerial, Economics: Objective of a firm; Economics theory and managerial theory; Managerial economist's role and responsibilities.</p> <p>UNIT-2 Fundamental economic concepts-incremental principle, opportunity cost principle, discounting principle. equi-marginal principle.</p>	<p>UNIT-1 Accounting for issue, Forfeited and redemption of shares and debentures.</p> <p>UNIT-2 Final accounts and financial statements of companies.</p>	<p>UNIT 1 Introduction of Accounting: Management accounting as a area accounting; Objectives, nature and scope of management accounting, techniques of management accounting, difference between financial accounting, cost accounting and management accounting, Management accounting and managerial decisions; Management accountant's position, role and responsibilities.</p>	<p>UNIT-1 Statistics - Definitions, Characteristics, Scope and Nature, Functions, limitations, Distrust and misuse importance &amp; Statistical Investigations, Classification &amp; Tabulation,</p> <p>UNIT-2 Data Sources: Primary and Secondary, Primary data collection techniques, Schedule, Questionnaire and interview &amp; Sources' of Secondary data.</p>	<p>UNIT-1 The Companies Act, 1956 (Relevant Provisions) : Definition, types of companies Memorandum of association; Articles of association; Prospectus; Share capital and membership.</p>
August	<p>UNIT-3 Demand Analysis: Individual and Market demand functions Law of demand; determinants of demand; Elasticity of demand-its meaning and importance, Price elasticity; income elasticity and cross elasticity; Using elasticity 'in managerial decisions.</p>	<p>UNIT-3 Accounting issues relative to amalgamation and reconstruction of companies.</p>	<p>UNIT-2 Accounting Plan and Responsibility Centers: Meaning and significance of responsibility accounting; Responsibility centers-cost centre, profit centre and investment centre, Problems in transfer pricing, Objectives and determinates of responsibility centers.</p>	<p>UNIT-3 Dispersion, Co-efficient of variance and skewness, correlation - Karl-Pearsons and spearman's ranking method and Regression analysis, Two variables case.</p>	<p>UNIT-2 Meetings and resolutions - Company management; Managerial remuneration; Winding up and dissolution of companies.</p>

September	UNIT-4 Theory of consumer Choice: Cardinal utility approach, indifference approach, revealed preference and theory of consumer choice under risk; Demand estimation for major consumer durable and non-durable products; Demand forecasting tech. technique.	UNIT-4 Accounting for holding and subsidiary companies.	UNIT-3 Budgeting. Definition of Budget; Essentials of budgeting; Types of budgets functional, master etc. .Fixed and flexible budget, Budgetary control, Zero-base budgeting; Performance budgeting. UNIT-4 Standard Costing and Variance Analysis:, Standard costing as a control technique; Setting of standards and their revision; Variance analysis- meaning and importance; Kinds of variances and their uses-material, labour and overhead variances; Disposal: of variances ; Relevance of variance analysis to budgeting and standard costing.	UNIT-4 Probability Theory: Probability classical, relative and subjective probability, Addition and multiplication probability models - Conditional probability and Baye's Theorem.	UNIT-3 The Negotiable Instruments Act, 1881 - Definition, types of negotiable instruments; Negotiation; Holder and holder in due course; payment in due course;  UNIT-4 Endorsement and crossing of cheque; Presentation of negotiable instruments.
October	UNIT-5 Production Theory: Production function- production with one and two variable inputs, Stages of production; Economics of scale; Estimation of production function.	UNIT-5 Accounts relating to Liquidation of companies.	UNIT-5 Marginal Costing: Concept of marginal cost; Marginal costing and absorption, costing, Marginal costing versus direct, costing; Cost-volume- profit analysis.	UNIT-5 Probability Distributions - Binomial, Poisson and Normal Distributions, Their characteristics and applications.	UNIT-5 Legal Environment for Security Markets: SEBI Act. 1992- organisation and objectives of SEBI.
November	Seminar And Internal Examination				
December	Semester Examination				

**Govt. D.B. Girls P.G. Autonomous College , Raipur (C.G.)**  
**Proposed Teaching Plan For the Session 2016-17**  
**M.Com. Part - II Semester**

