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THE NATIONAL COLLEGE BASAVANAGUDI, BENGALURU- 04

AUTONOMOUS

Website: www.ncbgudi.com

Program Outcomes (POs), Program Specific Outcomes (PSOs) and Course Outcomes (COs) for all Programs offered by the institution.

PROGRAM OUTCOMES	
POs of General Higher Education Program should be identified by the Autonomous College offering the three-year Program Students of all undergraduate general degree Program at the time of graduation will be able to	
PO1:	**Critical Thinking:**
	Take informed actions after identifying the assumptions that frame our thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational, and personal) from different perspectives.
PO2:	**Effective Communication:**
	Speak, read, write and listen clearly in person and through electronic media in English and in one Indian language, and make meaning of the world by connecting people, ideas, books, media and technology.
PO3:	**Social Interaction:**
	Elicit views of others, mediate disagreements and help reach conclusions in group settings.
PO4:	**Effective Citizenship:**
	Demonstrate empathetic social concern and equity centred national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.
PO5:	**Ethics:**
	Recognize different value systems including your own, understand the moral dimensions of your decisions, and accept responsibility for them.
PO6:	**Environment and Sustainability:**
	Understand the issues of environmental contexts and sustainable development.
PO7:	**Self-directed and Life-long Learning:**
	Acquire the ability to engage in independent and life-long learning in the broadest context socio-technological changes.

PROGRAM SPECIFIC OUTCOMES-
Bachelor of Arts

PSOs emphasize interdisciplinary knowledge, ethical and social responsibility, and communication skills across multiple platforms and languages.	
PSO1:	**Interdisciplinary Application of Social and Economic Theories**
	Students will critically apply theories from sociology, economics, and media studies to analyze social issues, economic systems, and cultural contexts in the real world.
PSO2:	**Research and Analytical Skills**
	Students will develop the ability to carry out research in social sciences and humanities, including qualitative and quantitative methods, data collection, and analysis.
PSO3:	**Effective Communication Skills**
	Students will be proficient in written, oral, and visual communication, ensuring they can present ideas effectively in English and Kannada, catering to diverse audiences.
PSO4:	**Ethics in Media and Society**
	Students will understand and apply ethical principles in media, journalism, and social studies, ensuring responsible reporting, research, and social engagement.
PSO5:	**Critical Media Literacy**
	Students will develop critical thinking skills to analyze media content and identify biases, framing, and the socio-political implications of media representation.
PSO6:	**Empathetic Social Concern**
	Students will demonstrate social awareness and empathy for marginalized communities, understanding socio-economic disparities and advocating for social change through volunteerism and activism.
PSO7:	**Understanding of Global and Local Socio-Economic Issues**
	Students will analyze both global and local social and economic issues, understanding how they interconnect and affect diverse communities.
PSO8:	**Civic Engagement and Leadership**
	Students will be equipped to take leadership roles in civic and community activities, including volunteering, organizing events, and advocating for policy change.
PSO9:	**Advanced Writing and Journalism Skills**
	Students will acquire professional writing skills suited for journalism, including news reporting, feature writing, editorial commentary, and digital content creation.
PSO10:	**Interpersonal and Collaborative Skills**
	Students will develop effective interpersonal communication and teamwork skills, enabling them to collaborate with peers, stakeholders, and the community in professional settings.

PROGRAM SPECIFIC OUTCOMES-
Bachelor of Science

PSOs focus on scientific inquiry, lab skills, interdisciplinary collaboration, and the application of technology in research and sustainability.	
PSO1:	**Comprehensive Scientific Knowledge**
	Students will gain deep knowledge in their selected scientific disciplines, with an emphasis on both theoretical and practical applications.
PSO2:	**Laboratory and Experimental Skills**
	Students will develop hands-on laboratory skills, including the design, execution, and interpretation of experiments across their chosen fields of study.
PSO3:	**Interdisciplinary Problem Solving**
	Students will integrate knowledge from different scientific disciplines to solve real-world scientific and technical challenges.
PSO4:	**Mathematical and Computational Proficiency**
	Students will develop strong mathematical and computational skills, utilizing advanced techniques for data analysis, modelling, and problem-solving in scientific research.
PSO5:	**Research Methodology and Scientific Writing**
	Students will acquire the ability to conduct scientific research, analyse experimental data, and present their findings in a clear, concise, and systematic manner in written and oral formats.
PSO6:	**Understanding of Scientific Theories and Laws**
	Students will be able to explain and apply fundamental scientific theories and principles.
PSO7:	**Sustainability and Environmental Awareness**
	Students will develop an understanding of environmental sustainability, the impact of human activity on ecosystems, and the importance of green technology and sustainable practices.
PSO8:	**Advanced Problem-Solving Using Technology**
	Students will use advanced technologies, including simulation software, lab instruments, and computational tools, to solve complex scientific problems and analyse data.
PSO9:	**Scientific Communication and Presentation Skills**
	Students will be equipped to effectively communicate their scientific findings to both expert and non-expert audiences, through presentations, papers, and digital platforms.
PSO10:	**Ethics and Responsibility in Science**
	Students will understand and apply ethical principles in scientific research and practice, ensuring integrity in data collection, reporting, and handling of sensitive or controversial issues.

PROGRAM SPECIFIC OUTCOMES-
Bachelor of Computer Applications

PSOs cover a wide array of technical skills from programming to cybersecurity, along with professional ethics and soft skills for IT careers.	
PSO1:	**Proficiency in Programming Languages**
	Students will gain expertise in multiple programming languages such as Java, Python, C++, and web development languages, enabling them to design and develop software applications.
PSO2:	**Database Management and Design**
	Students will acquire the knowledge to design, implement, and manage databases, understanding normalization, relational databases, and SQL for data retrieval and manipulation.
PSO3:	**Software Engineering and Development Methodologies**
	Students will learn software development methodologies like Agile, Waterfall, and DevOps, enabling them to participate in or manage software projects from inception to delivery.
PSO4:	**System Analysis and Design**
	Students will develop the skills to analyze user requirements, design system specifications, and develop software solutions that meet business or organizational needs.
PSO5:	**Networking and Security**
	Students will gain an understanding of networking protocols, network design, and security measures necessary to protect digital systems from cyber threats.
PSO6:	**Mobile and Web Application Development**
	Students will learn to design and develop mobile applications and web solutions, utilizing modern frameworks and tools for front-end and back-end development.
PSO7:	**Data Structures and Algorithms**
	Students will develop a strong understanding of fundamental data structures (like arrays, trees, and graphs) and algorithms (sorting, searching, optimization) for solving computational problems efficiently.
PSO8:	**Cloud Computing and Big Data**
	Students will gain practical knowledge in cloud computing platforms and big data technologies, including storage, processing, and analytics, for managing large-scale data-driven applications.
PSO9:	**Ethics and Professionalism in Technology**
	Students will develop an understanding of the ethical, legal, and social implications of technology, including issues of privacy, intellectual property, and cybersecurity.
PSO10:	**Soft Skills for IT Professionals**
	Students will enhance their communication, problem-solving, and teamwork skills, preparing them to work effectively in collaborative, interdisciplinary IT environments.

PROGRAM SPECIFIC OUTCOMES-
Bachelor of Commerce

PSOs highlight financial management, economics, taxation, business law, marketing, and entrepreneurship, equipping students for roles in diverse business sectors.	
PSO1:	**Core Accounting and Financial Management Skills**
	Students will develop the ability to prepare and interpret financial statements, and make informed decisions based on accounting principles and financial data.
PSO2:	**Business Economics and Financial Analysis**
	Students will gain a comprehensive understanding of micro and macroeconomic principles, and their application to business decision-making, market analysis, and policy formulation.
PSO3:	**Corporate Finance and Investment Management**
	Students will acquire the knowledge and skills to manage business finances, including capital budgeting, risk assessment, financial forecasting, and investment management.
PSO4:	**Taxation and Regulatory Compliance**
	Students will understand the principles of taxation (income tax, GST, etc.), and the legal framework that governs business transactions, including corporate and labour law.
PSO5:	**Business and Strategic Management**
	Students will develop the ability to plan, organize, and execute business strategies, assessing market opportunities and competitive positioning in both local and global contexts.
PSO6:	**Marketing and Consumer Behaviour**
	Students will develop an understanding of marketing principles, consumer behaviour, and market research, enabling them to create effective marketing strategies for diverse products and services.
PSO7:	**Human Resource Management and Organizational Behavior**
	Students will acquire knowledge in managing human resources, understanding organizational behaviour, and applying HR practices like recruitment, training, and performance management.
PSO8:	**Entrepreneurship and Business Development**
	Students will develop the entrepreneurial mindset, understanding how to create, manage, and scale new businesses, including sourcing funding and managing risks.
PSO9:	**Corporate Governance and Ethics**
	Students will understand corporate governance principles, ethical business practices, and corporate social responsibility (CSR), ensuring they contribute to sustainable business practices.
PSO10:	**Communication and Negotiation Skills**
	Students will develop strong communication and negotiation skills, enabling them to interact effectively with clients, stakeholders, employees, and business partners.

DEPARTMENT OF COMPUTER SCIENCE	
COURSE OUTCOMES-BCA	
FIRST SEMESTER	
Course Name:	BCA
Paper Title:	Discrete Structures
Course Code:	BC1-MT-T1
CO 1:	Analyze logical propositions via truth tables.
CO 2:	Prove mathematical theorems using mathematical induction.
CO 3:	Understand sets and perform operations and algebra on sets.
CO 4:	Determine properties of relations, identify equivalence, sketch relations.
CO 5:	Identify functions and determine their properties.
CO 6:	Define graphs, digraphs and trees, and identify their main properties.
CO 7:	Evaluate combinations and permutations on sets.
Course Name:	BCA
Paper Title:	Programming In C
Course Code:	BC1-PC-T2
CO 1:	Confidently operate Desktop Computers to carry out computational tasks
CO 2:	Understand programming languages, number systems, peripheral devices, networking, multimedia and internet concepts
CO 3:	Read, understand and trace the execution of programs written in C language
CO 4:	Write the C code for a given problem
CO 5:	Perform input and output operations using programs in C
CO 6:	Write programs that perform operations on arrays
Course Name:	BCA
Paper Title:	Database Management System
Course Code:	BC1-DB-T3
CO 1:	Have a broad understanding of database concepts and database management system software.
CO 2:	Have a high-level understanding of major DBMS components and their function.
CO 3:	Be able to model an application's data requirements using conceptual modeling tools like ER diagrams and design database schemas based on the conceptual model.
CO 4:	Able to write queries using SQL Server
Course Name:	BCA
Paper Title:	Programming in C Lab
Course Code:	BC1-PC-P1
CO 1:	Students acquire the knowledge to build the logic and develop a solution for aproblem statement.

Course Name:	**BCA**
Paper Title:	**Database Management System Lab**
Course Code:	**BC1-DB-P2**
CO 1:	Have a broad understanding of database concepts and database management systemsoftware.
CO 2:	Have a high-level understanding of major DBMS components and their function.
CO 3:	Be able to model an application's data requirements using conceptual modeling toolslike ER diagrams and design database schemas based.
Course Name:	**Open Elective: Computer Science**
Paper Title:	**Journey into Fundamentals and C Programming concepts**
Course Code:	**OE1-CS1**
CO 1:	Confidently operate Desktop Computers to carry out computational tasks
CO 2:	Understand working of Hardware and Software and the importance of operating systems
CO 3:	Understand programming languages, number systems, peripheral devices, networking, multimedia and internet concepts
CO 4:	Read, understand and trace the execution of programs written in C language
CO 5:	Write the C code for a given problem
CO 6:	Perform input and output operations using programs in C
CO 7:	Write programs that perform operations on arrays
Course Name:	**SKILL ENHANCEMENT: Computer Science**
Paper Title:	**Digital Fluency**
Course Code:	**SB1-DF**
CO 1:	Help students and employees learn to use digital technologies in a safe, secure, and efficient way.
SECOND SEMESTER	
Course Name:	**BCA**
Paper Title:	**COMPUTER ARCHITECTURE**
Course Code:	**BC2-CA-T1**
CO 1:	Be familiar with the history and development of modern computers.
CO 2:	Be familiar with Number System and Boolean algebra.
CO 3:	Be familiar with Combinational and logic circuits.
CO 4:	Be familiar with organization and design of modern computer and its architecture.
CO 5:	Be familiar with I/O organization and Memory organization
Course Name:	**BCA**
Paper Title:	**DATA STRUCTURES**

Course Code:	**BC2-DS-T2**
CO 1:	Understand the need for Data Structures when building application.
CO 2:	Appreciate the need for optimized algorithm.
CO 3:	Able to walk through insert and delete for different data structures.
CO 4:	Ability to calculate and measure efficiency of code.
CO 5:	Improve programming skills.
Course Name:	**BCA**
Paper Title:	**Object Oriented Programming with JAVA**
Course Code:	**BC2-JV-T3**
CO 1:	Understand the features of Java and the architecture of JVM
CO 2:	Write, compile, and execute Java programs that may include basic data types andcontrol flow constructs and how type casting is done
CO 3:	Identify classes, objects, members of a class and relationships among them needed for a specific problem and demonstrate the concepts of polymorphism and inheritance
CO 4:	The students will be able to demonstrate programs based on interfaces and threads and explain the benefits of JAVA's Exceptional handling mechanism compared to other Programming Language
CO 5:	Write, compile, execute Java programs that include GUIs and event driven programming and also programs based on files
Course Name:	**BCA**
Paper Title:	**Data Structures Lab Programs**
Course Code:	**BC2-DS-P3**
CO 1:	Upon completion of the course, the students acquire the knowledge to build the logic and develop a solution for a problem statement.
Course Name:	**BCA**
Paper Title:	**Java Lab**
Course Code:	**BC2-JV-P4**
CO 1:	Upon completion of the course, the students acquire the knowledge to build the suitable logic for solving the problem.
CO 2:	Students can create a software application, test, document and prepare a professional looking package for each project.
Course Name:	**Open Elective: Computer Science**
Paper Title:	**Python Programming**
Course Code:	**OE2-CS2**
CO 1:	Problem solving and programming capability.

Course Name:	SKILL ENHANCEMENT: Computer Science
Paper Title:	Digital Fluency
Course Code:	SB2-DF
CO 1:	Help students and employees learn to use digital technologies in a safe, secure, and efficient way.
THIRD SEMESTER	
Course Name:	BCA
Paper Title:	OPERATING SYSTEM
Course Code:	BC3-OS-T1
CO 1:	Explain the fundamentals of the operating system.
CO 2:	Comprehend multithreaded programming, process management, process synchronization, memory management and storage management.
CO 3:	Compare the performance of Scheduling Algorithms
CO 4:	Identify the features of I/O and File handling methods.
Course Name:	BCA
Paper Title:	COMPUTER NETWORKS
Course Code:	BC3-CN-T2
CO 1:	Describe the general principles of data communication.
CO 2:	Describe how computer networks are organized with the concept of layered approach.
CO 3:	Describe how signals are used to transfer data between nodes.
CO 4:	Implement a simple LAN with hubs, bridges and switches.
CO 5:	Compare the different layers of protocols.
CO 6:	Apply the basics of data communication and various types of Computer networks in real world application.
Course Name:	BCA
Paper Title:	Python Programming
Course Code:	BC3-PP-T3
CO 1:	Problem solving and programming capability.
Course Name:	BCA
Paper Title:	Computer Networks Lab
Course Code:	BC3-CN-P5
CO 1:	Understand the practical approach to network communication protocols.
CO 2:	Understand network layers, structure/format and role of each network layer.
CO 3:	Able to design and implement various network application such as data transmission between client and server, file transfer, real-time multimedia transmission.
CO 4:	Understand the various Routing Protocols/Algorithms and Internetworking.

Course Name:	**BCA**
Paper Title:	**Python Lab**
Course Code:	**BC3-PP-P6**
CO 1:	Understand principles of Python.
CO 2:	Ability to understand Python code, develop medium-difficulty applications in Python.
CO 3:	Understand the pros and cons on scripting languages vs. classical programming languages.
CO 4:	Use Python data structure & develop Python programs by defining functions & calling them.
CO 5:	Understand object-oriented programming.
Course Name:	**Open Elective: Computer Science**
Paper Title:	**Fundamentals of HTML & CSS**
Course Code:	**OE3-CS3**
CO 1:	Create web pages using HTML and Cascading Styles sheets.
Course Name:	**SKILL ENHANCEMENT: Computer Science**
Paper Title:	**Computer Assembly and Maintenance**
Course Code:	**SB3-CA**
CO 1:	Identify & demonstrate the functions of various hardware components.
CO 2:	Assemble & disassemble a desktop computer system.
FOURTH SEMESTER	
Course Name:	**BCA**
Paper Title:	**Software Engineering**
Course Code:	**BC4-SE-T1**
CO 1:	Basic knowledge and understanding of the analysis and design of complex systems.
CO 2:	Ability to apply software engineering principles and techniques.
CO 3:	Ability to develop, maintain and evaluate large-scale software systems.
CO 4:	To produce efficient, reliable, robust and cost-effective software solutions.
CO 5:	Ability to perform independent research and analysis.
Course Name:	**BCA**
Paper Title:	**Design and Analysis of Algorithms**
Course Code:	**BC4-DA-T2**
CO 1:	Analyze the asymptotic performance of algorithms.
CO 2:	Write rigorous correctness proofs for algorithms.
CO 3:	Demonstrate a familiarity with major algorithms and data structures.
CO 4:	Synthesize efficient algorithms in common engineering design situations.

