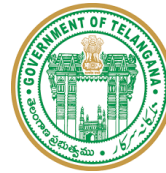




**J.V.R GOVERNMENT COLLEGE, SATHUPALLY, KHAMMAM Dist. TS.**  
(Affiliated to Kakatiya University, Warangal)

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## **PROGRAMME OUTCOMES OF COURSES OFFERED**

The learning outcomes of the undergraduate programmes offered at this college reflect disciplinary knowledge, generic skills and competencies applicable in different academic fields of study.

Upon completion of the programmes:

1. B.A.
2. B.Com.
3. B.Sc. Life Sciences
4. B.Sc. Physical sciences

**PO1: CRITICAL THINKING:** Students develop the trait of critical thinking. They relate actions to words. They acquire ability to express thoughts and ideas effectively in writing and orally. They also describe and define critical concepts in their discipline.

**PO2: EFFECTIVE COMMUNICATION:** Acquire ability to express thoughts and ideas effectively in writing and orally. They will be able to communicate the ideas in lucid manner. They also will be able to use socially accepted language either in regional language, national language Hindi or in English.

**PO3: SCIENTIFIC ATTITUDE:** They develop scientific attitude towards the issues. Hence, they analyze the critical things for getting solution to the problems they encounter in their profession or real life situations.

**PO4: EFFECTIVE CITIZENSHIP:** Demonstrate empathetic social concern and equity centered national development and the ability to act with an informed awareness of issues and participate in civic life through volunteering.

**PO5: ETHICAL VALUES:** Imbibe ethical values that are already part of our culture and relate them to their professions. They strongly adhere to the principles and etiquettes laid down in our social behavior.

**PO6: SOCIAL BEHAVIOUR:** They maintain healthy relationships with others for better outcome of the required results in their particular area of profession.

**PO7: TEAM WORK:** They can understand the value of team work. They also work with good acquired soft skills for the betterment of their professionalism.

**PO8: LIFE LONG LEARNING:** Acquire the ability to engage in independent and life-long learning in the broadest contexts.

### PROGRAMME OUTCOMES OF BA

S.No	The students who complete <b>B.A.</b> course successfully will be able to:
PO1	Study various subjects under this programme BA enables the students to acquire life skills for a better human being.
PO2	Develop language competence and expected to be proficient in oral as well as written communication
PO3	Inculcate sense of understanding about the society.
PO4	Inculcate a sense of national pride and respect for the nation by studying varied cultures, customs, literature, architecture, constitution, life skills, music society etc.
PO5	understand the international relations and its importance for building better society.
PO6	Imbibe leadership qualities, able administrators, extension workers etc
PO7	Understand the features, components and tenets of geography of the world.
PO8	Understand the basic concepts of polity and politics how make society.
PO9	know the features of good citizenship and responsibilities towards the nation.
PO10	Understand the structure of our constitution and its essence. They will know the structure of governments and governance.

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S.No	<b>The students who complete B.Com course successfully will be able to:</b>
PO1	Develop wide range of business, legal, stastical, financial and entrepreneurial expertise.
PO2	Apply managerial skills, abilities and knowledge in a business organization and be capable of maintaining business accounts.
PO3	Enhance the capability of decision making at personal and personal levels.
PO4	Understand the industry related managerial accounting skills for better professional opportunities.
PO5	Understand how to operate business successfully in a continuously changing environment.
PO6	Develop entrepreneurship spirit and participate effectively in social, commercial issues ultimately leading to national development.
PO7	Understand international trade agreements.
PO8	Study stock market and its business transactions.
PO9	understand self employment opportunities for their better careers.
PO10	Set up business units for self employment to lead honorable and competitive life.

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S.No	The students who complete B.Sc course successfully will be able to:
PO1	Acquire theoretical as well as practical knowledge in their disciplines.
PO2	Understand the basis of science for coherent understanding of the academic field to pursue multi and inter disciplinary
PO3	plan and execute experiments or investigations, analyze and intrepret data information collected using appropriate methods.
PO4	Develop scientific temper and reasoning ability.
PO5	Think critically, follow innovations and developments in science and technology.
PO6	Inculcate research temper and become self employed in organic agriculture, mushroom cultivation, medicinal plant products and plant propagation etc. the basis of science for coherent understanding of the academic field to pursue multi and inter disciplinary
PO7	Understand the features of zoo-geography of the world.
PO8	Know the basics of the life cycles of different living beings on this earth.
PO9	Understand the eco system and how to protect it.
PO10	Demonstrate, solve and an understanding of major concepts in all disciplines of chemistry.
PO11	To inculcate the scientific temperament in the students and outside the scientific community.
PO12	Solve the problem and also think methodically, independently and draw a logical conclusion.
PO13	Will be able pursue research in respective science stream
PO14	Scientific temper will be developed in Students
PO15	Students will become employable; they will be eligible for career opportunities in Industry, or will be able to opt for entrepreneurship
PO16	Capability of demonstrating comprehensive knowledge of mathematics and understanding of one or more disciplines which form a part of an undergraduate programme of study.
PO17	Learn to tolerate diverse ideas and different points of view
PO18	Be initiated into the basics of research
PO19	Apply the basic principles of Physics to the events occurring around us and also in the world.

## **PROGRAMME SPECIFIC OUTCOMES**

### **DEPARTMENT OF ENGLISH PROGRAMME SPECIFIC OUTCOMES**

<b>S.No</b>	The 14 -credit, four-semester course seeks to enhance the English language skills of undergraduate student by
<b>PSO-1</b>	Strengthening their grammar and vocabulary
<b>PSO-2.</b>	Improving their reading and writing skills
<b>PSO-3.</b>	Enhancing their listening their speaking skills
<b>PSO-4.</b>	Imparting to them needful life skills and human values
<b>PSO-5</b>	Encouraging them to think creatively and critically
<b>PSO-6</b>	Exposing to them a variety of content-rich texts
<b>PSO-7</b>	Expanding their emotional intelligence
<b>PSO-8</b>	Developing gender sensitivity among them

### **DEPARTMENT OF TELUGU PROGRAMME SPECIFIC OUTCOMES**

<b>S.No</b>	<b>TELUGU</b>
<b>PSO-1</b>	Fostering literary, cultural and creative values
<b>PSO-2.</b>	Improve writing skills like poems, stories, novels, etc

### **DEPARTMENT OF HINDI PROGRAMME SPECIFIC OUTCOMES**

<b>S.No</b>	<b>HINDI</b>
<b>PSO-1</b>	To create interest in Hindi literature
<b>PSO-2.</b>	To ensure the students for original thinking / thought decision making
<b>PSO-3.</b>	Understanding the basic concepts and subject of Hindi its origin
<b>PSO-4.</b>	To know about Hindi literature its roots cause perspectives and methods
<b>PSO-5</b>	To imbibe the effective Hindi communication in both areas.(oral and writing)
<b>PSO-6</b>	Making an attempt in different areas theory such as vocabulary and vice versa
<b>PSO-7</b>	To provide advanced knowledge of different theories of Hindi language and literature
<b>PSO-8</b>	Make students eligible and apply various job notifications other part of India
<b>PSO-9</b>	Evaluating the concept of Hindi from past to present and making the society more closely

**DEPARTMENT OF ECONOMICS**  
**PROGRAM SPECIFIC OUTCOMES**

S.No	B.A ECONOMICS
<b>PSO 1.</b>	The students after completion of B.A. course with Economics will develop understanding the Basic Concepts of Economics and Principles in Economics.
<b>PSO 2.</b>	The students will know about Consumer's behavior, Demand analysis, Cardinal and Ordinal Utility Analysis, Indifference Curves Analysis.
<b>PSO 3.</b>	The Students will know about the Theories of Production, Iso-quants, and Law of Returns to Scale, Law of Variable Proportion.
<b>PSO 4.</b>	The Student will familiarize with various concepts of Costs and Revenues and understand the relationship between average and marginal costs Average Revenue and Marginal Revenues.
<b>PSO 5.</b>	The Economics Graduate will know about the concepts of Markets, Types of Markets, Features of Perfect Competition, Monopoly, Monopolistic Competition, Oligopoly, Duopoly Markets, and Price and Equilibrium Determination in various markets. Analysis of Kinked Demand Curve, and Cournot's version of the duopoly.
<b>PSO 6.</b>	Economics Students will explain the concepts of Circular Flow of Income and National Income concepts like GNP, NNP, GDP, NDP, PCI, and Disposable Income, Components of National Income, and Methods of Measurement of National Income.
<b>PSO 7.</b>	Economic graduates are familiar with the knowledge of Classical and Modern Theories of Employment, Interest, Investment, Types of Investments, Determinants of level of Investment, Marginal Efficiency of Capital, and Marginal Efficiency of Investment.
<b>PSO 8.</b>	Economic graduates have knowledge of Supply of Money and Demand for Money, Fisher's and Cambridge Versions of Money, and Keynes's theory of Money and Prices.
<b>PSO 9.</b>	Economic graduates will explain the concepts of Inflation, Types, Causes, Effects of Inflation, Measures to Control Inflation, the concept of Philips Curve, Deflation, Stagflation, and Trade Cycles, causes, and Phases of Trade Cycles.
<b>PSO 10.</b>	The Economics Student can collect the Primary and Secondary data, Process the data, compute the data by using Statistical tool like Mean, Median, Mode, Geometric Mean, and Harmonic Mean, Measures of Dispersion, Range, Quartile Deviation, Mean Deviation, Standard Deviation and Coefficient of Variation, and present the data with graphs and diagrams.
<b>PSO 11.</b>	Economic graduate are familiar with the concepts of Correlation, Karl Pearson's Correlation Co-efficient, Spearman's Rank Correlation, and Regression, Index Numbers, Construction of Index Numbers, Types of Index Numbers: Laspayer, Paasche, and Fisher methods of Index Numbers and calculates Index Numbers. Time Series Analysis,

