UG DEPARTMENT OF ELECTRONICS

COURSE OUTCOMES

<mark>2022–2023</mark>

Course Code	Course Name	Course Outcomes
1104	Network Analysis andElectronic Devices	 CO1: To understand the concept of Voltage and Current Sources, Network Theorems, Mesh and Node Analysis. CO2: To become familiar with the Characteristics of the BJT Configurations, biasing, stabilization and their Applications. CO3: To be able to perform small signal analysis of Amplifier and understand its Classification. CO4: To be able to perform analysis of Two Stage R-C Coupled Amplifier. CO5: To understand the Concept of Positive and Negative Feedback along with Applications of each type of Feedback and the Working of Oscillators. CO6: To become familiar with Construction, Working and Characteristics of JFET, MOSFET and UJT. CO7: To develop an understanding of the Basic Operation and Characteristics of Photoelectric Devices. CO8: To become familiar with Half-wave, Full-wave and Bridge Rectifiers Ripple Factor and Efficiency.
2104	Linear and Digital Integrated Circuits	CO1: To understand Op- Amp Basics and its various Applications.CO2: To become familiar with Number Systems and Codes, Logic Gates, Boolean Algebra Theorems.

		 CO3: To understand the Minimization Techniques for designing a simplified Logic Circuit. CO4: To design Half Adder, Full Adder, Half-Subtractor and Full-Subtractor Circuits. CO5: To understand the working of Data Processing Circuits Multiplexers, De- multiplexers, Decoders and Encoders. CO6: To become familiar with the working of Flip-Flop Circuits, its working and applications.
3104	Electronic Communication Systems	 CO1: Familiarization with the basic Concepts of a Communication System and need for Modulation. CO2: To become familiar with an insight on the use of different modulation and demodulation techniques used in Analog Communication. CO3: To Learn the generation and detection of a signal through Pulse and Digital Modulation Techniques and Multiplexing. CO4: In-depth understanding of differentConcepts used in a Fiber Optic Communication, Satellite Communication. CO5: To Understand the Mobile Radio Propagation, Cellular System Design, Mobile Technologies like GSM and CDMA, Mobile Communication 2G, 3G,4G and 5G with their Characteristics and Limitations.
4123	Microprocessor Systems	 CO1: The student can gain good knowledge on Microprocessor and implement it in Practical applications. CO2: To understand the Assembly Language Programming essentials. CO3: To understand and devise techniques for faster execution of instructions, improve speed of operations and enhance performance of Microprocessors. CO4: To understand Concept of Multi Core Processors and its advantages.
4124	Microcontroller Systems	CO1: To understand the architecture of 8051 Microcontroller.CO2: To understand key concepts of 8051 Microcontroller Systems like I/O Operations, Interrupts, Programming of Timers andCounters.

		CO3: To understand Interfacing of 8051 Microcontroller with Peripherals.CO4: In the laboratory, students will Program 8051 Microcontroller to perform various experiments.
5129	Embedded Systems and Internet of Things	CO1: Explain the concepts related to Embedded Systems and Architecture of MicrocontrollersCO2: Describe the differences between the General
		Computing System & Embedded System and understand
		common aspects of Embedded System Development.
		CO3: Understand Internet of Things and its Hardware and
		Software Components.
		CO4: Interface I/O devices, Sensors & Communication
		Modules.
		CO5: Remotely Monitor Data and Control Devices.
		CO6: Develop Real Life IoT Based Projects.
5130	Consumer	CO1: Familiarization with various types of audio systems.
	Electronics	CO2: Familiarization with TV and videosystems.
		CO3: Familiarization with telephony andoffice equipment.
		CO4: Familiarization with various domestic
		gadgets/appliances.

DEPARTMENT OF COMPUTER SCIENCE

COURSE OUTCOMES

Course Code	Course Name	Course Outcomes
1105	Problem Solving in	CO1: Understand the evolution and functionality of a Digital
	' C'	Computer.
		CO2: Apply logical skills to analyze a given problem
		CO3: Develop an algorithm for solving a given problem.
		CO4: Understand 'C' language constructs like Iterative
		statements, Array processing, Pointers, etc.
		CO5: Apply 'C' language constructs to the algorithms to write a
		"C" language program.
2105	Data Structures using	CO1: Understand available Data Structures for data storage and
	'C"	processing.
		CO2: Comprehend Data Structure and their real-time
		applications - Stack, Queue, Linked List, Trees and Graph
		CO3: Choose a suitable Data Structures for an application
		CO4: Develop ability to implement different Sorting and Search
		methods
		CO5: Have knowledge on Data Structures basic operations like
		insert, delete, search, update and traversal Design and develop
		programs using various data structures
		CO6: Implement the applications of algorithms for sorting,
		pattern matching etc.
3105	Database Management	CO1: Gain knowledge of Database and DBMS.
	System	CO2: Understand the fundamental concepts of DBMS with
		special emphasis on relational data model.
		CO3: Demonstrate an understanding of normalization theory and
		apply such knowledge to the normalization of a database
		CO4: Model data base using ER Diagrams and design database
		schemas based on the model.
		CO5: Create a small database using SQL.
		CO6: Store, Retrieve data in database.

4105	Object Oriented	CO1: Understand the benefits of a well-structured program
	Programming using	CO2: Understand different computer programming paradigms
	java	CO3: Understand underlying principles of Object-Oriented
		Programming in Java
		CO4: Develop problem-solving and programming skills using
		OOP concepts
		CO5: Develop the ability to solve real-world problems through
		software development in high-level programming language like
		Java.
4131	Operating Systems	CO-1: Know Computer system resources and the role of
		operating system in resource management with algorithms.
		CO-2: Understand Operating System Architectural design and its
		services.
		CO-3: Gain knowledge of various types of operating systems
		including Unix and Android.
		CO-4: Understand various process management concepts
		including scheduling, synchronization, and deadlocks.
		CO-5: Have a basic knowledge about multithreading.
		CO-6: Comprehend different approaches for memory
		management.
		CO-7: Understand and identify potential threats to operating
		systems and the security features design to guard against them.
		CO-8: Specify objectives of modern operating systems and
		describe how operating systems have evolved over time.
		CO-9: Describe the functions of a contemporary operating
		system
5132	Web Interface	CO-1: Understand and appreciate the web architecture and
	Designing Technologies	services.
		CO-2: Gain knowledge about various components of a website.
		CO-3: Demonstrate skills regarding creation of a static website
		and an interface to dynamic website.
		CO-4: Learn how to install word press and gain the knowledge of
		installing various plug-INS to use in their websites.

5139	Web Applications	CO-1: Write simple programs in PHP.
	Development using PHP& MYSOL	CO-2: Understand how to use regular expressions, handle
	-	exceptions, and validate data using PHP.
		CO-3: Apply In-Built functions and Create User defined
		functions in PHP programming.
		CO-4: Write PHP scripts to handle HTML forms.
		CO-5: Write programs to create dynamic and interactive web
		based applications using PHP and MYSQL.
		CO-6: Know how to use PHP with a MySQL database and can
		write database driven web pages

DEPARTMENT OF COMMERCE

COURSE OUTCOMES

Course	Course Name	Course Outcomes
1219	Fundamentals of Accounting	 CO1: Explain the knowledge of accounting process and preparation of final accounts of sole trader CO2: Develop the skill of recording financial transactions and preparation of reports inaccordance with GAAP. CO3: Analyze the difference between cash book and pass book in terms of balance and make reconciliation. CO4: Evaluate the balance sheets of a sole trader for different accounting periods. CO5: Design new accounting formulas& principles for business organisations
1211	Business Organisation and Management	 CO1: Describe profit earning creation of customers and regular innovations. CO2: Develop a set of personal business career options and apply business ethics and social responsibility. CO3: Explain basic concepts and functions of Business organization as well as Management. CO4: Evaluate the various organizations of the business firms and judge the bestamong them. CO5: Design and plan to register a business firm. Prepare different documents to register a company at his own.
1220	Business Environment	 CO1: Illustrate the concept of business environment. CO2: Demonstrate how the Internal and External elements affect the business environment. CO3: Explain the economic trends and its effect on Government policies. CO4: Assess the recent developments in economic and business policies of the Government. CO5: Evaluate and judge the best business policies in Indian business environment.
1221	Information Technology	CO1: Explain the difference between an operating system and an application program, and what each is used for in a computer CO2: Apply standard statistical inference procedures to draw