Course Name:	**BCA**
Paper Title:	**INTERNET TECHNOLOGIES**
Course Code:	**BC4-IT-T3**
CO 1:	Analyze a web page and identify its elements and attributes.
CO 2:	Create web pages using HTML and Cascading Styles sheets.
CO 3:	Build dynamic web pages using JavaScript (client-side programming).
Course Name:	**BCA**
Paper Title:	**Design and Analysis of Algorithms Lab**
Course Code:	**BC4-PC-P7**
CO 1:	Students can design algorithms for various computing problems, and choose the best algorithm or a combination of algorithms for a given problem.
Course Name:	**BCA**
Paper Title:	**Internet Technologies Lab**
Course Code:	**BC4-DB-P8**
CO 1:	Analyze a web page and identify its elements and attributes.
CO 2:	Create web pages using XHTML and Cascading Styles sheets. Build dynamic web pages using JavaScript (client-side programming).
Course Name:	**SKILL ENHANCEMENT: Computer Science**
Paper Title:	**Artificial Intelligence**
Course Code:	**SB4-AI**
CO 1:	Provides foundational knowledge of AI & practical skills for implementing AI solutions.
FIFTH SEMESTER	
Course Name:	**BCA**
Paper Title:	**ARTIFICIAL INTELLIGENCE**
Course Code:	**BC5-AI-T1**
CO 1:	Understand the various characteristics of problem-solving agents and apply problem solving through search for AI applications.
CO 2:	Appreciate the concepts of knowledge representation using Propositional logic and Predicate calculus and apply them for inference/reasoning.
CO 3:	Obtain insights about Planning and handling uncertainty through probabilistic reasoning and fuzzy systems.
CO 4:	Understand basics of computer vision and Natural Language Processing and understand their relevance in AI applications.
CO 5:	Obtain insights about machine learning, neural networks, deep learning networks and their significance.
Course Name:	**BCA**
Paper Title:	**DATA ANALYTICS**

Course Code:	**BC5-DA-T2**
CO 1:	Explore the fundamental concepts of data analytics
CO 2:	Recognize and conduct statistical inference to solve engineering problems.
CO 3:	Appreciate the science of statistics and the scope of its potential applications
CO 4:	Summarize and present data in meaningful ways
CO 5:	Select the appropriate statistical analysis depending on the research question at hand
CO 6:	Form testable hypotheses that can be evaluated using common statistical analyses
Course Name:	**BCA**
Paper Title:	**WEB PROGRAMMING**
Course Code:	**BC5-WP-T3**
CO 1:	Understand the basics of Web Programming concepts
CO 2:	To build dynamic web pages with validation using JavaScript objects and by applying different event-handling mechanisms.
CO 3:	Analyze various PHP library functions that manipulate files and directories.
CO 4:	To develop modern interactive web applications using PHP and XML
Course Name:	**BCA**
Paper Title:	**Cloud Computing**
Course Code:	**BC5-CC-T4.2**
CO 1:	Analyze the performance of Cloud Computing
CO 2:	Understand the concept of Cloud Security.
CO 3:	Learn the Concept of Cloud Infrastructure Model.
Course Name:	**BCA**
Paper Title:	**Data Analytics Lab**
Course Code:	**BC5-PC-P1**
CO 1:	Students can learn to perform statistical analysis on data and use statistical analysis techniques to solve problems.
Course Name:	**BCA**
Paper Title:	**WEB PROGRAMMING LAB**
Course Code:	BC5-DB-P2
CO 1:	Students can develop web pages using HTML, Cascading Style Sheets (CSS)
Course Name:	**BCA: Vocational Course**
Paper Title:	**QUANTITATIVE TECHNIQUES**
Course Code:	**BC5-VOC1**
CO 1:	Students can learn the basic mathematical and statistical techniques required for quantitative analysis.

Course Name:	**BCA: Skill Enhancement Course**
Paper Title:	**Cyber Crimes, Cyber Laws and Intellectual Property Rights**
Course Code:	**SB2-CY**
CO 1:	Understand cybercrimes, their nature, legal remedies and as to how report the crimes through available platforms and procedures.
CO 2:	Recognize various privacy and security concerns on social media and e-commerce platforms.
CO 3:	Use basic tools and technologies to protect their devices.
CO 4:	Understand digital environment and IPR issues
SIXTH SEMESTER	
Course Name:	**BCA**
Paper Title:	**Machine Learning**
Course Code:	**BC6-MT-T1**
CO 1:	Learn the basics of machine learning, understanding its uses, challenges, and various applications.
CO 2:	Build practical data skills, covering data collection, analysis, visualization, and preparation.
CO 3:	Become skilled in using classification and regression algorithms, including selecting, training, and evaluating models.
CO 4:	Dive into advanced clustering and specialized applications, using methods like K Means, DBSCAN, and others.
Course Name	**BCA**
Paper Title:	**Mobile Application Development**
Course Code:	**BC6-PC-T2**
CO 1:	Understand the basic concepts of Mobile application development
CO 2:	Design and develop user interfaces for the Android platforms
CO 3:	Apply Java programming concepts to Android application development and create an application using database
Course Name:	**BCA: Vocation Course**
Paper Title:	**Electronic Content Design**
Course Code:	**BM6-VOC1**
CO 1:	To deliver the content via various media such as radio, television, computer etc
CO 2:	To increase students' concentration on particular subject matter in depth learning
CO 3:	To feel emotionally good with joyful learning and active learning involvement of students during the content delivery
CO 4:	To reuse many time the content to various group of same class without hesitate and unchanging.
CO 5:	To handle easy to the facilitators during the content delivery

CO 6:	To modify the content with present time needs.
Course Name:	**BCA: Elective**
Paper Title:	**SOFTWARE TESTING**
Course Code:	**BC6-DB-T4**
CO 1:	Differentiate the various testing techniques
CO 2:	Derive Test Cases for any given problem.
CO 3:	Classify the problem into suitable testing models.
CO 4:	Apply a wide-variety of testing techniques in an effective and efficient manner.
CO 5:	Explain the need for planning and monitoring a process
Course Name:	**BCA**
Paper Title:	**Machine Learning Lab**
Course Code:	**BC6-PC-P2**
CO 1:	Understand the mathematical and statistical prospective of machine learning algorithms through python programming.
Course Name:	**BCA**
Paper Title:	**Mobile Application Development Lab**
Course Code:	**BC6-DB-P3**
CO 1:	Students can learn to build mobile applications using various techniques, such as GUI components, event handlers, and databases.
Course Name:	**BCA**
Paper Title:	**Project Work**
Course Code:	**BC6-PC-P1**
CO 1:	Students can apply their knowledge in a chosen area of study to a project
CO 2:	Students can communicate effectively about their project activities and findings.

BACHELOR OF COMMERCE (B. COM)	
COURSE OUTCOMES	
FIRST SEMESTER	
Course Name:	**Financial Accounting**
Course Code:	**BM1-C1**
CO 1:	To explain the concepts, conventions and terms of Financial Accounting within the framework of Ind AS
CO 2:	To construct financial Statements of Sole Proprietorship and incorporating all the necessary adjustments.
CO 3:	To gain accounting knowledge in consignment.
CO 4:	To familiarize the concept of Royalty and its accounting treatment.
CO 5:	To understand the emerging trends in accounting.
Course Name:	**Management Principles and Applications**
Course Code:	**BM1-C2**
CO 1:	Understand and identify the different theories of organizations, which are relevant in the present context.
CO 2:	Design and demonstrate the strategic plan for the attainment of organizational goals.
CO 3:	Differentiate the different types of authority and chose the best one in the present context.
CO 4:	Compare and chose the different types of motivation factors and leadership styles.
CO 5:	Choose the best controlling techniques for better productivity of an organization.
Course Name:	**Principles of Marketing**
Course Code:	**BM1-C3**
CO 1:	Understand the basic concepts of marketing and asses the marketing environment.
CO 2:	Analyze the consumer behavior in the present scenario and marketing segmentation.
CO 3:	Discover the new product development & identify the factors affecting the price of a product in the present context.
CO 4:	Judge the impact of promotional techniques on the customers & importance of channels of distribution.
CO 5:	Outline the recent developments in the field of marketing.
Course Name:	**Accounting for Everyone**
Course Code:	**GE1-BM1**
CO 1:	Analyze various terms used in accounting;
CO 2:	Make accounting entries and prepare cash book and other accounts necessary while running a business;

CO 3:	Prepare accounting equation of various business transactions;
CO 4:	Analyze information from company's annual report;
CO 5:	Comprehend the management reports of the company.
SECOND SEMESTER	
Course Name:	Advanced Financial Accounting
Course Code:	BM2-C4
CO 1:	Understand & compute the amount of claims for loss of stock & loss of Profit.
CO 2:	Learn various methods of accounting for hire purchase transactions.
CO 3:	Deal with the inter-departmental transfers and their accounting treatment.
CO 4:	Demonstrate various accounting treatments for dependent & independent branches
CO5:	Prepare financial statements from incomplete records.
Course Name:	Corporate Administration
Course Code:	BM2-C5
CO 1:	Understand the framework of Companies Act of 2013 and different kind of companies.
CO 2:	Identify the stages and documents involved in the formation of companies in India.
CO 3:	Analyze the role, responsibilities and functions of Key management Personnel in Corporate Administration.
CO 4:	Examine the procedure involved in the corporate meeting and the role of company secretary in the meeting.
CO 5:	Evaluate the role of liquidator in the process of winding up of the company.
Course Name:	Law and Practice of Banking
Course Code:	BM2-C6
CO 1:	Summarize the relationship between Banker & customer and different types of functions of banker
CO 2:	Analyze the role, functions and duties of paying and collecting banker.
CO 3:	Make use of the procedure involved in opening and operating different accounts.
CO 4:	Examine the different types of negotiable instrument & their relevance in the present context.
CO 5:	Estimate possible developments in the banking sector in the upcoming days
Course Name:	Investing in Stock Markets
Course Code:	GE2-BM2
CO 1:	Explain the basics of investing in the stock market, the investment environment as well as risk & return;
CO 2:	Analyze Indian securities market;
CO 3:	Examine EIC framework and conduct fundamental analysis

CO 4:	Invest in mutual funds market.
THIRD SEMESTER	
Course Name:	**Corporate Accounting**
Course Code:	**B. Com 3.1-C7**
CO 1:	To understand the treatment of underwriting ofsecurities.
CO 2:	To comprehend the computation of Profit prior to incorporation.
CO 3:	Estimate the value of Securities.
CO 4:	Estimate the value of Goodwill.
CO 5:	Calculate the profit or loss and prepare a company's balance sheet according to Schedule III of the Companies Act 2013
Course Name:	**Business Statistics**
Course Code:	**B. Com 3.2-C8**
CO 1:	Familiarizes statistical data and descriptive statistics for business decision-making.
CO 2:	Validate the application of correlation and regression in business decisions.
CO 3:	Demonstrate the use of probability and probability distributions in business.
CO 4:	Comprehend the measures of variation and measures of skewness.
CO 5:	Show the use of index numbers in business.
Course Name:	**Cost Accounting**
Course Code:	**B. Com 3.3-C9**
CO 1:	Understand concepts of cost accounting & Methods of Costing.
CO 2:	Outline the Procedure and documentations involved in procurement of materials & compute the valuation of Inventory
CO 3:	Make use of payroll procedures & compute idle and over time.
CO 4:	Discuss the methods of allocation, apportionment & absorption of overheads
CO 5:	Prepare cost sheet & discuss cost allocation under ABC.
Course Name:	**Entrepreneurship Skills**
Course Code:	**GE3-B. Com 3**
CO 1:	Discover their strengths and weaknesses in developing the entrepreneurial mind- set.
CO 2:	Identify the different Government Institutions/Schemes available for promoting Entrepreneurs.
CO 3:	Understand the various aspects to set-up an Enterprises.
CO 4:	Familiarize Mechanism of Monitoring and maintaining an Enterprises
CO 5:	Know the various features for successful/unsuccessful entrepreneurs
Course Name:	**Financial and investment awareness**

Course Code:	**FE-3.7**
CO 1:	Provide the foundations for financial decision making
CO 2:	List out various saving and investment alternatives available for a common man
CO 3:	Give a detailed overview of stock markets and stock selection
CO 4:	Orient the learners about mutual funds and the criteria for selection.
FOURTH SEMESTER	
Course Name:	**Advanced Corporate Accounting**
Course Code:	**B. Com 4.1-C10**
CO 1:	Know the procedure of redemption of preference shares.
CO 2:	Comprehend the different methods of Mergers and Acquisition of Companies
CO 3:	Understand the process of internal reconstruction.
CO 4:	Prepare the liquidators final statement of accounts.
CO 5:	Understand the recent developments in accounting and accounting standards
Course Name:	**Business Regulatory Framework**
Course Code:	**B. Com 4.2-C12**
CO 1:	Recognize the laws relating to Contracts and its application in business activities.
CO 2:	Acquire knowledge on bailment and indemnification of goods in a contractual relationship and role of agents.
CO 3:	Comprehend the rules for Sale of Goods and rights and duties of a buyer and a seller
CO 4:	Distinguish the partnership laws, its applicability and relevance.
CO 5:	Rephrase the cyber law in the present context.
Course Name:	**Costing Methods and Techniques**
Course Code:	**B. Com 4.3-C11**
CO 1:	The method of costing applicable in different industries.
CO 2:	Determination of cost by applying different methods of costing.
CO 3:	Prepare flexible and cash budget with imaginary figures
CO 4:	Analyze the processes involved in standard costing.
CO 5:	Familiarize with the Activity Based Costing and its applications.
FIFTH SEMESTER	
Course Name:	**Financial Management**
Course Code:	**B. Com 5.1-C13**
CO 1:	Understand the role of financial managers effectively in an organization.
CO 2:	Apply the compounding & discounting techniques for time value of money.

CO 3:	Take investment decision with appropriate capital budgeting techniques for investment proposals.
CO 4:	Understand the factors influencing the capital structure of an organization
CO 5:	Estimate the working capital requirement for the smooth running of the business
Course Name:	Income Tax Law and Practice I
Course Code:	B. Com 5.1-C13
CO 1:	Understand the role of financial managers effectively in an organization.
CO 2:	Apply the compounding & discounting techniques for time value of money.
CO 3:	Take investment decision with appropriate capital budgeting techniques for investment proposals.
CO 4:	Understand the factors influencing the capital structure of an organization.
CO 5:	Estimate the working capital requirement for the smooth running of the business
Course Name:	Principles and Practice of Auditing
Course Code:	B. Com 5.3-C15
CO 1:	Understand the conceptual framework of auditing.
CO 2:	Examine the risk assessment and internal control.
CO 3:	Comprehend the relevance of IT in audit and audit sampling for testing.
CO 4:	Examine the company audit and the procedure involved in the audit of different entities.
CO 5:	Gain knowledge on different aspect of audit reporting and conceptual framework applicable on professional accountants.
Course Name:	Advanced Accounting
Course Code:	B. Com 5.4-E1
CO 1:	To understand the treatment of Employee Stock Option Scheme.
CO 2:	To familiarize with preparation of Investment accounting procedure.
CO 3:	To help students to acquire conceptual knowledge of financial statements of Banking companies.
CO 4:	To impart skills for understanding various kinds of business transactions and financial statements of Insurance companies.
Course Name:	Financial Institutions and Markets
Course Code:	B. Com 5.4-E1
CO 1:	Understand the structure of Indian financial system and its constituents.
CO 2:	Outline the role of capital and money market in economic development.
CO 3:	Comprehend primary and secondary market and its relevance in capital formation.
CO 4:	Appraise the role played by banking and development financial institutions in economic development so far.
CO 5:	Understand the different types of NBFCs and their contribution

Course Name:	**Consumer Behaviour and Market Research**
Course Code:	**B. Com 5.4-E1**
CO 1:	Recall the fundamentals of consumer behaviour
CO 2:	Categorize the consumers based on their behavioural aspects
CO 3:	Compare and Contrast consumer behaviour models
CO 4:	Conduct market research on consumer preference, store choice and consumer satisfaction
Course Name:	**Human Resource Management**
Course Code:	**B. Com 5.4-E1**
CO 1:	Comprehend the framework of HRM.
CO 2:	Know the models for evaluating the HRP programs.
CO 3:	Comprehend the need for HR environment
CO 4:	Apprehend the HR performance.
Course Name:	**GST – Law and Practice**
Course Code:	**B. Com 5.6-V1**
CO 1:	Comprehend the concepts of Goods and Services tax.
CO 2:	Understand the fundamentals of GST.
CO 3:	Analysis the GST Procedures in the Business.
CO 4:	Know the GST Assessment and its computation.
Course Name:	**Employability Skills**
Course Code:	**B. Com 5.7-ES**
CO 1:	Develop effective communication skills
CO 2:	Develop effective presentation skills
CO 3:	Preparation of CV
SIXTH SEMESTER	
Course Name:	**Advanced Financial Management**
Course Code:	**B. Com 6.1-C16**
CO 1:	Understand and determine the overall cost of capital.
CO 2:	Comprehend the different advanced capital budgeting techniques.
CO 3:	Understand the importance of dividend decisions.
CO 4:	Evaluate mergers and acquisition.
CO 5:	Understand the ethical and governance issues in financial management.
Course Name:	**Income Tax Law and Practice II**
Course Code:	**B. Com 6.2-C17**
CO 1:	Employ the procedure for computation of income from business and other Profession.

