



# V.V.GIRI GOVT. KALASALA

DUMPAGADAPA, W.G.Dist., (via) AKIVIDU - 534 235

Accredited by NAAC @ B+

College Code : **AKNU323**



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## COURSE OUTCOMES (COs)

### Department of Telugu

#### SEMESTER - 1:

**CO1:** Students recognize linguistics, the inevitability of language, the importance of language.

**CO2:** It is known that language is important for the personal life of man and the strength of the social system.

**CO3:** Recognizing the importance of non-word sentences, which are key elements of Telugu language, - can improve language skills through written expression.

**CO4:** To teach the theoretical subjects related to the structures of literary processes such as ancient poetry as well as modern poetry, story, essay, etc. and to develop writing skills among them

**CO5:** To improve Telugu usage and to get employment opportunity in print and electronic media

#### SEMESTER - 2:

**CO1:** Recognize the antiquity and uniqueness of ancient Telugu literature.

**CO2:** They can acquire knowledge about the language and culture of the ancient period and their political affairs during the epic period.

**CO3:** Understand the religious conditions and linguistic features of the time of Shiva poets.

**CO4:** Understanding the religious conditions of the Tikkana period.

**CO5:** Able to acquire knowledge of Eranna sukta vaichitri and taste for different styles of epic poetry. One can identify the poetic characteristics of Srinath's time.

### **SEMESTER - 3:**

**CO1: Gain an understanding of contemporary modern literary forms such as text poetry, short story, novel, drama and criticism.**

**CO2: Gain knowledge about the objectives of Bhava kavitha and Abhyudaya Kavitha.**

**CO3: Gain social consciousness through literature.**

**CO4: Enhance the creativity skills of the students through literature**

**CO5: Gain knowledge about social, cultural and political consciousness through modern Telugu fiction.**

## Department of English

### **SEMESTER - 1: A Course in Communication and Soft Skills**

- CO1: Use grammar effectively in writing and speaking.**
- CO2: Demonstrate the use of good vocabulary**
- CO3: Demonstrate an understanding of writing skills**
- CO4: Acquire ability to use Soft Skills in professional and daily life.**
- CO5: Confidently use the tools of communication skills**

### **SEMESTER - 2: A Course in Reading and Writing Skills**

- CO1: Use reading skills effectively**
- CO2: Comprehend, Interpret different types of texts and analyze what is being read**
- CO3: Build up a repository of active vocabulary**
- CO4: Use good writing strategies and Write well for any purpose**
- CO5: Improve writing skills independently for future need**

### **SEMESTER - 3: A Course in Conversational Skills**

- CO1: Speak fluently in English**
- CO2: Participate confidently in any social interaction**
- CO3: Face any professional discourse**
- CO4: Demonstrate critical thinking**
- CO5: Enhance conversational skills by observing the professional interviews**

## **Department of History**

**B.A Semester I / I year: Ancient Indian History & Culture (From Indus valley to 13th CAD) :**

**CO-1: To Identify and understand the sources of various periods to reconstruct Indian History.**

**CO-2: Compare and contrast various stages of progress from IVC to Vedic age and analyze the Jain, Buddhist and Vedic faiths.**

**CO-3: Increase the awareness and appreciation of Transition from Territorial States to Emergence of Empires.**

**CO-4: Analyze the emergence of Mouryan and Gupta Empires during the classical age of India.**

**CO-5: Evaluate the key facets of ancient society, polity and culture in South India—the feudalism, and the rise of technology and commerce.**

**CO-6: Critically examine the nature of monarchic rule and develop a comprehensive understanding of cultural evolution during the ancient period.**

**B.A, Semester II / I year: Medieval Indian History & Culture (From 1206 to 1764 A.D):**

**CO-1: Understand the socio, economic and cultural conditions of medieval India.**

**CO-2: Describe the advent of Islam in India and study the traces of political and cultural expansion of Turks & Afghans.**

**CO-3: Explain the Administration and art and architecture of Vijayanagar Rulers, Mughals.**

**CO-4: And also analyze the rise of the Marathas and the contribution of Shivaji.**

**CO-5: Evaluate the establishment of the British rule in India and understand the dangerous consequences of disunity at all levels.**

**CO-6: Analyze the emergence of composite culture in India.**

**CO-7: Visualize where places are in relation to one another through map pointing.**

**B.A, Semester III / 2 year Modern India History and culture (From 1764 -1947 A.D):**

**CO-1: Unearth the true nature of the British rule and its disastrous impact on Indian Economy and society.**

**CO-2: Gauge the disillusionment of people against the Company's rule even during the Early 19th century.**

**CO-3: Assess the causes and effects of Reformation movements and also inspire the public to overthrow inequalities of the present day society.**

**CO-4: Rise above petty parochial issues after understanding the sacrificial age of freedom struggle.**

**CO-5: Evaluate the under current of communal politics that led to India's partition and Identify the enemies of India's integrity and sovereignty.**

**CO-6: Visualize where places are in relation to one another through map pointing.**

**B.A, Semester IV / 2 year History of Andhra (From 1512-1956 AD):**

**CO-1: Interpret social and political and cultural transformation from medieval to Modern Andhra.**

**CO-2: Relate key historical developments during the medieval period occurring in coastal Andhra and Telangana regions and analyze socio-political and Economic changes under Qutub Shahi rulers.**