1032	Insurance Promotion	 conclusions from data CO3: Interpret, produce, and present work-related documents and information effectively and accurately. CO4: Analyse compression techniques and file formats to determine effective ways of securing, managing, and transferring data CO5: Analyse a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions. CO1: Demonstrate the field level structure and functioning of insurance sector and its role in protecting the risks. CO2: Interpret pertaining skills and their application for promoting insurance coverage. CO3: Explain the importance of Insurance agent examination conducted by IRDA. CO4: Plan 'promoting insurance coverage practice' as one of the corrier of the coverage.
2216	Financial	the carrier options.
2210	Accounting	 accounting treatment of the various aspects of consignment and ream the accounting treatment of the various aspects of consignment. CO2: Analyse the accounting process and preparation of accounts in consignment and joint venture. CO3: Distinguish Joint Venture and Partnership and to learn the methods of maintaining records under Joint Venture. CO4: Determine the useful life and value of the depreciable assets and maintenance of Reserves in business entities. CO5: Design an accounting system for different models of business at his own using the principles of existing accounting system.
2217	Business Economic	CO1: Describe the nature of economics in dealing with the
		 issues of scarcity of resources. CO2: Analyze supply and demand analysis and its impact on consumer behaviour. CO3: Evaluate the factors such as production and costs affecting firms behaviour. CO4: Apply economic models for managerial problems.
2218	Banking Theory and Practice	CO1: Explain the basic concepts of banks and functions of commercial banks.
		 CO2: Demonstrate an awareness of law and practice in a banking context. CO3: Analyse the practice of banking law. CO4: Organize information as it relates to the regulation of banking products and services. CO5: Evaluate the current scenario of Indian Banking system. CO6: Formulate the procedure for better service to the customers from various banking innovations.

2219	E-Commerce and Web Designing	 CO1: Explain the Internet trading relationships including Business to Consumer, Businessto-Business, Intra- organizational. CO2: Describe the infrastructure for E-commerce CO3: Analyze the impact of E-commerce on business models and strategy CO4: Design the website theme and navigational structure CO5: Assess electronic payment systems CO6: Design & develop web pages including: CSS Style Rules, Typography, Hyperlinks, Lists, Tables, Frames, Forms, Images, Behaviours, CSS Layouts.
2036	Business Communication	 CO1: Classify the types of business communication and correspondence CO2: Correlate the processes like receiving, filing and replying CO3: Develop good business communication skills CO4: Employ organizational communication requirements and presentations.
2037	Advertising	 CO1: Demonstrate the field of Advertising CO2: Assess opportunities and challenges in Advertising sector CO3: Prepare a Primary advertising model CO4: Classify different media for advertising CO5: Assess the scope for making advertising a future career
3218	Advanced Accounting	 CO1 Describe the concept of Non-profit organisations and its accountingprocess. CO2: Explain the concept of single-entry system and preparation of statement of affairs. CO3: Discuss the legal formalities at the time of dissolution of the firm. CO4:Prepare financial statements for partnership firm on dissolution of thefirm. CO5: Differentiate between the dissolution of the firm and dissolution ofpartnership

3212	Business Statistics	 CO1: Describe the importance of Statistics in real life. CO2: Formulate complete, concise, and correct mathematical proofs. CO3: Solve problems using multiple mathematical and statistical tools, measuring relationships by using standard techniques. CO4: Assess data-based models. CO5: Apply the statistical tools in day life. CO6: Create quantitative models to solve real world problems in appropriate contexts.
3219	Marketing	CO1: Develop an idea about marketing and marketing environment.CO2: Demonstrate the consumer behavior and market segmentation process.
		 CO3: Interpret the product life cycle and product line decisions. CO4:Formulate new marketing strategies. CO5: Develop prices strategies. CO6: Classify various promotion methods and distribution channels.
3220	Programming with C & C++	 CO1: Analyze a given problem and develop an algorithm to solve the problem along with flowchart. CO2: Use the 'C' language constructs in the right way. CO3: Design, develop and test programs written in 'C'. CO4: Explain the importance of Functions CO5: Develop Programs using Arrays CO6: Develop Programs using Pointers
4227	Corporate Accounting	 CO1: Demonstrate the procedure for issue of bonus shares and buyback of shares. CO2: Interpret the important provisions of Companies Act, 2013 and prepare final accounts of a company with Adjustments. CO3: Prepare consolidated accounts for a corporate group. CO4: Analyze complex issues, formulation of well-reasoned arguments and reaching better conclusions. CO5: Interpret accounting policy choices with reference to relevant laws and accounting standards.
4226	Cost and Management Accounting	 CO1: Compute the cost of products using different methods of costing. CO2: Prepare Cost sheets quotations and tenders to organizations for different works. CO3: Evaluate cost ascertainment, cost control and cost reduction. CO4: Demonstrate the importance of management

		accounting system and Role of Management Accountant. CO5: Analyse and Interpret Financial Statements.
		CO6: Classify various Ratio analysis techniques.
4230	Business Laws	 CO1: Describe the legal environment of business and laws of business. CO2: Analyse the security aspects in the present cybercrime scenario. CO3: Apply basic legal knowledge to business transaction. CO4: Interpret the various provisions of Company Law. CO5: Predict outcomes and recommend appropriate action on issues relating to business associations and legal issues. CO6: Evaluate the procedure to integrate concept of business law with foreign trade.
4229	Income Tax	 CO1: Develop the complete knowledge of the tax evasion, tax avoidance and tax planning. CO2: Compute Income tax for various sources and understanding the Income tax policies. CO3: Correlate amendments made from time to time in Finance Act. CO4: Compute total income and define tax complicacies and structure. CO5: Prepare and File IT returns of individual at his own.
4228	Auditing	 CO1: Develop the conceptual knowledge relating to audit procedures and practices. CO2: Classify different types of audits and describe rights and duties of Auditors. CO3:Evaluate the books of accounts and express an opinion on financial statements. CO4:Demonstrate the accounting knowledge and skills in auditing. CO5:Distinguish between auditing and investing. CO6: Prepare Audit report.
4231	Goods And Service Tax	 CO1: Explain the basic principles underlying the Indirect Taxation Statutes. CO2: Estimate the method of tax credit. Input and Output Tax credit and Cross Utilisation of Input Tax Credit. CO3: Identify and analyze the procedural aspects under different applicable statutes related to GST. CO4: Compute the assessable value of transactions related to goods and services for levy and determination of duty liability. CO5: Develop various GST Returns and reports for business
4232	DBMS	transactions in Tally. CO1: Develop basic concepts of database and database

		management. CO2:Demonstrate the database development process. CO3:Apply SOL commands for various quaries.
		CO4: Create PL/SQL programs.
5238	Advanced corporate accounting	 CO1: Understand Corporate Accounting environment CO2: Record Transactions related to Purchase of Business. CO3: Analyze the situations of Purchase of Business and Liquidation CO4: Create formulas and calculations relating to Amalgamation.
5239	Software solutions to	CO1: Apply basics of accounting software into business firms
	accounting	for accounting transactions.
		CO2: Integrate the concept of different Accounting softwares for accounting purpose
		CO3: Design new approaches for use of accounting software
		environment
		CO4: Understand the various versions of Tally and other
		softwares
5240	Life Insurance with	COI : Analyse various schemes and policies related to life
	practice	CO2: Acquire insurance agency skills and other administrative
		skills
		CO3:Acquire skill of settlement of schemes claims under
		various circumstances.
5241	General Insurance	CO1: Understand the features of general insurance and
	Procedure and Practice	CO2: Analyze various schemes and policies related to general
	Tractice	insurance sector.
		CO3: Acquire general insurance agency skills and
		administrative skills
		CO4: Apply skill for settlement of claims under various
5242	F.Commerce	CO1 : Understand the mechanism of E-commerce
5272	E-Commerce	CO2: Equip specialization in website designing for E-
		commerce
		CO3: Involve in activities of E-commerce
5243	E-Filling	CO1: Understand and apply basic knowledge of Indian Tax
		System
		CO3: Involve in activities of Charted Accountants for filling
		returns.
5244	Mobile Application	CO1: Identify basic terms ,tools and software related to
	Development	android systems
		CO2: Describe components of IDE, understand features of
		android development tools