<b>PSO 12.</b>	Economics students in general will be able to understand the Structure of the Indian Economy, the composition of National Income and Employment, the importance of natural resources, Population and their implications for Indian Economy, Planning concepts and objectives of Five Year Plans and NITI Aayog.
<b>PSO 13.</b>	The Economics Graduate will assess the importance of agriculture; Trends in Agricultural Production and Productivity, Land Reforms, Green Revolution, Agriculture Finance, Agricultural Marketing, Agricultural Price Policy and Food Security in India.
<b>PSO 14.</b>	The Economics students are familiar with the concepts of Income Inequalities, Poverty, and Unemployment: Magnitude, Types, Causes, Consequences, and Poverty Alleviation and Employment Generation Programs in India.
<b>PSO 15.</b>	The economics students have knowledge of Indian Industry, growth, Importance and Problems of Indian Industry, Industrial Policy Resolutions of 1948, 1956, and 1991, and NITI Aayog.
<b>PSO 16.</b>	The Economic Students will understand the role of Service Sector in Indian Economy and understand the issues relating to infrastructural development like Transport, Banking, Insurance, and Information Technology and Communication and Foreign Direct Investment (FDI).
<b>PSO 17.</b>	The Economic Student will understand the Telangana Economy in terms of Human Resources, Demographic Features, Occupational and Sectoral Distribution of Population, Education and Health and Regional Imbalances: Causes, Consequences and Remedial Measures.
<b>PSO 18.</b>	The Economic Student will understand the GSDP, Development Trends in GSDP and Per Capita Income, Sectoral Contribution to GSDP, Poverty and Unemployment in Telangana, Trends, Causes and Consequences. Poverty Alleviation & Employment Generation Programmes in Telangana.
<b>PSO 19.</b>	The Economic Student will understand the importance of Agriculture in Telangana Economy, Production, Productivity of Agriculture, Determinants of Agricultural Productivity, Cropping Pattern, Land reforms. Irrigation Sources and Trends, Mission Kakatiya, Agricultural Credit and Rural Indebtedness.
<b>PSO 20.</b>	The Economic graduate will know the structure of Industrial Sector in Telangana, Growth and Pattern of Industrial Development, Industrial policy of Telangana, Special Economic Zones (SEZ)–Role of Small Scale Industries in the Telangana, Problems & Remedial Measures of Small Scale Industries: Issue of Sickness– Industrial Finance in Telangana.
<b>PSO 21.</b>	The Economic graduate understand the importance of Service Sector in the Telangana, Infrastructure like Transport, Energy, Communication and Information Technology (IT) and Information Technology enabled servers (ITES).



## DEPARTMENT OF HISTORY

### PROGRAMME SPECIFIC OUTCOMES

S.No	B.A HISTORY
PSO-1.	Understand the basic concepts like National Income, Poverty, Employment, International trade. Fiscal and monetary policies, Economic conditions of various historic periods, Satavahana's Agriculture economy from ancient period to modern times and their role in administration for formulating relevant policies for effective utilization of resources and tackling various problems like unemployment and improved standard of living
PSO 2.	To analyze the economic importance of various sectors like agriculture, industry and service in different dynasties that influence administration like Chola administration (Local self Government), Mauryan administration (Urban Governance) and British administration
PSO 3.	To understand the impact of agriculture and foreign trade in economic development that attract foreign invaders towards India, resulting in changed administration in due course up to and after independence
PSO 4.	To provide life skills required for gainful employment by using domain knowledge such as Economic Services, Historians/ History writing and bureaucrats at various levels

## DEPARTMENT OF COMPUTER APPLICATIONS

### PROGRAMME SPECIFIC OUTCOMES

S.No	B.A COMPUTER APPLICATIONS
PSO-1	Students will be prepared to make their career in the IT segments like Software services.
PSO-2.	Business Process Management (BPM/BPO).
PSO-3.	Students can also appear for various competitive exams including IT officers in various organizations and can pursue for higher studies.
PSO-4.	Attain the ability to design and develop Computer Applications, evaluate and recognize potential skills and provide innovative solutions.

**DEPARTMENT OF POLITICAL SCIENCE  
PROGRAMME SPECIFIC OUTCOMES**

S.No	B.A.POLITICAL SCIENCE
<b>PSO-1</b>	Understanding the nature and developments in national and international politics
<b>PSO-2.</b>	Analyzing the Indian constitutional provisions, major legislations and reforms.
<b>PSO-3.</b>	Critical evaluation of social, economic and political variables for a proper understanding of the plurality of Indian society
<b>PSO-4.</b>	Critical evaluation of social, economic and political variables for a proper understanding of the plurality of Indian society
<b>PSO-5</b>	Building overall consciousness regarding national political history, international relations and present Indian and Western political thinkers.
<b>PSO-6</b>	Encouraging a comprehensive, comparative understanding of specific world constitutions such as USA, China, Russia.
<b>PSO-7</b>	Developing knowledge of administrative studies with special reference to Indian administrative structures and practices.
<b>PSO-8</b>	Examining India's foreign relations with her neighbours and great powers.

**DEPARTMENT OF PUBLIC ADMINISTRATION  
PROGRAMME SPECIFIC OUTCOMES**

S.No	B.A PUBLIC ADMINISTRATION
<b>PSO-1</b>	Understand the basic concepts of public administration
<b>PSO-2.</b>	General concept of public administration and bureaucracy
<b>PSO-3.</b>	Understanding knowledge of human resource management
<b>PSO-4.</b>	Understanding knowledge of public budgeting and finance
<b>PSO-5</b>	Understanding knowledge of policy analysis
<b>PSO-6</b>	Understanding knowledge of information management and technology
<b>PSO-7</b>	Understanding how administrative responsibility, accountability, efficiency, diversity, and teamwork within the context of government and non-profit public service programs
<b>PSO-8</b>	Have the research skills to critically analyze public administration issues and analyze managerial issues and policy recommendations.
<b>PSO-9</b>	Have the ability to communicate and interact productively with a diverse and changing workforce and citizenry
<b>PSO-10</b>	Be able to develop/formulate a public policy response to social or economic problem

**DEPARTMENT OF COMMERCE  
PROGRAMME SPECIFIC OUTCOMES**

S.No	COMMERCE
<b>PSO-1</b>	Learners venture into managerial positions, Accounting areas, Banking sectors, Auditing, Company secretary ship, Teaching, Professor, Stock Agents, Government Employment etc
<b>PSO-2.</b>	Enables learners to prove themselves in different Professional examinations like CA, CS, ICWA, CMA and other diploma courses such as Tally ERP 9 and MS –Excel
<b>PSO-3.</b>	Gain through systematic and subject skills within various disciplines of commerce' business, business law, business statistics, banking, accounting tax ,finance cost accounting, entrepreneurship, auditing, strategic management and marketing
<b>PSO-4.</b>	Learners further move towards research in the field of commerce.
<b>PSO-5</b>	Enables students to demonstrate Progressive learning of various tax issues and tax forms related to individuals and businessmen and setting up their own business start up.
<b>PSO-6</b>	The vast syllabi covers various fields covers various fields of commerce and accountancy which helps students grasp practical and theoretical knowledge

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**DEPARTMENT OF COMMERCE - COMPUTER APPLICATIONS  
PROGRAMME SPECIFIC OUTCOMES**

S.No	COMPUTER APPLICATIONS
<b>PSO-1</b>	Integrate information technology and application of computers to business and office
<b>PSO-2.</b>	Practical Knowledge in Computerized Accounting and Programming languages
<b>PSO-3.</b>	Understand the relevance of Data Base Management system in Business
<b>PSO-4.</b>	Development of quantitative aptitude, presentation and analytical skills of the learner, ability to work in teams by strengthening group dynamics
<b>PSO-5</b>	Acquire awareness of organizational culture and job nature