**CO-3: Understand gradual change ,or change in certain aspects of society in Andhra, rather than rapid or fundamental changes.**

**CO-4: Explain how the English East India Company became the most dominant Power and outline the impact of colonial policies on different aspects in Andhra.**

**CO-5: Outline the issues related to caste, women, widow remarriage, child marriage, social reforms and the laws and policies of colonial administration towards these issues.**

**CO-6: Take pride in the non-violence struggle for Indian Independence and relate the importance of peace in everyday life.**

**CO-7: Apply the knowledge of the regional history to understand the regional, Linguistic and other cultural aspirations of the present day society.**

**CO-8: Visualize where places are in relation to one another through map pointing.**

**B.A , Semester IV / 2 year History of modern World 15th& C. to 1945AD)**

**CO1: Assess and appraise the developments in art, literature, and society during the Renaissance and utilize content knowledge of the Reformation and Counter Reformation to make predictions about the evolution of Christianity in Europe and abroad.**

**CO2: Evaluate the causes for the Glorious Revolution and American Revolution and Identify the background for the evolution of the human rights movement.**

**CO3: Understand the main events of the French Revolution and its significance in the shift In European culture from Enlightenment to Romanticism.**

**CO4: Think how Russia's traditional monarchy was replaced with the world's first Communist state.**

**CO5: Know how the world wars affected people all over the world and the destruction they caused**

**CO6: Develop the intellectual curiosity and habits of thought that will lead to life-long learning and continued engagement with European history, literature, culture, languages, and current affairs and acquire advanced international and intercultural competence through course work in international studies.**

**CO7: Visualize where places are in relation to one another through map pointing.**

**B.A, Semester V/ 3 year Course 6B:Tourism and Hospitality Services(Skill Enhancement Course)**

**CO1: Understand hospitality as a career**

**CO2: Inculcate inter personal skills**

**CO3: Develop the ability for multitasking and crisis management**

**CO4: Understands the spirit of teamwork**

**B.A, Semester V/ 3 year Course 7B:Tourism Guidance and Operating Skills(Skill Enhancement Course)**

**CO1: Acquire tour guiding, operating and soft skills**

**CO2: Understand different situations under which one has to work**

**CO3: Cultivate cultural awareness and flexibility**

**CO4: Understand and apply team spirit**

**CO5: Plan and organize tour operations efficiently**

## Department of Economics

### **Sem-I** Microeconomic Analysis

**CO1: Remembers and states in a systematic way the differences between microeconomic analysis and macro economic analysis, various laws and principles of microeconomic theory under consumption.**

**CO2: Explains Various terms and concepts relating to microeconomic analysis with the help of examples of real life, Consumer's equilibrium and consumer's surplus using indifference curve analysis, various laws and principles of consumption, production, and income distribution.**

**CO3: Critically examines using data and figures various laws and principles of microeconomic analysis and market conditions, Application of the concept of demand elasticity and its relation with Average and Marginal Revenue.**

**CO4: Draws critical diagrams and graphs to explain and examine the application of various laws and principles of micro economic analysis.**

### **Sem-II** Macroeconomic Analysis

**CO1: Remembers and states in a systematic way Various concepts, definitions, laws and principles of macroeconomic theory with reference to income,employment, money, banking and finance.**

**CO2: Explains the difference between various concepts and components of national income with illustrations and methods of measuring national income various terms, concepts, laws and principles, theories relating to income, employment,consumption, investment, money, price-level and phases of trade cycles functions of commercial banks and central bank, creation and control of credit.**

**CO3: Critically examines using data and figures in order to understand the interrelationship between various components of national income. the theories of macroeconomics with reference to their assumptions,implications and applicability. Empirical evidence of Consumption and Investment Functions and factors influencing them.**

**CO4: Draws critical formulae, diagrams and graphs,consumption and investment functions; concepts of multiplier and accelerator price indices, inflation and trade cycles**

### **Sem-III Development Economics**

**CO1: Remembers and states in a systematic way Various concepts and definitions and indicators relating to economic growth and development including recent developments**

**CO2: Explains Distinction between growth and development with examples Characteristics of developing and developing economies and distinction between the two factors contributing to development, Choice of Techniques and a few important models and strategies of growth**

**CO3: Critically examines using data and figures the theoretical aspects of a few models and strategies of economic growth role and importance of various financial and other institutions in the context of India's economic development**

**CO4: Draws critical diagrams and graphs to explain the models and strategies to highlight empirical evidences to support the strategies**

### **Sem-IV (paper IV) Economic Development- India and Andhra Pradesh**

**CO1: Remembers and states in a systematic way leading issues of Indian economic development with reference to potential for growth, obstacles and policy responses**

**Objectives, outlays and achievements of economic plans and growth strategies**

**CO2: Explains Available Resources, demographic issues, general problems of poverty and unemployment and relevant policies Sector specific problems, remedial policies and their effectiveness relating to Agriculture and Industrial Sectors of Indian and AP economy and infrastructure issues of AP economy.**

**CO3: Critically examines using data and figures Leading issues of current importance relating to India and AP economy, major policies and programmes Covid- 19 and its impact on Indian economy**

**CO4: Uses official statistical data and reports including tables and graphs to explain the achievements of the Indian economy with reference to the objectives of planning and policy and make critical evaluation.**