		CO3: Explain the features of services and able to publish android ApplicationCO4: Describe the layouts and controls
5245	Cyber Security Malware Analysis	 CO1: Understand the computer networks, networking tools and cyber security CO2: Understand the OWASP Vulnerabilities CO3:Understand about Information Technology act 2000

UG DEPARTMENT OF BIOTECHNOLOGY

COURSE OUTCOMES

<mark>2022 – 202</mark>3

Course Code	Course Name	Course Outcomes
1109	Biomolecules & Analytical Techniques	 CO1: To learn about the principle, mechanism, equipment and applications of separation of biomolecules, pigments etc., is learnt. This knowledge is useful in isolating certain molecules in pure form. CO2: To be able to Design and carry out appropriate PCR based DNA detection assays and to apply gel electrophoresis in DNA detection and quantification, Evaluate appropriate methods for mutation detection, Use Bioinformatics tools for DNA sequence analysis. CO3: To learn about Isotopic tracer techniques - how to calculate the Measurement of radioactivity, different principle, advantages, disadvantages instrumentation techniques of counters, mass spectroscopy and they can learn how to apply different isotopes in biotechnology. CO4: To learn the basic principles, concept and types of centrifuges to isolate cell components and determine molecular weight by sedimentation velocity and sedimentation equilibrium methods. To learn the basic concepts of mean, median, mode and standard deviation and standard error, Anova using to calculate problems.
2109	Microbiology, Cell and Molecular Biology	 CO1: To learn about contributions of various scientists in the field of Biotechnology and microscopy, various staining methods useful for the study of microorganisms in detail. To be motivated to pursue research through keen observations. CO2: To study in detail about Microorganisms like bacteria and viruses - their structure, life cycle, history, classification and their importance a. To apply the knowledge about microorganisms in daily life like maintaining hygiene, and taking food rich in probiotics for healthy life. CO3: To acquire knowledge on Organelle genome organization and various gene families To know the level of expression by transcription and translation. CO4: To learn the molecular mechanisms responsible for diseases and may take up research in this field.
3109	Immunology and r-	CO1: To learn about the basic mechanisms, distinctions

	DNA Technology	and functional interplay of innate and adaptive immunity and the cellular/molecular pathways of humoral/cell- mediated adaptive responses. CO2: To learn about the structure, classes, types of Antibody and Antigens and factors affecting antigenicity. To gain knowledge that helps to take up research to find medicines for present incurable diseases. CO3: The course will provide an insight into basic aspects of immunology and rDNA technology. CO4: Concepts of immunology and recombinant DNA technology.
4131	Plant and Animal Biotechnology	 CO1: Students should be able to gain fundamental knowledge in animal and plant biotechnology and their applications. CO2: Plant biotechnology can be defined as the introduction of desirable traits into plants through genetic modification. CO3: The student learns the various basic concepts and also about how this knowledge can be used for the welfare of the humankind by improving the quality of animals and animal products. CO4: Animal biotechnology is a branch of biotechnology in which molecular biology techniques are used to genetically engineer (i.e. modify the genome of) animals in order to improve their suitability for pharmaceutical, agricultural or industrial applications.
4132	Environmental & Industrial Biotechnology	 CO1: Students should be able to gain fundamental knowledge in Environmental and industrial biotechnology and their applications. CO2: Environmental biotechnology addresses environmental problems, such as the removal of pollution, renewable and non renewable energy generation or biomass production, by exploiting biological processes. CO3: Industrial biotechnology is one of the most promising new approaches to pollution prevention, resource conservation, and cost reduction. It is often referred to as the third wave in biotechnology. CO4: They learn the mechanisms involved in improving the organisms and processes which lead to improvement in yield and quality.
5137	Apiculture	 CO1: Artificial Bee rearing (Apiary), Beehives – Newton and Langstroth. Methods of Extraction of Honey (Indigenous and Modern). CO2: Bee Diseases and Enemies. Control and Preventive Measures CO3: Products of the Apiculture Industry and its Uses (Honey, Bee Wax, Propolis) and Pollen.

		CO4: Bee Keeping Industry: Present and future, Role of Bees in cross-pollination in horticulture and agriculture. Prospects of apiculture as self-employment venture.
5138	Pearl culture	 CO1: Pearl oyster culture Techniques of pearl oyster culture (Fresh water and Marine water) for artificial production of pearls. Pearl culture techniques -Rafts, long lines, Pearls oyster baskets, under water platforms, mother oyster culture/Collection of oysters, rearing of oysters, Environmental parameters CO2: Selection of Oyster, Graft tissue preparation, Nucleus insertion, Conditioning for surgery, Postoperative culture, harvesting of pearl, clearing of pearl. CO3: Diseases and Predators of Pearl oysters' Present status, prospects and problems of pearl industry in India.

UG DEPARTMENT OF AQUACULTURE

COURSE OUTCOMES

<mark>2022 – 202</mark>3

Course	Course Name	Course Outcomes	
Code			
1114	Basic Principles	CO1: Demonstrate blue revolution and classify different types of	
	of Aquaculture	aqua culture systems.	
		CO2: Explain the concepts of Food Chain, Food Web, Plankton	
		and Benthos in Pond ecosystem.	
		CO3: Categorize the different types of fish ponds such as	
		Nursery, Rearing, Production, Stocking and Quarantine ponds.	
		CO4: Demonstrate different steps of Pond preparation such as site	
		selection, Topography, Nature of the Soil, Water resources.	
		CO5: Illustrate the pond management factors.	
		CO6: List out the Physico-Chemical conditions of soil and water.	
2114	Biology of Fin	CO1: Classify fishes according to their Classes.	
	fish and Shell fish	CO2: Explain the Commercial importance of Fish, Crustacean,	
		Molluscs.	
		CO3: Analyze Food, Feeding and Growth mechanism of Fish.	
		CO4: Illustrate reproductive biology of Fishes.	
		CO5: Differentiate Oviparity, Viviparity, Nest building and	
		Brooding while explaining Parental Care in Fishes	
		CO6: Demonstrate Endocrine system in Fishes and moulting in	
		Crustacean shell fish.	
3114	Fish Nutrition	CO1: Demonstrate the Requirement for protein, carbohydrates,	
	and Feed Technology	lipids, fiber, for different types of cultivable fish and Essential	
		Amino acid and fatty acids.	
		CO2: Calculate Feed conversion efficiency and feed conversion	

