

LEARNING OUT COMES:

DEPARTMENT OF HISTORY:

PROGRAM SPECIFIC OUTCOMES :

- PSO1. Students will be able to demonstrate a breadth of training across historical time and space.
- PSO2. Students will be able to develop an in-depth understanding of a field, theme or region.
- PSO3. Students will be able to demonstrate an historical awareness of the diversity of the human experience across time and space (research papers).
- PSO4. Students will be able to apply, assess and debate the major historical schools of thought, methodology and types of sources that historians use to make original arguments
- PSO5. Students will be able to formulate historical arguments and communicate those arguments in clear and persuasive prose.

DEPARTMENT OF POLITICAL SCIENCE:

PROGRAM SPECIFIC OUTCOMES

A student who graduates with Political Science as one of the options should be able to:

1. Demonstrate knowledge and analytical proficiency across the political science subfields.
2. Use writing skills to communicate theoretical perspectives, findings, and interpretations of political issues.
3. Apply theoretical perspectives and research methods to generate positions about contemporary political issues and/or explanations of political phenomena.
4. Utilize critical thinking skills to assess political ideas and events.
5. Identify opportunities for civic engagement and participation in political processes.
6. Integrate political knowledge with faith, ethnic, race, and/or gender identities.

DEPARTMENT OF ECONOMICS:

COURSE OUTCOMES

1 Micro Economics-I

- CO1 How households (demand) and business (supply) firms interact in various market structures to determine price and quantity of a good produced.
- CO2 Understand that Economics is about the allocation of scarce resources, that scarcity forces choice, trade-offs exist and that every choice has an opportunity cost.
- CO3 Demonstrate these concepts using a production possibility frontier diagram.
- CO4 Understand how comparative advantage provides the basis for gains through trade.

2 Micro Economics-II

- CO1 Producers equilibrium with the help of isoquants, expansion path and elasticity of substitution
- CO2 Different types of markets and their features
- CO3 List the determinants of the demand and supply for a good in a competitive market and explain how that demand and supply together determine equilibrium price.
- CO4 Demonstrate marginal productivity theory of distribution, theory of wages, identify different types of rent, illustrate different theories of interest and profit.

3 Macro Economics-I

- CO1 Difference between Micro and Macro Economics, importance of macro Economics and Macro Economic variables
- CO2 Define and explain the process of calculating national income, identify its components, demonstrate circular flow of income, analyse the various identities with government and international trade
- CO3 Demonstrate the meaning and functions of money, illustrate various versions of quantity theory of money

- CO4 Explain the meaning of consumption function, relationship between APC and MPC, consumption and income, concept of multiplier and accelerator, MEC and rate of interest.

4 Macro Economics-II

- CO1 Analyse different phases of trade cycles, demonstrate various phases of trade cycles, understand the impact of cyclical fluctuations on the growth of business, and lay policies to control trade cycles.
- CO2 Illustrate the meaning of inflation, identify different kinds of inflation, causes and effects of inflation on different sectors of the economy, describe different measures to control it.
- CO3 Identify types of banks, explain the meaning and functions of commercial banks, illustrate how bank create credit, and suggest the instruments to control it
- CO4 Explain economic growth and development, determinants of economic development and measurement of economic development.

5.Agricultural Economics

- CO1 Understand limited resources available in the economy. Realize the need to exploit and utilize through development and improvement of production techniques
- CO2 Productivity trends in Indian agriculture with special reference to Andhra Pradesh
- CO3 Green revolution and its impact on Indian economy
- CO4 Emerging trends in processing, marketing and exports in agricultural products

DEPARTMENT OF COMMERCE:

SL NO	PROGRAMME	SPECIFIC OUT COMES
1.	B.COM – GENERAL (TM)	<ul style="list-style-type: none">• To understand the nature, scope and concepts of Accounting, Business Operations and Management.• To analyses the relationship between Accounting, Auditing and Taxation.• To understand the application of Corporate Accounting Principles and Practices in real time business situations.• To enable the students to understand the legal environment and its effect on business, industry, commerce and management.• To understand the nature, scope and concepts of financial services sector.
2	B.COM – COMPUTER APPLICATIONS (EM)	<ul style="list-style-type: none">• To understand the nature, scope and concepts of Accounting, Business Operations and Management.• To enable the students to understand the concepts of computer software and its applications in business operations.• To equip the students with business analytics and e-commerce skills.• To make them learn the latest technologies and their application in modern business operations