### **Sem-IV (paper-V) Statistics Methods for Economics**

**CO1: Remembers and states in a systematic way the definitions, terms and their meaning relating to statistical methods various formulae used to measure central tendency, correlation regression and Indices**

**CO2: Explains Importance of statistics and its applications The method of classification of primary data Uses of Correlation and Regression analysis, time series and index numbers in economic analysis**

**CO3: Analyses and solves using given data and information (analysis and evaluation) different kinds of statistical problems using various principles and formulae**



relating to central tendency, correlation, regression, time series and indices to interpret data and suggest solutions to economic problems

**CO4: Draws critical diagrams and graphs Histogram, Frequency Polygon and Frequency Curve More than cumulative and less than cumulative frequency curves (Ogive) Different types of Bar diagrams Pie Diagram and its uses in economic analysis.**

### **Sem-V ( Paper-VI C ) Insurance Service**

**CO1: Explain the concept and principles of insurance service and functioning of insurance service agencies**

**CO2: Identify and analyze the opportunities related insurance services in local rural area**

**CO3: Apply the concepts and principles of insurance to build a career in Insurance services**

**CO4: Demonstrate practical skills to enable them to start an insurance service agency or earn wage employment in it.**

### **Sem-V ( Paper-VII C ) Banking and Financial Services**

**CO1: Explain the concept and essentials banking and financial services.**

**CO2: Identify and analyze the employment opportunities related to banks and other financial institutions.**

**CO3: Apply the concepts to banking and financial opportunities and formulate ideas related to them.**

**CO4: Demonstrate practical skills to enable them to get employment in Banks and other financial institutions as business correspondents or Common Service Centers or market ingagents.**

## **Department of Political Science**

### **INTRODUCTION TO POLITICAL SCIENCE :**

**CO1: Recall the previous knowledge about Political Science and understand the nature and scope, traditional and modern approaches of Political Science.**

**CO2: Understand concepts intrinsic to the study of Political Science.**

**CO3: Have solid theoretical understanding of Rights and its theories along with the basic aspects of certain political ideologies.**

**CO4: Apply the knowledge to observe the field level phenomena.**

### **BASIC ORGANS OF THE GOVERNMENT**

**CO1: Understand the Origin and Evolution of the concept of Constitutionalism and classification of Constitutions.**

**CO2: Acquaint themselves with different theories of the origin of the State.**

**CO3: Understand and analyze organs and forms of Governments along with a deep insight into the various agents involved in the political process.**

**CO4: Apply the knowledge to analyze and evaluate the existing systems.**

### **INDIAN GOVERNMENT AND POLITICS**

**CO1: Acquire knowledge about the historical background of Constitutional development in India**

**CO2: appreciate philosophical foundations and salient features of the Indian Constitution.**

**CO3: Analyze the relationship between State and individual in terms of Fundamental Rights and Directive Principles of State Policy.**

**CO4: Understand the composition of and functioning of Union Government as well as State Government**

**CO5: Acquaint themselves with the judicial system of the country and its emerging trends such as judicial reforms.**

### **INDIAN POLITICAL PROCESS**

**CO1: Know and understand the federal system of the country and some of the vital contemporary emerging issues.**

**CO2: Evaluate the electoral system of the country and to identify the areas of electoral reforms.**

**CO3: Know the constitutional base and functioning of local governments with special emphasis on 73rd & 74th Constitutional Amendment Acts.**

**CO4: Understand the dynamics of Indian politics, challenges faced and gain a sensitive comprehension to the contributing factors.**

**CO5: Apply the knowledge and critically comprehend the functioning of some of the regulatory and governance institutions AND Propose theoretical outline alternate models.**

## **WESTERN POLITICAL THOUGHT**

**CO1: Understand the fundamental contours classical, western political philosophy, basic features of medieval political thought and shift from medieval to modern era.**

**CO2: Understand the Social Contract Theory and appreciate its implications on the perception of the State in terms of its purposes and role.**

**CO3: Acquaint with the Liberal and Marxist philosophy and analyze some trends in Western Political Thought.**

**CO4: Critically analyze the evolution of western political thought.**

## Department of Commerce

Course Name	Course Code	Course Outcome	Course Outcomes
<b>Semester-I</b>			
FA	COM-1	CO1	Equip with the fundamental knowledge relating to the Accounting principles and procedures.
		CO2	Learn the methods of recording business transactions and preparing various accounts.
		CO3	Know about the maintenance of subsidiary books, preparation of Bank Reconciliation statements and Trial Balance.
		CO4	Prepare various bills of exchange.
		CO5	Prepare final accounts of the trading organization.
BOM	COM-2	CO1	Learn about profit earning creation of customers and regular innovations.
		CO2	Develop a set of personal business career options and apply business ethics and social responsibility.
		CO3	Understand the various steps in the formation of a company.
		CO4	Understand the basic concepts and functions of Business Organisation as well as Management.
		CO5	Know about the financial aspects in a business.
BE	COM-3	CO1	Describe the nature of economics in dealing with the issues of scarcity of resources.
		CO2	Analyze demand and supply analysis and its impact on Consumer behaviour.
		CO3	know about the measurements and methods in demand elasticity.
		CO4	Evaluate the factors such as production and costs affecting firms behaviour.
		CO5	Apply economics models for managerial problems.