		ratio.		
		CO3: Classify different feeds - Wet feeds, Moist feeds, dry feeds,		
		mashes, pelleted feeds, floating and sinking pellets.		
		CO4: Illustrate the steps involved in feed manufacturing and		
		storage - Steam pelleting, grinding, mixing and drying, pelleting		
		and packing.		
		CO5: Distinguish between Feed attractants and Feed Stimulants.		
		CO6: Explain the different nutritional deficiency in Cultivable		
		fish.		
4114	Fish water &	CO1: Analyze the scope and prospects of fresh water aquaculture		
	Brackish water	in the world, India and A.P.		
	uquueunure	CO2: Categorize Different fresh water Aquaculture systems.		
		CO3: Illustrate Major cultivable Indian carps – Labeo, Catla and		
		Cirrhinus& Minor carps and Composite fish culture (fish) system		
		of Indian and exotic carps.		
		CO4: Explain how Air-Breathing And Cold Water Fish are		
		cultivated.		
		CO5: Distinguish between Macro brachiumrosenbergii and M.		
		Malcomsoni- biology, seed production, pond preparation, stocking		
		management of Nursery and grow out ponds, feeding harvesting.		
		CO6: Distinguish between Culture of P.Mondon – Hatchery		
		technology and culture practices including feed and disease		
		management and Culture of l-vannamei – hatchery technology and		
		culture practices including feed and disease management.		
5143	Fish Health	CO1:Describe the diseases of fin fish		
	Management and Fisheries	CO2:Explain the diseases of shellfish		
	Economics	CO3:Describe the fish health management strategies		
		CO4:Explain different fisheries economic policies		
		CO5: Describe the various schemes for the welfare of fishermen		
		community		

5144	Soil and Water	CO1: Know various types of soil and their properties 2.
	Quality Management	CO2: Monitor and manage optimum water quality parameters in
	management	fish/shrimp culture ponds
		CO3: Maintain the soil and water quality by using required dose of
		lime, manures and fertilizers for optimum yields in culture ponds
		CO4: Acquire knowledge on advanced technologies for improving
		water quality
		CO5: Demonstrate skills related to chemical treatments for
		combating soil and water quality problems in aquaculture farms.
6157	Ornamental	CO1: Acquire knowledge on the status of world and Indian
	Fish Culture	ornamental fish farming and trade
		CO2: Identify various commercially important freshwater and
		marine ornamental fishes
		CO3: Fabricate, set up and maintain the freshwater and marine
		aquaria
		CO4: Demonstrate skills for breeding and larval rearing of
		ornamental fishes
		CO5: Develop the commercial production units for large scale
		production of ornamental fishes and aquarium plants and their
		trade.

DEPARTMENT OF MANAGEMENT STUDIES

COURSE OUTCOMES

Programme	Course Name	Course Outcomes
BBA	Course NameBBA 1A: PRINCIPLESOF MANAGEMENTBBABBA1B:MANAGERIALECONOMICS	 Course Outcomes Course outcomes: On completion of the course the student will - understand the basic principles of management get acquaintance with the management functions and techniques get the idea about new developments in management. Course Outcomes:Upon completion of this course, students will be able to: Develop capacity to analyze he economic environments in which business entities operate. Understand how managerial decisions can vary under different constraints
	BBA 1C: QUANTITATIVE METHODS FOR MANAGERS	Course Outcome: Upon completion of this course, the students will be able to gain the basic knowledge of quantitative methods and their applications to commercial situations.
	BBA 2A : ACCOUNTING FOR MANAGERS	 Course Outcomes: Upon completion of this course, the students will be able to: Acquire conceptual knowledge of basics of financial accounting. Understand the accounting practices of business enterprises. Demonstrate hands on skills in preparing Financial Statements of a Business enterprise.
	BBA 2B : FUNDAMENTALS OF MARKETING	Course Outcome : On completion of the course the students will gain complete insights into different concepts of marketing, marketing mix and strategies to compete successfully in the present day competitive world.
	BBA 2C : E- COMMERCE	 Course Outcomes: Upon completion of this course, the students will be able to: Understand the concepts and uses of electronic commerce in different areas of the economy Recognize the impact of Information and Communication technologies on the business operations
	BBA 3A : ORGANIZATIONALB EHAVIOUR	 Course Outcomes: Upon completion of this course, the students will be able to: Understand the behavior of people in the organizations. Comprehend the concepts of Personality, Perception, Attitudes, Values and Motivation of individuals in the Organisations. Understand the group dynamics and demonstrate

		Team building skills required for effective performance.	
BBA RESI MAN	A 3B: HUMAN OURCE NAGEMENT	 Course outcomes: Upon completion of this course, the students will be able to: Acquire knowledge, process and techniques of HRM in an Organisation. 	
		• Obtain the skills to manage the Human Resources.	
BBA MAN	A 3 C: FINANCIAL NAGEMENT	 Upon completion of this course, the students will be able to: Understand the functions and decisions of Financial Management of Business Organisations Apply financial theory to analyze real life situations in an uncertain environment. 	
BBA AND	4A:TRAINING DEVELOPMENT	Course outcome: Upon completion of this course, the students will be acquaintewith the different methods of Training and Development in the organizations	
BBA LAW	4B: BUSINESS	Course outcome: Upon completion of this course, the students will be acquainted with the different aspects of managing Legal activities in the organizations.	
BBA SMA ENT MAN	A 4C: MICRO, ALL & MEDIUM ERPRISES NAGEMENT	 Course outcomes: Upon completion of this course, the students will be able to : Understand the structure and functioning of Medium, Small and Micro Enterprises. Setup own ventures and emerge as entrepreneurs 	
BBA INTE BUS	4D: ERNATIONAL INESS	Course outcome: Upon completion of this course, the students will acquire the skills of managing the International Business of the organizations.	
BBA MAN ACC	A 4E: COST & NAGEMENT COUNTING	Course outcome: : Upon completion of this course, the students will get familiarized with the different aspects of Cost and Management Accounting activities in the organization.	 Formatiert: Schriftart: (Standard) Times New Roman, Nicht Fett
BBA SER	4F: FINANCIAL VICES	Course outcome: : Upon completion of this course, the students will get enlightened with the different aspects of Financial Services in the organizations.	
BB/ TAI EM	A 5A: LENTMANAG IENT	 CourseOutcomes: Uponcompletion of this course, the students will illustrate the connections between factor sidentified, the strategy of the company and the talent man agement system 	
		 thestudentswillgain the ability to develop talentmanagementstrategyfortheorganizationchosen thestudentswillacquire the talentthatmeets the organizational needs 	Formatiert: Schriftart: 11 Pt., Nicht Kursiv, Nicht Erweitert durch / Verdichtet durch
BBA LEA	A5B: ADERSHIP	CourseOutcomes: Uponcompletionof thiscourse, the students recognizetheimplicationsof • the students will identifyandcriticallyassessassumptionsthatinfluenced ecisionsandactionsonmanagement,leadership,teamwo rkandrelationshipbuilding the students will receiveandintegratefeedbackondecision- makingpractices.conflictresolutionskills.andteamwork	
		 behaviourswith the support of a team-based coach. the students will gain the leadershipskills, e.g., interpersonal skills, team developm 	