Month	Business Economics	Advanced Accounting	Accounting For Managerial Decision	Advanced Statistics	Business Law
January	UNIT-I Cost Theory and Estimation, economic value analysis, Short and long run cost function s- their nature, shape and inter-relationship; Law of variable proportions;-Law of returns to scale.	UNIT-1 Accounts of General Insurance Companies. UNIT-2 Accounts of Banking Companies.	UNIT-I Break-even-analysis; Assumptions and practical applications of break- even-analysis; Decisions regarding sales-mix, make or buy decisions and discontinuation of a product line etc.	UNIT-1 Statistical Decision Theory: Decision environment, Expected profit under uncertainty and assigning probabilities and utility theory.	UNIT-I SEBI Act-1992: Organisation and objectives of SEBI, Functions and Role of SEB Rights and Power of SEBI. UNIT-II MRTP Act 1969: Monopolistic Trade Practice Meaning, essentials, Restrictive Trade Practices - Meaning, Unfair trade practice, MRTP commission offences and Penalties.
February	UNIT-II Price Determination under Different Market Conditions: Characteristics of different market structures; Price determination and firm's equilibrium in short-run and long-run under perfect competition, monopolistic competition, oligopoly and monopoly,	UNIT-3 Accounts of Public Utility concerns: Double Accounts System.	UNIT-2 Analyzing financial Statements: Method, objects and ratio analysis.  UNIT-3 Cash flow analysis and Fund flow analysis.	UNIT-2 Statistical Estimations. and Testory: Point and interval estimation of population mean, proportion and variance Statistical Testing - Hypothesis and Errors, Sample size – Large and Small Sampling test Z tests, T Tests & F Tests..	UNIT-III Consumer Protection Act 1986: Needs of Act, Rights of consumers, Objectives of Act., Grievance redressal Machinery, District Forum, State Commission, National Commission.

March	UNIT-III Pricing Practices: Methods of price determination in practice, pricing of multiple products; price discrimination; International price discrimination and dumping; Transfer pricing.	Accounts of Public Utility concerns: Double Accounts System.	UNIT-4 Contemporary Issues in Management Accounting: Value chain analysis; Activity bases costing, Quality costing, Target and life cycle costing.	UNIT-3 Association of Attributes: Two Attributes, consistency of data, measurement of Association of Attributes - Percentage method, Co-efficient of Association, Comparison of Actual and (youle method) Expected frequency's & illusory Association.	UNIT-IV FEMA Act 1999: Objectives; Regulation and Management of FEMA, Penalties Appeal.
April	UNIT-IV Business Cycles: Nature and phases of la business .cycle; Theories of business cycles psychological, profit, monetary, innovation, cobweb, Samuelson and Hicks theories. UNIT-V Inflation: Definition, Characteristics and types; Inflation in terms of demand- pull and cost-push factors; Effects of inflation.	UNIT-4 Royalty accounts.  UNIT-5 Investment accounts.	UNIT-5 Reporting to Management: Objectives of reporting, reporting needs at different managerial levels; Types of ,reports," modes of reporting; reporting at different levels of management.	UNIT-4 Statistical Quality Control: Causes of Variations in quality characteristics, Quality Control charts-purpose and logic, Process under control and out of control, warning limits, control charts for attributes-fraction defectives and number of defects, Acceptance sampling. UNIT-5 Interpolation and Extrapolation - Parabolic Binomial, Newton and long rages method.	UNIT-V W.T.O.: Brief History of WTO, Objectives and Functions, Organisation, W.T.O. and India, Regional groupings, anti-dumping duties and other NTBs, Doha declaration , Dispute settlement system, TRIP, TRIMS and GATS.
May	Seminar And Internal Examination				
June	Semester Examination				

**Govt. D.B. Girls P.G. Autonomous College , Raipur (C.G.)**  
**Proposed Teaching Plan For the Session 2016-17**  
**M.Com. Part - III Semester**