**SEMESTER-II**

<b>Course Name</b>	<b>Course Code</b>	<b>Course Outcome</b>	<b>Course Outcomes</b>
<b>FA-II</b>	<b>COM-6</b>	<b>CO1</b>	<b>Learn different methods of providing for Depreciation.</b>
		<b>CO2</b>	<b>Know about various types of Reserves, Provisions and Accounting procedures followed by the non-profit organizations.</b>
		<b>CO3</b>	<b>Understand the concept of consignment and learn the methods of accounting treatment of various aspects of consignment.</b>
		<b>CO4</b>	<b>Acquire the knowledge relating to the accounting treatment of consignment and joint venture businesses.</b>
		<b>CO5</b>	<b>Understand about accounting treatments in non trading organizations.</b>
<b>B ECO</b>	<b>COM-7</b>	<b>CO1</b>	<b>Understand the concept of cost, nature of production and its relationship to Business operations.</b>
		<b>CO2</b>	<b>Learn the pricing and output decisions under various market structure</b>
		<b>CO3</b>	<b>Apply marginal analysis to the firm under different market conditions.</b>
		<b>CO4</b>	<b>Understand different methods for the measurement of National Income.</b>
		<b>CO5</b>	<b>Know about structural reforms in India and also about WTO.</b>
<b>B ENV</b>	<b>COM-8</b>	<b>CO1</b>	<b>Understand the different environments in the business climate.</b>
		<b>CO2</b>	<b>Know about balanced regional development.</b>
		<b>CO3</b>	<b>Learn about NITI AYOJ and NDC 5 year plans.</b>
		<b>CO4</b>	<b>Know the effects of government policy on the economic environment.</b>
		<b>CO5</b>	<b>Acquire in-depth knowledge about the legal environment.</b>

**SEMESTER-III**

<b>Course Name</b>	<b>Course Code</b>	<b>Course Outcome</b>	<b>Course Outcomes</b>
<b>CA</b>	<b>COM-11</b>	<b>CO1</b>	<b>Know about the valuation of shares and good will.ed by the companies.</b>
		<b>CO2</b>	<b>Know about the issue and redemption of debentures.</b>
		<b>CO3</b>	<b>Know about the valuation of shares and good will.ed by the companies.</b>
		<b>CO4</b>	<b>Prepare final accounts of the companies using computers.</b>
		<b>CO5</b>	<b>Understand various provisions of the Companies Act 2013.</b>
<b>BS</b>	<b>COM-12</b>	<b>CO1</b>	<b>Describe and discuss the key terminology, concepts, tools and techniques used in business statistical analysis.</b>
		<b>CO2</b>	<b>Use statistical, graphical and algebraic techniques wherever relevant.</b>
		<b>CO3</b>	<b>Deal with numerical and quantitative issues, measures of dispersion and Skewness.</b>
		<b>CO4</b>	<b>Learn about measures of relations.</b>
		<b>CO5</b>	<b>Understand statistical applications in Economics and management.</b>
<b>BTP</b>	<b>COM-13</b>	<b>CO1</b>	<b>Understand the basic concepts of Banks and functions of Commercial Banks</b>
		<b>CO2</b>	<b>Demonstrate an awareness of law and practice in Banking Context.</b>
		<b>CO3</b>	<b>Critically examine the current scenario of the Indian Banking System.</b>
		<b>CO4</b>	<b>Formulate the procedure for better service to the customers from various Banking innovations.</b>
		<b>CO5</b>	<b>Formulate the procedure for better service to the customers from various Banking innovations.</b>

**SEMESTER-IV**

<b>Course Name</b>	<b>Course Code</b>	<b>Course Outcome</b>	<b>Course Outcomes</b>
<b>ASO</b>	<b>COM-16</b>	<b>CO1</b>	<b>Acquire the knowledge relating to the accounting procedures followed by various non-trading/service organizations.</b>
		<b>CO2</b>	<b>Know about electricity supply companies, Bank accounts and Insurance companies.</b>
		<b>CO3</b>	<b>Understand various bank accounts.</b>
		<b>CO4</b>	<b>Learn about preparation of insurance accounts.</b>
		<b>CO5</b>	<b>Learn about preparation of general insurance. accounts.</b>
<b>BL</b>	<b>COM-17</b>	<b>CO1</b>	<b>Understand the legal environment of business and laws of business.</b>
		<b>CO2</b>	<b>Identify the fundamental legal principles behind contractual agreements.</b>
		<b>CO3</b>	<b>Understand the legal and fiscal structure of different parties.</b>
		<b>CO4</b>	<b>Know about the sale of goods Act 1930.</b>
		<b>CO5</b>	<b>Highlight the security aspects in the present cyber -crime scenario.</b>
<b>IT</b>	<b>COM-18</b>	<b>CO1</b>	<b>Acquire the knowledge regarding Income Tax.</b>
		<b>CO2</b>	<b>Compute the income under the head “Income from salary”,</b>
		<b>CO3</b>	<b>Compute the , “Income from house property” .</b>
		<b>CO4</b>	<b>Compute “Income from house property” and “Capital Gains”.</b>
		<b>CO5</b>	<b>Learn the concept of Deductions U/S 80.</b>
<b>SEMESTER-V</b>			
<b>Course Name</b>	<b>Course Code</b>	<b>Course Outcome</b>	<b>Course Outcomes</b>
<b>CG</b>	<b>COM-19</b>	<b>CO1</b>	<b>Know about the evolution and internal structure of the earth</b>
		<b>CO2</b>	<b>Know agriculture: crops,non-food crops.</b>
		<b>CO3</b>	<b>Analyze the uses of forests and effects of deforestation.</b>
		<b>CO4</b>	<b>Acquire the knowledge relating to natural resources like water, minerals, mines and agricultural products.</b>