	ent.conflictmanagement.communicationandchangeskil
	ls.
BBA5C: EXPORTANDIMP	Course Outcomes: Uponcompletionof thiscourse,
ORTMANAGEME	• the students will
NT	understandthesignificanceofExportandImportManagem entanditsroleinEconomyandasiohcareers
	the students will
	acquireknowledgeonProceduresofexportandimport
	2. <u>•</u> the students will gain skills to involveinpreandpostEXIMactivities
	• the students will gain strength to do foreigntrade
BBA 5D:	Course Outcomes: Uponcompletionof thiscourse,
BrandManagement	• the students will
	andunderstandkeyprinciplesofbranding
	• the students will
	understandthebrandingconceptsandideas intheir
	• the students will
	understandandconducthemeasurementofbrandequityan dbrandperformance
	• the students will
	formulateeffectivebrandstrategiesforconsumerandbusi
	nessgoodsandservices.
	demonstratetheabilitytoconductacriticalbrandaudit.inclu
	dingrecommendationsforchangesandimprovementinbra
	ndmanagement.
BBA5E:	Course Outcomes: Uponcompletionof thiscourse,
FOREIGNEXCHA	risk management and the techniques available to
NGEMANAGEME	smallbusiness operators forriskexposurecontainment;
NT	• the students will be able to analyzealternative
	 the students will be able to examine the organization
	of the Foreign Exchange Market, the Spot Market, and
	theForward Market, and how the information driven
	in these markets can be used by smallbusiness operators in controlling and managing for
	reignexchange;
	• the students will
	beabletoidentifyoperationaldifficultiesinfinancing, and
	 the students will be able to evaluate the intercompany
	funds-flow mechanisms, cost and benefits, pertaining
	toallforeignsales andsettlements;
BBA 5F: E-	Course Outcomes: Uponcompletion of this course,
PAYMENTSYSTE	 the students will be able to definekeycomponents and keyplayers in the payment industry:
M	• the students will be able to describe, at a highlevel, the
	various paymentchannels, networks, and systems;
	• the students will be able to
	and controls related to various payment types,

Formatiert: Einzug: Links: 0,13 cm, Hängend: 0,63 cm, Zeilenabstand: einfach, Aufgezählt + Ebene: 2 + Ausgerichtet an: 3,05 cm + Einzug bei: 3,5 cm, Tabstopps: Nicht an 2,54 cm + 3,43 cm, Position: Horizontal: -1,05 cm, Gemessen von: Seitenrand, Vertikal: 0,43 cm, Gemessen von: Absatz, Horizontal: 0,32 cm, Umschließen

	•	paymentchannels,andsystems; the students will be able to identifykeyprinciples baseonexamguidelines; the students will be able to conductrisk- focusedpaymentsystemexam.
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DEPARTMENT OF COMPUTER SCIENCE

COURSE OUTCOMES

Course Code	Course Name	Course Outcomes	
C1	Computer Fundamentals and Office Tools	 C1: Describe the usage of computers and why computers are essential components in business and society. C2: Identify categories of programs, system software and applications. Organize and work with files adfolders. C3: Compose, format and edit a word document and working with macros. C4: Create work sheets and using various functions. C5: Make presentations and inserting multimedia in them. 	
C2	Programming In C	 C1: Understand the basic terminology used in computer programming. C2: Write, compile and debug programs in C language. C3: Use different data types in a computer program. C4: Design programs involving decision structures, loops and functions C5: Understand the dynamics of memory by the use of pointers and Structures. C6: Apply different operations in File handling. 	
C3	Numerical and Statistical Methods	 C1: Skill to choose and apply appropriate numerical methods to obtain appropriate solutions to difficult mathematical problems. C2: Ability to apply various statistical techniques such as Measures of Central Tendency andDispersion. C3: Understanding of relationship between variables using the method of Correlation and FitAnalysis. C4: Skill to execute programs of various Numerical Methods and Statistical techniques for solving mathematical problems. 	
C4	Data Structures	C1: Describe how arrays, records, linked structures, stacks, queues, trees, and graphs are represented in memory and	

		used by algorithms.
		C2: Describe common applications for arrays, records, linked structures, stacks, queues, trees, andgraphs.
		C3: Write programs that use arrays, records, linked structures, stacks, queues, trees, and graphs
		C4: Demonstrate different methods for traversing trees C5: Compare alternative implementations of data structures
		with respect to performance
		C6: Compare and contrast the benefits of dynamic and static
		data structures implementations
		C7: Describe the concept of recursion, give examples of its
		use, describe how it can be implemented using a stack.
		C8: Discuss the computational efficiency of the principal
		algorithms for sorting, searching, and hashing.
	Introduction to	C1:Understand the concepts of python programming
C5	Python Programming	C2: Students should be able to develop logic for Problem
		Solving.
		C3: Students should be able to apply the problem solving
		skills using syntactically simple language
		C4: Create new GUI based programming to solve industry
		standard problems

C6	Data Base Management System	 C1: Gain knowledge of Database and DBMS. C2: Understand the fundamental concepts of DBMS with special emphasis on relational data model. C3: Demonstrate an understanding of normalization theory and apply such knowledge to thenormalization of a
		C4: Model database using ER Diagrams and design databaseschemas based on the model.C5: Create a small database using SQL.
		C6: Store, Retrieve data in database.
C7	Accounting and	C1: Company Setup & Configurations.
	Financial Management	C2: Recording Financial Transactions.
	Wanagement	C3: Financial Reports Analysis.
C8	Object Oriented Programming through Java	C1: Demonstrate good object-oriented programming skills in Java
		c2. Able to describe, recognize, appry and implement
		selected design patterns in Java
		C3: Understand the capabilities and limitations of Java
		C4: Be familiar with common errors in Java and its
		associated libraries
		C5: Develop excellent debugging skills

C9	Operating Systems	C1: Understand the main components and Structure of
	operating official	Operating System& their functions.
		C2: Analyze various ways of Process Management& CPU
		Scheduling Algorithms.
		C3: Evaluate various device and resources like Memory,
		Time and CPU Management techniques in distributed
		systems.
		C4: Apply different methods for Preventing Deadlocks in a
		Computer System.
		C5 : Create and build an Application/Service over the UNIX
		operating system
		operating system.
C10	Cyber Laws	C1: Critically evaluate ongoing developments in law relating
		to information technologies.
		C2: Display an understanding of how these developments relate to one another.C3: Examine areas of doctrinal and political debate
		surrounding rules and theories.
		C4: Evaluate those rules and theories in terms of internal
		coherence and practical outcomes.
		C5: Draw on the analysis and evaluation contained in
		primary and secondary sources.
C11	Data Mining and Data Ware Housing	C1: Examine the types of the data to be mined and present a general classification of tasks and primitives to integrate a data mining system.
		C2: Apply preprocessing statistical methods for any given raw data
		C3: Discover interesting patterns from large amounts of
		data to analyze and extract patterns to solveproblems, make
		predictions of outcomes
		C4: Comprehend the roles that data mining plays in various fields and manipulate different datamining
		techniques
		C5: Select and apply proper data mining algorithms to build

		analytical applications.
		C6: Evaluate and implement a wide range of emerging and newly-adopted methodologies andtechnologies to facilitate the knowledge discovery.
C12	Web Programming	C1: Able to use Building Blocks of PHP, Access array elements.
		C2: Able to use various functions and handle data using files.
		C3: Able to use working with Forms, Sessions, Cookies.
		C4: Able to implement JavaScript.
C13	Data Communications & Networking	C1: Define computer networks, list network configurations, types, topologies, the applications of computer networks in different fields, network models and description of physical layer.
		C2: Reason the need for flow and error control at the data link layer and explain the associated protocols.
		C3: Enumerate the shared channel access methods, associated protocols and Wired & Wireless LANstandards and implementations.
		C4: List the types of networking devices / equipments and also explain the addressing scheme used atthe network layer.
		C5: Explain how network layer, transport layer and application layer facilitates the transfer of messagefrom one node to another in a global network
C14	Data Analytics Using R	C1: Data-Visualization tools and techniques offer executives and other knowledge workers new approaches to dramatically improve their ability to grasp information hiding in their data.
		C2: Data visualization is a general term that describes any effort to help people understand the significance of data by placing it in a visual context.
		C3: Patterns, trends and correlations that might go

		undetected in text-based data can be exposed and recognized easier with data visualization software.
		C4: It isn't just the attraction of the huge range of statistical analyses afforded by R that attracts data people to R. The language has also developed a rich ecosystem of charts, plots and visualizations over the years.
		C5: ggplot2 is a data visualization package for the statistical programming language R.
C15	Object Oriented Software Engineering	C1: To describe the three pillars of object-orientation methodologies and explain the benefits of each.
		C2: To create use case documents that capture requirements for a software system.
		C3: To create class diagrams that model both the domain model and design model of a softwaresystem.
		C4: To create interaction diagrams that models the dynamic aspects of a software system.
		C5: To understand the facets of the Unified Process approach to designing and building a softwaresystem.
		C6: To build a model for the user interface (UI) of a software application
SEC-1	Machine Learning	CO1: Identify the characteristics of machine learning.
	Using Python	CO2: Summarize the Model building and evaluation approaches
		CO3: Apply Bayesian learning and regression algorithms for real-world Problems.
		CO4: Apply supervised learning algorithms to solve the real-world Problems.
		CO5: Apply unsupervised learning algorithms for the real world data.
SEC-2	Digital Imaging	C1: Gain knowledge about Types of Graphics, Types of Objects, Types of video editing tools