Month	Management Concept	Organizational Behaviour	Advanced Cost Accounting	Income Tax Law and Accounts	Tax Planning and Management
July	Unit – I Schools of Management Thought : Scientific, process, human behaviour and social system school; Decision theory school; Quantitative and system school; Contingency theory of management; Functions of a manager.	Unit – I Organizational Behaviour : concept and significance ; Relationship between management and organizational behaviour; Emergence and ethical perspective; Attitudes; Perception; Learning; Personality; Transactional analysis.	Unit – I Introduction – Cost Analysis, concepts and classification, Materials control– Techniques of Materials control. Unit – II Labour cost – Computation and control, Overheads – Accounting and Control.	Unit – I Law relating to Income tax :Brief study of the main provisions of the Indian Income Tax Act. Important definitions. Income exempted from tax, Residence and Tax liability. Unit – II Calculation of taxable income under the head :Salary and House property.	Unit – I Calculation of taxable Income and tax of Firm and Companies.  Unit – II Return of Income, Provisional Regular, Expert and emergency assessment, Re-opening of assessment.
August	Unit – II Managerial Functions : Planning - concept, significance, types; Organizing - concept, principles of authority, theories, types of organizations, authority, responsibility, power, delegation, decentralization;  Unit – III Staffing; Directing; Coordinating; Control - nature, process, and techniques.	Unit – II Leadership : Concept; Leadership styles; Theories - trait theory, behavioural theory, Fielder's contingency theory; Harsey and Blanchard's situational theory; Managerial grid; Likert's four systems of leadership. Unit – III Organizational Conflict: Dynamics and management; Sources, patterns, levels, and types of conflict; Traditional and modern approaches to conflict; Functional and dysfunctional organizational conflicts; Resolution of conflict.	Unit – III Job, Batch, Contract Costing and operating costing.	Unit – III Depreciation and Development allowance, Calculation of taxable Income under the head :Business and Profession, capital gains, income from other sources.	Unit – III Concept of tax Planning; Tax avoidance and tax evasions; Tax planning with reference of location, nature and form of organization of new business.

September	Unit – IV Motivation : Process of motivation; Theories of motivation – need hierarchy theory, theory X and theory Y, two factor theory, Alderfer's ERG theory, McClelland's learned need theory, Victor Vroom's expectancy theory, Stacy Adams equity theory.	Unit – IV Interpersonal and Organizational Communication : Concept of two-way communication; Communication process; Barriers to effective communication; Types of organizational communication; Improving communication; Transactional analysis in communication.	Unit –IV Process Costing, Joint products & By – products costing. Uniform costing and Estimate costing.	Unit – IV Set off and carry forward of losses, Deduction from gross total Income Calculation of taxable Income and tax of an individual, and Hindu undivided Families.	Unit – IV Tax planning to capital structure, decision dividend policy ; Inter corporate dividends and bonus shares.
October	Unit – V Group Dynamics and Team Development : Group dynamics -Definition and importance, types of groups, group formation, group development, group composition, group performance factors; Principle-cantered approach to team development.	Unit – V Organizational Development: Concept; Need for change, resistance to change; Theories of planned change; Organizational diagnosis; Organizational Development intervention.	Unit – V Budgetary control – Importance of budgets in accounting. Nature of budgetary control, Organization for budgetary control preparation of fixed and variable budgets. Cash Budget, Production and sales Budget	Unit – V Appeals & Revisions Reference of High Court and Supreme court, offences & penalties, Income tax authorities.	Unit – V Preparation of income tax returns, Computation of Income tax, Tax deduction at source; Advance payment of tax.
November	Seminar And Internal Examination				
December	Semester Examination				

**Govt. D.B. Girls P.G. Autonomous College , Raipur (C.G.)**  
**Proposed Teaching Plan For the Session 2016-17**  
**M.Com. Part - IV Semester**