CO 2:	Employ the provisions for determining the capital gains.
CO 3:	Employ the knowledge to calculate the tax liability for an individual and the knowledge in practice to assess and file the tax.
CO 4:	Employ the computation of total income of an Individual.
CO 5:	Assessment procedure and to know the power of income tax authorities.
Course Name:	Management Accounting
Course Code:	B. Com 6.3-C19
CO 1:	Demonstrate the significance of management accounting in decision making.
CO 2:	Analyze and interpret the corporate financial statements by using various techniques.
CO 3:	Compare the financial performance of corporates through ratio analysis
CO 4:	Understand the latest provisions in preparing cash flow statement.
CO 5:	Comprehend the significance of management audit and examine the corporate reports of Management Review and Governance
Course Name:	Indian Accounting Standards
Course Code:	B. Com6.4.1-C20
CO 1:	Understand the need and benefits of accounting standards.
CO 2:	Prepare the financial statements as Indian Accounting standards.
CO 3:	Comprehend the requirements of Indian Accounting Standards for recognition, measurement and disclosures of certain items appear in financial statements
CO 4:	Understand the Accounting Standards for Items that do not Appear in Financial Statements
Course Name:	Investment Management
Course Code:	B. Com 6.4-E2
CO 1:	Understand the concept of investments, its features and various instruments.
CO 2:	Comprehend the functioning of secondary market in India.
CO 3:	Underline the concept of risk and return and their relevance in purchasing and selling of securities.
CO 4:	Illustrate the valuation of securities and finding out the values for purchase and sale of securities.
CO 5:	Demonstrate the fundamental analysis to analyze the company for purchase and sale of securities and technical analysis for trading in the share market.
Course Name:	Customer Relationship Management
Course Code:	B. Com 6.4-E2
CO 1:	Understand the concept of CRM
CO 2:	Analyze the CRM link with the other aspects of marketing
CO 3:	Understand the Role of CRM in the performance of the company.
CO 4:	Understand the CRM models in service industry
CO 5:	Comprehend the different issues in CRM

Course Name:	**Human Resource Development**
Course Code:	**B. Com 6.4-E2**
CO 1:	Comprehend the framework of HRD
CO 2:	Know the models for evaluating the HRD programs
CO 3:	Comprehend the need for employee counselling
CO 4:	Apprehend the HR performance
Course Name:	**Assessment of Persons Other than Individuals and Filing ITRs**
Course Code:	**B. Com 6.7**
CO 1:	Utilize the definitions of the various components of income tax law.
CO 2:	Complete federal income tax returns, including schedules to the Form 1040, and be able to calculate the correct amount of federal income tax.
CO 3:	Analyze simple fact situations and recognize income tax ramifications.
CO 4:	Apply basic tax concepts to simple fact situations and communicate potential income tax ramifications in writing and orally.
CO 5:	Research basic questions of federal tax law

DEPARTMENT OF PHYSICS	
COURSE OUTCOMES	
FIRST SEMESTER	
Course Name:	Physics
Paper Title:	Mechanics and Properties of Matter
Course Code:	BS1-PH1-CT1
CO 1:	Fixing units, tabulation of observations, analysis of data (graphical/analytical).
CO 2:	Accuracy of measurement and sources of errors, importance of significant figures.
CO 3:	Knowledge of how g can be determined experimentally and derive satisfaction.
CO 4:	Understanding the difference between simple and tensional pendulum and their use in the determination of various physical parameters.
CO 5:	Knowledge of how various elastic moduli can be determined.
CO 6:	Measuring surface tension and viscosity and appreciate the methods adopted.
CO 7:	Hands on experience of different equipment's.
Course Name:	Physics Practical
Course Code:	BS1-PH-CP1
CO 1:	Fixing units, tabulation of observations, analysis of data (graphical/analytical).
CO 2:	Accuracy of measurement and sources of errors, importance of significant figures.
CO 3:	Knowledge of how g can be determined experimentally and derive satisfaction.
CO 4:	Measuring surface tension and viscosity and appreciate the methods adopted.
CO 5:	Hands on experience of different equipment's.
Course Name:	Physics-OE 1
Paper Title:	Physics for all
Course Code:	GE1-PH1
CO 1:	Understand the principles and types of explosions, including nuclear explosions, and analyze the energy release and impact in terms of heat and power sources.
CO 2:	Comprehend the concept of gravitational acceleration (g) across different planets, the physics behind escape velocity, and the significance of satellite technology in modern space programs.
CO 3:	Develop a thorough understanding of various forms of radiation, their effects on health, including radiation poisoning and cancer, and the methods for measuring environmental radioactivity and age through radioactivity.
SECOND SEMESTER	
Course Name:	Physics-CT2
Paper Title:	Electricity and Magnetism
Course Code:	BS2-PHY-CT2
CO 1:	Fixing units, tabulation of observations, analysis of data (graphical/analytical).

CO 2:	Accuracy of measurement and sources of errors, importance of significant figures.
CO 3:	Knowledge of how g can be determined experimentally and derive satisfaction.
CO 4:	Understanding the difference between simple and tensional pendulum and their use in the determination of various physical parameters.
CO 5:	Knowledge of how various elastic moduli can be determined.
CO 6:	Measuring surface tension and viscosity and appreciate the methods adopted.
CO 7:	Hands on experience of different equipment's.
Course Name:	Physics Practical's
Course Code:	BS1-PH-CP2
CO 1:	Fixing units, tabulation of observations, analysis of data (graphical/analytical).
CO 2:	Accuracy of measurement and sources of errors, importance of significant figures.
CO 3:	Knowledge of how g can be determined experimentally and derive satisfaction.
CO 4:	Measuring surface tension and viscosity and appreciate the methods adopted.
CO 5:	Hands on experience of different equipment's.
Course Name:	Physics-OE 2
Paper Title:	Energy sources
Course Code:	GE2-PH2
CO 1:	Demonstrate an understanding of various non-renewable energy sources, their classification, significance, and limitations, including the importance of non-commercial energy resources.
CO 2:	Analyze the necessity and potential of renewable energy sources, including advancements in offshore wind, tidal energy, wave systems, solar energy, biomass, geothermal energy, and hydroelectricity.
CO 3:	Apply the knowledge of solar energy systems to practical applications such as solar water heaters, solar cookers, photovoltaic (PV) systems, and sun tracking technologies, understanding their merits, demerits, and circuit models.
CO 4:	Evaluate the environmental and economic impacts of both renewable and non-renewable energy sources, with an emphasis on sustainable energy solutions and their role in addressing global energy challenges.
THIRD SEMESTER	
Course Name:	Physics-CT3
Paper Title:	Wave Motion and Optics
Course Code:	BS3-PHY-CT3
CO 1:	Understand the fundamental concepts of wave motion, including types of waves, wave propagation, and the mathematical formulation of wave equations.
CO 2:	Apply principles of interference, diffraction, and polarization to various optical phenomena, and analyze their applications in real-world contexts.
CO 3:	Develop problem-solving skills related to wave optics, including the study of light behavior in different media and the analysis of optical instruments.

CO 4:	Explore the application of wave motion and optics in technological advancements such as fiber optics, lasers, and imaging systems.
Course Name:	**Physics Practical's**
Course Code:	**BS2-PH-CP3**
CO 1:	Perform experiments related to wave motion, such as measuring the velocity of sound in different media, and gain hands-on experience with wave propagation techniques.
CO 2:	Apply the principles of interference, diffraction, and polarization in laboratory experiments, enhancing the understanding of these optical phenomena.
CO 3:	Utilize optical instruments such as spectrometers and interferometers to perform precise measurements, developing skills in data collection, analysis, and interpretation.
Course Name:	**Physics-OE**
Paper Title:	**Optical Instruments**
Course Code:	**GE3-PH3**
CO 1:	Understand the fundamental principles of optics, including the laws of reflection, refraction, lens equations, and the dispersion of light, applying these concepts to various optical systems.
CO 2:	Analyze the construction and working of optical instruments like cameras and microscopes (simple, compound, electron, and binocular), and apply the knowledge to understand their practical uses in various fields.
CO 3:	Demonstrate a thorough understanding of telescopes (astronomical, terrestrial, and reflecting), and evaluate the functioning and applications of different eyepieces (Huygen, Ramsden's, Gauss) and spectrometers.
FOURTH SEMESTER	
Course Name:	**Physics-CT4**
Paper Title:	**Thermal Physics & Electronics**
Course Code:	**BS3-PHY-CT4**
CO 1:	Understand the basic concepts of thermodynamics, including the laws of thermodynamics, heat transfer, and the kinetic theory of gases.
CO 2:	Analyze the principles of thermal conductivity, entropy, and their practical applications in various thermal systems.
CO 3:	Apply the fundamental concepts of electronics, including semiconductors, diodes, and transistors, to understand electronic circuits and devices.
CO 4:	Develop problem-solving skills related to the practical aspects of electronics, such as designing circuits and analyzing electronic components in both analog and digital systems.
Course Name:	**Physics-CT4**
Course Code:	**BS3-PH-CP4**
CO 1:	Conduct experiments on the thermal properties of materials, including heat transfer, specific heat, and thermal conductivity, to understand their practical applications in thermodynamics.

CO 2:	Apply the laws of thermodynamics in laboratory settings by measuring entropy, analyzing heat engines, and exploring phase transitions.
CO 3:	Perform hands-on experiments with electronic components such as diodes, transistors, and resistors, developing skills in building and analyzing simple electronic circuits.
CO 4:	Gain practical experience in designing and testing electronic circuits, understanding the behavior of analog and digital devices, and learning to troubleshoot basic electronics problems.
Course Name:	Physics-CT5
Paper Title:	Classical Mechanics and Quantum Mechanics- I
Course Code:	BS2-PHY-CT5
CO 1:	Identify the failure of classical physics at the microscopic level.
CO 2:	Find the relationship between the normalization of a wave function and the ability to correctly calculate expectation values or probability densities.
CO 3:	Explain the concept of the Newtonian principle of relativity and differentiate between inertial and non-inertial frames of reference.
CO 4:	Apply the Lorentz transformations to transform velocities, frequencies, and wave numbers in special relativity.
CO 5:	Calculate the relativistic Doppler effect.
CO 6:	Explain the minimum uncertainty of measuring both observables on any quantum state.
CO 7:	Describe the time-dependent and time-independent Schrödinger equation for simple potentials like for instance one-dimensional potential well and Harmonic oscillator.
CO 8:	Apply Hermitian operators, their eigenvalues and eigenvectors to find various commutation and uncertainty relations.
Course Name:	Physics-CP5
Course Code:	BS3-PHY-CP5
CO 1:	Conduct experiments to explore the principles of classical mechanics, including the study of motion, forces, energy, and momentum, and apply these concepts to real-world mechanical systems.
CO 2:	Perform laboratory experiments that involve analyzing complex systems using Lagrangian and Hamiltonian mechanics, and gain practical insight into the advanced theoretical frameworks of classical mechanics.
CO 3:	Experiment with quantum mechanical systems, including the study of wave-particle duality, uncertainty principles, and quantum states, enhancing the understanding of foundational quantum mechanics concepts.
Course Name:	Physics-CT6
Paper Title:	Elements of Atomic, Molecular & Laser Physics
Course Code:	BS2-PHY-CT6
CO 1:	Describe atomic properties using basic atomic models.
CO 2:	Interpret atomic spectra of elements using vector atom model.
CO 3:	Interpret molecular spectra of compounds using basics of molecular physics.

CO 4:	Explain laser systems and their applications in various fields.
Course Name:	**Physics-CP6**
Course Code:	**BS2-PHY-CP6**
CO 1:	Conduct experiments to explore the principles of classical mechanics, including the study of motion, forces, energy, and momentum, and apply these concepts to real-world mechanical systems.
CO 2:	Perform laboratory experiments that involve analyzing complex systems using Lagrangian and Hamiltonian mechanics, and gain practical insight into the advanced theoretical frameworks of classical mechanics.
CO 3:	Experiment with quantum mechanical systems, including the study of wave-particle duality, uncertainty principles, and quantum states, enhancing the understanding of foundational quantum mechanics concepts.
SIXTH SEMESTER	
Course Name:	**Physics-CT7**
Paper Title:	**Elements of Condensed Matter & Nuclear Physics**
Course Code:	**BS2-PHY-CT7**
CO 1:	Explain the basic properties of nucleus and get the idea of its inner information.
CO 2:	Understand the concepts of binding energy and binding energy per nucleon v/s mass number graph.
CO 3:	Describe the processes of alpha, beta and gamma decays based on well-established theories.
CO 4:	Explain the basic aspects of interaction of gamma radiation with matter by photoelectric effect, Compton scattering and pair production.
CO 5:	Explain the different nuclear radiation detectors such as ionization chamber, Geiger-Mueller counter etc.
CO 6:	Explain the basic concept of scintillation detectors, photo-multiplier tube and semiconductor detectors.
Course Name:	**Physics-CP7**
Course Code:	**BS2-PHY-CP7**
CO 1:	Perform experiments to measure fundamental nuclear properties such as charge, mass, and radius, and develop skills in analyzing the internal structure of the nucleus.
CO 2:	Experiment with the concepts of binding energy by measuring mass defects and calculating binding energy per nucleon, correlating the results with mass number graphs.
CO 3:	Conduct experiments on alpha, beta, and gamma decay processes, applying theoretical principles to observe and analyze nuclear disintegration and radiation emissions.
Course Name:	**Physics-CT8**
Paper Title:	**Electronic Instrumentation & Sensors**
Course Code:	**BS2-PHY-CT8**
CO 1:	Identify different types of tests and measuring instruments used in practice and understand their basic working principles.

CO 2:	Get hands on training in wiring a circuit, soldering, making a measurement using an electronic circuit used in instrumentation.
CO 3:	Have an understanding of the basic electronic components viz., resistors, capacitors, inductors, discrete and integrated circuits, colour codes, values and pin diagram, their practical use.
CO 4:	Understanding of the measurement of voltage, current, resistance value, identification of the terminals of a transistor and ICs.
CO 5:	Identify and understand the different types of transducers and sensors used in robust and hand-held instruments.
CO 6:	Understand and give a mathematical treatment of the working of rectifiers, filter, data converters and different types of transducers.
CO 7:	Connect the concepts learnt in the course to their practical use in daily life.
CO 8:	Develop basic hands-on skills in the usage of oscilloscopes, multimeters, rectifiers, amplifiers, oscillators and high voltage probes, generators and digital meters.
CO 9:	Servicing of simple faults of domestic appliances: Iron box, immersion heater, fan, hot plate, battery charger, emergency lamp and the like.
Course Name:	**Physics-CP8**
Course Code:	**BS2-PHY-CP8**
CO 1:	Perform hands-on experiments using different types of tests and measuring instruments, gaining practical experience in their operation and understanding their applications in electronic instrumentation.
CO 2:	Develop skills in wiring and assembling electronic circuits, including soldering components and making precise measurements using electronic instruments commonly used in various sensor applications.
CO 3:	Analyze the characteristics and practical applications of basic electronic components such as resistors, capacitors, inductors, and integrated circuits, applying knowledge of color codes, values, and pin diagrams in circuit design and troubleshooting.

DEPARTMENT OF CHEMISTRY	
COURSE OUTCOMES	
FIRST SEMESTER	
Course Name:	CHEMISTRY-CT1
Paper Title:	Analytical and inorganic chemistry-I
Course Code:	BS1-CH-CT1
CO 1:	Explain basic laboratory practice like calibration of glass ware, sampling, handling acids.
CO 2:	Prepare the solutions after calculating the required quantity of salts in preparing the reagents /solutions and dilution of stock solution
CO 3:	Describe the limitations of classical mechanics with necessitated the developments of quantum mechanics.
CO 4:	Solve the Schrödinger's equation to obtain wave function for a basic type of potential in one dimension.
CO 5:	To justify the need for quantum mechanical structure of atoms.
CO 6:	Describe the periodicity in physical and chemical properties.
CO 7:	Explain the nature of bonding in organic compounds using concepts.
CO 8:	Learn methods of synthesis of alkenes, alkanes, alkynes along with their reactions.
Course Name:	CHEMISTRY-CP1
Course Code:	BS1-CH-CP1
CO 1:	Calibrate common laboratory glassware like pipette, burette and volumetric flask.
CO 2:	Conduct a variety of volumetric estimations such as acid-base, redox and iodometric titrations.
CO 3:	Purify/crystallize organic compounds by proper selection of suitable solvents
Course Name:	CHEMISTRY-OE
Course Code:	BS1-CH-OE1
CO 1:	Describe the analysis of important constituents in food items such as fat content in dairy products, caffeine in coffee/tea, methanol in alcoholic beverages, etc.
CO 2:	Explain the nutritional aspects of macro and micronutrients, namely oils/fats and vitamins respectively.
CO 3:	Give details of possible food additives, preservatives, colorants and adulterants commonly used in processed food.
CO 4:	Explain the chemistry of daily used products like soaps/detergents, batteries/fuel cells and polymers.
SECOND SEMESTER	
Course Name:	CHEMISTRY-CT2
Paper Title:	Analytical, physical and organic chemistry
Course Code:	BS2-CH-CT2
CO 1:	The concept of volumetric and gravimetric analysis and deducing the conversion factor for determination.

CO 2:	Handling of toxic chemicals, concentrated acids and organic solvents and practice safety procedures.
CO 3:	The concepts of organic reactions and techniques of writing the movement of electrons, bond breaking, bond forming.
CO 4:	Various theories of gases and their significance.
CO 5:	The concept of surface tension, viscosity, refraction and its significance.
CO 6:	Different types of liquid crystals and their applications.
CO 7:	The concept of volumetric and gravimetric analysis and deducing the conversion factor for determination.
CO 8:	The concept of unit cell, symmetry elements, Nernst distribution law.
Course Name:	**CHEMISTRY-CP2**
Course Code:	**BS2-CH-CP2**
CO 1:	Determine the density of liquids
CO 2:	Understand how viscosity and surface tension of liquids vary with concentrations
CO 3:	Determine the percentage composition of liquid mixtures using Abbe's Refractometer
Course Name:	**CHEMISTRY-OE**
Course Code:	**BS1-CH-OE2**
CO 1:	Describe the biomolecules, namely carbohydrates, amino acids, lipids and nucleic acids on the basis of their classification and structure.
CO 2:	Explain enzyme action, factors influencing enzyme action, co-enzymes and enzyme specificity.
CO 3:	Depict the action of drugs in biological systems based on Receptor theory, SAR studies and binding action of various groups.
CO 4:	Study the energy dynamics of biological systems in terms of calorific values of macronutrients, their metabolic pathways and ATP as energy currency.
THIRD SEMESTER	
Course Name:	**CHEMISTRY-CT3**
Paper Title:	**Analytical and organic chemistry II**
Course Code:	**BS3-CH-CT3**
CO 1:	Understand the importance of fundamental law and validation parameters in
CO 2:	chemical analysis
CO 3:	Know how different analytes in different matrices water and real samples determined by spectrophotometric, nephelometric and turbidometric
CO 4:	Predict the configuration of an organic molecule and able to designate it.
CO 5:	methods.
CO 6:	Understand the requirement for chemical analysis by paper, thin layer and
CO 7:	column chromatography.
CO 8:	Apply solvent extraction method for quantitative determination of metal ions.

Course Name:	**CHEMISTRY-CP3**
Course Code:	**BS3-CH-CP3**
CO 1:	Understand the importance of instrumental methods for quantitative applications
CO 2:	Apply colorimetric methods for accurate determination of metal ions and anions in
CO 3:	water or real samples
Course Name:	**CHEMISTRY-OE**
Course Code:	**BS1-CH-OE3**
CO 1:	Understand the concept of Chemical Bonding
CO 2:	To know the concept of bonding and molecular structure and hydrocarbons
CO 3:	Predict the simple mechanism of chemical reaction
FOURTH SEMESTER	
Course Name:	**CHEMISTRY-CT4**
Paper Title:	**Inorganic and physical chemistry -II**
Course Code:	**BS4-CH-CT4**
CO 1:	Predict the nature of the bond formed between different elements
CO 2:	Identify the possible type of arrangements of ions in ionic compounds
CO 3:	Write Born - Haber cycle for different ionic compounds
CO 4:	Relate different energy parameters like, lattice energy, entropy, enthalpy and
CO 5:	solvation energy in the dissolution of ionic solids
CO 6:	Explain covalent nature in ionic compounds
CO 7:	M.O. energy diagrams for simple molecules
CO 8:	Differentiate bonding in metals from their compounds
Course Name:	**CHEMISTRY-CP4**
Course Code:	**BS4-CH-CP4**
CO 1:	Understand the chemical reactions involved in the detection of cations and anions.
CO 2:	Explain basic principles involved in classification of ions into groups in semi-micro qualitative analysis of salt mixture
CO 3:	Carryout the separation of cations into groups and understand the concept of common ion effect.
FIFTH SEMESTER	
Course Name:	**CHEMISTRY-CT5**
Paper Title:	**Inorganic chemistry- III and organic chemistry- III**
Course Code:	**BS5-CH-CT5**
CO 1:	Demonstrate a solid understanding of the properties, structures, and nomenclature of alcohols, thiols, and phenols and to perform laboratory experiments safely and effectively, including the synthesis and analysis of alcohols, thiols, and phenols.