		C2: Show their skills in editing and altering photographs for through abasic understanding of the tool box.
		C3: Gain knowledge in using the layers.
		C4: Gain knowledge in using the selection tools, repair tools.
		C5: Gain knowledge in using selection tools, applying filters and can show their skills.
SEC-3	Cyber Security and Malware	C1: Understand the computer networks, networking tools and cyber security
	Analysis	C2: Learn about NIST Cyber Security Framework
		C3: Understand the OWASP Vulnerabilities
		C4: Implement various Malware analysis tools
		C5: Understand about Information Technology act 2000
SEC-4	Internet of Things	C1: Able to understand various applications of IOT in real world and industry domain.
		C2: Able to realize the revolution of Internet in Mobile Devices, Cloud & Sensor Networks.
		C3: Able to understand building blocks of Internet of Things and characteristics.
		C4: Able to design and develop IOT devices.
SEC-5	Mobile Application	CO1: Identify basic terms ,tools and software related to android systems
	Development	CO2: Describe components of IDE, understand features of android development tools
		CO3: Describe the layouts and controls
		CO4: Explain the significance of displays using the given view
		CO5: Explain the features of services and able to publish android Application C0 6. Developing interesting Android applications using MIT App Inventor

SEC-6	PC Hardware And	CO1: Identify the computer peripherals, software and
	Networking	hardware devices.
		CO2: Describe the basics of networks and networking tools
		CO3:. Describe the Network Addressing and sub-netting
		CO4: Explains the Networks protocols and management
		CO5: Identifies Basic Network administrator roles

UG DEPARTMENT OF ECONOMICS

COURSE OUTCOMES

<mark>2022 – 202</mark>3

Course	Course Name	Course Outcomes
Code		
1304	Micro	CO1: Articulate the nature and scope of economics with regard to
	Fconomics -	wealth ,welfare and Scarcity.
	Economics –	CO2: Categorize different methodologies in Economics .
	Analysis	CO3: Illustrate the law of diminishing marginal utility and law of
		equi - marginal utility Theories.
		CO4: Estimate price ,income and cross elasticity's of demand by
		using Demand analysis.
		CO5: Distinguish between Cardinal and Ordinal Utilities .
		CO6: Correlate indifference curve analysis with price or budget line .
		CO?: Classify different types of production functions.
		CO8: Classify different types of cost & revenue analysis.
		CO9: Analyze different types Market structures & determinations of
		price & out put of different markets.
		CO10: Differentiate Monopolistic Competition from monopoly.
		CO12: Analyze Different theories of wages.
2204	Maara	CO1: Distinguish between Miere and Meere Economics
2304	масго	CO: Massura National Income by using Expanditure method
	Economics –	Income method Product method
	analysis	CO3 : Demonstrate classical theories of employment by IB Say
	anarysis	market Law
		CO4: Categorize different investment functions.
		CO5: Interpret different theories Money.
		CO6: Correlate money Classification of RBI
		CO7: Illustrate trade cycle by using graphs.
		CO8: Argue Causes effects of inflation. Estimate the measures to
		control inflation.
		CO9: Explain banking system functions of commercial banks and
		recent development s in banking system.
		CO10: Explain non- banking financial institutions, types, factors
		contributing to the growth of NBFIs, Money markets Defects of
		Indian Money Market.
		CO11: Demonstrate stock market , functions ,role of SEBI,
		Distinguish between Life insurance & General.

3304	Development	CO1: Distinguish between Economics growth & Economics
	Economics	Development.
		CO2: Classify Different theories of Economics Growth .
		CO3: Evaluate Choice of Techniques Concept by using Capital
		intensive Method, Labour intensive Method.
		CO4: Explain basic features of Indian Economy ,demographic
		features, population dividend Policy.
		CO5: Demonstrate the measures taken by the government in order to
		irradiate poverty.
		CO6: Analyze how Economic reforms like liberalization
		,Privatization and .
4312	Economic	CO1: Interpret the importance of agriculture in India in Economic
	Development-	point of view.
	India And	CO2: Analyze the pros & cons of Indian Industrial Policies .
	Andhra	CO3: Infer the problems &Prospects of small scale industries
	Pradesh	{MSME} in India .
		CO4: Discuss about pros & Cons of Disinvestment in India.
		CO5: Discuss about objectives of five year plans & NITI Ayog.
		CO6: Compare GSDP of Andhra Pradesh with that of other states .
4313		CO1: Describe the importance of Statistics in real life.
	Statistical	CO2: Formulate complete, concise, and correct mathematical proofs.
	Methods for	CO3: Estimate problems using multiple mathematical and
	Economics	statistical lools measuring relationships by using standard
		techniques.
		CO4: assess the data-based models.
		COS: Measures of Central Tendency and Dispersion.
5215		CO: Calculate Time Series and Index Numbers .
5317	Urban Entrennen eur	CO-1 : Illustrate the Under of Urban Entr2preneurship
	Entrepreneur	CO-2: Correlate the urban entrepreneurship & Business Planning
	sinp a MSME ₂	co-s: Analyze the MSMEs and Orban Entrepreneurship
	IVISIVILS	CO -4: Analyze the opportunities of finance and Marketing
		CO-5: Classify different types of financial intuitional support to
		Urban Entrepreneurshin
		CO-6 : Explain the basic theories and essentials of entrepreneurship
		Identify and analyze the entrepreneurship opportunities available in
		local urban area
		CO-7: Apply the theories of entrepreneurship to the conditions of
		local urban area
		CO-8: And formulate appropriate business ideas.
		CO-9: Demonstrate practical skills that will enable the urban
		entrepreneurship

5318	Retail &	CO-1: Illustrate the Concept of Marketing Decision & strategies
	Digital	CO-2: Understanding the product planning & Consumer behavior
	marketing	CO-3: Analyze the Concept of Retail marketing
		CO-4: Understanding the digital Marketing concept
		CO-5: Articulate the market models & case studies
		CO-6: Explain the concepts and principles about the retail and digital
		marketing;
		CO-7: Identify and analyze the opportunities related to retail and
		digital marketing available in the local area;
		CO-8: Apply the concept to formulate the new strategies related to
		retail and digital marketing;
		CO-9: Demonstrate the practical skills required to get employment
		in retail and digital marketing to start own digital marketing.