Month	Financial Management	Personnel Management	Production management	Strategic Management	Project
January	Unit – I Financial Management: Meaning, nature and scope of finance; Finance functions - investment, financing and dividend decisions. Capital Budgeting : Nature of investment decisions; Investment evaluation criteria - net present value, internal rate of return, profitability index, payback period, accounting rate of return; NPV and IRR comparison; Capital rationing; Risk analysis in capital budgeting.	Unit – I Concept, Definition, Importance & Objectives of Personnel Management, Historical Development of Personnel Management, Nature, scope planning, Philosophy and Principles of personnel Management and its relation with behavioural sciences.	Unit – I Fundamentals of production management, Nature, Scope, Functions; Problems, Production and Productivity organizing for production. Types of manufacturing systems.	Unit – I Concept of Strategy :Defining strategy, levels at which strategy operates; Approaches to strategic decision making; Mission and purpose, objectives and goals; Strategic business unit (SBU);Functional level strategies. Environmental Analysis and Diagnosis :Concept of environment and its components; Environment scanning and appraisal; Organisational appraisal; Strategic advantage analysis and diagnosis, SWOT analysis.	
February	Unit – II Cost of Capital :Meaning and significance of cost of capital; Calculation of cost of debt, preference capital, equity capital and retained earnings; Combined cost of capital (weighted); Cost of equity and CAPM. Unit – III Operating and Financial Leverage: Measurement of leverages; Effects of operating and financial leverage on profit; Analysing alternate financial plans; Combined financial and operating leverage. Capital structure Theories: Traditional and M.M. hypotheses -without taxes and with taxes; Determining	Unit – II Personnel policies, programmes & procedures. Personnel Department; Personnel Functions, Position of personnel Department & Organization of Personnel Management.	Unit – II Production planning, Objectives, Factors affecting Production Planning. Planning future activities, forecasting. Qualitative & Quantitative forecasting Methods, long range forecasts, project planning method Process planning System. Techniques of process planning: Assembly charts, process charts make or buy analysis. Unit – III Process design, Factors affecting design Relation with types of manufacturing plant location and layout : Factors affecting location. Types of plans layout, evaluation of alternative layout.	Unit – II Strategy Formulation and Choice of Alternatives : Strategies - modernisation, diversification, integration, Merger, take-over and joint strategies; Turnaround, divestment and liquidation strategies; Process of strategic choice-industry, competitor and SWOT analysis; Factors affecting strategic choice; Generic competitive strategies- cost leadership, differentiation focus, value chain analysis, benchmarking, service blue printing.	



March	Unit – IV Dividend Policies : Issues in dividend decisions, Walter’s model, Gordon’s model, M-M hypothesis, dividend and uncertainty, relevance of dividend; Dividend policy in practice; Forms of dividends; Stability in dividend policy; Corporate dividend Behaviour.	Unit – III Man power planning Recruitment and Selection, Training & Development of Employees & Executives. Promotion, Demotion, Transfers, Absenteeism & Turnover.  Unit – IV Performance Appraisal and Merit Routing, Discipline. Job-evaluation Wage & Salary Administration, plans of Remuneration & Financial Rewards/Incentive payments.	Unit – IV Work measurement and work standards Uses of work measurement data procedure for work measurement. Direct work measurement. Time study, activity sampling, Indirect work measurement: Synthetic timing, Predetermined motion time system, analytical estimating. Methods analysis: Areas of application, Approaches to methods design, Tools for methods analysis, work simplification programme.	Unit – III Functional Strategies: Marketing, production / operations and R & D plans and policies. Functional Strategies: Personnel and financial plans and policies. Unit – IV Strategy Implementation: Inter-relationship between formulation and implementation; Issues in strategy implementation; Resource allocation. Strategy and Structure : Structural considerations, structures for strategies; Organisational design	
April	Unit – V Management of Working Capital : Meaning, significance and types of working capital; Calculating operating cycle period and estimation of working capital requirements; Financing of working capital and norms of bank finance; Sources of working capital; Factoring services; Various committee reports on bank finance ;Dimensions of working capital management. Management of cash, and inventory.	Unit – V Employees Fringe Benefits & Services - Safety, Health & Security programme and welfare. Motivation and Moral.	Unit – V Production Control – Control functions: Routing Loading, Scheduling, and Dispatching, Follow up. Quality control & inspection: place of quality control in modern enterprises, organization of quality control. Statistical quality control, inspection location for inspection, inspection procedure and records, Inspection devices.	Unit – V Strategy Evaluation: Overview of strategic evaluation; Strategic control; Techniques of strategic evaluation and control. Techniques of strategic evaluation and control.	
May	Seminar And Internal Examination				
June	Semester Examination				