CO 2:	Evaluate the suitability of different synthetic methods and reagents for specific applications involving aldehydes and ketones and understanding the practical applications of aldehydes and ketones & carboxylic acids in various industries, research, and daily life.
CO 3:	Explain the Lambert-Beer's law, the laws of photochemistry, photochemical and photophysical processes as well as to calculate the quantum yield of photochemical combinations.
CO 4:	to develop an understanding on nuclear stability, nuclear reactions, radioactive decay and applications of nuclear and radiochemistry
CO 5:	Explains the fundamental concepts of quantum mechanics and its application in chemistry
CO 6:	Learning about the fundamental of electrochemistry and to determine the electrode potential of a half cell, identify different types of electrodes, construct cells and demonstrate its application.
CO 7:	To develop expertise on the fundamental concepts of quantum mechanics and its application in chemistry
CO 8:	To know different types of electrochemical cells, types of electrodes and electrode potential
Course Name:	**CHEMISTRY-CP5**
Course Code:	**BS5-CH-CP5**
CO 1:	Gain knowledge of the manufacturing and processing methods for various industrial materials, including the techniques used to shape, heat treat, and finish them.
CO 2:	Understand the practical applications of coordination compounds in various fields, such as catalysis, medicinal chemistry, and materials science.
CO 3:	To acquire the preparation and quantitative analysis of inorganic complexes.
Course Name:	**CHEMISTRY-CT6**
Paper Title:	**Physical chemistry-III and spectroscopy -I**
Course Code:	**BS5-CH-CT6**
CO 1:	Explains the fundamental concepts of quantum mechanics and its application in chemistry
CO 2:	Learning about the fundamental of electrochemistry and to determine the electrode potential of a half cell, identify different types of electrodes, construct cells and demonstrate its application.
CO 3:	Exposed to a strong theoretical and practical background in fundamental concepts.
CO 4:	demonstrate its application.
CO 5:	Gain expertise to explain the different methods to study the of kinetics of fast reactions. to demonstrate skills to explain the principles of DME and experimental set up for cyclic voltammetry
CO 6:	Explains the fundamental concepts of quantum mechanics and its application in chemistry
CO 7:	Predict the spectroscopic technique and understand its role in the structure elucidation based on its interaction with electromagnetic radiation

CO 8:	to demonstrate skills to explain the principles of DME and experimental set up for cyclic voltammetry
Course Name:	CHEMISTRY-CP6
Course Code:	BS5-CH-CP6
CO 1:	Understand and appreciate the practical applications of aldehydes and ketones &carboxylic acids in various industries, research, and daily life.
CO 2:	Demonstrate a solid understanding of the properties, structures, and nomenclature of alcohols, thiols, and phenols.
CO 3:	Learning about the fundamental of electrochemistry and to determine the electrode potential of a half cell, identify different types of electrodes, construct cells and demonstrate its application.
SIXTH SEMESTER	
Course Name:	CHEMISTRY-CT7
Paper Title:	Inorganic chemistry-IV and physical chemistry-IV
Course Code:	BS6-CH-CT7
CO 1:	Define and explain what coordination compounds are, including their structure, bonding, and properties.
CO 2:	Understand the practical applications of coordination compounds in various fields, such as catalysis, medicinal chemistry, and materials science.
CO 3:	Gain knowledge of the manufacturing and processing methods for various industrial materials, including the techniques used to shape, heat treat, and finish them.
CO 4:	Exposed to a strong theoretical and practical background in fundamental concepts. Demonstrate its application
CO 5:	Understand the practical applications of coordination compounds in various fields, such as catalysis, medicinal chemistry, and materials science.
CO 6:	the fundamental concepts of chemical dynamics
CO 7:	learn the basics of Voltammetry as an electroanalytical technique
CO 8:	Application of electrochemistry.
Course Name	CHEMISTRY-CP7
Course Code:	BS6-CH-CP7
CO 1:	Perform and analyze conductometric titrations.
CO 2:	Apply principles to determine the equivalence point and endpoints in titrations.
CO 3:	Analyze and interpret data obtained from conductometric experiments.
Course Name:	CHEMISTRY-CT8
Paper Title:	Organic chemistry-IV and spectroscopy-II
Course Code:	BS6-CH-CT8
CO 1:	learn the basics of Voltammetry as an electroanalytical technique
CO 2:	Define and explain what coordination compounds are, including their structure, bonding, and properties.

CO 3:	Understand the practical applications of coordination compounds in various fields, such as catalysis, medicinal chemistry, and materials science.
CO 4:	Gain knowledge of the manufacturing and processing methods for various industrial materials, including the techniques used to shape, heat treat, and finish them.
CO 5:	Exposed to a strong theoretical and practical background in
CO 6:	Understand the principles and strategies involved in the total synthesis of complex natural products
CO 7:	Demonstrate a strong awareness of chemical safety protocols and hazard mitigation in industrial settings.
CO 8:	To introduce students to various spectroscopic techniques, including UV-Vis, IR, NMR, and
Course Name:	**CHEMISTRY-CP8**
Course Code:	**BS6-CH-CP8**
CO 1:	Interpret the results of these tests to deduce the presence of particular functional groups.
CO 2:	Develop skills in interpreting experimental data obtained from various analytical techniques to determine the structure of bifunctional compounds.
CO 3:	Demonstrate proficiency in laboratory techniques, including proper handling of reagents, safety protocols, and accurate record-keeping.

Department of Mathematics	
COURSE OUTCOMES	
FIRST SEMESTER	
Course Name:	MATHEMATICS-CT1
Paper Title:	Algebra - I and Calculus - I
Course Code:	BS1-MT-CT1
CO 1:	This course will enable the students to Learn to find rank of a matrix.
CO 2:	Solve the system of homogeneous and non-homogeneous linear system of ' m' equations in' n' variables by using concept of rank of matrix, finding eigenvalues and eigen vectors.
CO 3:	Be familiar with the techniques of finding nth derivatives of some standard functions.
CO 4:	Identify and apply the intermediate value theorems and L'Hospital's rule.
CO 5:	Learn partial differentiation, Jacobians and related properties.
CO 6:	Learn expansion of Taylor's and Maclaurin's series of functions of 2 variables and maxima and minima of functions of 2 variables.
Course Name:	MATHEMATICS-CP1
Course Code:	BS1-MT-CP1
CO 1:	This course will enable the students to Learn Free and Open-Source Software (FOSS) tools for computer programming
CO 2:	Solve problem on algebra and calculus theory studied in MATDSCT 1.1 by using FOSS.
CO 3:	Solve problem on algebra and calculus theory studied in MATDSCT 1.1 by using FOSS soft wares.
CO 4:	Acquire knowledge of applications of algebra and calculus through FOSS Practical/Lab Work to be performed in Computer Lab (FOSS)
Course Name:	OPEN ELECTIVE - MATHEMATICS
Paper Title:	Corporate Mathematics
Course Code:	GE1-PH1
CO 1:	Learn types of equations and methods to solve linear, quadratic equations.
CO 2:	Learn how to represent data through graphs and analyze.
CO 3:	Learn definitions of proportions and properties.
CO 4:	Apply these concepts in commercial problems.
CO 5:	Translate the real-world problems through appropriate mathematical modelling.
CO 6:	Analyze and demonstrate the mathematical skills required in mathematically intensive areas in economics and business problems.
SECOND SEMESTER	
Course Name:	MATHEMATICS-CT2
Paper Title:	Algebra - II and Calculus - II
Course Code:	BS2-MT-CT2

CO 1:	Recognize the mathematical objects called Groups.
CO 2:	Link the fundamental concepts of groups and symmetries of geometrical objects.
CO 3:	Explain the significance of the notions of cosets, normal subgroups and factor groups.
CO 4:	Learn the quotient groups, concepts of homomorphism, isomorphism and properties related to isomorphism.
CO 5:	Learn solve problems related to angle between radius vector and tangent, angle between two curves.
CO 6:	Learn expressing the curves in pedal form, derivative of an arc
CO 7:	Learn the center of curvature, asymptotes, evaluates and envelops of the given curve
CO 8:	Learn the reduction formulae
CO 9:	Learn to find length of an arc, area of plane curves and surface area, volume of revolution
Course Name:	MATHEMATICS-CP2
Course Code:	BS2-MT-CP2
CO 1:	Learn Free and Open-Source Software (FOSS) tools for computer programming
CO 2:	Solve problems on algebra and calculus by using FOSS.
CO 3:	Acquire knowledge of applications of algebra and calculus through FOSS Practical/Lab Work to performed in Computer Lab.
Course Name:	OPEN ELECTIVE - MATHEMATICS
Paper Title:	Commercial Mathematics
Course Code:	GE2-PH1
CO 1:	Learn concepts of set, types of sets and Venn diagrams.
CO 2:	Learn concepts of Relations and functions
CO 3:	Learn concept of permutation and combination with application problems.
CO 4:	Learn concept of probability, definitions of events, occurrences of events.
CO 5:	Learn some rules of probability and application problems
CO 6:	Learn to calculate percentage and ratios in application problems.
CO 7:	Learn frequency distribution, mean, median and mode.
CO 8:	Learn GM, HM, AM concepts.
THIRD SEMESTER	
Course Name:	MATHEMATICS-CT3
Paper Title:	Ordinary Differential Equations and Real Analysis – I
Course Code:	BS3-MT-CT3
CO 1:	Solve first-order non-linear differential equations and linear differential equations.
CO 2:	To model problems in nature using Ordinary Differential Equations.
CO 3:	Formulate differential equations for various mathematical models

CO 4:	Apply these techniques to solve and analyze various mathematical models.
CO 5:	Understand the fundamental properties of the real numbers that lead to define sequence and series, the formal development of real analysis.
CO 6:	Learn the concept of Convergence and Divergence of a sequence.
CO 7:	Able to handle and understand limits and their use in sequences, series, differentiation, and integration.
CO 8:	Apply the ratio, root, alternating series, and limit comparison tests for convergence and absolute convergence of an infinite series.
Course Name:	**MATHEMATICS-CP3**
Course Code:	**BS3-MT-CP3**
CO 1:	Free and Open-Source software (FOSS) tools or computer programming.
CO 2:	Solving exact differential equations
CO 3:	Plotting orthogonal trajectories
CO 4:	Finding complementary function and particular integral of linear and homogeneous differential equations.
CO 5:	Acquire knowledge of applications of real analysis and differential equations.
CO 6:	Verification of convergence/divergence of different types of series
Course Name:	**OPEN ELECTIVE - MATHEMATICS**
Paper Title:	**Commercial Mathematics-II**
Course Code:	**GE3-PH3**
CO 1:	Understand number system and fundamental operations
CO 2:	Identify the strength of a linear relationship and predict how much a dependent variable change based on adjustments to an independent variable.
CO 3:	Analyze how a given economic variable changes over time.
FOURTH SEMESTER	
Course Name:	**MATHEMATICS-CT4**
Paper Title:	**Partial Differential Equations and Integral Transforms**
Course Code:	**BS4-MT-CT4**
CO 1:	Solve the Partial Differential Equations of the first order and second order
CO 2:	Formulate, classify and transform partial differential equations into canonical form.
CO 3:	Solve linear and non-linear partial differential equations using various methods; and apply these methods to solving some physical problems.
CO 4:	Able to take more courses on wave equation, heat equation, and Laplace equation.
CO 5:	Solve PDE by Laplace Transforms and Fourier Transforms

Course Name:	**MATHEMATICS-CP4**
Course Code:	**BS4-MT-CP4**
CO 1:	Learn Free and Open-Source software (FOSS) tools or computer programming.
CO 2:	Solve problems on Partial Differential Equations and Integral Forms
CO 3:	To find Laplace transform of various functions
CO 4:	To find the Fourier Transform of periodic functions
CO 5:	To solve differential equations by using Integral transforms.
FIFTH SEMESTER	
Course Name:	**MATHEMATICS-CT5.1**
Paper Title:	**Real Analysis-II and Complex Analysis**
Course Code:	**BS5-MT-CT5.1**
CO 1:	Carry out certain computations such as improper integrals involving Beta and Gamma functions.
CO 2:	Exhibit certain properties of mathematical objects such as integrable functions, analytic functions, harmonic functions and so on.
CO 3:	Prove some statements related to complex integral as well as in complex analysis
CO 4:	Carry out the existing algorithms to construct mathematical structures such as analytic functions.
CO 5:	Evaluate the utility of complex analysis in solving real world problems.
Course Name:	**MATHEMATICS-CP5.1**
Course Code:	**BS5-MT-CP5.1**
CO 1:	Learn Free and Open-Source Software (FOSS) tools for computer programming
CO 2:	Solve problem on Real Analysis and Complex Analysis studied in MATDSCT 5.1 by using FOSS software's.
CO 3:	Acquire knowledge of applications of Real Analysis and Complex Analysis through FOSS.
Course Name:	**MATHEMATICS-CT5.2**
Paper Title:	**Vector Calculus and Geometry**
Course Code:	**BS5-MT-CT5.2**
CO 1:	Get introduced to the fundamentals of vector differential and integral calculus.
CO 2:	Get familiar with the various differential operators and their properties.
CO 3:	Get acquainted with the various techniques of vector integration.

CO 4:	Learn the applications of vector calculus.
Course Name:	**MATHEMATICS-CP5.2**
Course Code:	**BS5-MT-CP5.2**
CO 1:	Learn Free and Open-Source Software (FOSS) tools for computer programming
CO 2:	Solve problems related to Vector Calculus using FOSS software.
SIXTH SEMESTER	
Course Name:	**MATHEMATICS-CT6.1**
Paper Title:	**Linear Algebra and Calculus of Variations**
Course Code:	**BS6-MT-CT6.1**
CO 1:	Identify and analyze the algebraic structures such as ring, field, and integral domain.
CO 2:	Understand the concepts of vector spaces, subspaces, bases dimension and their properties.
CO 3:	Understand the concept of linear transformation and eigenvalue analysis.
CO 4:	Understand the concept of functional and applications.
CO 5:	Apply the knowledge gained to various situations inside and outside mathematics.
Course Name	**MATHEMATICS-CP6.1**
Course Code:	**BS6-MT-CP6.1**
CO 1:	Learn Free and Open-Source Software (FOSS) tools for computer programming
CO 2:	Solve problem on Linear Algebra studied in MATDSCT 6.1 by using FOSS software's.
CO 3:	Acquire knowledge of applications of Linear Algebra through FOSS.
Course Name:	**MATHEMATICS-CT6.2**
Paper Title:	**Numerical Analysis**
Course Code:	**BS6-MT-CT6.2**
CO 1:	Describe various operators arising in numerical analysis such as difference operators, shift operators and so on.
CO 2:	Articulate the rationale behind various techniques of numerical analysis such as in finding roots, integrals and derivatives.
CO 3:	Reproduce the existing algorithms for various tasks as mentioned previously in numerical analysis.
CO 4:	Apply the rules of calculus and other areas of mathematics in justifying the techniques of numerical analysis.

CO 5:	Solve problems using suitable numerical technique
CO 6:	Appreciate the profound applicability of techniques of numerical analysis in solving real life problems and also appreciate the way the techniques are modified to improve the accuracy.
Course Name:	**MATHEMATICS-CP6.2**
Course Code:	**BS6-MT-CP6.2**
CO 1:	Learn Free and Open-Source Software (FOSS) tools for computer programming
CO 2:	Solve problem on numerical Analysis studied in MATDSCT 6.2 by using FOSS software's.
CO 3:	Acquire knowledge of applications of Numerical Analysis through FOSS.