DEPARTMENT OF ENGLISH (U.G)

COURSE OUTCOMES

Course	Course Name	Course Outcomes
Code		
1001	English A Course in Communication and Soft Skills	 CO1: Student will improve decision making skills and thinking ability to convey their ideas without any confusion and understand the importance of listening and practice effective listening. CO2: Students will use relevant vocabulary in everyday communication. CO3: Students use grammar effectively for accuracy in writing and speaking CO4: They can improve pronunciation, speaking and writing skills with simple discussions and explanation to enable the students to use language accurately and appropriately. CO5: Students would be able to learn to use the skills of communication and soft skills confidently CO6: Students will learn to acquire ability to use soft skills in professional and daily life
2001	English A Course in Reading and Writing Skills	 CO1: Students will be able to learn how to build up a repository of active vocabulary CO2: Students will know the value of true friendship and importance of education CO3: Students will be able to learn how to build their personality, attitude in every aspect of their life. CO4: Students will be able to learn how to use good writing strategies CO5: Students will be able to learn how to improve writing skills independently for future need CO6: Students will be able to learn how to maintain discipline and time management.
3001	English A Course in Conversational Skills	 CO1: Students will be able speak in English. CO2: Students will be able to manage failures as well as success. CO3: Students will be able to participate in any social interaction. CO4: Students will be able to enhance conversational skill by observing the professional interviews. CO5: Students will be able to know how to balance the justice, equality and prosperity in the society. CO6: Students will be able to demonstrate critical thinking.

DEPARTMENT OF FASHION TECHNOLOGY AND APPAREL DESIGNING

COURSE OUTCOMES

Course	Course Name	Course Outcomes
Code		
FT1G1	Introduction to	CO1: Determine the Basic Terminologies related to textiles
11101	Fiber and Yarn	CO2: Classify the different textile fibers into
	Science	Groups
	Science	CO3: Analyze the process of Extracting of Different Textile fibers from
		their Sources
		CO4: Consider the Common Properties of natural fibers and manmade
		fibers.
		CO5: Modify the Principals of Spinning of manmade fibers
		CO6: Evaluate the objectives and Construction Process of Yarn
FT1S1	Fundamentals of	CO1 : Define and Discuss fashion, art and design related terms
	Fashion	CO2: Understand the Classification and types of Fashion
	Designing	CO3: Illustrate the Different types of figures with Design Elements
	000	CO4: Analyze the Fashion Terminologiesand fashion theories
		CO5: Demonstrate the Nature of Fashion and categories of fashion
		CO6: Consider the fashion business and Fashion figure analysis
FT1S2	Garment	CO1 : Differentiate the Various types of Seams and Seam finishes
	Construction -1	CO2 : Analyze the Techniques involved in the Construction of Garment
		Closures
		CO3: Demonstrate the Types of Sleeves and collars
		CO4: Explain the Construction of garment Yokes Cuffs and Fullness
		CO5 : Evaluate the Hemming Techniquesand their Construction
		CO6: Consider the factors in selection of Stitches and Stitching Defects
FT1S2	Garment Surface	CO1: Define the Basic Embroidery Stitches
	Ornamentation	CO2: Determine the various types of garment surface Ornamental Works
		CO3 : Analyze the Painting Techniques and tracing techniques
		CO4 : Classify the traditional Embroideries and their importance
		COS: Demonstrate Computerized Embroidery Machines and its Work flow
		CO6: Illustrate the Types fabric of painting andstone painting designs
FT2G1	Fundamentals of	COI: Determine the concepts of weaving and types of weaves and its
	textiles	construction
		CO2: Classify the types of knitting, Lacing and felting
		CO3: Explain the Crocheting and its types and Crochet fabrics
		CO5 a Evolute the Classification of finishes and its importance
		COS: Evaluate the Special finishes and treatments
		CO1: Consider the elements of design and knitting
F1281	Elements of	CO2. Illustrate the designs hunsing design Designs
	Fashion	CO2 : Inustrate the designs by using design Principles
	Designing	cus: Demonstrate the factors influencing the choice of dress, choosing
1		crouning for men and women
		CO4: Explain the Characteristics of well dressed person
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		CO5: Evaluate the Dimension of color and Classification of color
DEAGA		CO6: Analyze the fashion illustration, Proportion of Fashion figures
F12S2	Basics of Pattern	COI: Discuss about factors to be Considered while taking all types body
	Making& sewing	measurements
		CO2: Determine the types of Paper Patterns, and its advantages
		CO4: Analyze the Special coving Machine attachments. Cathering foot
		cover plate
		CO5 : Classify the causes and remedies of sewing machine and care of
		sewing Machines
		CO6: Procedure of Pattern making ,Drafting methods
FT3S1	Fashion	CO1: Explain the role computers in Fashion Industry
	Designing	CO2: Illustrate the garment designing with 2D and 3D forms
	Through CAD	CO3: Demonstrate the various aspects of CAD operations, Corel draw and
	0	adobe Photoshop
		CO4: Develop the CAD in designing by weaving, Knitting designs
		CO5: Collaborate sketching through design SoftwareLike Photoshop
		CO6: Evaluate the designs, creating designs model virtually
F13S2	Fashion	CO1: Evaluate the Basics of Fashion Accessories of 19 th and 20 th century
	Accessories	CO2: Design the different types of Fashion Accessories
		cos: Demonstrate aesthetic and functional purposeor commonly used
		CO4. Analyze the leather accessories and its advantages of various
		accessories
		CO5: Determine the Ornamental accessories and selection of materials
		CO6: Explain the pattern making techniques and production Process of
		these accertsories
FT3S3	Lace Making	CO1 :List various tools and materials used for the making crochet fabrics
	Through	CO2 : Define the basic stitches used in crocheting and its types
	crochet Stitches	CO3: Illustrate the crochet patterns of making circles. rings,
		CO4: Consider most common abbreviations, symbols to prepare the
		crochet diagram
		CO5: Explain the foundation of chain, single, crochet, treble crochet
		patterns
		CO6 : Prepare different fabric structures like fruit petal scarf, barefoot
	A	sandals
F14G1	Apparel	CO1 : Define the structure of garment industries
	production	Manufacturing process
	Technology	CO3: Consider the concepts of Pattern Making Cutting and fusing
		CO4: Evaluate the Machinery equipment cutting Machines Notches drills
		CO5: Construct Different methods of stitching Seams
		CO6: Organize the work structure un garment industry including
		inspection and transportation
FT4G2	Textile wet	CO1: Describe the preparation process of grey fabric and Purpose of
	processing	singeing
	1 0	CO2: Explain the mercerization and its types, fabric mercerization
		chainless mercerization
		CO3: Evaluate the Fundamentals of dyeing and classification of dyeing

		CO4: Discussion on printing, methods and its principles
		CO5: Describe the classification of finishes and its types
		CO6: Develop the different design methods of dyeing shades
FT4S1	Garment	CO1: Define the techniques involved in the construction of garment closure
	Construction -II	CO2: Develop the Preparation and uses of true Bias
		CO3: Describe the construction of types of plackets
		CO4: Demonstrates the types of pockets –one piece ,two piece
		CO5: Evaluate the preparation of rue bias
		CO6: Design different types of different types of garments
FT4S2	Photoshop	CO1: Evaluate the basic introduction regarding Photoshop and its
		documents
		CO2: Describe the Key board shortcuts and understanding the images
		CO3: Describe the different background selections and changing the bag
		ground
		CO4: Illustrate different designs by using Photosnop
		COG. Determine the working proceedure of different tools and selection of
		tools
	Mini project	CO1. Discuss the plan and execute the mini project with the team
	winn project	CO2: Consider the discussion and execute the work
		CO3: Illustrate the theme and enhance the project
		CO4: Design the various aspects based on the project title
		CO5: Adapt some designs from reference and implantation
		CO6 : Conclude the designs and exhibit
FT5G1	Fashion business	CO1:Define fashion business management and introduction scope of
	Management	fashion business
		CO2: Analyze the Concept cat walk and supply chains
		CO3: Compare the internalization to current fashion business
		CO4: Determine the fashion merchandising
		History and development of fashion retailing
		CO5: Differentiae between domestic retailing and overseas retailing
DDCO 1	D. ()	CO6: Discuss on contemporary issues in fashion business
F1581	Pattern	COI: Classify the Pattern making tools and concepts involved in
	Construction	patternmaking CO2: Describe the Importance of fashion industry
		CO3 : Construct different collars for children and adults
		CO4. Evaluate the dart manipulation techniques slash and spared
		techniques
		CO5: Determine the fullness & skirts variations Gypsy skirt. Tired skirt
		CO6: Analyze the needs of fit in Pattern making in given particular at of
		conditions or constrains
FT5S2	Apparel Quality	CO1: Analyze the needs testing of trims in apparels
	Assurance	CO2: Describe the various tests carried out in garment industry
		CO3: Conclude the quality management and quality inspections
		CO4: Evaluate the quality of trims and accessories in garment construction
		CO5: Divide the defects in garments and their remedies –A,B C zones
		CO6: Explain the garment testing procedures -Seam Slippage, Garment
		Checking procedure
FT5S3	Historic	CO1: Define the various historic costumes of India , history oh
	costumes and	embroidery fabrics