## DEPARTMENT OF BOTANY

### PROGRAMME SPECIFIC OUTCOMES

S.No	BOTANY
PSO-1	Understand the nature of microbial diversity and basic concepts of lower group of plants, classifications of Algae, Fungi, Bryophyta, Pteridophyta
PSO-2.	Understand morphology and reproductive parts of Gymnosperms, basic concepts of Plant Taxonomy, Plant identification and systematic study of families
PSO-3.	Basic concepts of Ecology, Plants and environment and succession in plants
PSO-4.	Understand Plant Anatomy and Embryology of Angiosperms
PSO-5	Students will have Critical understanding of Cell Biology and Plant metabolisms and Plant regulations
PSO-6	Gain complete knowledge of morphology, nutritional value and economic importance of vegetables, cereals, millets, beverages, edible oils and other plant products
PSO-7	Acquire fundamentals of Tissue culture and Biotechnology its applications and hands on experience
PSO-8	Students will have strong fundamentals on modern and classical aspects of Botany
PSO-9	Understand knowledge of Botany is an essential pre-requisite for the pursuit of many applied sciences
PSO-10	To facilitate students for taking up and shaping a successful career in Botany

## DEPARTMENT OF ZOOLOGY

### PROGRAMME SPECIFIC OUTCOMES

S.No	ZOOLOGY
PSO-1	Understand the nature and basic concepts of cell structure and functions, genetics, taxonomy, animal physiology, ecology, applied zoology and aquatic Biology
PSO-2.	Analyses the relationships among animals, plants and various kind of microbes
PSO-3.	Understand the applications of biological sciences in Apiculture, Aquaculture, Agriculture like dairy farming, Vermiculture, Poultry and Medicine
PSO-4.	Gains knowledge about research methodologies, effective communication and skills of problem scientific thinking and solving methods
PSO-5	Perform procedures as per laboratory standards in the areas of Taxonomy, animal Physiology, Biochemistry, Ecology, Cell biology, Genetics, Applied Zoology, Clinical science, tools and techniques of Zoology, Toxicology, parazoology, Nematology, Entomology, Sericulture, Fish biology, Immunology, Animal biotechnology and research methodology
PSO-6	Contributes the knowledge for Human & other animal welfare

**DEPARTMENT OF DAIRY SCIENCE  
PROGRAMME SPECIFIC OUTCOMES**

<b>S.No</b>	<b>DAIRY SCIENCE</b>
<b>PSO-1</b>	Gain the knowledge about the dairy science theoretically and practically
<b>PSO-2.</b>	Identify the different types of breeds and their characters.
<b>PSO-3.</b>	Use the modern methods for milking, maintenance, fodder storage, and milk storage etc.
<b>PSO-4.</b>	Understand the good laboratory practice and safety
<b>PSO-5</b>	Develop research orientated skills
<b>PSO-6</b>	Make aware and handle the sophisticated instruments/ equipments

**DEPARTMENT OF CHEMISTRY  
PROGRAMME SPECIFIC OUTCOMES**

<b>S.No</b>	<b>CHEMISTRY</b>
<b>PSO-1</b>	Be versatile in classical laboratory techniques, use instrumental methods for analysis as well as synthesis and follow standardized procedures and regulations in handling and disposal of chemicals.
<b>PSO-2.</b>	Demonstrate, solve and an understanding of major concepts in all disciplines of chemistry
<b>PSO-3.</b>	Solve the problem and also think methodically, independently and draw a logical conclusion
<b>PSO-4.</b>	Employ critical thinking and the scientific knowledge to design, carry out, record and analyze the results of chemical reactions
<b>PSO-5</b>	Create an awareness of the impact of chemistry on the environment, society, and development outside the scientific community
<b>PSO-6</b>	Find out the green route for chemical reaction for sustainable development
<b>PSO-7</b>	To inculcate the scientific temperament in the students and outside the scientific community
<b>PSO-8</b>	Use modern techniques, decent equipments and Chemistry softwares
<b>PSO-9</b>	Be able to integrate knowledge gained in Chemistry to General education courses
<b>PSO-10</b>	Be able to access, scout and use the chemical literature and also able to work as a member of a team.

**DEPARTMENT OF MATHEMATICS  
PROGRAMME SPECIFIC OUTCOMES**

<b>S.No</b>	<b>MATHEMATICS</b>
<b>PSO-1</b>	Think in a critical manner
<b>PSO-2.</b>	Familiarize the students with suitable tools of mathematical analysis to handle issues and problems in mathematics and related sciences
<b>PSO-3.</b>	Acquire good knowledge and understanding to solve specific theoretical and applied problems in advanced areas of mathematics
<b>PSO-4.</b>	Provide students/learners sufficient knowledge and skills enabling them to undertake further studies in mathematics and its allied areas on multiple disciplines concerned with mathematics
<b>PSO-5</b>	Encourage the students to develop a range of generic skills helpful in Employment and social activities

**DEPARTMENT OF PHYSICS  
PROGRAMME SPECIFIC OUTCOMES**

<b>S.No</b>	<b>PHYSICS</b>
<b>PSO-1</b>	Gain the knowledge of Physics through theory and practicals.
<b>PSO-2.</b>	Understand good laboratory practices and safety
<b>PSO-3.</b>	Develop research oriented skills.
<b>PSO-4.</b>	Make aware and handle the sophisticated instruments/equipments

**DEPARTMENT OF COMPUTER SCIENCE  
PROGRAMME SPECIFIC OUTCOMES**

<b>S.No</b>	<b>COMPUTER SCIENCE</b>
<b>PSO-1</b>	On the completion of the B. SC. Computer Science, the students are able to
<b>PSO-2.</b>	Understand the knowledge of operating system in realty
<b>PSO-3.</b>	Study data structure and its principles
<b>PSO-4.</b>	Learn different programming languages as per the requirements software fields
<b>PSO-5.</b>	Study and understand the importance of cyber security
<b>PSO-6.</b>	study the different roles and the features of operating system



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## **COURSE OUTCOMES**

### **ENGLISH**

#### **Course outcomes:**

- CO1: Strengthening their grammar and vocabulary
- CO2: Improving their reading and writing skills
- CO3: Enhancing their listening their speaking skills
- CO4: Imparting to them needful life skills and human values
- CO5: Encouraging them to think creatively and critically
- CO6: Exposing to them a variety of content-rich texts
- CO7: Expanding their emotional intelligence

### **TELUGU**

#### **Course Outcomes**

- CO1: Learn about ancient vocabulary and literary topics.
- CO2: Raising awareness on Telangana language and dialect.
- CO3: Differentiate the methods of old and modern poetry thoughts.
- CO4: Understand the culture of old society and comparison with modern trends.
- CO5: Students can learn all the grammar skills.
- CO6: Students can understand the values of literature and culture.
- CO7: Students will be able to improve comprehensive skills as well as advanced grammar skills.
- CO8: Broaden a deep understanding of folklore.
- CO9: Extensive reading skills are developed through the study of novel literature.
- CO10: Concentration and retention are enhanced by reading ancient verse.
- CO11: Raising more awareness about the inextricable link between society and literature.
- CO12: Students will be able to make use of grammar skills when the face competitive exams.

CO13 : Differentiate the old and modern poetry thoughts.

CO14: Understand the culture of old society comparison with modern trends.

CO15: Students can improve prosody and grammar skills.

CO16: Students will be able to use the language skills they have learned in a different fields

## **HINDI**

### **Course outcomes**

CO1: concept of Hindi Gadyakivivdhvidhaaen.

CO2: To know more about Hindi language useful contribution in different level.

CO3: Diffentiation and departure points of Hindi Gadyakivivdhvidhaaen like essays and stories memories , biography ,travel ,ekanki.

CO4: closely together there by making the society and nation more storanger and unity .

CO5: They know about the greatness of Indian culture and they know how to protect environment .

CO6: They know about the development of moral qualities .

CO7: They know about the human emotions and natural beauty sensation.

CO8: understanding the nature scope of origin of Hindi literature.

## **ECONOMICS**

### **Course outcomes**

#### **SEMESTER I**

#### **CORE 1: MICRO ECONOMICS.**

CO1: This course is designed to provide a basic understanding of micro economic concepts, like Methods of Cardinal and Ordinal Utility Analysis, Consumer Behaviour through Indifferent Curves Analysis.

CO2: This course intended to familiarize with short-run and long production functions and theories, properties of iso-product curves, properties of Cobb-Douglass Production Function.

CO3: To understand the cost concepts like Accounting Costs, Explicit Costs, Real Costs, Opportunity Costs, Marginal Cost, Average Cost, Short-run and Long-run costs like Fixed Costs, Variable Costs, and Total Cost, the relationship between average and marginal costs and derivation of Long run cost curves.



CO4: The course also aims to understand the Revenue concepts like Total Revenue, Average Revenue, and Marginal Revenue, The relationship between Average Revenue and Marginal Revenue.