DEPARTMENT OF BOTANY	
COURSE OUTCOMES	
FIRST SEMESTER	
Course Name:	B.Sc.-Botany
Paper Title:	Microbial Diversity and Technology
Course Code:	BS1-BT-T1
CO 1:	Understand the fascinating diversity, evolution, and significance of microorganisms.
CO 2:	Comprehend the systematic position, structure, physiology and life cycles of microbes and their impact on humans and environment.
CO 3:	Knowledge of economic importance of Bacteria, fungi and Virus.
Course Name:	B.Sc. Botany
Paper Title:	Microbial Diversity and Technology
Course Code:	BS1-BT-P1
CO 1:	Gain laboratory skills such as microscopy, microbial cultures.
CO 2:	Knowledge of staining, identification, preservation of microbes.
CO 3:	Knowledge of identifying plant pathogens.
Course Name:	Open elective Botany
Paper Title:	Plants and Human Welfare
Course Code:	BS1-BT-P1
CO 1:	To make the students familiar with economic importance of diverse plants that offer resources to human life.
CO 2:	To make the students known about the plants used as-food, medicinal value and also plant source of different economic value.
CO 3:	To generate interest amongst the students on plants importance in day today life, conservation, ecosystem and sustainability.
SECOND SEMESTER	
Course Name:	Botany
Paper Title:	Diversity and conservation of Non flowering plants
Course Code:	BS2-BT-T1
CO 1:	Understand the diversity and affinities among Algae, Bryophytes, Pteridophytes and Gymnosperms.
CO 2:	Understand the morphology, anatomy, reproduction and life cycle across Algae, Bryophytes, Pteridophytes and Gymnosperms.
CO 3:	Understand their ecological and evolutionary significance and their conservation.
Course Name:	Botany
Course Code:	BS2-BT-P1

CO 1:	Obtain laboratory skills/explore non-flowering plants for their commercial applications
CO 2:	Able to identify the different non flowering plant specimens.
CO 3:	Obtain the Knowledge of algal cultivation, different media for growing plants
Course Name:	Open Elective Botany
Paper Title	Plant propagation and Nursery Management
Course Code:	OE2-BT1
CO 1:	To gain knowledge of gardening, cultivation, multiplication, raising of seedlings of garden plants.
CO 2:	To get knowledge of new and modern techniques of plant propagation
CO 3:	To develop interest in nature and plant life.
THIRD SEMESTER	
Course Name:	B.Sc., Botany
Paper Title:	Plant anatomy and developmental Biology
Course Code:	BS3-BT-T1
CO 1:	Observation of variations that exist in internal structure of various parts of a plant and as well as among different plant groups in support for the evolutionary concept.
CO 2:	Skill development for the proper description of internal structure using botanical terms, their identification and further classification
CO 3:	Induction of the enthusiasm on internal structure of locally available plants.
CO4:	Understanding various levels of organization in a plant body with an outlook in the relationship between the structure and function through comparative studies.
Course Name:	B.Sc., Botany
Paper Title:	Plant anatomy and developmental Biology
Course Code:	BS3-BT-P1
CO 1:	Observation and classification of the floral variations from the premises of college and house.
CO 2:	Understanding the various reproductive methods sub-stages in the life cycle of plants
CO 3:	Observation and classification of the embryological variations in angiosperms
CO4:	Enthusiasm to understand evolution based on the variations in reproduction among plants
Course Name:	Open Elective Botany
Paper Title:	Landscape and Gardening
Course Code:	OE3-BT-1
CO 1:	Apply the basic principles and components of gardening Conceptualize flower arrangement and bio-aesthetic planning
CO 2:	Distinguish between formal, informal and free style gardens

CO3:	Establish and maintain special types of gardens for outdoor and indoor landscaping
CO4:	Design various types of gardens according to the culture and art of bonsai
FOURTH SEMESTER	
Course Name:	BSc, Botany
Paper Title:	Ecology and Biodiversity conservation.
Course Code:	BS4-BT-T1
CO 1:	Understanding the fundamental concepts in ecology, environmental science and phytogeography.
CO 2:	Concept development in conservation, global ecological crisis, Sustainable development and pros and cons of human intervention
CO 3:	Enable the student to appreciate bio diversity and the importance of various conservation strategies, laws and regulatory authorities and global issues related to climate change and sustainable development.
Course Name:	B.Sc., Botany
Course Code:	BS4-BT-P1
CO 1:	Able to determine of pH of different types of Soils. Estimation of salinity of soil/water.
CO 2:	Skill development to study different Ecological instruments and different ecological adaptations.
CO 3:	Understanding the demonstration of different types of vegetation sampling methods.
FIFTH SEMESTER	
Course Name:	B.Sc., Botany- Paper 5
Paper Title:	Plant Morphology and Taxonomy
Course Code:	BOT C9 - T
CO 1:	Understanding the main features in Angiosperm evolution.
CO 2:	Ability to identify, classify and describe a plant in scientific terms, thereby, Identification of plants using dichotomous keys
CO 3:	Skill development in identification and classification of flowering plants
CO4:	Interpret the rules of ICN in botanical nomenclature.
Course Name:	B.Sc., Botany-Paper 5
Paper Title:	Plant Morphology and Taxonomy
Course Code:	BOT C10 - p
CO 1:	Classify Plant Systematic and recognize the importance of herbarium and Virtual Herbarium,
CO 2:	Evaluate the Important herbaria and botanical gardens
CO 3:	Recognition of locally available angiosperm families and plants and economically important plants

CO4:	Appreciation of human activities in conservation of useful plants from the past to the present.
Course Name:	B.Sc., Botany-Paper 6
Paper Title:	Genetics and Plant Breeding
Course Code:	BOT C11 - T
CO 1:	Understanding the basics of genetics and plant breeding
CO 2:	Classify Plant pollination methods
CO 3:	CO5.Recognitionof modes of inheritance of traits/ phenotypes and Phenotype-genotype correlation
Course Name:	B.Sc., Botany-Paper 6
Paper Title:	Genetics and plant Breeding
Course Code:	DSC – BOT – C12 - P
CO 1:	Interpret the results of mating and pollinations
CO 2:	Ability to identify, calculate and describe crossing over, allelic generations and frequencies of recombination.
CO 3:	Skill development in performing vegetative propagation methods in plants.
SIXTH SEMESTER	
Course Name:	B.Sc., Botany Paper -7
Paper Title:	Cell Biology
Course Code:	DSC-BOT - C13-T
CO 1:	Understanding of Cell metabolism, chemical composition, physiochemical and functional organization of organelle
CO 2:	Contemporary approaches in modern cell and molecular biology
CO 3:	To study the organization of cell, cell organelles and biomolecules (i.e. protein, carbohydrate, lipid and nucleic acid)
Course Name	B.Sc., Botany- Paper -7
Paper Title:	Cell Biology
Course Code:	DSC-BOT - C14-P
CO 1:	To gain knowledge on the activities in which the diverse macro molecules and microscopic structures inhabiting the cellular world of life are engaged.
CO 2:	To understand the various metabolic processes such as respiration, photosynthesis etc. which are important for life
CO 3:	Skill development in extraction of cell organelle like chloroplast.
Course Name:	B.Sc., Botany - Paper-8
Paper Title:	Plant Physiology and Plant Biochemistry
Course Code:	BOT C-15 T
CO 1:	Importance of water and the mechanism of transport.

CO 2:	To understand biosynthesis and breakdown of biomolecules.
CO 3:	Role of plant hormones in plant development and about secondary metabolites
Course Name:	**B.Sc., Botany - Paper-8**
Paper Title:	**Plant Physiology and Plant Biochemistry**
Course Code:	**BOT C16-P**
CO 1:	Preliminary understanding of the basic functions and metabolism in a plant body.
CO 2:	To understand the importance of nutrients in plant metabolism and crop yield.
CO 3:	Skill development in estimation of chlorophyll pigments and conducting qualitative test for Starch, Protein, Reducing Sugars and Lipids.

DEPARTMENT OF ZOOLOGY	
COURSE OUTCOMES	
FIRST SEMESTER	
Course Name:	B.Sc.-Zoology
Paper Title:	Cytology, Genetics and Infectious Diseases (Theory)
Course Code:	BS1-ZO-T1
CO 1:	The structure and function of the cell organelles.
CO 2:	The chromatin structure and its location.
CO 3:	The basic principle of life, how a cell divides leading to the growth of an Organism and also reproduces to form a new organism.
CO 4:	How a cell communicates with its neighbouring cells?
CO 5:	The principles of inheritance, Mendel 's laws and the deviations.
CO 6:	How environment plays an important role by interacting with genetic factors.
CO 7:	Detect chromosomal aberrations in humans and study of pedigree analysis.
Course Name:	B.Sc.-Zoology
Paper Title:	Cytology, Genetics and Infectious Diseases (Practical)
Course Code:	BS1-ZO-P1
CO 1:	To use simple and compound microscopes.
CO 2:	To prepare stained slides to observe the cell organelles
CO 3:	To be familiar with the basic principle of life, how a cell divides leading to the growth of an organism and also reproduces to form new organisms.
CO 4:	The chromosomal aberrations by preparing karyotypes.
CO 5:	How chromosomal aberrations are inherited in humans by pedigree analysis in families. The antigen-antibody reaction.
Course Name:	Open Elective
Paper title:	Economic Zoology
Course Code:	O.E1-ZO-1
CO 1:	Gain knowledge about silkworms rearing and their products.
CO 2:	Gain knowledge in Bee keeping equipment and apiary management.
CO 3:	Acquaint knowledge on dairy animal management, the breeds and diseases of cattle and learn the testing of egg and milk quality.
CO 4:	Acquaint knowledge about the culture techniques of fish and poultry.
CO 5:	Acquaint the knowledge about basic procedure and methodology of Vermiculture.
CO 6:	Learn various concepts of lac cultivation.
CO 7:	Students can start their own business i.e. self-employments.
CO 8:	Get employment in different applied sectors
SECOND SEMESTER	
Course Name:	B.Sc.-Zoology

Paper Title:	**Biochemistry and Physiology (Theory)**
Course Code:	**BS2-ZO-T2**
CO 1:	To develop a deep understanding of structure of biomolecules like proteins, lipids and carbohydrates.
CO 2:	How simple molecules together form complex macromolecules.
CO 3:	To understand the thermodynamics of enzyme catalysed reactions.
CO 4:	Mechanisms of energy production at cellular and molecular levels.
CO 5:	To understand various functional components of an organism.
CO 6:	To explore the complex network of these functional components.
CO 7:	To comprehend the regulatory mechanisms for maintenance of function in the body.
Course Name:	**B.Sc.-Zoology**
Paper Title:	**Biochemistry and Physiology (Practical)**
Course Code:	**BS2-ZO-P2**
CO 1:	Basic structure of biomolecules through model making.
CO 2:	Develop the skills to identify different types of blood cells.
CO 3:	Enhance basic laboratory skill like keen observation, analysis and discussion. Learn the functional attributes of biomolecules in animal body.
CO 4:	Know uniqueness of enzymes in animal body and their importance through enzyme kinetics.
Course Name:	**B.Sc.-Zoology**
Paper title:	**Open Elective-Parasitology**
Course Code:	**O.E2-ZO-2**
CO 1:	Know the stages of the life cycles of the parasites and infective stages.
CO 2:	Develop ecological model to know population dynamics of parasite, establishment of parasite population in host body, adaptive radiations and methods adopted by parasite to combat with the host immune system.
CO 3:	Develop skills and realize significance of diagnosis of parasitic infection and treatment.
CO 4:	Understand about diseases caused by Protozoa, Helminthes, Nematodes and Arthropods at molecular level.
CO 5:	Develop their future career in medical sciences and related administrative services.
THIRD SEMESTER	
Course Name:	**B.Sc.-Zoology**
Paper Title:	**Molecular Biology, Bioinstrumentation & Techniques in Biology (Theory)**
Course Code:	**BS3-ZO-T3**
CO 1:	After successful accomplishment of the course, the learners will be able to acquire better understanding and comprehensive knowledge regarding most of the essential aspects of Molecular Biology subject which in turn will provide a

	fantastic opportunity to develop professional skill related to the field of molecular biology.
CO 2:	The course will mainly focus on the study of principal molecular events of cell incorporating DNA Replication, Transcription and Translation in prokaryotic as well as eukaryotic organisms.
CO 3:	Acquiring knowledge on instrumentation and techniques in biology.
Course Name:	**B.Sc.-Zoology**
Paper Title:	**Molecular Biology, Bioinstrumentation & Techniques in Biology (Practical)**
Course Code:	**BS3-ZO-P3**
CO 1:	At the end of the course, students will be able to understand the applications of biophysics and principle involved in bio-instruments.
CO 2:	Understand the methodology involved in bio techniques.
CO 3:	Students can Demonstrate knowledge and practical skills of using instruments in biology and medical field.
CO 4:	They can perform techniques involved in molecular biology and diagnosis of diseases.
Course Name:	**B.Sc.-Zoology**
Paper Title:	**Open Elective-ENDOCRINOLOGY**
Course Code:	**O.E3-ZO-3**
CO 1:	Describe the different classes and chemical structures of hormones.
CO 2:	Identify the glands, organs, tissues and cells that synthesize and secrete hormones, hormone precursors and associated compounds.
CO 3:	Identify and discuss the integration of the endocrine system in general with focus on specific interactions.
CO 4:	Explain the consequences of under- and overproduction of hormones.
FOURTH SEMESTER	
Course Name:	**B.Sc.-Zoology**
Paper Title:	**Gene Technology, Immunology and Computational Biology (Theory)**
Course Code:	**BS4-ZO-T4**
CO 1:	Acquaint knowledge on versatile tools and techniques employed in genetic engineering and recombinant DNA technology.
CO 2:	An understanding on application of genetic engineering techniques in basic and applied experimental biology.
CO 3:	To acquire a fundamental working knowledge of the basic principles of immunology.
CO 4:	To understand how these principles, apply to the process of immune function.
CO 5:	Use, and interpret results of, the principal methods of statistical inference and design; helps to communicate the results of statistical analyses accurately and effectively; helps in usage of appropriate tool of statistical software.
Course Name:	**B.Sc.-Zoology**

Paper Title:	**Gene Technology, Immunology and Computational Biology (Practical)**
Course Code:	**BS4-ZO-P4**
CO 1:	Accurately, safely and appropriately use all the equipment regularly used in Molecular Biology (DNA manipulation, including balances, pipettes, electrophoresis and centrifuges).
CO 2:	Prepare chemical solution and reagents to the precision appropriate to the task.
CO 3:	Demonstrate knowledge of the biochemical basis underpinning the molecular biology techniques
FIFTH SEMESTER	
Course Name:	**B.Sc.-Zoology**
Paper Title:	**Non-Chordates and Economic Zoology (Theory)**
Course Code:	**BS5-ZO-T1**
CO 1:	Group animals on the basis of their morphological characteristics/structures.
CO 2:	Demonstrate comprehensive identification abilities of non-chordate diversity
CO 3:	Explain structural and functional diversity of non-chordates
CO 4:	Develop the knowledge of economic animals.
Course Name:	**B.Sc.-Zoology**
Paper title:	**Non-Chordates and Economic Zoology (Practical)**
Course Code:	**BS5-ZO-P5**
CO 1:	Understand basics of classification of non-chordates.
CO 2:	Learn the diversity of habit and habitat of these species.
CO 3:	Develop the skills to identify different classes and species of animals.
CO 4:	Know uniqueness of a particular animal and its importance
Course Name:	**B.Sc.-Zoology**
Paper Title:	**Chordates and Comparative Anatomy (Theory)**
Course Code:	**BS5-ZO-T2**
CO 1:	Demonstrate comprehensive identification abilities of chordate diversity
CO 2:	Explain structural and functional diversity of chordate diversity CO3. Understand evolutionary relationship amongst chordates
CO 3:	Take up research in biological sciences.
CO 4:	Realize that very similar physiological mechanisms are used in very diverse organisms. Get a flavour of research by working on project besides improving their writing skills. It will further enable the students to think and interpret individually.
CO 5:	Demonstrate comprehensive identification abilities of chordate diversity
CO 6:	Explain structural and functional diversity of chordate diversity
CO 7:	Understand evolutionary relationship amongst chordates
Course Name:	**B.Sc.-Zoology**
Paper Title:	**Chordates and Comparative Anatomy (Practical)**

Course Code:	BS5-ZO-P6
CO 1:	Demonstrate comprehensive identification abilities of chordate diversity
CO 2:	Explain structural and functional diversity of chordate diversity CO3. Understand evolutionary relationship amongst chordates
CO3:	Demonstrate comprehensive identification abilities of chordate diversity
SIXTH SEMESTER	
Course Name:	B.Sc.-Zoology
Paper Title:	Paper-VII-Evolutionary & Developmental Biology (Theory)
Course Code:	BS6-ZO-T1
CO 1:	Understand that by biological evolution we mean that many of the organisms that inhabit the earth today are different from those that inhabited it in the past.
CO 2:	Understand that natural selection is one of several processes that can bring about evolution, although it can also promote stability rather than change.
CO 3:	Understand how the single cell formed at fertilization forms an embryo and then a full adult organism.
CO 4:	Integrate genetics, molecular biology, biochemistry, cell biology, anatomy and physiology during embryonic development.
CO 5:	Understand a variety of interacting processes, which generate an organism's
CO 6:	Heterogeneous shapes, size, and structural features.
Course Name:	B.Sc.-Zoology
Paper Title:	Paper-VII-Evolutionary & Developmental Biology (Practical)
Course Code:	BS6-ZO-P1
CO 1:	To understand the biological evolution on the earth
CO 2:	To understand various forces influencing the evolution
CO 3:	To understand how the single cell formed at fertilization forms an embryo and then a full adult organism.
Course Name:	B.Sc.-Zoology
Paper Title:	Paper-VIII-Environmental Biology, Wildlife Management &Conservations (Theory)
Course Code:	BS6-ZO-T2
CO 1:	Develop an understanding of how animals interact with each other and their natural environment.
CO 2:	Develop the ability to use the fundamental principles of wildlife ecology to solve local, regional and national conservation and management issues.
CO 3:	Develop the ability to work collaborative team-based projects.
CO 4:	Gain an appreciation for the modern scope of scientific inquiry in the field of wildlife conservation management.
CO 5:	Develop an ability to analyze, present and interpret wildlife conservation management in formation.
Course Name:	B.Sc.-Zoology

Paper Title:	**Paper-VIII-Environmental Biology, Wildlife Management & Conservations (Practical)**
Course Code:	**BS6-ZO-P2**
CO 1:	Develop an understanding of how animals interact with each other and their natural environment.
CO 2:	Develop the ability to use the fundamental principles of wildlife ecology to solve local, regional and national conservation and management issues.
CO 3:	Develop the ability to work collaborative team-based projects.