DEPARTMENT OF MATHEMATICS:

UG COURSE OUTCOMES:

PAPER-I: DIFFERENTIAL EQUATIONS

Upon completion of the course students should be able

- To analyze real world scenarios to recognize when ordinary differential equations (ODEs) or systems of ODEs are appropriate, formulate problems about the scenarios, creatively model these scenarios (using technology, if appropriate) in order to solve the problems using multiple approaches, judge if the results are reasonable, and then interpret and clearly communicate the results
- To recognize ODEs and system of ODEs concepts that are encountered in the real world, understand and be able to communicate the underlying mathematics involved to help another person gain insight into the situation
- To work with ODEs and systems of ODEs in various situations and use correct mathematical terminology, notation, and symbolic processes in order to engage in work, study, and conversation on topics involving ODEs and systems of ODEs with colleagues in the field of mathematics, science or engineering

PAPER-II: SOLID GEOMETRY

After studying this course, students should be able

- To understand geometrical terminology for angles, triangles, quadrilaterals and circles
- To measure angles using a protractor
- To use geometrical results to determine unknown angles
- To recognise line and rotational symmetries
- To find the areas of triangles, quadrilaterals and circles and shapes based on these

PAPER-III: ABSTRACT ALGEBRA

Upon successful completion of Abstract Algebra, students will be able to

- Assess properties implied by the definitions of groups and rings
- Use various canonical types of groups (including cyclic groups and groups of permutations) and canonical types of rings (including polynomial rings and modular rings)
- Analyze and demonstrate examples of subgroups, normal subgroups and quotient groups
- Analyze and demonstrate examples of ideals and quotient rings
- Use the concepts of isomorphism and homomorphism for groups and rings

- Produce rigorous proofs of propositions arising in the context of abstract algebra

PAPER-IV: REAL ANALYSIS

Upon successful completion of Real Analysis, students will be able to

- Describe the real line as a complete, ordered field
- Determine the basic topological properties of subsets of the real numbers
- Use the definitions of convergence as they apply to sequences, series, and functions
- Determine the continuity, differentiability, and integrability of functions defined on subsets of the real line
- Apply the Mean Value Theorem and the Fundamental Theorem of Calculus to problems in the context of real analysis
- Produce rigorous proofs of results that arise in the context of real analysis

PAPER-V: RING THEORY AND VECTOR CALCULUS

- Upon successful completion of Ring Theory and Vector Calculus, students will be able to
- Describe the concept of ring (algebraic structure associated with two binary operations)
- Distinguish the integral domain, fields
- Define subring, ideals, Quotient rings & Euclidean Rings
- Able to apply fundamental theorem of homomorphism for different groups
- Differentiates the rings, maximal and prime ideals
- Defines line integral, surface integral, volume integrals with examples
- Converts from line integral to surface, surface to volume etc using the theorems, Green's theorem in plane, Gauss Divergence theorem.

PAPER-VI: LINEAR ALGEBRA

Upon successful completion of Linear Algebra, students will be able to

- Solve systems of linear equations
- Analyze vectors in \mathbb{R}^n geometrically and algebraically
- Recognize the concepts of the terms span, linear independence, basis, and dimension, and apply these concepts to various vector spaces and subspaces
- Use matrix algebra and the related matrices to linear transformations,
- Compute and use determinants,
- Compute and use eigenvectors and eigenvalues
- Determine and use orthogonality

PAPER-VII: LAPLACE TRANSFORMS

Upon successful completion of Laplace Transforms, students will be able to

- Find the Laplace transform of a function by definition and by use of a table
- Find the inverse Laplace transform of a function
- Write piecewise functions using the unit step function
- Find transforms using the first and second translation theorems
- Find the convolution of two functions and the transform of a convolution
- Find the transforms of derivatives and integrals
- Solve linear differential equations with constant coefficients and unit step input functions using the Laplace transform

DEPARTMENT OF CHEMISTRY:

PROGRAMME SPECIFIC OUT COMES OF B.Sc. (CHEMISTRY) PROGRAMMES

B.Sc - Mathematics, Physics, Chemistry (M.P.C)-

Programme Specific Outcomes

PSO 1: Understand the theoretical concepts of physical and chemical properties of materials

and the role of mathematics in dealing with them in a quantitative way.

PSO 2: Analyse the concepts of mathematics, physics and chemistry and understand the

relation among them like physical chemistry, mathematical modelling of physics and

chemistry problems.