CO5: The course enables the students to understand the concepts of Markets, Types of Markets, Features of Perfect Competition, Monopoly, Monopolistic Competition, Oligopoly, Duopoly Markets, and Price and Equilibrium Determination in various markets. Analysis of Kinked Demand Curve, and Cournot's version of the duopoly.

## **SEMESTER II**

### **CORE 2: MACRO ECONOMICS**

CO1: This course is designed to make the students aware of the theoretical aspects of Macro Economic concepts like Circular Flow of Income, Nation Income Concepts, Components, and Methods of Measurement of National Income.

CO2: This course intends to familiarize the students with the Classical and Keynesian Theories of Income and Employment.

CO3: The course also aims to enable the students to understand concepts of Investment, Types of Investments, Determinants of level of Investment, Marginal Efficiency of Capital, and Marginal Efficiency of Investment, Neo-classical and Keynesian Theories of Interest.

CO4: The course familiarizes the students with the concepts of Supply of Money and Demand for Money, Fisher's and Cambridge Versions of Money, and Keynes's theory of Money and Prices.

CO5: This course enables the students to understand the concepts of Inflation, Types, Causes, Effects of Inflation, measures to control Inflation, the concept of Philips Curve, Deflation and Stagflation, and Concepts of Trade Cycles, causes, and Phases of Trade Cycles.

## **SEMESTER III**

### **CORE 3: STATISTICS FOR ECONOMICS.**

CO1: The objective of this course is to equip the students with Primary Concepts Statistics, and mathematical tools for analyzing economic problems.

CO2: This course will help the students to understand the issues regarding types of data, method of data collection, processing organizing, graphical and diagrammatical . presentation of data, and the issues involved therein.

CO3: This course enables the student to describe the concept of Measures of Central Tendency, Calculate and apply of Mean, Median, Mode, Geometric Mean, and Harmonic Mean, Measures of Dispersion, Range, Quartile Deviation, Mean

Deviation, Standard Deviation and Coefficient of Variation.

CO4: This course enables the student to explain the concept of correlation, Types of Correlation, Karl Pearson's Correlation Co-efficient, Spearman's Rank Correlation, and Regression and Uses of Regression.

CO5: This course describes the Meaning and Uses of Index Numbers, Aspects and Difficulties in the construction of Index Numbers, Types of Index Numbers: Laspayer, Paasche, and Fisher methods of Index Numbers and calculates Index Numbers.

CO6: This course enables the student to understand the meaning and uses of Time Series Analysis, Components of Time Series Analysis, and Methods of Measurements of Secular Trends.

#### **SEMESTER IV**

##### **CORE 4: INDIAN ECONOMY.**

CO1: This course helps the students to understand the Structure of the Indian Economy before independence and after independence, how the changes occurred in the composition of National Income and Employment, the importance of natural resources, Population Size, Growth, Composition, and their implications for Indian Economy.

CO2: This course enables the student to understand the importance of agriculture, Trends in Agricultural Production and Productivity, Land Reforms, Green Revolution, Agriculture Finance, Agricultural Marketing, Agricultural Price Policy and Food Security in India.

CO3: This course is designed to provide a basic understanding of Indian Industry, Trends in Industrial Production, Industrial Policy Resolutions of 1948, 1956, and 1991, Role of Public and Private Sectors, Formal and Informal Sectors in Indian Industry.

CO4: This course enables the student to impart knowledge about Evolution of Planning Commission, Failures and Demise of Planning Commission, Genesis of NITI Aayog, Structure and composition of NITI Aayog, Functions and Objectives of NITI Aayog, Difference between NITI Aayog and Planning Commission and NITI Aayog role in the strategic planning and development.

#### **SEMESTER V**

##### **CORE 5: INDIAN ECONOMY. (Old) (Discipline Specific Course)**

CO1: This course helps the students to understand the concepts of Economic Growth and Economic Development, Measures of Economic Development like GDP, GNP, PCI, PQLI and HDI, Demographic Features like Population Size, Growth, Composition, Occupational Distribution, population policy and Planning concepts and objectives of Five Year Plans and NITI Aayog.

CO1: This course enables the student to understand the concept of National Income in India, its Trends and Composition, Income Inequalities, Poverty, Unemployment: Magnitude, Types, Causes, Consequences, and Remedial Measures. Student also gets the knowledge of Poverty Alleviation and Employment Generation Programs in India.

CO3: This course enables the student to understand the nature and importance of agriculture, Trends in Agricultural Production and Productivity, Land Reforms, Green Revolution, Rural Credit, Agriculture Finance, Micro Finance, Agricultural Marketing and Pricing Policy, Crop Insurance, Agricultural Infrastructure and Food Security in India.

CO4: This course is designed to provide a basic understanding of the growth of the Indian Industry, Importance and Problems of Indian Industry, Industrial Policy Resolutions of 1948, 1956, and 1991, and NITI Aayog.

CO5: This course describes the concept, components, Trends, and Role of the Service Sector, the issues relating to infrastructural development like Transport, Banking, Insurance, and Information Technology and Communication and Foreign Direct Investment (FDI).

#### **CORE 6: ECONOMICS OF STATISTICS (Old) (Optional)**

CO1: The objective of this course is to equip the student with primary statistical techniques used in economics and understand the role of statistics in economics in analysing the economic problems.

CO2: The course enables the student to understand the Meaning of Statistics, Scope of Statistics in Economics, Methods of collection of Statistics Data, Primary and Secondary Data.

CO3: The course also enables the student to collect the Data, Analyse the Data, Classify the Data and tabulate the statistical data.

CO4: The course helps the student to understand the Diagrammatic Representation of Data through Bar Diagram, Histogram, Frequency Polygon, Frequency Curves like Ogive and Pie – Diagrams.

CO5: This course enables the student to describe the concept of Measures of Central Tendency, Calculate and apply of Mean, Median, Mode, Geometric Mean, and Harmonic Mean.

#### **SEMESTER VI**

#### **CORE 7: TELANGANA ECONOMY. (Old) (Discipline Specific Course)**

CO1: The course helps the student to understand the Telangana Economy in terms of

Human Resources, Demographic Features of Telangana, Occupational and Sectoral Distribution of Population in, Migration, Social Infrastructure Development like Education and Health and Regional Imbalances: Causes, Consequences and Remedial Measures.

CO2: This course enables the students to understand the concepts of GDP, GSDP, Development Trends in GSDP and Per Capita Income, Sectoral Contribution to GSDP, Inequalities in the distribution of Income and wealth. It also helps the student to understand the Poverty and Unemployment in Telangana, Trends, Causes and Consequences. Poverty Alleviation & Employment Generation Programmes in Telangana.

CO3: The course helps the student to understand the Growth of Agriculture in Telangana Economy—Trends in Agricultural production and Productivity, Determinants of Agricultural Productivity, Cropping Pattern, Agrarian Structure and Land reforms. It also helps the student to understand the Irrigation Sources and Trends, Mission Kakatiya, Agricultural Credit and Rural Indebtedness, Agricultural Marketing, Food Security in the Telangana State.

CO4: The course provides the knowledge to the student regarding structure of Industrial Sector in Telangana, Growth and Pattern of Industrial Development, Industrial policy of Telangana, Special Economic Zones (SEZ)—Role of Small Scale Industries in the Telangana Economy, Problems & Remedial Measures of Small Scale Industries: Issue of Sickness—Industrial Finance in Telangana.

CO5: The course provides the knowledge to the student regarding the Service Sector in the Telangana, Infrastructure like Transport, Energy, Communication and Information Technology (IT) and Information Technology enabled services (ITES).

#### **CORE 8: ECONOMICS OF AGRICULTURE (Old) (OPTIONAL).**

CO1: The course enables the student to understand the concepts of Agricultural Development Meaning, Nature and Scope Sustainable Agricultural Development, and Interdependence between Agriculture and Industry.

CO2: The course provides the knowledge to the student regarding Agrarian Structure, Land Reforms like Abolition of Intermediaries, Land Ceiling, Agricultural Wages and Gender Discrimination—The Question of Landless labour.

CO3: The course enables the student to understand the concepts of Agricultural Production and Productivity, Production function analysis in agriculture, ecological changes, Green Revolution, Agrarian Crisis—Farmers' Suicides.

CO4: The course enables the students to understand the concept of Diversification of Agricultural Economic Activities, Modernization of Agriculture and allied activities, Problems of Agricultural Marketing, Globalization of Indian Agriculture.