DEPARTMENT OF COMPUTER SCIENCE	
COURSE OUTCOMES	
FIRST SEMESTER	
Course Name:	BSc
Paper Title:	Programming in C
Course Code:	BS1-CS-T1
CO 1:	Confidently operate Desktop Computers to carry out computational tasks
CO 2:	Understand programming languages, number systems, peripheral devices, networking, multimedia and internet concepts
CO 3:	Read, understand and trace the execution of programs written in C language
CO 4:	Write the C code for a given problem
CO 5:	Perform input and output operations using programs in C
CO 6:	Write programs that perform operations on arrays
SECOND SEMESTER	
Course Name:	BSc
Paper Title:	DATA STRUCTURES
Course Code:	BS2-CS-T2
CO 1:	Understand the need for Data Structures when building application
CO 2:	Appreciate the need for optimized algorithm.
CO 3:	Able to walk through insert and delete for different data structures.
CO 4:	Ability to calculate and measure efficiency of code.
CO 5:	Improve programming skills.
THIRD SEMESTER	
Course Name:	BSc
Paper Title:	OBJECT ORIENTED PROGRAMMING USING JAVA
Course Code:	BS3-CS-T3
CO 1:	Understand the features of Java and the architecture of JVM
CO 2:	Write, compile, and execute Java programs that may include basic data types and control flow constructs and how type casting is done
CO 3:	Identify classes, objects, members of a class and relationships among them needed for a specific problem and demonstrate the concepts of polymorphism and inheritance
CO 4:	The students will be able to demonstrate programs based on interfaces and threads and explain the benefits of JAVA's Exceptional handling mechanism compared to other Programming Language
CO 5:	Write, compile, execute Java programs that include GUIs and event driven programming and also programs based on files
FOURTH SEMESTER	
Course Name:	BSc
Paper Title:	OPERATING SYSTEMS

Course Code:	**BS4-CS-T4**
CO 1:	Explain the fundamentals of the operating system
CO 2:	Comprehend multithreaded programming, process management, process synchronization, memory management and storage management.
CO 3:	Compare the performance of Scheduling Algorithms
CO 4:	Identify the features of I/O and File handling methods.
FIFTH SEMESTER	
Course Name:	**BSc**
Paper Title:	**DATABASE MANAGEMENT SYSTEMS**
Course Code:	**BS5-CS-T1**
CO 1:	Have a broad understanding of database concepts and database management system software.
CO 2:	Have a high-level understanding of major DBMS components and their function.
CO 3:	Be able to model an application's data requirements using conceptual modeling tools like ER diagrams and design database schemas based on the conceptual model.
CO 4:	Able to write queries using SQL Server
Course Name:	**BSc**
Paper Title:	**PYTHON PROGRAMMING**
Course Code:	**BS5-CS-T2**
CO 1:	Problem solving and programming capability.
SIXTH SEMESTER	
Course Name:	**BSc**
Paper Title:	**ARTIFICIAL INTELLIGENCE**
Course Code:	**BS6-CS-T1**
CO 1:	Understand the various characteristics of problem-solving agents and apply problem solving through search for AI applications.
CO 2:	Appreciate the concepts of knowledge representation using Propositional logic and Predicate calculus and apply them for inference/reasoning.
CO 3:	Obtain insights about Planning and handling uncertainty through probabilistic reasoning and fuzzy systems.
CO 4:	Understand basics of computer vision and Natural Language Processing and understand their relevance in AI applications.
CO 5:	Obtain insights about machine learning, neural networks, deep learning networks and their significance.
Course Name:	**BSc**
Paper Title:	**COMPUTER NETWORKS**
Course Code:	**BS6-CS-T2**
CO 1:	Describe the general principles of data communication.

CO 2:	Describe how computer networks are organized with the concept of layered approach.
CO 3:	Describe how signals are used to transfer data between nodes.
CO 4:	Implement a simple LAN with hubs, bridges and switches.
CO 5:	Compare the different layers of protocols.
CO 6:	Apply the basics of data communication and various types of Computer networks in real world application.

DEPARTMENT OF ELECTRONICS	
COURSE OUTCOMES	
FIRST SEMESTER	
Course Name:	Electronics DSC-I
Paper Title:	ELECTRONIC DEVICES AND CIRCUITS
Course Code:	BS1-EL-CT1
CO 1:	Analyse PN junctions in semiconductor devices under various conditions.
CO 2:	Design and analyse simple rectifiers and voltage regulators using diodes and different ICs.
CO 3:	Describe the behaviour of special semiconductor diodes and devices.
CO 4:	Design and analyse simple BJT circuits.
CO 5:	Do the conversion between different number system.
CO 6:	Simplify the Boolean expressions and design simple logic circuits.
Course Name:	ELECTRONIC DEVICES AND CIRCUITS- LAB
Course Code:	BS1-EL-CP1
CO 1:	Measure voltage, frequency and phase of any waveform using CRO.
CO 2:	Generate sine, square and triangular waveforms with required frequency and amplitude using function generator.
CO 3:	Analyse the characteristics of different electronic devices such as diodes, transistors etc., and simple circuits like rectifiers, amplifiers etc..
Course Name:	Digital Fundamentals and Consumer Electronics
Course Code:	GE1-EL1
CO 1:	Gain knowledge between different types of number systems, and their conversions.
CO 2:	Design various logic gates and simplify Boolean equations.
CO 3:	Troubleshoot the different types of microphones and speakers.
CO 4:	Maintain audio system.
CO 5:	Troubleshoot the different display system.
CO 6:	Maintain various consumer appliances.
SECOND SEMESTER	
Course Name:	Electronics DSC-II
Paper Title:	ANALOG AND DIGITAL ELECTRONICS
Course Code:	BS2-EL-CT2
CO 1:	Describe and explain the semiconductor electronics, diodes and characteristic of diodes.
CO 2:	Describe and explain the fundamental operation of the operation amplifiers.
CO 3:	Analyze the essentials of digital logic systems that include binary quantities, logic gates, Boolean algebra, combinational logic, latches and flip-flops.
CO 4:	Analyze circuits using diodes.
CO 5:	Derive the expressions (output voltage and gain) for the operation amplifiers.

CO 6:	Design combinational circuits from truth table specification and optimize combinational logic with Karnaugh maps.
CO 7:	Apply/Investigate the diodes as rectifiers, Op-Amp, and logic gates.
Course Name:	ANALOG AND DIGITAL ELECTRONICS - Lab
Course Code:	BS2-EL-CP2
CO 1:	Identify relevant information to supplement to the Analog Electronic Circuit.
CO 2:	Set up testing strategies and select proper instruments to evaluate performance characteristics of electronic circuit.
CO 3:	Choose testing and experimental procedures on different types of electronic circuit and analyze their operation different operating conditions.
CO 4:	Evaluate possible causes of discrepancy in practical experimental observations in comparison to theory.
CO 5:	Practice different types of wiring and instruments connections keeping in mind technical, Economical, safety issues.
CO 6:	Prepare professional quality textual and graphical presentations of laboratory data and Computational results, incorporating accepted data analysis and synthesis methods, Mathematical software and word-processing tools.
Course Name:	Digital Systems and its application in daily life
Course Code:	GE2-EL2
CO 1:	Synthesis of Boolean functions, simplification and construction of digital circuits by employing Boolean algebra.
CO 2:	Sequential systems by choosing Flip-Flop as a building bock- construct multivibrators, counters to provide a basic idea about memory including RAM, ROM and also about memory organization.
CO 3:	Understand the importance of the digital system in daily life.
CO 4:	Understand he mobile communication.
CO 5:	Study the working principle of different gadgets used in our daily life.
THIRD SEMESTER	
Course Name:	Electronics DSC-III
Paper Title:	PROGRAMMING IN C AND DIGITAL DESIGN USING VERILOG
Course Code:	BS3-EL-CT3
CO 1:	Write and execute and debug C codes for solving problems.
CO 2:	Apply the acquired knowledge of digital circuits in different levels of modelling using Verilog HDL.
CO 3:	Design and verify the functionality of digital circuit/system using test benches.
CO 4:	Develop the programs more effectively using directives, Verilog tasks and constructs.
CO 5:	Design and analyze algorithms for solving simple problems.
Course Name:	PROGRAMMING IN C & DIGITAL DESIGN USING VERILOG - LAB
Course Code:	BS3-EL-CP3

CO 1:	Write programs in C compiler
CO 2:	Write code in Verilog to realize any digital electronic circuit.
Course Name:	Electronics Open Elective-III
Paper Title:	Medical Instruments and Arduino Programming
Course Code:	GE3-EL3
CO 1:	Gain knowledge on different medical instruments.
CO 2:	In depth knowledge on Arduino programming and its application.
FOURTH SEMESTER	
Course Name:	Electronics DSC-IV
Paper Title:	BS4-EL-CT4
Course Code:	Electronic Communication-I
CO 1:	Know the basic concept of Analog Communication, means and medium of communication.
CO 2:	Understand the principle of Analog and digital modulation.
CO 3:	Familiar with "AM" and "FM "techniques.
CO 4:	Understand the basic concept of Pulse Modulation, Carrier Modulation for digital transmission and able to construct simple pulse modulation.
CO 5:	Understand the basic concept of Satellite Communication.
CO 6:	Understand the basic concept of Optical Fiber Communication.
Course Name:	Electronic Communication-I Lab
Course Code:	BS4-EL-CP4
CO 1:	The working of Amplitude modulation.
CO 2:	Different blocks in a receiver.
CO 3:	Sampling theorem.
CO 4:	Modulation techniques with respect to pulse communication.
CO 5:	Modulation techniques with respect to digital communication.
FIFTH SEMESTER	
Course Name:	Electronics DSC-V
Paper Title:	Communication II
Course Code:	BS5-EL-CT5
CO 1:	Understand the various Spread Spectrum Communication
CO 2:	Understand the basic concept of cell phone handset, working principle of cellular communication and wireless technologies.
CO 3:	Understand different Computer Networks, OSI layers, TCP/IP suite, Ethernet and IEEE 802.11 a/b/g/n standards
CO 4:	Understand different wireless communication techniques used in Zigbee, Bluetooth and RFID

Course Name:	**Electronics -V**
Paper Title:	**Communication II Lab**
Course Code:	**BS5-EL-CP5**
CO 1:	Understand basic theories of Digital communication system in practical
CO 2:	Design and implement different modulation and demodulation techniques.
CO 3:	Analyze digital modulation techniques by using MATLAB tool
CO 4:	Identify and describe different techniques in modern digital communications, in particular in source coding using MAT Lab tools.
CO 5:	Perform channel coding.
Course Name:	**Electronics -V**
Paper Title:	**Embedded Controllers**
Course Code:	**BS5-EL-CT6**
CO 1:	Identify and understand function of different blocks of 8051 microcontroller
CO 2:	Develop program for I/O port operations, Timers, Serial port and Interrupts using C.
CO 3:	Gain the knowledge to interface LCD, Keyboard, ADC, DAC, DC motor, etc.,
CO 4:	Do the projects using Arduino.
Course Name:	**Embedded Controllers Lab**
Course Code:	**BS5-EL-CP6**
CO 1:	Understand what is a microcontroller, microcomputer, embedded system.
CO 2:	Understand different components of a micro-controller and their interactions
CO 3:	Become familiar with programming environment used to develop embedded system.
CO 4:	Understand key concepts of embedded systems like IO, timers, interrupts, interaction with peripheral devices
CO 5:	Learn debugging techniques for an embedded system.
SIXTH SEMESTER	
Course Name:	**Electronics -VI**
Paper Title:	**Electronic Instrumentation and Biomedical Instruments**
Course Code:	**BS6-EL-CT7**
CO 1:	Able to calibrate the instruments to minimize measurement errors.
CO 2:	Use different data acquisition systems to acquire real-time.
CO 3:	Set up testing strategies to evaluate performance characteristics of different types of data acquisition system and develop professional skills in acquiring and applying the knowledge outside the classroom through design of a real-life instrumentation system.
CO 4:	Apply/Investigate the diodes as rectifiers, Op-Amp, and logic gates.
Course Name	**Instrumentation and IoT Lab**
Course Code:	**BS6-EL-CP7**

CO 1:	Describe measuring instrument
CO 2:	Understand and explain working of waveform generators, waveform analyzers, and transducers.
CO 3:	To operate various measuring instruments.
CO 4:	To analyze performance of waveform generators, waveform analyzers, transducers.
Course Name:	**Electronics -VI**
Paper Title:	**Internet of Things and Robotics**
Course Code:	**BS6-EL-CT8**
CO 1:	Able to calibrate the instruments to minimize measurement error.
CO 2:	Use different data acquisition systems to acquire real.
CO 3:	Set up testing strategies to evaluate performance characteristics of different types of data acquisition system and develop professional skills in acquiring and applying the knowledge outside the classroom through design of a real-life instrumentation system.
CO 4:	Apply/Investigate the diodes as rectifiers, Op-Amp, and logic gate.
Course Name:	**Project Lab**
Course Code:	**BS6-EL-CP8**
CO 1:	Do the project.
CO 2:	Understand the working of each component used in the project.
CO 3:	Get keen knowledge about the subject.

DEPARTMENT OF ENGLISH	
COURSE OUTCOME	
FIRST SEMESTER	
Course Name:	**English-I**
Paper Title:	**Language English**
Course Code:	**LBAE-C1**
CO 1:	Understand and remember the basic rules of English Grammar; Apply and Create a sentence of their own.
CO 2:	Understand and Remember format of writing a paragraph; apply and create a sample based on a given topic
CO 3:	Understand and apply various aspects of reading a/the literary text; and Create an essay appreciating the literary text
CO 4:	Understand, Remember, Apply and Create
Course Name:	**Optional English-I**
Paper Title:	**Introduction to Literatures-I**
Course Code:	**OE –C1**
CO 1:	Understand and remember the key terms
CO 2:	Remember the aspects of film making viz costume, music, images etc; , Apply and Create a response to the scenes
CO 3:	Understand that orality is very much a part of literature
CO 4:	Understand and Remember concepts discussed
SECOND SEMESTER	
Course Name:	**English-II**
Paper Title:	**Language English**
Course Code:	**LBAE-C2**
CO 1:	Understand, Remember, Apply the various aspects of reading skills
CO 2:	Understand and Apply rules of making linear notes; and create a sample based on a given passage
CO 3:	Understand and Remember format of the resume; apply and create a sample based on a given question
CO 4:	Evaluate the ideas presented in the novella and create an essay expressing their opinions and understanding
Course Name:	**Optional English-II**
Paper Title:	**Introduction to Literatures-I**
Course Code:	**OE-C2**
CO 1:	Understand and apply the concept of spatiality
CO 2:	Understand and remember the philosophy of language as discussed in the text
CO 3:	Apply and evaluate a text as it critiques/depicts the reality; and create an analytical essay

CO 4:	Understand and remember
	Understand, remember and create
THIRD SEMESTER	
Course Name:	**English-III**
Paper Title:	**Language English**
Course Code:	**LBAE-C3**
CO 1:	Understand and Remember format of writing a short paragraph; apply and create a sample based on a given topic
CO 2:	Understand and Remember format of the official letter writing skill; apply and create a sample based on a given question
CO 3:	Evaluate and critique the different voices present in the text; create an analytical response to the same
CO 4:	Understand the notions of patriarchy, apply these notions and evaluate a literary text
CO 5:	Apply and evaluate a given literary text; Create an analytical essay
Course Name:	**Optional English-III**
Paper Title:	**Introduction to Literatures III**
Course Code:	**OE-C3**
CO 1:	Understand literary representation of reality
CO 2:	Understand and apply the elements of a good film to write a critical review
CO 3:	Understand the key concepts; Apply and Evaluate texts prescribed
CO 4:	Understand the aspects of stylistic analysis
CO 5:	Remember and Apply characteristics of stylistic analysis; evaluate a poem/passage based on this understanding
FOURTH SEMESTER	
Course Name:	**English-IV**
Paper Title:	**Language English**
Course Code:	**LBAE-C4**
CO 1:	Understand and Remember format of the blog post; apply and create a sample based on a given idea/issue
CO 2:	Understand the politics of culture
CO 3:	Understand and Remember format of the short skill; apply and create a sample based on a given question
CO 4:	Understand the notion of race and apply the understanding to critique and express their opinion
Course Name:	**Optional English-IV**
Paper Title:	**Introduction to Literatures IV**
Course Code:	**OE-C4**

CO 1:	Remember, Understand and Apply the key concepts in Postcolonialism to the texts prescribed
CO 2:	Understand, Apply and evaluate the notion of gender as depicted in different texts and critique it
CO 3:	Remember and apply the critical skills of discourse analysis
FIFTH SEMESTER	
Course Name:	Optional English-V
Paper Title:	Literatures-Classical
Course Code:	OE-C5.5
CO 1:	Understand the idea of classical literature and remember its features across world literature
CO 2:	Understand, evaluate and apply the understanding of folklore from the world
CO 3:	Understand and remember the definition of the concept
CO 4:	Understand 'folktales' as important literary genre and their importance to the present
CO 5:	Understand the concept of classical; , Evaluate texts from different Ages from this comprehension of the concept
Course Name:	Optional English-VI
Paper Title:	Literatures-20th Century
Course Code:	OE-C5.6
CO 1:	Understand 20th C as an age of formulation of different voices; Analyze and Apply the understanding to the texts prescribed;
CO 2:	Understand the concept and apply it to the texts to comprehend
CO 3:	Understand the academic skills requisite for the research and Apply and Create using these skills
CO 4:	Understand the concept and evaluate the texts
SIXTH SEMESTER	
Course Name:	Optional English-VII
Paper Title:	Postcolonial Studies
Course Code:	OE-C6.7
CO 1:	Understand Post colonialism as an important theoretical study to comprehend 20th C literatures written by previously colonized nations
CO 2:	Understand the concepts and apply the same in order to discuss the notions depicted in the text
CO 3:	Understand the concept of 'marginalized' and analyze the texts for the concept to critique the societal hierarchy
CO 4:	Understand the required research skills like close reading and apply the same to write critically
Course Name:	Optional English-VIII
Paper Title:	Popular Culture

Course Code:	OE-C6.8
CO 1:	Understand the distinction between 'high' and 'low'/ 'popular' culture; , Remember the scholarly definition to analyse and apply the understanding to the texts prescribed for study
CO 2:	Understand the dynamics of the genres of popular culture
CO 3:	Appreciate and apply the knowledge of 'popular culture' to artists
CO 4:	Understand the role of films in shaping and critiquing the prevalent cultural norms

DEPARTMENT OF KANNADA	
COURSE OUTCOME	
FIRST SEMESTER	
Course Name:	**Kannada-I**
Course Code:	LBAK-C1 & LBMK-C1
CO 1:	LOVE: Creating awareness among students the need for human relationships through the concept of love. Motivate the creation of a society free of hostility using the concept of love.
CO 2:	REGIONALISM: To create the awareness among students to learn the essence of regional languages. Through this concept of regionalism encouraging them to create literature in this Desi Saga.
CO 3:	MODERNISM: Exposure to the modern literature to students enhances the learning to build the value-based life and retaining the sensitivity in the modern and mechanical life.
CO 4:	EQUALITY: To create awareness among students concerning the social and gender disparity in society and motivate to fight towards equality.
Course Name:	**Kannada-I**
Course Code:	**LBSK-C1 & LBCK-C1**
CO 1:	VIOLENCE: Educating the students about the impact of violence and make an effort to build humanitarian values.
CO 2:	ENVIRONMENT: Educating awareness among students on environmental protection through the concept of ecology
CO 3:	MODRENISM: Educating students about the necessity to preserve life values in the modern world
CO 4:	SOCIAL EQUALITY: To create awareness among students concerning the social and gender disparity in society and motivate to fight towards equality.
CO 5:	SCIENCE: Developing scientific thinking through the teaching of science articles
Course Name:	**Optional Kannada-I**
Course Code:	**OK-C1**
CO 1:	Students learn the emergence of Kannada Naadu, Nudi and Polite Literature through history of Kannada literature. CO 2: CO 3CO 4: CO 5:
CO 2:	They learn about the way this literature grew. They also understand the religion, culture and lordship in literary creation.
CO 3:	Students learn the application of versification in literary writing.
CO 4:	Also, exposure to language-specificity and fluency.
CO 5:	Provide exposure to different forms of literature developing the critical approach with social concern
SECOND SEMESTER	
Course Name:	**Kannada-II**
Course Code:	**LBAK-C2 & LBMK-C2**

CO 1:	STATUS QUO: Understand the current status quo and motivate them to adopt appropriate behaviour.
CO 2:	DREAM: Building sense of better dreams for better future.
CO 3:	MODERNISM: Exposure to the modern literature to students enhances the learning to build the value-based life and retaining the sensitivity in the modern and mechanical life.
CO 4:	EQUALITY: To create awareness among students concerning the social and gender disparity in society and motivate to fight towards equality.
Course Name:	Kannada-II
Course Code:	LBSK-C2 & LBCK-C2
CO 1:	SCIENCE: Build scientific temperament to prepare the students for better livelihood.
CO 2:	RELATIONSHIP: Motivating the students about the creation of a cohesive and beautiful society by conveying the meaning of human relationships
CO 3:	MODRENISM: Exposure to the modern literature to students enhances the learning to build the value-based life and retaining the sensitivity in the modern and mechanical life.
CO 4:	RATIONALISM: Provide exposure to different forms of literature developing the critical approach with social concern.
Course Name:	Optional Kannada-II
Course Code:	OK-C2
CO 1:	VACHANA SAHITHYA : To educate the students about the contribution of Allama, Basavanna, Akkamahadevi and others about their contribution towards social change and value based society through effective use of simple poetry.
CO 2:	DASA SAHITHYA: Addressing the possibility of social transformation through the introduction of Simple Musical Literature of Kanaka, Purandara and others.
CO 3:	Prepare the students for creative thinking and developing writing skills.
THIRD SEMESTER	
Course Name:	Kannada-III
Course Code:	LBAK-C3 & LBMK-C3
CO 1:	ANCIENT LITERATURE: Educating the students about the relationship of different time period of literature and society.
CO 2:	THOUGHTFUL LITERATURE: Learning socio-cultural views.
CO 3:	: DIVERSE PROSE: Introducing the elegance of regional fragrance.
CO 4:	WRITING SKILLS: In-depth learning of writing skills and life values.
Course Name:	Kannada-III
Course Code:	LBSK-C3 & LBCK
CO 1:	ANCIENT LITERATURE: Educating the students about the relationship of different time period of literature and society.
CO 2:	THOUGHTFUL LITERATURE: Learning socio-cultural views.
CO 3:	DIVERSE PROSE: Introducing the elegance of regional fragrance.