Skills needed to handle instruments and adopt lab procedures to study physical chemical

properties of materials.

PSO 3: Mathematical, numerical techniques required to model them.

PSO 4: Ability to interlink the skills and knowledge in mathematics, physics and chemistry

and develop an aptitude to address the problems in biophysics, stock market analysis.

B.Sc - Botany, Zoology, Chemistry (B.Z.C)

Programme Specific Outcomes

PSO 1: To understand principles of origin of life and its evolutionary trends, Microbial

diversity, chemical theory related to origin of life

PSO 2: To analysis the taxonomic range of various life forms as per their external characters

and internal chemical constitutions (chemo taxonomy)

PSO 3: The knowledge about of ecological and phyto geographical studies related in

environmental biodiversity with biotic and abiotic factors

PSO 4: Skills to study the principles of tissue culture techniques in biology leads to various

diversity of life forms (hybrids) by using chemically synthesised growth hormones.

PSO 5: Ability to design the evolution of drugs form the biological sources and its

applications without any side effects in nature.

DEPARTMENT PF PHYSICS:

Course Outcomes :

PAPER – 1 Mechanics

Learn the skills to analyse and solve problems involving bodies in motion through the application of vector analysis and mechanics. Learn the basic ideas and equation of Einstein special theory of relativity.

PAPER – 2 Waves and Oscillations

Express complex vibrating physical systems in a mathematical form that can be solved by using Fourier methods. Learn to use methods for solving differential equations

PAPER – 3 Optics

Use of matrices in different equations of light To explore different characteristics of light like Interference, Diffraction and Polarization

PAPER – 4 Thermodynamics

To understand the concepts of heat engine and refrigerator. To understand the Quantum theory of radiation

PAPER - 5 Electrostatic & Magnetostatics Basic and Digital Electronics

Understand the relation between electric charge, electric field, electrical potential and magnetism. Calculate the magnitude and direction of the magnetic field for symmetric current distribution using the law of Biot-savart's law and Ampere's law.

PAPER - 6 Modern Physics

Study the molecular structure of molecules using Raman effect. Understand the concepts of Quantum mechanics dealt with Schrodinger wave mechanism.

7 PAPER VII - A Analog and Digital Electronics

Study different application of operational amplifier. Study different digital applications like Multiplexers, Encoders, and flip-flops.

8 PAPER VII - B Material Science

Study of material bonding and their behavior Study of mechanical, magnetic and dielectric materials

9 PAPER VII - C Renewable energy

To emphasize different types of energy sources and their origin. Production of electric energy from Thermal, Hydro, Wind, Solar and Tidal energies.

10 PAPER VIII(B)-1 Fundamentals of Nanoscience

To Study the classification of nano materials. Study of Biomaterials.

11 PAPER VIII(B)-2 Synthesis and Characterization of nanomaterials

Different methods of production of nano materials. Study of different characterization methods of XRD, SEM, TEM, AFM, XPS and PL

12 PAPER VIII(B)-3

Applications of Nano materials and Devices

Understand the optical properties and electric transport of nano materials.

Applications of Nano technology in Biotechnology and Medical science

13 PAPER VIII(C)-1 Solar Thermal and Photovoltaic Aspects

Study of Basics of Solar Radiation, Radiative Properties and Characteristics of Materials. Study of Solar cell module assembly

14 PAPER VIII(C)-2 Wind, Hydro and Ocean Energies

Study of Wind Energy Conversion System To attain knowledge on Ocean Thermal, Tidal and Wave Energy Systems

15 paper VIII (C) -3 Energy Storage Devices

To illustrate different modes of energy storage To understand the working principle and classification of Fuel cells

DEPARTMENT OF COMPUTER SCIENCE:

Course Name	Course Outcomes
Computer Fundamentals and Photoshop	<ul style="list-style-type: none">• The student is able to explore the basic knowledge of computer hardware and software.• The student is able to learn and work on adobe Photoshop applications.• The student is able to create and edit photo albums.• The student is able to design and edit Banners and visiting cards etc..
Programming in C	<ul style="list-style-type: none">• Appreciate and understand the working of a digital computer• Analyse a given problem and develop an algorithm to solve the problem• Use the 'C' language constructs in the right way• Design, develop and test programs written in 'C'
Object Oriented Programming using JAVA	<ul style="list-style-type: none">• Understand the concept and underlying principles of Object-Oriented Programming• Understand how object-oriented concepts are incorporated into the Java programming language• Develop problem-solving and programming skills using OOP concept• Become familiar with the fundamentals and acquire programming skills in the Java language.
Data Structures	<ul style="list-style-type: none">• student knows how arrays, records, linked structures, stacks, queues, trees, and graphs are represented in memory and its applications• Write programs that use arrays, records, linked