# HISTORY

## **COURSE OUTCOME:**

- CO1: Identify Geographical features of India
- CO2: Describe Prehistory and Proto history
- CO3: Classification of Buddhism and Jainism
- CO4: Acquire knowledge about Early India
- CO5 Identify Early Indian Map

## **Course: DSC-201HISTORY OF INDIA(c.700-1526CE)**

- CO1: Acquire Knowledge about Rajputs and Rastrakutas Cholas
- CO2: Classifications of Bhakti Movement
- CO3: Understanding of Delhi Sultanate
- CO4: Describe Political and social and Economic conditions of Kakatiya
- CO5: Analyse social conditions Religious consciousness in Vijayanagara
- CO6: Classification Political culture activities of south India

## **Course: HISTORY OF INDIA (1526-1857CE)**

- CO1: Analyze Mughal rule administration, art and architecture
- CO2: Identify cultural synthesis
- CO3: Analyze Medieval India
- CO4: Maps- Importance centers in Mughal Empire under Akbar and Aurangzeb  
Analyze India Economy

## **COURSE: HISTORY OF INDIA (1858-1947CE)**

- CO1: Evaluate consolidation of English power in India
- CO2: Analyse social religious consciousness in India
- CO3: Comparison of Nationalist movement-pre Gandhian and Post-Gandhian Era
- CO4: Identify Modern India Maps
- CO5: Identify the major sites of Religious Movement
- CO6: Classifications of Emergence of communal politics and Mohd

## **COURSE: WORLD HISTORY (1453-1914CE)**

- CO1: Describe rise of modern world
- CO2: Development of Beginning of Modern age in Europe
- CO3: Classify Growth of capitalism
- CO4: Classifications Reformation Movement
- CO5: Identify world Maps- Oceans Explorations, Europe in 1914 importance  
stages of world war and important centers of International trade

## **COURSE:HISTORY OF TELANGANA(Form Earliest Times to 1724CE)**

- CO1: Identify Geographical feature of Telangana
- CO2: Analyze early Human settlements Palaeolithic, Neolithic
- CO3: Identify cultural synthesis
- CO4: Identify Telangana Maps- Megalithic, culture and Tribal culture
- CO5: Identify Telangana Festivals and Jataras
- CO6: Classify socio-Religious Movement

**COURSE: WORLD HISTORY (1815-1950CE)**

- CO1: Repression of Liberalism in Central Europe
- CO2: Unification of Germany
- CO3: Unification of Italy
- CO4: Identify world wars and Results
- CO5: Identify Gandhi National movement
- CO6: Unification of Chinese Revolutions

**COURSE: HISTORY OF TELANGANA (1724-2014CE)**

- CO1: Identify political Experience of Telangana
- CO2: Classify Tribal Revolt
- CO3: Classify Telangana movements
- CO4: Identify Formations of Telangana state

## **POLITICAL SCIENCE**

**Semester I : Political Theory**

- CO1: To understand the nature, scope and significance of political theory.
- CO2: To appreciate the procedure of different theoretical ideas in political theory.
- CO3: To understand the various traditional and modern theories of political science.

**Semester II: Concepts, Theories and Institutions**

- CO1: To evaluate the theories of origin of the state
- CO2: Introducing the Indian Constitution with a focus on the evolution of it and examining the essence of the Preamble.
- CO3: Examining the Fundamental Rights and Duties of Indian citizens with a study of the significance and status of Directive Principles.
- CO4: Critically analyzing the important institutions of the Indian Union: the Executive: President; Prime Minister, Council of Ministers; Governor, Chief Minister and Council of Ministers; The legislature: Rajya Sabha, Lok Sabha, Speaker, Committee System, State Legislature, The Judiciary: Supreme Court and the High Court: composition and functions- Judicial Activism.

### **Semester III: Indian Government and Politics(Basic of Indian constitution & Citizenship)**

CO1: Introducing the Indian Constitution with a focus on the evolution of it and examining the essence of the Preamble.

CO2: To know the salient features of Indian constitution

CO3: To introduce the students the concept, evolution and classification of Human Rights.

CO4: To acquaint the students with the different approaches and perspective of human rights.

### **Semester-IV: Indian Government & Politics**

CO1: Critically analyzing the important institutions of the Indian Union: the Executive President; Prime Minister, Council of Ministers; Governor, Chief Minister and Council of Ministers; The legislature: Rajya Sabha, Lok Sabha, Speaker, Committee System, State Legislature, The Judiciary: Supreme Court and the High Court: composition and functions- Judicial Activism.

CO2: Looking at the Centre-State Relations with focus on the Legislative, Administrative and Financial Relations.

### **Semester-V: Political Thought(Ancient &Medival Political Thought)**

CO1: To introduce the students to the Greek political tradition, specifically to the ideas of Plato and Aristotle.

CO2: To explain the ideas of medieval and early modern political thinkers like St.Thomasaquinas and Machiavelli.

CO3: To familiarise the students with the exponents of the Social Contract Theory- Hobbes, Locke and Rousseau.

### **Semester- V(Elective): International Relations(19<sup>th</sup>&20<sup>th</sup> century-I)**

CO1: The students will get an overview about the nature, evolution and scope of international relations.

CO2: It will help them to get acquainted with the basic ideas of international relations

CO3: It will familiarise the students with the different approaches to the study of International Relations.

CO4: It will also give them a historical background of the discipline which will help them understand international politics in a better way.

### **Semester VI- -: Political Thought(Western & Indian Political Thought)**

CO1: The paper shall introduce the most prominent Indian Political Thinkers like Buddha Basava, Raja Ram Mohan Roy and JyotibaPhule social ideas.

CO2: It shall also explain the ideas of M N Roy, Mahatma Gandhi, Jawaharlal Nehru, B R Ambedkar.

### **Semester VI(Elective) : International Relations(19<sup>th</sup>& 20<sup>th</sup> century-II)**

CO1: To understand the basic concepts of International Relations and also

- develop a preliminary understanding of the global economy.
- CO2: Investigating the challenges to National Integration: Terrorism
- CO3: To analyse the international security; Disarmament, Arms Control and Nuclear non proliferation.
- CO4: To introduce the students the concept, evolution and classification of Human Rights.

## **Public Administration**

### **Course Outcomes:**

- CO1: To understand the nature and scope of Public Administration;
- CO2: To appreciate the method logical pluralism and synthesizing nature of knowledge in Public Administration.
- CO3: To comprehend the changing paradigms of Public Administration;
- CO4: To acquaint with the theories, approaches, concepts and principles of Public Administration;
- CO5: To understand the administrative theories and concepts to make sense of administrative practices.
- CO6: To understand the role of public services in the emergence and development of Telangana state

### **Public Administration**

- CO1: Meaning and Importance of Public Administration
- CO2: State and Evolution of Public Administration

### **Oriental and Classical Approaches**

- CO1: Oriental Approach-Kautilya
- CO2: Classical Approach:HenriFayol,LutherGulickandLyndallUrwick
- CO3: Scientific Management Approach:F.W.Taylor
- CO4: Bureau critic Approach:MaxWeberandKarlMarx

### **Human Relations and Behavioural Approaches**

- CO1: Human Relations Approach–EltonMayo
- CO2: Behavioural Approach :Herbert A.Simon
- CO3: Socio-Psychological Approach: Abraham Maslow; McGregor, Rensis Likert



### **Ecological and Social Justice Approaches**

CO1: Administrative Ecology: F.W. Riggs

CO2: Social Justice Approach—B.R. Ambedkar Jyothirao Pule

### **Financial Management**

CO1: Meaning and Scope

CO2: Importance of Financial Management

### **Budget**

CO1: Concept and Principles of Budget

CO2: Preparation of Budget

CO3: Enactment and Execution of Budget

### **Financial Institutions**

CO1: Organization and Functioning of Finance Ministry

CO2: Union–State Financial Relations and the role of Finance Commission

CO3: Parliamentary Financial Committees: Public Accounts Committee, Estimates Committee and Committee on Public Undertakings

### **Materials Management**

CO1: Meaning and Concept of Materials Management

CO2: Procurement, Storage and Distribution

CO3: Inventory Control and Management

## **COMMERCE**

### **Course outcomes:**

CO1: the process by which an organization's revenue, receivables, and expenses are collected, measured, recorded and finally reported

CO2: Across financial accounting, companies have two basic ways they can structure their business's accounting

CO3: To acquaint the students with the basics of Commerce and Business concepts and functions, forms of Business Organization and functions of Management

CO4: The organisational objectives of management refer to the main objectives required to fulfil the economic goals of any business organisation

CO5: Every organisation is a part of the society. Thus it has certain social obligations to fulfil.

CO6: To acquire accounting knowledge of bills of exchange and other business accounting methods

CO6: The American is an industry leading organization in the area of financial accounting.

CO7: In the United States, financial reporting standards are set forth by the FASB and required under GAAP for publicly traded companies

CO8: To understand basics of contract act, sales of goods act, IPRs and legal provisions applicable for establishment, management and winding up of companies in

India.