CO 4:	WRITING SKILLS: In-depth learning of writing skills and life values
Course Name:	**Optional Kannada-III**
Course Code:	**OK-C3**
CO 1:	POETICS: Provide an understanding of the basic tools of poetry and its benefits.
CO 2:	DRAMA: Teaching the values of life effectively through visual poetry.
CO 3:	NOVEL: Creating the love for reading which yields to understand the life.
CO 4:	MOVEMENTS: Teaching leadership qualities about the movements of various era and their effects.
FOURTH SEMESTER	
Course Name:	**Kannada-IV**
Course Code:	**LBAK-C4 & LBMK**
CO 1:	DRAMA: Improving Social Awareness through Performing Arts and Language Arts.
CO 2:	NOVEL: Elevating awareness of life through detailed analytical literature.
CO 3:	SMALL STORIES: Briefly raise awareness of the incident.
CO 4:	ESSAY: Educating the importance of content analysis and developing analytical qualities.
Course Name:	**Kannada-IV**
Course Code:	**LBSK-C4 & LBCK**
CO 1:	DRAMA: Improving Social Awareness through Performing Arts and Language Arts.
CO 2:	NOVEL: Elevating awareness of life through detailed analytical literature.
CO 3:	SMALL STORIES: Briefly raise awareness of the incident.
CO 4:	ESSAY: Educating the importance of content analysis and developing analytical qualities.
Course Name:	**Optional Kannada-IV**
Course Code:	**OK-C4**
CO 1:	FOLKLORE: Educating the elegance and culture through the introduction of desi literature
CO 2:	ANCIENT LITERATURE: Teaching the moral values for life.
CO 3:	CRITICS: Teaching the skills of literary criticism which yields the social, analytical skills.
CO 4:	ASSOCIATION AND ORGANIZATION: Educating the role of organizations in the preservation of Naadu and Nudi.
FIFTH SEMESTER	
Course Name:	**Kannada-V**
Course Code:	**OK-C5.5**

CO 1:	DRAMA: Exposure to gender inequality through the study of MEDIA, a Greek Tragedy.
CO 2:	THE EPIC: Teaching Sri Ramayana Darshanam exposes the students to the unique intuition of Kuvempu with reference to modern times.
CO 3:	VACHANA SAHITHYA: Learning the literary elegance and social values of Vachanas.
CO 4:	TRAVEL LITERATURE: Educating the students about Peruvian and Cuban commitment and struggle in rebuilding their nations.
CO 5:	THOUGHTFUL LITERATURE: Developing analytical and inter-personal skills.
Course Name:	Optional Kannada-VI
Course Code:	OK-C5.6
CO 1:	Teaching the systematic skills of language structure.
CO 2:	Learning the history of Kannada Grammar and Major Grammarians.
CO 3:	Teaching a systematic approach to the use of sound (DWANIMA) in word formation.
CO 4:	Teaching a systematic approach to the use of words (AKRUTIMA) in sentence formation.
CO 5:	Building the self confidence in students through systematic different writing skills.
SIXTH SEMESTER	
Course Name:	Optional Kannada-VII
Course Code:	OK-C6.7
CO 1:	CHAMPU SAHITHYA: Addressing the nature and essence of tenth-century literature.
CO 2:	DRAMA: Raising awareness of life anomaly (ASANGATHA) and social conditions through the Plays (Dramas) of Da Ra Bendre and G B Joshi.
CO 3:	SMALL STORIES: Introduction of various forms and complexities of life through this event-centred literature
Course Name:	Optional Kannada-VIII
Course Code:	OK-C6.8
CO 1:	Educate the literature students that linguistic awareness is the most essential to understand different forms of language.
CO 2:	Educate the origin and evolution of language.
CO 3:	Educating about the language category and their features.
CO 4:	Teaching about the Kannada dialects and its reasons.
CO 5:	Bring about the relationship between the Language and technology.

DEPARTMENT OF HINDI	
COURSE OUTCOME	
FIRST SEMESTER	
Course Name:	Hindi-I
Course Code:	LBAH-C1/ LBSH-C1/ LBCH-C1/ LBMH
CO 1:	Understanding learners in appreciating aesthetics in classical language.
CO 2:	All the details of the subject, the essence of the story, essay, travel narration etc. were explained on time.
CO 3:	Able to understand the present societal issues.
SECOND SEMESTER	
Course Name:	Hindi-II
Course Code:	LBAH-C1/ LBSH-C1/ LBCH-C1/ LBMH
CO 1:	Poetry taught the lessons of life, peace and humankind.
CO 2:	Able to learn prose work, it will improve learner's proficiency.
CO 3:	Understanding the learning process and the nature, the structure of the Hindi language.
THIRD SEMESTER	
Course Name:	Hindi-III
Course Code:	LBAH-C1/ LBSH-C1/ LBCH-C1/ LBMH
CO 1:	Able to understand the ethical values of present days.
CO 2:	Understand general public at every age and all levels of formal and non-formal education.
CO 3:	It Development of society is based on languages. The introduction of literary works was done in a scientific way.
FOURTH SEMESTER	
Course Name:	Hindi-IV
Course Code:	LBAH-C1/ LBSH-C1/ LBCH-C1/ LBMH-C4
CO 1:	Able to understand the ethical values of present days.
CO 2:	The ideology of the writers from the drama was delivered to the students.
CO 3:	It gives moral values of life in students that will inculcate or lead and influence them towards right path in their materialistic world.

DEPARTMENT OF SANSKRIT	
COURSE OUTCOME	
CO 1:	Students will be able to know not only ancient literature and their classification but also modern Sanskrit literature.
CO 2:	They will be managing their cognition, emotive apparatus, confusion and conflict of mind.
CO 3:	They should general introduction of Indian Petrology and definitions and examples of various Artha alankara.
CO 4:	The students would learn about the ancient Indian Educational system and Polity, their nature, concepts through the text of Dharmasastra and Arthasastra.
CO 5:	The students would know about the historical importance of Indian Epigraphy, Paleography, Chronology and Inscription.
CO 6:	They will be able to know the importance, propagation across the world of this language.
CO 7:	Students would know about the Vedic mantras, their application, Vedic grammar, socio-cultural life.
CO 8:	Grammar is very important part of this language for the making of sentences, to know appropriate meaning of texts, oral communication and perfection.
CO 9:	Linguistics should also help them to know the source of this language and the relation between other languages.
CO 10:	The students will take the knowledge about of Indian philosophy, Philosophers and their thoughts. They could relate the philosophical theory in practical life.

BA in ECONOMICS	
COURSE OUTCOMES	
FIRST SEMESTER	
Course Name:	Economics-C1
Paper Title:	ECONOMIC ANALYSIS-1
Course Code:	BA1-EC-C1
CO 1:	Identify the facets of an economic problem.
CO 2:	Learn basic economic concepts and terms.
CO 3:	Explain the operation of a market system;
CO 4:	Analyze the production and cost relationships of a business firm;
CO 5:	Evaluate the pricing decisions under different market structures; and
CO 6:	Use basic cost-benefit calculations as a means of decision making (i.e., thinking like an economist)
Course Name:	Economics-C2
Paper Title:	CONTEMPORARY INDIAN ECONOMY
Course Code:	BA1-EC-C2
CO 1:	Understand the current problems of Indian Economy.
CO 2:	Identify the factors contributing to the recent growth of the Indian economy.
CO 3:	Evaluate impact of LPG policies on economic growth in India.
CO 4:	Analyze the sector specific policies adopted for achieving the aspirational goals
CO 5:	Review various economic policies adopted.
Course Name:	OPEN ELECTIVE - ECONOMICS
Paper Title:	INDIAN ECONOMY PRIOR TO ECONOMIC REFORMS
Course Code:	GE1-EC1
CO 1:	Trace the evolution of Indian Economy
CO 2:	Identify the structural features and constraints of the Indian economy
CO 3:	Evaluate planning models and strategy adopted in India
CO 4:	Analyze the sector specific problems and contributions towards overall economic growth.
CO 5:	Review various economic policies adopted.
SECOND SEMESTER	
Course Name:	Economics-C1
Paper Title:	Economic Analysis - II
Course Code:	BA2-EC-C3
CO 1:	Understand the operation of the overall economic system;

CO 2:	Calculate national income and related aggregates
CO 3:	Explain the relationship between macroeconomic aggregates;
CO 4:	Analyse the nature of business cycles and policies towards controlling them;
CO 5:	Evaluate the macroeconomic policies for solving major problems like poverty and unemployment
Course Name:	Economics-C2
Paper Title:	Karnataka Economy
Course Code:	BA2-EC-C4
CO 1:	To acquaint the students about economic features of State of Karnataka
CO 2:	To prepare the students for the competitive and other allied examinations
CO 3:	To keep the students informed about the latest happening in the State
CO 4:	To encourage the students to think, prepare, plan and actively participate in finding solutions to the State related issues and
CO 5:	To support the students to take-up the research projects related to the State issues.
Course Name:	OPEN ELECTIVE - ECONOMICS
Paper Title:	Contemporary Indian Economy
Course Code:	GE 2-EC II
CO 1:	Understand the current problems of Indian Economy
CO 2:	Identify the factors contributing to the recent growth of the Indian economy
CO 3:	Evaluate impact of LPG policies on economic growth in India
CO 4:	Analyze the sector specific policies adopted for achieving the aspirational goals
CO 5:	Review various economic policies adopted
THIRD SEMESTER	
Course Name:	Economics-C5
Paper Title:	MICRO ECONOMICS
Course Code:	BA3-EC-C5
CO 1:	Understand introductory economic concepts.
CO 2:	Recognize basic supply and demand analysis.
CO 3:	Recognize the structure and the role of costs in the economy.
CO 4:	Describe using graphs, the various market models: perfect competition, monopoly, monopolistic competition, and oligopoly
CO 5:	Explain how equilibrium is achieved in the various market models.
CO 6:	Identify problem areas in the economy, and possible solutions, using the analytical tools developed in the course
Course Name:	Economics-C6

Paper Title:	**Mathematics for Economics**
Course Code:	**BA2-EC-C6**
CO 1:	Perform basic operations in Sets and functions and Matrix algebra.
CO 2:	Calculate limits, derivatives of Economic functions and identify the nature of the relationship.
CO 3:	Calculate the maxima and minima of function
Course Name:	**OPEN ELECTIVE - ECONOMICS**
Paper Title:	**RURAL ECONOMICS**
Course Code:	**GE3-EC3**
CO 1:	To Understand the basics of rural development.
CO 2:	To study the characteristics, problems, and programmers of rural redevelopment.
CO 3:	To study the trends and patterns of economic activities in rural areas.
CO 4:	To study the role of infrastructural facilities and governance in rural development.
CO 5:	To enable the students to know about the significance of rural enterprises and agricultural allied activities.
FOURTH SEMESTER	
Course Name:	**Economics-C7**
Paper Title:	**Macroeconomics**
Course Code:	**BA4-EC-C7**
CO 1:	Acquire knowledge on the circular flow of income in two sectors, three and four-sector model.
CO 2:	Understand and learn the calculation of national income.
CO 3:	Appreciate the classical and Keynesian theory of Employment.
CO 4:	Understand the concepts of multiplier and accelerator and leaning the simple Calculation on the working of Multiplier and Accelerator.
CO 5:	Acquire knowledge of the determinants of the Investment function
Course Name:	**Economics-C8**
Paper Title:	**Statistics for Economics**
Course Code:	**BA4-EC-C8**
CO 1:	Understand the nature of Data and their presentation
CO 2:	Calculate Descriptive statistics like measures of central tendency and dispersion
CO 3:	Apply statistical techniques like correlation and regression in Economic analysis
FIFTH SEMESTER	
Course Name:	**Economics-C9**
Paper Title:	**PUBLIC ECONOMICS**

Course Code:	**BA5-EC-C9**
CO 1:	Understand introductory Public Finance concepts.
CO 2:	Study the causes of market failure and corrective actions
CO 3:	Understand the impact, incidence and shifting of tax
CO 4:	Study the Economic Effects of tax on production, distribution and other effects
CO 5:	Enable the students to know the Principles and Effects of Public Expenditure
CO 6:	Understand the Economic and functional classification of the budget; Balanced and Unbalanced budget
Course Name:	**Economics-C10**
Paper Title:	**DEVELOPMENT ECONOMICS**
Course Code:	**BA5-EC-C10**
CO 1:	Understand the basic concepts and measurements of Development.
CO 2:	Learn some classical and partial theories of Development economics and identify the difference.
CO 3:	Identify the difference between Developed and Developing Countries.
CO 4:	Analyze and tackle the Development issues effectively. .
Course Name:	**Economics-C11**
Paper Title:	**ECONOMICS OF HUMAN RESOURCE MANAGMENT**
Course Code:	**BA5-EC-C11**
CO 1:	To acquaint the students about human resource management with reference to Economics.
CO 2:	To prepare the students for the Interviews.
CO 3:	To keep the students informed about the recruitment, selection, induction and placement.
CO 4:	To encourage the students to think, prepare, plan and actively participate in human resource planning.
CO 5:	To support the students to take-up the new job recruitments.
SIXTH SEMESTER	
Course Name:	**Economics-C12**
Paper Title:	**INDIAN BANKING AND FINANCIAL**
Course Code:	**BA6-EC-C12**
CO 1:	Understand the structure of Indian banking and the role of banks in monetary policy.
CO 2:	Analyze the functioning of banks and different types of accounts and other services offered by banks.
CO 3:	Evaluate recent developments in the Indian banking sector, including digital banking, payment banks, and non-performing assets.

CO 4:	Describe the overview of the Indian financial system, including financial markets, financial instruments, and financial regulation.
CO 5:	Analyze the challenges faced by Indian banks and the implications of banking reforms for the Indian economy.
CO 6:	Develop critical thinking and analytical skills in evaluating various financial products and services banks and capital markets offer.
Course Name:	Economics-C13
Paper Title:	INTERNATIONAL ECONOMICS
Course Code:	BA6-EC-C13
CO 1:	Understand the international trade theories and their application in international trade.
CO 2:	Explain the concept of terms of trade and demonstrate the effect of trade barriers; and display the ability to analyze the stages of economic integration.
CO 3:	Understand the concept of BoP and assess the BoP position and examine the changes in forex rate.
CO 4:	Analyse the role of international trade and financial institutions.
CO 5:	Demonstrate good inter-personal and communication skills through class participation and contributing to critical discussion on trade issues.
Course Name:	Economics-C14
Paper Title:	INDIAN PUBLIC FINANCE
Course Code:	BA6-EC-C14
CO 1:	To acquaint the students about public finance.
CO 2:	To prepare the students for the competitive and other allied examinations.
CO 3:	To keep the students informed about the latest happening in the country.
CO 4:	To encourage the students to think, prepare, plan and actively participate in finding solutions to the Budget.
CO 5:	To support the students to take-up the research projects related to the Budget issues.
Course Name:	BA in Economics Internship
Paper Title:	INTERNSHIP
CO 1:	Identify socio/economic/managerial/political issues and develop a framework to conduct enquiry.
CO 2:	Identify sources of data and tools (Statistical/Mathematical/Econometric techniques) to analyze the collected data.
CO 3:	Utilize the theoretical knowledge acquired to solve socio/economic/ managerial/ political issues and gain industry experience.