		CO5	Learn water resources and the rivers interlinking ways.
CA	COM-20	CO1	Acquire conceptual knowledge relating to accounting of various costs.
		CO2	Get good training in finding the cost of products using different methods of costing.
		CO3	Know about various labour incentive methods.
		CO4	Know the method of recording income and expenditure relating to production of goods and services.
		CO5	Learn about cost ascertainment, cost control and cost reduction.
CB	COM-21	CO1	Acquire the comprehensive knowledge relating to the functions and operations of Central Banks.
		CO2	Know about the role of the Reserve Bank of India in developing the Indian economy.
		CO3	Analyze the impact of the Central Bank's monetary policy on the financial system and the overall economy.
		CO4	Learn credit control measures by RBI during inflation & deflation.
		CO5	Analyze the effects of liberalization and globalization in RBI and changes in norms according to conditions.
GST	COM-22	CO1	Learn the concepts Indirect tax and GST from the pre-GST period to post GST period.
		CO2	Understand the importance of GST in the Indian and global economy and its contribution to the economic development.
		CO3	Know about the principles of Taxation, objects & impacts of taxes, shifting and incidence processes of indirect taxes in the market oriented economy.
		CO4	Know about taxation system in India
		CO5	Become tax consultants.
RFC	COM-23	CO1	Equip with the basic knowledge relating to farming in rural areas.
		CO2	Know about the farm credit agencies like SHG etc.,
		CO3	Know about the farm credit. Ex-KCC
		CO4	Learn PACS, NABARD,RRBs etc.
		CO5	Analyze farm credit analysis with 3 R's , 3 C's of credit.



**SEMESTER-VI**

<b>Course Name</b>	<b>Course Code</b>	<b>Course Outcome</b>	<b>Course Outcomes</b>
<b>MFS</b>	<b>COM-25</b>	<b>CO1</b>	<b>Equip with the knowledge relating to the service elements and service management.</b>
		<b>CO2</b>	<b>Learn about constructing service environment, customer loyalty.</b>
		<b>CO3</b>	<b>Analyze the pricing and promotion strategies under marketing services.</b>
		<b>CO4</b>	<b>Understand channels of service, cost and revenue management.</b>
		<b>CO5</b>	<b>Know about Insurance Services in India.</b>
<b>FS</b>	<b>COM-26</b>	<b>CO1</b>	<b>Acquire the knowledge about various financial services provided by the Government.</b>
		<b>CO2</b>	<b>Knowing about merchant banking services, demat services.</b>
		<b>CO3</b>	<b>Learn legal aspects of leasing and hire purchase.</b>
		<b>CO4</b>	<b>Understand credit rating agencies like CRISIL &amp; CARE.</b>
		<b>CO5</b>	<b>Understand the Indian Financial System</b>
<b>MAR</b>	<b>COM-27</b>	<b>CO1</b>	<b>Develop an idea about marketing and the marketing environment.</b>
		<b>CO2</b>	<b>Understand the consumer behaviour and market segmentation process.</b>
		<b>CO3</b>	<b>Comprehend the product life cycle and product line decisions.</b>
		<b>CO4</b>	<b>Formulate new pricing strategies</b>
		<b>CO5</b>	<b>Learn promotion mix , distribution channels, global marketing etc.,</b>
<b>AUD</b>	<b>COM-28</b>	<b>CO1</b>	<b>Equip with the conceptual knowledge relating to audit procedures and practices.</b>
		<b>CO2</b>	<b>Know about different types of audits and rights and duties of Auditors.</b>
		<b>CO3</b>	<b>Learn the steps to be taken by an auditor using an audit note book for successful audit.</b>
		<b>CO4</b>	<b>Understand the vouching of cash and trading transactions.</b>
		<b>CO5</b>	<b>Learn how to examine the books of accounts and express an opinion on financial statements.</b>

## **Department of Mathematics**

**Title of the Paper: DIFFERENTIAL EQUATIONS**

**Semester:I (60Hr)**

**CO1. Solve linear differential equations**

**CO2. Convert non exact homogeneous equations to exact differential equations by using integrating factors**

**CO3. Know the methods of finding solutions of differential equations of the first order but not of the first Degree.**

**CO4. Solve higher-order linear differential equations, both homogeneous and non homogeneous, with constant coefficients.**