- CO9: Establishing standards identifies what types of behaviour are and are not accepted in society. For example, damage to person or property is considered a crime because it is not tolerated by society
- CO10: Businesses large and small must comply with the same legal regulations. Often, this involves the expertise of a specialist who can help entrepreneurs succeed in an area such as law or finance.
- CO11: To acquire accounting knowledge of partnership firms and joint stock companies
- CO12: Objectives of accounting in any business are; systematically record transactions, sort and analyzing them, prepare financial statements, assessing the financial position, and aid in decision making with financial data and information about the business
- CO13: The primary object of accounting is to identify the financial transactions and to record these systematically in the books of accounts
- CO14: Every business concern is interested to know its operating results at the end of a particular period to inculcate analytical and computational ability among the students.
- CO15: Demonstrate knowledge of probability and the standard statistical distributions.
- CO16: Demonstrate knowledge of fixed-sample and large-sample statistical properties of point and interval estimators
- CO17: Demonstrate understanding of how to design experiments and surveys for efficiency.
- CO18: To acquire conceptual and legal knowledge about Income Tax provisions relating to computation of Income from different heads with reference to an Individual Assesses
- CO19: The primary purpose of taxation is to raise revenue to meet huge public expenditure One of the important objectives of taxation is economic development. Economic development of any country is largely conditioned by the growth of capital formation
- CO20: Second objective is the full employment. Since the level of employment depends on effective demand, a country desirous of achieving the goal of full employment must cut down the rate of taxes
- CO21: Demonstrate knowledge of fixed-sample and large-sample statistical properties of point and interval estimators
- CO22: Demonstrate understanding of how to design experiments and surveys for efficiency To make the students acquire the knowledge of cost accounting methods
- CO23: Cost Accounting refers to the classifying, recording and appropriate allocation of expenditure for the purpose of determining the costs of products or services
- CO24: The objective of the cost accounting is to determine the methods by which expenditure on materials, wages and overhead are recorded, classified and allocated.
- CO25: Banking Sector Reforms: Liberalization of banking sector, Narsimham Committee-1st and 2nd generation reforms, Capital adequacy: introduction,

Basel II norms (new capital adequacy framework)

- CO26: To make the students to acquire the knowledge of computer software.
- CO27: It ensures efficient performance in accounting records.
- CO28: Greater accuracy computerised Accounting make sure accuracy in accounting records and statements.
- CO29: It prevents clerical errors and omissions in records.
- CO30: To study and critically analyse the basic concepts and trends in marketing
- CO31: To aware the recent changes in the field of marketing.
- CO32: Updates students about current trends in advertising.
- CO33: Acquaints students about various tools of IMC and careers in advertising.
- CO34: To acquire Managerial Accounting decision-making techniques and reporting methods.
- CO35: Financial accounting is the recording and presentation of information for the benefit of the various stakeholders of an organization
- CO36: To familiarize with various Financial Institutions and Markets
- CO37: Financial institutions, such as banks, credit unions, stockbrokers, finance and insurance companies, often have a business plan with a set list of goals and objectives
- CO38: To equip with the conceptual and legal knowledge about Taz planning and management with reference to various Heads of Income to relating to an individual assesses.

## **BOTANY**

### **FIRST YEAR, I-SEMESTER PAPER-I**

#### **MICROBIAL DIVERSITY AND LOWER PLANTS**

- CO1: Describe Bacteria structure, Nutrition and Re production, and compare Arche bacteria, Actinomycetes and Mycoplasma
- CO2: Describe structure of Viruses, Replication and Transmission
- CO3: Classify Algae, Fungi and Lichens based on their structure, Reproduction and Lifecycles and their Economic importance
- CO4: Analyze and ascertain the important plant disease symptoms due to Viruses, Bacteria and Fungi
- CO4: Classify Bryophytes based on morphology, anatomy and Lifecycles and know their evolutionary significance
- CO5: Classify Pteridophytes based on Morphology, Anatomy and Lifecycles and gain knowledge on their stelarevolution, Heterspory and Seed habit

CO6: Demonstrate the techniques of use of lab equipment, preparation of slides and identify the material and draw diagrams

CO7: Preparation of Double stained Permanent mounts.

### **First Year, II -Semester Paper-II**

#### **Gymnosperms, Taxonomy of Angiosperms and Ecology**

On successful completion of this course, the students will be able to:

CO1: Classify Gymnosperms based on their structure, reproduction and write down the life history of Pinus and Gnetum.

CO2: Explain the Geological time scale, process of Fossilization and compare the characteristics of extinct and extant plants

CO3: Critically understand various types of Classifications and taxonomical aids for Identification of Angiosperms.

CO4: Analyze the morphology of the most common angiospermic plants of their localities and recognize their families.

CO5: Evaluate the Economic importance of Plants belonging to different families.

CO6: Understand the basic components of Ecosystem, Food chains and ecological adaptations of Plants.

CO7: Describe serial stages in Plant succession

CO8: Demonstrate the techniques of section cutting, preparing slides, identifying of the material and drawing exact figures.

CO9: Exhibit skill to identify the local angiosperms of the families prescribed to their genus and species level

CO10: Prepare and preserve specimens of local wild plants using herbarium techniques.

### **II Year SEMESTER –III PLANT ANATOMY AND EMBRYOLOGY**

CO1: Classify Meristems and understand the histological organization of tissues and tissue systems in plants Identify local timbers based on wood structure

CO2: Interpret various aspects of embryology in detail about microspore and megaspore genesis

CO3: Illustrate and interpret pollen morphology, seed structure, Endosperm types and Embryo types Understand Polyembryony and Apomixis

CO4: Get familiarized with techniques of double stained permanent slides Conduct of Pollen viability test, Pollen grain whole mounts.

CO5: Isolation and mounting of embryos

## **II Year SEMESTER-IV CELL BIOLOGY AND PLANT PHYSIOLOGY**

CO1: Explain the organization of cell wall and cell membranes

CO2: Distinguish the semiautonomous and other cell organelles

CO3: Explain the organization of chromosomes and structure of genetic material and cell division.

CO4: Comprehend the importance of water in plant life and mechanisms for transport of water and solutes in plants

CO5: Evaluate the role of minerals in plants nutrition and their deficiency symptoms

Critically understand the light reactions and carbons simulation processes in C<sub>3</sub>,C<sub>4</sub> and CAM Plants

CO6: Analyze the biochemical reaction sin relation to Nitrogen metabolism Evaluate the photo hormones that regulate growth and development in plants.

CO7: Fixation of plant material and nuclear staining form mitotic and meiotic studies.

CO8: Conduct lab and field experiments pertaining to Plant Physiology ,using related glass ware, equipment, chemicals and plant material.

## **Final Year (DSC-1E)SEMESTER-V Cell Biology and Genetics**

CO1: Explain the organization of cell wall and cell membrane

CO2: Distinguish these mi autonomous and other cell organelles

CO3: Explain the organization of chromosomes and structure of genetic material and cell division.

CO4: Discuss the basics of Mendelian genetics its variations and interpreting heritance of traits in living beings.

CO5: Construction of Genetic maps

CO6: Evaluate the structure and functions and regulation of genetic material

CO7: Demonstrate techniques to observe the cell and its components under microscope.

CO8: Demonstration of cyto chemical methods and fixation of plant material

CO9: Show the understanding of techniques of demonstrating Mitosis and Meiosis in the laboratory and identify different stages of cell division

CO10: Solve the problems related to crosses and genetic interactions

### **Final Year SEMESTER–V(Elective)Economic Botany**

- CO1: Understand the basic concepts of Economically important plant products, Origin, Nutritional, commercial values of vegetables, Millets and Cereals.
- CO2: Develop an overall view of commercial and nutritional values of Fruits and Nuts.
- CO3: Understand the processing of Sugar and its by products and important spices
- CO4: Understand morphological features, Processing of Beverages, Extraction of Edible oils, Rubber and Tobacco
- CO5: Evaluate various drug yielding plants, various fibers and extraction methods
- CO6: Estimation of Iodine number of different oils, comparative study of proteins in Millets and Cereals.

### **Final Year SEMESTER –VI(Elective)Plant Molecular Biology**

- CO1: Plant molecular biology focuses on exploration of molecular basis of plant life mainly on DNA, RNA, protein, molecular systems and regulation of gene expression prokaryotic and eukaryotic organisms.
- CO2: Understand the function of cells at molecular level. Understand DNA and its functions central dogma of life and salient features of genetic code.
- CO3: Understand the process of transcription in prokaryotes and eukaryotes, m-RNA processing, editing and its transport.

## **Zoology**

### **Animal Diversity Invertebrates**

- CO1: Outline general taxonomic on animal classification.
- CO2: Classify protista are up to phylum amusing example from parasitic adaptations.
- CO3: Analyse phylum porifera to Echinodermata tags on a mic indicators.
- CO4: Specify nematode and give the examples of pathogens helminth.

### **Animal Diversity Vertebrates**

- CO1: Segregate phylum proto chordata to Mammalia.
- CO2: Comparative internal anatomy study of vertebrates.
- CO3: To know conceptual knowledge of vertebrates.

CO4: To know that the adaptations an Association in relation to their environment.

### **Animal Physiology And Animal behaviour**

CO1: Look for to understand the mechanisms that work to keep the human body alive and functioning.

CO2: Understand their own body organs functions mechanism.

CO3: Interactions and Inter dependents of physiological and biochemical process.