DEPARTMENT of SOCIOLOGY	
COURSE OUTCOMES	
FIRST SEMESTER DSC-1	
Course Name:	BA Sociology
Paper Title:	Understanding Sociology
Course Code:	BA1-SO-C1
CO 1:	Understand the nature and role of Sociology in a changing world.
CO 2:	Comprehend the uniqueness of sociological imagination in the study of real world.
CO 3:	Recognize different perspectives of perceiving the workings of social groups
CO 4:	Differentiate between sociology's two purposes - science and social reform
CO 5:	Express one's understanding of current social issues in oral and written forms
FIRST SEMESTER DSC-2	
Course Name:	BA Sociology
Paper Title:	Changing Social Institutions in India
Course Code:	BA1-SO-C2
CO 1:	Identify the new forms taken by institutions of family and marriage
CO 2:	Understand the role played by religion in modern world
CO 3:	Sensitize the students to the conflicting norms of secularism and living by one's religious beliefs
CO 4:	Appreciate the role of education and challenges in making education accessible to all
CO 5:	Recognize the social nature of economy and work
FIRST SEMESTER OE-1	
Course Name:	Sociology
Paper Title:	Sociology of Everyday life
Course Code:	OE1-SO1
CO 1:	Look at the familiar world from a new perspective
CO 2:	Able to appreciate how our social world is constructed
CO 3:	Able to communicate effectively in written and oral formats
SECOND SEMESTER DSC-3	
Course Name:	BA Sociology
Paper Title:	Foundations of Sociological Theory
Course Code:	BA2-SO-C3
CO 1:	Contextualize the social and intellectual background of classical sociologists
CO 2:	Appreciate the need for thinking in theoretical terms and concepts
CO 3:	Appreciate the need for thinking in theoretical terms and concepts
CO 4:	Demonstrate Basic Understanding of Theory and Research

SECOND SEMESTER DSC-4	
Course Name:	BA Sociology
Paper Title:	Sociology of Rural Life in India
Course Code:	BA2-SO-C4
CO 1:	Contextualize the social and intellectual background of classical sociologists
CO 2:	Appreciate the contemporaneity of classical sociological thought
CO 3:	Appreciate the need for thinking in theoretical terms and concepts
CO 4:	Demonstrate Basic Understanding of Theory and Research
SECOND SEMESTER OE-2	
Course Name:	Sociology
Paper Title:	Society Through Gender Lens
Course Code:	OE2-SO2
CO 1:	Understand the role of socialization as a constructor of gender roles and status
CO 2:	Appreciate the role of defining one's self identity in terms of gender
CO 3:	Identify the gender bias and discrimination present in everyday social structure
CO 4:	Take informed decisions about addressing gender justice issues
THIRD SEMESTER DSC-5	
Course Name:	BA Sociology
Paper Title:	Social Stratification and Mobility
Course Code:	BA3-SO-C5
CO 1:	Understand the nature and role of social stratification
CO 2:	Recognize different types of stratification and mobility
CO 3:	Describe different types of social stratification and mobility
CO 4:	Critically understand and analyze different theories of social stratification
THIRD SEMESTER DSC-6	
Course Name:	BA Sociology
Paper Title:	Sociology of Urban Life in India
Course Code:	BA3-SO-C6
CO 1:	Define the basic concepts of Urban Sociology
CO 2:	Identify and describe different types of cities
CO 3:	Analytically understand theoretical issues related to urban society
CO 4:	Critically evaluate urban policies
THIRD SEMESTER OE-3	
Course Name:	Sociology
Paper Title:	Sociology of Tourism and Management
Course Code:	OE3-SO3

CO 1:	Explain the relationship between tourism, culture and cultural heritage
CO 2:	Explain the social, cultural and economic impacts of tourism on local communities
CO 3:	Understand the relationship between tourism and consumption
CO 4:	Understand the principles of tourism management
FOURTH SEMESTER DSC-7	
Course Name:	BA Sociology
Paper Title:	Sociology of Marginalized Groups
Course Code:	BA4-SO-C7
CO 1:	Knowledge of marginalization and marginalized groups in India
CO 2:	Understand the impact of powerlessness in social life
CO 3:	Ability to participate and critically view efforts undertaken to address inequalities
FOURTH SEMESTER DSC-8	
COURSE NAME:	BA SOCIOLOGY
PAPER TITLE:	SOCIOLOGY OF MARGINALIZED GROUPS
COURSE CODE:	BA4-SO-C8
CO 1:	Define the basic concepts of population studies
CO 2:	Understand the dynamics of population from sociological perspectives
CO 3:	Understand problems around India's population
CO 4:	Critically analyze population policies of India
FIFTH SEMESTER DSC-9	
Course Name:	BA Sociology
Paper Title:	Social Entrepreneurship
Course Code:	BA5-SO-C9
CO 1:	Provide knowledge about social entrepreneurship
CO 2:	To help them to start their own social enterprise or NPO
CO 3:	Understand the scope and need for social entrepreneurship
CO 4:	Plan and implement socially innovative ideas in the areas of entrepreneurship
FIFTH SEMESTER DSC-10	
Course Name:	BA Sociology
Paper Title:	Society and Tribes
Course Code:	BA5-SO-C10
CO 1:	Gain basic knowledge about social organization of tribals
CO 2:	Critically understand the implications of changes occurring in tribal life
CO 3:	Undertake micro research work
CO 4:	Assess the impact of social changes on tribal social life

FIFTH SEMESTER DSC-11	
Course Name:	BA Sociology
Paper Title:	Statistics in Sociological Research
Course Code:	BA5-SO-C11
CO 1:	Use appropriate research method
CO 2:	Use appropriate statistical techniques
CO 3:	Summarize data, examine relationships among variables
SIXTH SEMESTER DSC-12	
Course Name:	BA Sociology
Paper Title:	Sociological Perspectives
Course Code:	BA6-SO-C12
CO 1:	Understand major Sociological theoretical approaches
CO 2:	Compare and contrast the different theoretical perspectives
CO 3:	Appreciate the significance of major Sociological theories
CO 4:	Able to use fundamental theoretical categories
SIXTH SEMESTER DSC-13	
Course Name:	BA Sociology
Paper Title:	Sociology of Health
Course Code:	BA6-SO-C13
CO 1:	Understand the concept of health, illness and social conditions
CO 2:	Analyse the inter-relationship between social factors and health status
CO 3:	Understand the role of doctors, nurse, pharmaceutical industry and social institutions in maintaining and promoting human health
CO 4:	Distinguish between health, well-being, illness and disease
CO 5:	Analyse the role of pharmaceutical industry and hospitals critically
SIXTH SEMESTER DSC-14	
Course Name:	BA Sociology
Paper Title:	Society in Karnataka
Course Code:	BA6-SO-C14
CO 1:	To understand the Knowledge of Society in Karnataka.
CO 2:	Understand the history of Karnataka.
CO 3:	Ability to undertake micro research work based on learning
CO 4:	To understand the social, political and economic life of Karnataka.

DEPARTMENT OF JOURNALISM	
COURSE OUTCOMES	
FIRST SEMESTER	
Course Name:	JOURNALISM-CT1
Paper Title:	Introduction to Journalism Concepts and Practices
Course Code:	BA1-JR-CT1
CO 1:	Identify the distinct nature of journalism and its professional aspects, including career opportunities
CO 2:	Recognize and use terms specific to media
CO 3:	Recognize the significance of changes in the practice of journalism
CO 4:	Explore different media platforms, including print, broadcast, online, and social media.
CO 5:	Understand the importance of maintaining integrity and credibility in reporting.
CO 6:	Explore normative theories that prescribe how the media should function in an ideal society.
Course Name:	BA1-JR-CP1
Paper Title:	Introduction to Journalism Concepts and Practices
Course Code:	JOURNALISM-CP1
CO 1:	Showcase the ability to write informative and engaging articles on diverse topics.
CO 2:	Craft a feature story that delves deep into a subject, providing in-depth analysis and insights.
CO 3:	Ability to capture compelling moments and emotions in human subjects.
CO 4:	Critically analyze and review the content of newspapers, magazines, or trending topics in social media.
CO 5:	Ability to capture compelling moments and demonstrate the ability to enhance the visual storytelling through captions.
Course Name:	JOURNALISM-OE1
Paper Title:	WRITING FOR MEDIA
Course Code:	OE1-JO1
CO 1:	Learn the basics of media literacy and the importance of ethical writing across different platforms.
CO 2:	Gain skills in writing for print, radio, TV, and online media, adapting to each platform's needs.
CO 3:	Master the steps of creating content, from choosing topics and finding sources to rewriting for clarity.
CO 4:	Build confidence through practical exercises like writing headlines, radio scripts, and social media posts.
CO 5:	Learn about new trends in digital media, preparing for a future in the fast-changing world of media.
SECOND SEMESTER	
Course Name:	JOURNALISM-CT2

Paper Title:	**COMPUTER APPLICATIONS FOR MEDIA**
Course Code:	**BA2-JR-CT2**
CO 1:	Provide an overview of the role of computer applications in enhancing media workflows.
CO 2:	Familiarize students with the diverse software applications commonly used in media production.
CO 3:	Introduce video editing software such as Adobe Premiere Pro or Final Cut Pro.
CO 4:	Develop skills in creating visually appealing graphics for print and digital media.
CO 5:	Introduce audio editing and production tools like Audacity or Adobe Audition.
Course Name:	**JOURNALISM-CP2**
Paper Title:	**BASIC MULTIMEDIA SKILLS**
Course Code:	**BA2-JR-CP2**
CO 1:	Create visually appealing slides that enhance the overall message.
CO 2:	Ability to design and format e-paper pages using professional desktop publishing software.
CO 3:	Ability to publish and organize content on a blog platform.
CO 4:	Understand basic editing techniques to enhance recorded content.
CO 5:	Understand the unique storytelling aspects of the podcasting medium.
CO 6:	Produce content tailored for specific social media channels.
Course Name:	**JOURNALISM-OE2**
Paper Title:	**PHOTOJOURNALISM**
Course Code:	**OE2-JO2**
CO 1:	Gain foundational knowledge of photography, including camera types, lighting, and photography trends.
CO 2:	Understand the purpose, skills, and responsibilities of a photojournalist, focusing on capturing newsworthy images.
CO 3:	Build skills in photo editing, caption writing, and using editing software to enhance images effectively.
CO 4:	Learn how to use smartphones for capturing, editing, and sharing news photos and videos on digital platforms.
CO 5:	Acquire practical skills for a career in photography and photojournalism, adapting to evolving media technologies and practices.
THIRD SEMESTER	
Course Name:	**JOURNALISM - CT3**
Paper Title:	**NEWS REPORTING AND ANALYSIS**
Course Code:	**BA3-JR-CT3**
CO 1:	Increased awareness of the values that make a story newsworthy.
CO 2:	Ability to critically assess and validate news from different sources, ensuring accuracy and ethical standards.
CO 3:	Understanding the structural nuances of different types of news stories.
CO 4:	Familiarise to package news stories effectively for radio and television audiences.

CO 5:	Ability to identify and navigate the challenges specific to each reporting area.
Course Name:	JOURNALISM-CP3
Paper Title:	NEWS REPORTING AND ANALYSIS
Course Code:	BA3-JR-CP3
CO 1:	Students will be proficient in recognizing significant events and providing comprehensive news coverage.
CO 2:	Improved skills in summarizing key points and extracting news angles from press conferences.
CO 3:	Ability to navigate and comprehend information from official sources for news reporting.
CO 4:	Enhanced critical thinking skills in analyzing news content.
CO 5:	Proficiency in conducting in-person interviews and extracting relevant information.
Course Name:	JOURNALISM-OE3
Paper Title:	FEATURE WRITING AND FREELENCING
Course Code:	OE3-JO3
CO 1:	Gain a solid understanding of feature writing, including its characteristics, techniques, structure, and the research process for developing compelling stories and columns.
CO 2:	Learn about diverse feature types, including news features, profiles, human interest stories, and reviews, and understand the latest trends in feature writing across different genres.
CO 3:	Develop knowledge of freelancing in media, the qualities needed for success, and understand the ethical and legal considerations involved.
CO 4:	Explore the wide scope for freelancing across print, electronic, and social media, and learn about the resources and tools available for freelance writers.
CO 5:	Build a foundation for a career in feature writing and freelancing, with insights into industry trends and career opportunities in India and globally.
FOURTH SEMESTER	
Course Name:	BA4-JR-CT4
Paper Title:	NEWS PROCESSING AND EDITING
Course Code:	JOURNALISM – CT4
CO 1:	Understand the foundational concepts, importance, and principles of editing in the context of print, broadcast, and digital media.
CO 2:	Demonstrate proficiency in various editing skills, including language editing, headline writing, and news translation.
CO 3:	Apply editing techniques to enhance the visual and textual elements of news content, including photographs and layout design.
CO 4:	Develop news judgment skills, the ability to read between the lines, and creativity in presenting news stories.
CO 5:	Gain practical experience in preparing news for different media pages, considering placement and layout.

Course Name:	BA4-JR-CP4
Paper Title:	NEWS PROCESSING AND EDITING
Course Code:	JOURNALISM-CP4
CO 1:	Ability to create compelling headlines that accurately represent the news content.
CO 2:	Gain practical experience in curating and selecting news stories for publication.
CO 3:	Proficiency in selecting photos that enhance the narrative.
CO 4:	Proficiency in writing editorials that reflect critical thinking and journalistic insight.
CO 5:	Improved editing and rewriting skills.
FIFTH SEMESTER	
Course Name:	JOURNALISM-
Paper Title:	INTRODUCTION TO COMMUNICATION
Course Code:	CP5BA5-JR-CP5
CO 1:	Students will demonstrate the ability to craft well-structured and persuasive letters suitable for various contexts.
CO 2:	Students will grasp the importance of clarity, tone, and audience engagement in effective public speaking.
CO 3:	Students will enhance their public speaking skills, gaining confidence and improving their delivery techniques.
CO 4:	Students will express ideas creatively using visual elements and narratives in cartoon form
CO 5:	Students will gain practical experience in delivering presentations through digital mediums, enhancing their digital communication skills.
Course Name:	JOURNALISM-CP5
Paper Title:	INTRODUCTION TO COMMUNICATION
Course Code:	BA5-JR-CP5
CO 1:	Students will demonstrate the ability to craft well-structured and persuasive letters suitable for various contexts.
CO 2:	Students will grasp the importance of clarity, tone, and audience engagement in effective public speaking.
CO 3:	Students will enhance their public speaking skills, gaining confidence and improving their delivery techniques.
CO 4:	Students will express ideas creatively using visual elements and narratives in cartoon form
CO 5:	Students will gain practical experience in delivering presentations through digital mediums, enhancing their digital communication skills.
Course Name:	JOURNALISM – CT6
Paper Title:	FUNDAMENTALS OF RADIO AND TELEVISION
Course Code:	BA5-JR-CT6
CO 1:	Acquire practical skills required for effective audio and video production.
CO 2:	Explore the various components and functions of television in the communication landscape.

CO 3:	Acquire hands-on knowledge of radio program production techniques.
CO 4:	Develop a comprehensive understanding of television program production methodologies.
CO 5:	Understand the current landscape, challenges, and opportunities in both audio and video mediums.
Course Name:	JOURNALISM – CT6
Paper Title:	FUNDAMENTALS OF RADIO AND TELEVISION
Course Code:	BA5-JR-CT5
CO 1:	Students will demonstrate the ability to craft well-structured and persuasive letters suitable for various contexts.
CO 2:	Students will grasp the importance of clarity, tone, and audience engagement in effective public speaking.
CO 3:	Students will enhance their public speaking skills, gaining confidence and improving their delivery techniques.
CO 4:	Students will express ideas creatively using visual elements and narratives in cartoon form
CO 5:	Students will gain practical experience in delivering presentations through digital mediums, enhancing their digital communication skills.
SIXTH SEMESTER	
Course Name:	JOURNALISM – CT7
Paper Title:	INTRODUCTION TO DIGITAL MEDIA
Course Code:	BA6-JR-CT7
CO 1:	Students will comprehend the emerging trends and the impact of artificial intelligence (AI) on digital platforms.
CO 2:	Students will develop skills in planning, writing, designing, and editing digital media content.
CO 3:	Students understanding of current trends in digital marketing.
CO 4:	Students will be aware of legal frameworks governing digital media and their implications for content creators and platforms.
Course Name:	JOURNALISM – CP7
Paper Title:	INTRODUCTION TO DIGITAL MEDIA
Course Code:	BA6-JR-CT7
CO 1:	Students will demonstrate proficiency in creating engaging and relevant content suitable for different digital platforms.
CO 2:	Students will gain hands-on experience in managing a YouTube channel, including content creation, scheduling, and understanding the dynamics of maintaining an online presence.
CO 3:	Students will develop analytical skills and effectively utilize social media platforms to engage with audiences
CO 4:	The student will explore a variety of programs used to create digital media along with team teamwork in digital media production.
CO 5:	The student will create a simple multimedia presentation.

Course Name:	**JOURNALISM – CT8**
Paper Title:	**ADVERTISING AND PUBLIC RELATIONS**
Course Code:	**BA6-JR-CT8**
CO 1:	Develop skills in visualization and illustration for effective communication in advertising.
CO 2:	Learn to plan and execute advertising campaigns.
CO 3:	Examine the ethical considerations in advertising.
CO 4:	Explore the tools and processes involved in public relations.
CO 5:	Recognize the role of public relations in corporate communication, crisis management, disaster management, and conflict resolution.
Course Name:	**JOURNALISM – CP8**
Paper Title:	**ADVERTISING AND PUBLIC RELATIONS**
Course Code:	**BA6-JR-CP8**
CO 1:	Students develop practical skills in creating comprehensive advertising campaigns.
CO 2:	Students enhance their critical thinking and analytical skills by evaluating advertising messages in diverse media
CO 3:	Students acquire practical experience in creating promotional content for virtual platforms.
CO 4:	Students gain experience in creating a house journal, demonstrating their ability to compile and present information in a professional and organized manner

INDIAN CONSTITUTION & HUMAN RIGHTS, VALUE EDUCATION	
COURSE OUTCOME	
Course Name:	INDIA AND INDIAN CONSTITUTION
Course Code:	AE2-IC
CO 1:	Understand and explain the significance of Indian Constitution as the fundamental law of the land.
CO 2:	Exercise his fundamental rights in proper sense at the same time identifies his responsibilities in national building.
CO 3:	Analyse he Indian political system, the powers and functions of union and state Governments as well as judiciary system.
Course Name:	VALUE EDUCATION
Course Code:	
CO 1:	Understand the values and they become more responsible for their behavior with teachers and fellow students.
CO 2:	They learn to cooperate with the teachers and fellow students in every situation.
CO 3:	Students analyze the importance of Time management, Environment awareness, positive thinking and emotional maturity for personality development.