**CO5. Understand the concept and apply appropriate methods for solving differential equations**

**Title of the Paper: THREE DIMENSIONAL ANALYTICAL SOLID GEOMETRY**

**Semester:II (60Hr)**

**CO1. get the knowledge of planes..**

**CO2. basic idea of lines, sphere and cones**

**CO3. understand the properties of planes, lines, spheres and cones**

**CO4. express the problems geometrically and then to get the solution.**

**Title of the Paper: ABSTRACT ALGEBRA**

**SEMESTER –III (60Hr)**

**CO1. acquire the basic knowledge and structure of groups, subgroups and cyclic groups.**

**CO2. get the significance of the notation of a normal subgroups**

**CO3. get the behavior of permutations and operations on them**

**CO4. study the homomorphisms and isomorphisms with applications.**

**CO5. Understand the ring theory concepts with the help of knowledge in group theory and to prove the theorems.**

**CO6. Understand the applications of ring theory in various fields**

**Title of the Paper: REAL ANALYSIS**

**SEMESTER -IV(60Hr)**

**CO1. get clear idea about the real numbers and real valued functions**

**CO2. obtain the skills of analyzing the concepts and applying appropriate methods for testing**

**CO3. convergence of a sequence/ series. Test the continuity and differentiability and Riemann integration of a function.**

**CO4. Know the geometrical interpretation of mean value theorems.**

**Title of the Paper: : LINEAR ALGEBRA                      SEMESTER IV (60Hr)**

**CO1: understand the concepts of vector spaces, subspaces, bases, dimension and their properties**

**CO2: understand the concepts of linear transformations and their properties**

**CO3: apply Cayley- Hamilton theorem to problems for finding the inverse of a matrix and higher**

**CO4: powers of matrices without using routine methods Learn the properties of inner product spaces and determine orthogonality in inner product spaces**

**Title of the Paper: Numerical Methods                      Semester: V(60Hr)**

**CO1: understand the subject of various numerical methods that are used to obtain approximate solutions**

**CO2: Understand various finite difference concepts and interpolation methods**

**CO3: . Work out numerical differentiation and integration whenever and wherever routine methods are not applicable.**

**CO4: . Find numerical solutions of ordinary differential equations by using various numerical methods.**

**CO5: Analyze and evaluate the accuracy of numerical methods.**

**Title of the Paper: Mathematical Special Functions                      Semester:V(60Hr)**

**CO1: Students after successful completion of the course will be able to: 1. Understand the Beta and Gamma functions, their properties and relation between these two functions, understand the orthogonal properties of Chebyshev polynomials and recurrence relations.**

**CO2: Find power series solutions of ordinary differential equations**

**CO3: solve Hermite equation and write the Hermite Polynomial of order (degree) n, also find the generating function for Hermite Polynomials, study the orthogonal properties of Hermite Polynomials and recurrence relations**

**CO4: Solve Legendre equation and write the Legendre equation of the first kind, also find the generating function for Legendre Polynomials, understand the orthogonal properties of Legendre Polynomials.**

**CO5: Solve Bessel equation and write the Bessel equation of first kind of order n, also find the generating function for Bessel function understand the orthogonal properties of Bessel function**

## Department of Physics

### SEMESTER - 1:

**CO1: Understand the physical significance of gradient of scalar field, divergence and curl of vector field. Applications of Gauss's & Green's theorems.**

**CO2: Understand the working of multi stage rockets, collisions in 2D & 3D. Concept of Rutherford's scattering experiment and its importance**

**CO3: Knowing and applying Euler equations. Analysis of precessional velocity of symmetric top.**

**CO4: Basic understanding of central force with examples. Verification of Kepler's laws, application to Planetary system**

**CO5: Understanding the concepts of relativity, frame of reference, Lorentz transformations, length contraction and time dilation**

### SEMESTER -2:

**CO1: Analyzing the Simple Harmonic Motion, characteristics. Determination of acceleration due to gravity "g" by Compound pendulum & rigidity modulus by Torsion pendulum.**

**CO2: Apply the concept of damping to determine logarithmic decrement & quality factor. Differential equation of forced harmonic oscillator and its equation and applied in daily life.**

**CO3: Analyze the periodic functions like square wave, Sawtooth wave by using Fourier's theorem.**

**CO4: Figure out the formation of harmonics and overtones in a stretched strings**

**CO5:**

**Basic understanding of Ultrasonics, different production methods and applications**

### SEMESTER - 3:

**CO1: The students will be able to understand the concept of aberrations, their importance in cameras and other lens systems.**

**CO2: Understand the phenomenon of interference of light and its formation in Lloyd's Single mirror due to division of wavefront and Newton's rings and Michelson interferometer due to division of amplitude.**

**CO3: distinguish between Fresnel's diffraction and Fraunhofer diffraction and observe the diffraction patterns in the case of single slit and diffraction grating**

**CO4: Explain the various methods of production of plane, circularly, and elliptically polarized light and their detection and the concept of optical activity.**

**CO5: Understand the basic principle of laser, the working of He-Ne Laser and Ruby laser and their applications in different fields.**

#### **SEMESTER - 4:**

**CO1: Understand the concept of low temperature Physics and its applications.**

**CO2: Gain knowledge on the basic concepts of thermodynamics, the first and the second law of thermodynamics**

**CO3: Knowledge of diffraction and basic understanding of Holography**

**CO4: Understanding the polarization and different methods of conversion of unpolarized light into polarized light. Basics of Fiber optics.**

**CO5: Examine the nature of black body radiation and the basic theories.**

#### **SEMESTER -5: (PAPER VA)**

**CO1: Understand Gauss's law and its applications of electrostatics & basics of dielectrics.**

**CO2: Analyze the electric & magnetic fields and understand the Biot savart's law and apply it to long straight wire & solenoid.**