### **Cell Biology Genetics and developmental Biology**

CO1: Structural and functional aspects of basic unit of life.

CO2: To know the concepts of molecular biology find central dogma of cell.

CO3: Basic concepts of developmental biology.

CO4: Extra embryonic layers placenta types regeneration process.

### **Immunology And Animal Biotechnology**

CO1: Types of immunity antigen antibody and their properties.

CO2: Provides basic information about immune system and individual to create insight as auto improve their immune system and health humans.

CO3: To know the vaccination and importance of vaccination process.

CO4: To know the basic concepts of animal biotechnology and a different techniques.

CO5: Use in our DNA technology genetic manipulation and variety of industrial process.

### **Ecology Zoogeography and Evolution:**

CO1: Distribution of fauna in different rhythms interactions.

CO2: To know the animal distribution on the earth.

CO3: Imports knowledge regarding the various theories of evolution evolutionary process such as variations, speciation, natural selection.

CO4: Theories of evolution.

CO5: Knowledge of Eras and evolution of human beings.

## **CHEMISTRY**

### **COURSE OUTCOMES OF CHEMISTRY**

#### **Chemistry-I**

- CO-1: Students learn chemical bonding and related theories like Fagan's rule, polarity, VSEPR theory, Molecular orbital theory and molecular orbital energy diagrams etc
- CO-2: To learn about the p-block elements emphasising on structures of Diborane and higher boranes, Carbides and nitrides and properties
- CO-3: To make an understand of structural theory in organic chemistry like bond polarisation, applications of inductive effect, basicity of amines and carboxylic acids
- CO-4: Acyclic hydrocarbons of alkanes, alkenes and alkynes preparation and chemical properties and aromatic hydrocarbon observations
- CO-5: To know about basic concepts of physical chemistry of atomic structure and elementary quantum mechanics, gaseous state and liquid state

### **Chemistry-II**

- CO-1 To learn about inorganic chemistry concepts like p-block elements of oxides, oxyacids inter halogens and pseudohalogens
- CO-2 Zero group elements and d-block elements properties and applications
- CO-3 : Obtain knowledge about halogen compounds, alcohols, phenols, ethers and carbonyl compounds
- CO-4: To gain knowledge about theory of quantitative analysis, stereochemistry and colligative properties

### **Chemistry-III**

- CO-1: Students learn inorganic chemistry of f block elements and co-ordination compounds
- CO-2: In organic chemistry students able to learn carboxylic acids and derivatives, nitro hydrocarbons and amines, cyanides and isocyanides
- CO-3: In physical chemistry students acquire the subject of thermodynamics and its laws, applications
- CO-4: General chemistry gives knowledge about evaluation of analytical data, carbon ions and phase rule

### **Chemistry-IV**

- CO-1: In inorganic chemistry students learn CFT, HSAB and applications of coordination compounds and bioinorganic chemistry
- CO-2 : In organic chemistry carbohydrates, amino acids, proteins and heterocyclic compounds knowledge is obtained
- CO-3: In Physical chemistry knowledge is obtained about photochemical laws, applications
- CO-4 : In General chemistry theories of bonding in metals, carbene ion -II, colloids and surface chemistry and its applications

### **Chemistry-V**

- CO-1: The students to able gain the subject of coordination compounds and its applications



CO-2: Boranes and carboranes properties and applications

CO-3: In organic chemistry amines, cyanides and isocyanides, heterocyclic compounds properties and its applications study

CO-4: In Physical chemistry chemical kinetics, its laws and various applications are studied

CO-5: Molecular spectroscopy techniques and Photochemistry tools handling, results observation and analysis is learnt by the students

### **Chemistry-VI**

CO-1: Students able to gain the knowledge about Chromatography techniques and methodology

CO-2: To know about applications of various chromatographic techniques

CO-3: Understand the colometry, spectrophotometry, IR spectrophotometer and other techniques

CO-4: In inorganic chemistry inorganic reaction mechanism, bio inorganic chemistry, HSAB analysis is learnt by the students

CO-5: In organic chemistry carbohydrates, amino acids and proteins awareness is obtained

CO-6: In thermodynamics the laws and applications awareness is created among the students

CO-7: In general chemistry students able to learn Mass spectrometry and entropy

CO-8: To acquire knowledge of introduction and basic concepts of medicinal chemistry

CO-9: To know about enzymes properties, mechanism of action and types of inhibition

CO-10: Importance of drugs, its synthesis, mechanism of action and applications in treatment of diseases

CO-11: To know about molecular messengers and health promoting drugs and vitamins

## **DAIRY SCIENCE**

### **COURSE OUT COMES**

CO1: After completion of course the students will be versed about animal husbandry and maintenance of animals.

CO2: This course provides knowledge about dairy technology and machinery.

CO3: The person who studied dairy science, he know about the correct rations of fodder for providing to different type of animals

CO4: They know different type of breeds in different milking animals.

CO5: Methods of conservation of fodder and entrepreneurship development methods provided by this course

CO6: It creates the Self-employment .

## **MATHEMATICS**

### **Course outcomes**

- CO1: Students will have the capability of demonstrating comprehensive knowledge of Mathematics and two more disciplines of Sciences which form a part of an undergraduate programme of study.
- CO2: The skills and knowledge gained has intrinsic beauty, which also leads to proficiency in analytical reasoning, which can be utilized in modelling and solving real life problems.
- CO3: Students will have the capability to solve various problems using the domain knowledge of mathematics acquired during this programme.
- CO4: Students will have the Capability for inquiring about appropriate questions relating to the concepts in various fields of Sciences and acquainted with the advances in various branches of Sciences.
- CO5: Students will have the ability to identify unethical behaviour such as fabrication, falsification or misrepresentation of data and adopting objective, unbiased and truthful actions in all aspects.
- CO6: Students will have the ability to work independently and do in-depth study of various notions of mathematics and other sciences.
- CO7: Students will have the ability to think, acquire knowledge and skills through logical reasoning and to inculcate the habit of self-learning.
- CO8: This programme will help the students to enhance their employability skills for jobs in government, research institutes, MNCs for software development, banks, insurance and investment sectors and in various other public and private enterprises.

## **PHYSICS**

### **SEMESTER - I**

#### **MECHANICS**

On successful completion of this course students will:

- CO1: Understand integration of vectors  
CO2: Derive Stoke's, Green's and Gauss theorems

- CO3: Understand Collisions in one and two dimensions
- CO4: Understand the relation between scattering cross section and impact parameter
- CO5: Understand the properties of materials
- CO6: Identify and apply the laws of mechanics along with the necessary mathematics for solving numerical
- CO7: Gain knowledge on Central forces – definition and examples, Conservative nature of central forces, Conservative force as a negative gradient of potential energy, Equation of motion under a central force
- CO8: Derive Kepler's laws, Coriolis force and its expressions

## **SEMESTER II**

### **WAVES AND OSCILLATIONS**

On successful completion of this course students will:

- CO1: Understand the concepts of mechanics, acoustics and the properties of matter
- CO2: Understand physical characteristics of SHM and obtaining solution of the oscillator using differential equations
- CO3: Calculate logarithmic decrement relaxation factor and quality factor of a harmonic oscillator
- CO4: Use Lissajous figures to understand simple harmonic vibrations of same frequency and different frequencies
- CO5: Solve wave equation and understand significance of transverse waves
- CO6: Solve wave equation of a longitudinal vibration in bars free at one end and also fixed at both the ends [Comment \[p1\]: This is a hyperlink, when clicked should display the content](#)
- CO7: Obtain boundary conditions of a longitudinal vibration in bars free at one end and also fixed at both the ends
- CO8: Gain knowledge on applications of transverse and longitudinal waves.

## **SEMESTER III**

### **THERMODYNAMICS**

On successful completion of this course students will:

- CO1: Gain knowledge in Kinetic theory of gases
- CO2: Understand the process of thermal conductivity, viscosity and diffusion in gases
- CO3: Understand the nature of thermodynamic properties of matter like internal energy, enthalpy, entropy, temperature, pressure and specific volume
- CO4: Understand the efficiency of Carnot's engine.
- CO5: Understand the significance of first law and second of thermodynamics
- CO6: Understand implications of the second law of thermodynamics and limitations placed by the second law on the performance of thermodynamic systems
- CO7: Evaluate entropy changes in a wide range of processes and determine the reversibility or

irreversibility of a process from such calculations.

CO8: Understand the interrelationship between thermodynamic functions and ability to use such relationships to solve practical problems.

## **SEMESTER IV**

### **OPTICS**

On successful completion of this course students will:

CO1: Gain knowledge on various theories of light

CO2: Acquire skills to identify and apply formulas of optics and wave physics

CO3: Understand the properties of light like reflection, refraction, interference, diffraction etc

CO4: Understand the applications of diffraction and polarization.

CO5: Understand the applications of interference in design and working of interferometers.

CO6: Understand the resolving power of different optical instruments.