	<p>structures, stacks, queues, trees, and graphs</p> <ul style="list-style-type: none"> • Compare and contrast the benefits of dynamic and static data structures implementations • Describe the concept of recursion, give examples of its use, describe how it can be implemented using a stack. • Discuss the computational efficiency of the principal algorithms for sorting, searching, and hashing.
<p style="text-align: center;">Database Management Systems</p>	<ul style="list-style-type: none"> • Student knows database structure and its design • Students are able to understand Different data models used for database design • Students are able to understand database transactions and data recovery • Students can use DML,DDL,DCL commands to manipulate data in the database
<p style="text-align: center;">Software Engineering</p>	<ul style="list-style-type: none"> • Ability to gather and specify requirements of the software projects. • Ability to analyse software requirements with existing tools • Able to differentiate different testing methodologies and apply the basic project management practices in real life projects • Ability to work in a team as well as independently on software projects

Operating Systems	<ul style="list-style-type: none">• . Analyse the concepts of processes in operating system and illustration of the scheduling of processor for a given problem instance.• Identify the dead lock situation and provide appropriate solution so that protection and security of the operating system is also maintained.• . Analyse memory management techniques, concepts of virtual memory and disk scheduling.
Computer Networks	<ul style="list-style-type: none">• Identify the different components in a Communication System and their respective roles.• Describe the technical issues related to the local Area Networks• Knows about different topologies and network types• Identify the common technologies available in establishing LAN infrastructure.

<p>GUI Programming</p>	<ul style="list-style-type: none"> • Design and develop Windows application using different Windows technologies that use a variety of GUI controls and classes to fulfill specific user requirements. • Explain how event driven applications use threading to perform time-consuming operations. • Demonstrate how to use specific features of the GUI programming language to write objectoriented programs and handle run-time errors. • Explain in a public setting how user interfaces should be designed to accommodate human physiology and limitations.
<p>Web Technologies</p>	<ul style="list-style-type: none"> • . To understand the web architecture and web services. • To practice latest web technologies and tools by conducting experiments. • . To design interactive web pages using HTML and Style sheets. • To study the framework and building blocks of .NET Integrated Development Environment. • To provide solutions by identifying and formulating IT related problems.
<p>Foundation of Data Science</p>	<ul style="list-style-type: none"> • Able to apply fundamental algorithmic ideas to process data. • Learn to apply hypotheses and data into actionable predictions. • Document and transfer the results and effectively communicate the findings using visualization techniques.

Big Data	<ul style="list-style-type: none">• Learn tips and tricks for Big Data use cases and solutions.• Learn to build and maintain reliable, scalable, distributed systems with Apache Hadoop.• Able to apply Hadoop ecosystem components.
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DEPARTMENT OF ENGLISH:

COURSE OBJECTIVES AND OUTCOMES - General English

OBJECTIVES :

1. Ability to be comfortable with English in use while reading or listening.

2. Ability to use receptive skills through reading and listening to acquire good exposure to language and literature.

3. Ability to write and speak good English in all situations.

4. Students should develop style in speech and writing and manipulate the tools of language for effective communication.

OUTCOMES :

1. Students can read and understand any text in English listening to the inputs given by the teacher in the classroom.

2. Students imbibe the rules of language unconsciously and tune to deduce language structure and usage.

3. Students write paragraphs, essays, and letters.

4. Students decipher the mechanism of language and use it for success in competitive examinations and job related speaking and writing tasks.

COURSE OBJECTIVES AND OUTCOMES - Foundation Course in Communication Skills

OBJECTIVES :

1. Ability to trace the difference of pronunciation of words, their correct pronunciation, accent and intonation.

2. Ability to use English correctly in speaking and writing skills.

OUTCOMES :

1. Students refer to dictionary and study the correct stress, right accent and right intonation to ask questions, make requests or to make command.

2. Students perform various speaking and writing tasks, such as roleplays, debates, group discussions apart from the use of correct spelling, punctuation and the ability to transfer information in the writing tasks.