**CO3: Review the basic laws of electricity and magnetism, derivation of Maxwell equations and analyze the production of electromagnetic waves**

**CO4: Understand the basic concepts of electronics, working of p-n junction diodes and analysis of transistor configurations.**

**CO5: Understand the technology process of Ocean, thermal and tidal energy conversion**

#### **SEMESTER - 5 (PAPER VB)**

**CO1: Understand the evolution of atomic model spectra of different elements, the effect of electric and magnetic field on the spectra.**

**CO2: Understand the properties of the nucleus and the models associated with it.**

**CO3: The theories behind the alpha and beta decays. Different detectors used to detect alpha, beta & gamma radiations.**

**CO4: Basic understanding of the crystal structure and also experimental study of it.**

**CO5: Understanding the basic theories of superconductivity.**

## Department of Chemistry

**Title of the Paper: Inorganic & Physical Chemistry**

**Semester: I (60 Hr)**

- CO1. Understand the basic concepts of p-block elements.**
- CO2. To compare the periodic properties of d and f block elements and explain the bonding and structures of metal carbonyls.**
- CO3. To understand the properties and structure of Solid state.**
- CO4. To understand the properties of gaseous and liquid states.**
- CO5. To explain the properties of Solutions.**

### **Practical-I ANALYSIS OF SALT MIXTURE**

- CO1. Understand the basic concepts of qualitative analysis of inorganic mixture**
- CO2. Use glassware, equipment and chemicals and follow experimental procedures in the laboratory**
- CO3. Apply the concepts of common ion effect, solubility product and concepts related to qualitative analysis.**

**Title of the Paper: ORGANIC AND GENERAL CHEMISTRY**

**Semester: II**

- CO1. Understand and explain the differential behaviour of organic compounds based on fundamental concepts learnt.**
- CO2. Formulate the mechanism of organic reactions by recalling and correlating the fundamental properties of the reactants involved.**
- CO3. Learn and identify many organic reaction mechanisms including Free Radical Substitution, Electrophilic Addition and Electrophilic Aromatic Substitution.**
- CO4. Understand the concepts of absorption and adsorption, colloidal chemistry and nature of Chemical Bonding.**
- CO5. Correlate and describe the stereo chemical properties of organic compounds and reactions.**

### **Practical Paper – II: Volumetric Analysis**

- CO1. Use glassware, equipment and chemicals and follow experimental procedures in the laboratory**
- CO2. Understand and explain the volumetric analysis based on fundamental concepts learnt in ionic Equilibria**
- CO3. Learn and identify the concepts of standard solutions, primary and secondary standards**

**CO4: Facilitate the learner to make solutions of various molar concentrations. This may include: The concept of the mole; Converting moles to grams; Converting grams to moles; Defining concentration; Dilution of Solutions; Making different molar concentrations.**

**Title of the Paper: Organic Chemistry & Spectroscopy**

**Semester: III (60 Hr)**

**CO1: Remember the preparations, properties and reactions of haloalkanes, halo arenes and oxygen containing functional groups.**

**CO2: Understand preparation, properties and reactions of carbonyl compounds.**

**CO3: Apply preparation methods for carboxylic acids and their derivatives.**

**CO4: Analyze various molecules and polyatomic molecules using different spectroscopy methods.**

**CO5: Evaluate the functional groups of different organic compounds. Create applications of spectroscopy for various organic molecules.**

**Practical title: Basics of Organic Preparations and IR Spectroscopy**

**CO1: How to calculate limiting reagent, theoretical yield, and percent yield**

**CO2: How to perform common laboratory techniques including reflux, distillation, recrystallization, vacuum filtration.**

**CO3: How to critically evaluate data collected to determine the identity, purity, and percent yield of products and to summarize findings in writing in a clear and concise manner.**

**Title of the Paper: INORGANIC, ORGANIC AND PHYSICAL CHEMISTRY**

**Semester: IV**

**CO1: To learn about applications of Organometallic Compounds**

**CO2: To learn about classification of Carbohydrates**

**CO3: To understand the concept of Amino acids and proteins**

**CO4: To learn about the laws of absorption of light energy by molecules and the subsequent photochemical reactions.**

**CO5: To understand the concept of quantum efficiency and mechanisms of photochemical reactions**

**Practical Paper – IV: Organic Qualitative analysis**

**CO1: Use glassware, equipment and chemicals and follow experimental procedures in the laboratory.**

**CO2: Determine melting and boiling points of organic compounds**

**CO3: Understand the application of concepts of different organic reactions studied in theory as part of organic chemistry.**

**Title of the Paper: INORGANIC & PHYSICAL CHEMISTRY**

**Semester: IV**

**CO1: Understand concepts of Coordination Chemistry and Inorganic Reaction Mechanism.**

**CO2: Understand concepts of Phase Rule and Phase diagram.**

**CO3: Understand concepts of boundary conditions and quantization, probability distribution, most probable values, uncertainty and expectation value**

**CO4: Application of quantization to spectroscopy.**

**CO5: Various types of spectra and their use in structure determination.**

**Practical Paper – V: Conductometric and Potentiometric Titrimetry**

**CO1: Use glassware, equipment and chemicals and follow experimental procedures in the laboratory**

**CO2: Apply concepts of electrochemistry in experiments.**

**CO3: Be familiar with electro analytical methods and techniques in analytical chemistry which study an analyte by measuring the potential ( volts) and/or current ( amperes) in an electrochemical cell containing the analyte.**