CO7: Gain knowledge on working of holography and their applications in various fields.

CO8: Gain knowledge in optical fiber and their applications in communication

## **SEMESTER V**

### **ELECTROMAGNETISM :**

On successful completion of this course students will:

CO1: Gain Knowledge on the basic concepts of electric and magnetic fields.

CO2: Understand the concept of conductors, dielectrics, inductance and capacitance

CO3: Gain knowledge on the nature of magnetic materials.

CO4: Understand the concept of static and time varying fields.

CO5: Gain knowledge on electromagnetic induction and its applications

CO6: Gain knowledge on EM waves, propagation and their properties.

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## **SEMESTER VI**

### **MODERN PHYSICS**

On successful completion of the course, the students will:

CO1: To understand the difference between Atomic and Molecular spectroscopies.

CO2: Understand the intuitive ideas of the Quantum physics and Nuclear physics.

CO3: Derive Schrodinger time dependent and time independent wave equations

CO4: To understand dual nature of matter.

- CO5: Gain knowledge on classification of various crystal systems .Understand the basics of crystallography, x-ray diffraction and Superconductivity.
- CO6: Students will develop a comprehension of the current basis of broad knowledge in Modern physics.
- CO7: Learners will build on a critical thinking, analytical reasoning, and problem solving skills.

## **COMPUTER SCIENCE / APPLICATIONS**

### **JAVA**

Upon successful completion, students will have the knowledge and skills to:

- CO1:Read and understand Java-based software code of medium-to-high complexity.
- CO2: Use standard and third party Java's API's when writing applications.
- CO3:Understand the basic principles of creating Java applications with graphical user interface (GUI).
- CO4: Understand the fundamental concepts of computer science: structure of the computational process, algorithms and complexity of computation.
- CO5: Understand the basic approaches to the design of software applications.
- CO6: Apply the above to design, implement, appropriately document and test a Java application of medium complexity, consisting of multiple classes.

### **SOFTWARE ENGINEERING**

- CO1: Acquire strong fundamental knowledge in science, mathematics, fundamentals of computer science, software engineering and multidisciplinary engineering to begin in practice as a software engineer.
- CO2: Design applicable solutions in one or more application domains using software engineering approaches that integrate ethical, social, legal and economic concerns.
- CO3: Deliver quality software products by possessing the leadership skills as an individual or contributing to the team development and demonstrating effective and modern working strategies by applying both communication and negotiation management skill.
- CO4: Apply new software models, techniques and technologies to bring out innovative and novelistic solutions for the growth of the society in all aspects and evolving into their continuous professional development.

## **C++**

- CO1: Understand the difference between the top-down and bottom-up approach
- CO2: Describe the object-oriented programming approach in connection with C++
- CO3: Apply the concepts of object-oriented programming
- CO4: Illustrate the process of data file manipulations using C++
- CO5: Apply virtual and pure virtual function & complex programming situations

## **RDBMS**

- CO1: Describe the fundamental elements of relational database management systems
- CO2: Explain the basic concepts of relational data model, entity-relationship model, relational database design, relational algebra and SQL.
- CO3: Design ER-models to represent simple database application scenarios
- CO4: Convert the ER-model to relational tables, populate relational database and formulate SQL queries on data.
- CO5: Improve the database design by normalization.
- CO6: Familiar with basic database storage structures and access techniques: file and page organizations, indexing methods including B tree, and hashing.

## **DBMS**

- CO1: Understand database concepts and structures and query language
- CO2: Understand the E R model and relational model
- CO3: To design and build a simple database system and demonstrate competence with the fundamental tasks
- CO4: involved with modelling, designing, and implementing a DBMS.
- CO5: Understand Functional Dependency and Functional Decomposition.
- CO6: Apply various Normalization techniques
- CO7: Perform PL/SQL programming using concept of Cursor Management, Error Handling, Package and Triggers
- CO8: Execute various advance SQL queries related to Transaction Processing & Locking using concept of Concurrency control.
- CO9: Understand query processing and techniques involved in query optimization.
- CO10: Understand the principles of storage structure and recovery management

## **WEB TECHNOLOGY**

- CO1: Explain the history of the internet and related internet concepts that are vital in understanding web development.
- CO2: Discuss the insights of internet programming and implement complete application over the web.
- CO3: Demonstrate the important HTML tags for designing static pages and separate design

from content using Cascading Style sheet.

CO4: Utilize the concepts of JavaScript and Java

CO5: Use web application development software tools i.e. Ajax, PHP and XML etc. and identify the environments currently available on the market to design web sites.

## **COMPUTER NETWORKING**

CO1: Students should be understand and explore the basics of Computer Networks and Various Protocols. He/She will be in a position to understand the World Wide Web concepts.

CO2: Students will be in a position to administrate a network and flow of information further he/she can understand easily the concepts of network security, Mobile and ad hoc networks.

CO3: Able to introduce the fundamental various types of laptop networks. · Get introduce with demonstration of the TCP/IP and OSI fashions with merits and demerits.

CO4: Awarded with the knowledge to explore the various layers of OSI model.

CO5: Able to introduce UDP and TCP models.

CO6: Define various examples of wireless communication system, standards related to 2G and 3G wireless networks.

CO7: Design wireless mobile network according to parameters such as frequency reuse, handoff strategies and system capacity

## **FIT**

CO1: The focus of the subject is on introducing skills relating to IT basics, computer applications, programming, interactive medias, Internet basics etc.

CO2: Have a basic understanding of personal computers and their operations.

CO3: Understand basic concepts and terminology of information technology

## **‘C’ Language**

CO1: Choose appropriate data structures to represent data items in real world problems.

CO2: Analyze the time and space complexities of algorithms

CO3: Design programs using a variety of data structures such as stacks, queues, hash tables, binary trees, search trees, heaps, graphs, and B-trees.

CO4: Analyze and implement various kinds of searching and sorting techniques.

CO5: Write the C code for a given algorithm.

CO6: Implement Programs with pointers and arrays, perform pointer arithmetic, and use the pre-processor.

## **DAA (Design Analysis of Algorithm)**

CO1: Ability to analyze the performance of algorithms.

CO2: Ability to choose appropriate algorithm design techniques for solving problems.

CO3: Ability to understand how the choice of data structures and the algorithm design methods impact the performance of programs.

CO4: To clear up troubles the usage of set of rules design methods including the grasping approach, divide and overcome, dynamic programming, backtracking and department and certain.

CO5: To understand the variations among tractable and intractable problems.

### **OS (Operating System)**

CO1: Define, restate, discuss, and explain the policies for scheduling, deadlocks, memory management, synchronization, system calls, and file systems.

CO2: Describe and extrapolate the interactions among the various components of computing systems.

CO3: Design and construct the following OS components: System calls, Schedulers, Memory management systems, Virtual Memory and Paging systems.

CO4: Understand and analyse theory and implementation of: processes, resource control (concurrency etc.), physical and virtual memory, scheduling, I/O and files

### **Web Technology**

CO1: How to and where to start research, planning for website & actually build excellent web sites

CO2: Simple and impressive design techniques, from basics till advanced to focus on goal oriented and user centric designs

CO3: Writing valid and concise code for webpages

CO4: Setting up page layout, color schemes, contract, typography in the designs.

CO5: To create web elements like buttons, banners & Bars and of course complete designs

### **Oops with CPP**

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CO1: Define classes modeling techniques and instances modeling techniques.

CO2: Describe interaction diagrams and their modeling techniques.

CO3: Demonstrate activity diagram and their modeling techniques.

CO4: Demonstrate component and deployment diagram.

CO5: C++ Programming assignments based on class, inheritance, abstraction, encapsulation, dynamic binding, polymorphism, I/O systems, exception handling should be covered.

CO6: DS using C++ assignments should be based on Stacks, Queue, Linked List and mainly it should cover Tree, Binary Threaded Tree & Graph programs

### **CPP with DS**

CO1: Choose appropriate data structures to represent data items in real world problems.

CO2: Analyze the time and space complexities of algorithms



CO3: Design programs using a variety of data structures such as stacks, queues, hash tables, binary trees, search trees, heaps, graphs, and B-trees.

CO4: Analyze and implement various kinds of searching and sorting techniques.

## **E- Commerce**

CO1: Analyze the impact of E-commerce on business models and strategy.

CO2: Describe the major types of E-commerce.

CO3: Explain the process that should be followed in building an E-commerce presence.

CO4: Identify the key security threats in the E-commerce environment.

CO5: Describe how procurement and supply chains relate to B2B E-commerce.

## **Visual Programming**

CO1: understand the programming algorithm, process, and structure

CO2: understand and identify the fundamental concepts of object-oriented programming

CO3: understand and use the concepts of objects, primitive value, message, method, selection control structure, repetition control structures, object reference, container, and method parameter

CO4: know how to write and run a complete program

CO5: understand and identify the importance of object-oriented programming for the Internet based electronic commerce