**Title of the Paper: Analytical Methods in Chemistry-I**

**Semester: V**

**CO1. Remember the basic concepts of .quantitative analysis data treatment, separation techniques and analysis of water.**

**CO2. Acquire knowledge on the concepts quantitative analysis data treatment, separation techniques and analysis of water.**

**CO3. Apply the conceptual knowledge gained in the areas of quantitative analysis data treatment, separation techniques and analysis of water in the chosen jobrole.**

**CO4. Analyse that how far the quantitative methods, data treatment methods separation techniques and Analysis of water**

**Analytical methods in Chemistry-1-PRACTICAL**

**CO1. Estimate Iron (II) using standard Potassium dichromate solution**

**CO2. Learn the procedure for the estimation of total hardness of water**

**CO3. Demonstrate the determination of chloride using Mohr's method**

**CO4. Acquire skills in the operation and calibration of pH meter**



**Title of the Paper: Analytical Methods in Chemistry-2**

**Semester: V**

**CO1. Remember the basic concepts of Chromatography like paper, TLC, Column, GC & HPLC.**

**CO2. Understand the significance of paper, TLC, Column, GC & HPLC in separation and identification of compounds.**

**CO3. Apply the conceptual knowledge gained in the techniques of chromatography in separating and identifying the chemical compounds as and when required.**

**CO4. Analyze that how far one chromatographic technique is much use full in separation and identification of compounds over the other chromatographic technique.**

**PRACTICAL :Chromatography**

**CO1. Perform the separation of a given dye mixture using TLC**

**CO2. Learn the preparation of TLC plates**

**CO3. Demonstrate the separation of mixture of amino acids using paper chromatography**

**CO4. Acquire skills in using column chromatography for the separation of dye mixture**

## Department of Computer Science

**Title of the Paper: PROBLEM SOLVING IN C**

**Semester:I(60Hr)**

**CO1. Understand the evolution and functionality of a Digital Computer**

**CO2. Apply logical skills to analyze a given problem**

**CO3. Develop an algorithm for solving a given problem.**

**CO4. Understand 'C' language constructs like Iterative statements, Array Processing, Pointers**

**CO5. Apply 'C' language constructs to the algorithms to write a 'C' language program**

**Title of the Paper: DATA STRUCTURES USING C**

**Semester:II**

**CO1. Understand available Data Structures for data storage and processing**

**CO2 Comprehend Data Structure and their real-time applications - Stack,Queue, Linked List, Trees and Graph**

**CO3. Choose a suitable Data Structures for an application.**

**CO4: Develop ability to implement different Sorting and Search methods.**

**CO5: Design and develop programs using various data structures**

**CO6: Implement the applications of algorithms for sorting, pattern matching etc**

**Title of the Paper: DATABASE MANAGEMENT SYSTEM**

**Semester:III(60Hr)**

**CO1: Gain knowledge of Database and DBMS**

**CO2: Understand the fundamental concepts of DBMS with special emphasis on relational data model.**

**CO3: Demonstrate an understanding of normalization theory and apply such knowledge to the normalization of a database**

**CO4: Model database using ER Diagrams and design database schemas based on the model.**

**CO5: Create a small database using SQL.**

**CO6: Store, Retrieve data in database.**

**Title of the Paper: OBJECT ORIENTED PROGRAMMING USING JAVA**

**Semester:IV(60hrs)**

**CO1: Understand the benefits of a well-structured program**

**CO2: Understand different computer programming paradigms**

**CO3: Understand underlying principles of Object-Oriented Programming in Java**

**CO4: Develop problem-solving and programming skills using OOP concepts**

**CO5: Develop the ability to solve real-world problems through software development in high-level programming language like Java**

**Title of the Paper: OPERATING SYSTEMS**

**Semester:IV(60hrs)**

**CO1: Know Computer system resources and the role of operating system in resource management with algorithms**

**CO2: Understand Operating System Architectural design and its services.**

**CO3: Gain knowledge of various types of operating systems including Unix and Android**

**CO4: Understand various process management concepts including scheduling, synchronization, and deadlocks**

**CO5: Have a basic knowledge about multithreading.**

**CO6: Comprehend different approaches for memory management.**

**CO7: Understand and identify potential threats to operating systems and the security features designed to guard against them.**

**CO8: Specify objectives of modern operating systems and describe how operating systems have evolved over time.**

**Title of the Paper: Web Interface Designing Technologies**

**Semester V**

**CO1. Understand and appreciate the web architecture and services.**

**CO2. Gain knowledge about various components of a website.**

**CO3. Demonstrate skills regarding creation of a static website and an interface to dynamic website.**

**CO4. Learn how to install word press and gain the knowledge of installing various plugins to use in their websites.**

**Title of the Paper: Web Applications Development using PHP& MYSQL**

**Semester:V(60hrs)**

**CO1. Write simple programs in PHP**

**CO2 Understand how to use regular expressions, handle exceptions, and validate data using PHP**

**CO3. Apply In-Built functions and Create User defined functions in PHP programming.**

**CO4. Write PHP scripts to handle HTML forms.**

**CO5. Write programs to create dynamic and interactive web based applications using PHP and MYSQL**