	textiles	CO2: Evaluate the woven textiles Brocades, Jammavar, Chanderi, Muslin
		CO3: Describe the traditional textiles of India –carpets, colored textiles
		CO4: Determine the Indus valley civilization, Vedic period costumes
		CO5: Consider the clothing in the Socio-cultural content, factors effecting
		clothing Habit
		CO6: Organize the design concepts of Historic India to present day designs
FT5S4	Portfolio	CO1: Determine the various styles of Portfolio presentation
	Preparation&	CO2: Discussion on themes for different garments
	Presentation	CO3: Develop the design concepts in sketching for preparation of Port folio
	110000000000000000000000000000000000000	CO4: Illustrate different designs based on themes,
		CO5: Design and develop various creative Sketches in portfolio
		CO6: Asses more chance to implementation of new ideas for portfolio
		presentations
FT5S5	Retailing and	CO1: Determine the fundamental knowledge if concepts in retailing
	Branding in	CO2: Asses to provide the customer relationship management in retailing
	Apparels	CO3: Design various accepts in visual merchandisingand floor
		management
		CO4: Evaluate the knowledge of international retailing and branding
		Concepts
		CO5 : Consider the accepts of visual merchandising , mannequinsand
		display activities
		CO6 : Collaborate the information technology in retail management

UG DEPARTMENT OF GEOGRAPHY

COURSE OUTCOMES

Course	Course Name	Course Outcomes
Code		
1306	Physical Geography	 CO1: Student will gain the knowledge of Physical Geography. CO2: Develop an idea on Geomorphology and different types of fundamental concepts. CO3: Understand different theories of the earth. CO4: Gain knowledge about earth's interior. CO5: Develop an idea about concept of earth's movement and related topography. CO6: Study of Oceanography – oceanic floors, temperature and salinity of ocean, land and water, waves and ocean currents.
2306	Human Geography	 CO1: Gain knowledge about major themes of Human geography. CO2: Develop an idea about space and society. CO3: Know about population-resource relationship. CO4: Build an idea about Urban and Rural settlements. CO5: Know about different theories of urban growth.
3306	Economics Geography	 CO1: Develop an idea about Economic Activities. CO2: To study the theories of industrial location and Agriculture land use. CO3: Acquire knowledge about different crop patterns. CO4: Gain knowledge about production and distribution of Mineral recourses. CO5: Understand the process of Iron & Steel and Cotton textile industries. CO6: Develop an idea about different types of transport and communication trade.
4314	Geography of India	 CO1: Study of Geography of India- a land of diversity & Unity within diversities, Physical divisions. CO2: Study of Indian climate, distribution of rainfall, soil types of soils, vegetation and rivers. CO3: Understand spatial distribution of population and density, migration, urbanization and settlements. CO4: Students know about land resources, irrigation, problems of Indian agriculture. CO5: Gain knowledge about mineral resources in India. CO6: Study of industries- Iron & steel, Cotton textile, Sugar and petro chemical.
4315	Introduction to	CO1: The student is able to explore the basic knowledge of Remote

	remote sensing	Sensing.
	& Geographical	CO2: Understand the various Electromagnetic Spectrum, Platforms,
	Information	Sensors and Satellites.
	system	CO3: Develop an idea about Aerial Photographs and techniques in
	5	Geographical aspects.
		CO4: The student is able to explore the basic knowledge of GIS
		software and Hardware.
		CO5: Understanding the concepts of Raster and Vector Data,
		GPS/DGPS applications.
		CO6: Study of Application of GIS in various fields of Geography.
5321	Environmental	CO-1: To knows the knowledge of the Concept of
	Geography	Environmental Geography, Types of Environments.
		CO-2: To know the knowledge of Human and Environment relationship
		Adaption in different Biomes.
		CO-3: To acquire the knowledge of Ecosystem, and Bio - diversity.
		CO-4: To acquire the knowledge of Environment – Natural
		vegetation, Environmental Hazards, Environmental pollution.
		CO-5: To acquire the knowledge of Environmental Programs and
		policies, Emerging Environmental issues.
5322	Disaster	CO-1: To knows the knowledge of the Concepts of Disasters and Hazar
	Management	CO-2: To know the knowledge of Classification of Disasters. Distribut
	e	of Disaster management.
		CO-3: To acquire the knowledge of Natural Disasters – Floods
		Droughts, Landslides, Diseases, Terrorism.
		Accidental Disasters.
		CO-4: To acquire the knowledge of Causes and Impact
		Earthquakes, Tsunamis, and Cyclones.
		CO-5: To acquire the knowledge of Disaster management Stages. Disa
		management International Organizations.

DEPARTMENT OF HEALTH CARE AND NURSING (U.G)

COURSE OUTCOMES

Programme	Course	Course Outcomes
	Name	
B.Voc.	<u>Ist sem</u>	CO1: Define primary health care nursing, nursing, nurse,
Health Care	Primary	health. Profession.
and Nursing	health	CO2: Determine vital signs like temperature, pulse, respiration,
	care	blood pressure.
	nursing	CO3: Illustrate the nursing process and steps of nursing
	paper-1	process.
		CO4: Demonstrate the role of biomedical waste management.
		CO5: Demonstrate hand washing techniques in infection
		control.
		CO6: Plan first aid management and list out the principles and
		first aid kit articles.
	Human	CO1: Describe the cell structure and its parts
	Anatomy	CO2: List out the name of the tissues.
	&	CO3: Explain muscular skeletal system.
	Physiolo	CO4: Discuss about all the constituents & organization of the
	gy	body.
	Paper-2	CO5: Structure of digestive system & respiratory system.
		CO6: Illustrate about the heart and circulatory system.
	Nutrition	CO1: Define nutrition & bio chemistry and its importance in
	and Bio	nursing.
	chemistry.	CO2: Tabulate the normal nutritional values and requirements
	Paper-3	for the body.
		CO3: Illustrate the principles and methods of cooking.
		CO4: Classify the foods and nutritional elements.
		CO5: Plan the storage of foods.
		CO6: List out the nutritional problems in India.
	IInd sem	CO1: Define microbiology and relevance to nursing.
	Microbiol	CO2: Structure of bacteria and its types.
	ogy	CO3: Explain biomedical and its management.
	Paper-4	CO4: Test of TB Monteux.
		CO5: List out the DNA & RNA viruses.
		CO6: Label the parts and uses of microscope.

Pathology and genetics Paper-5	 CO1: Define pathology and relevance to nursing. CO2: Distinguish between normal and cancer cell. CO3: Write about hemoglobin. CO4: Demonstrate the examination of bone marrow. CO5: Uses and types of stool examination. CO6: Describe the characteristics and structure of genetics.
Communit y health nursing-1 Paper-6	 CO1: Define community health and community health nursing. CO2: Define health & its dimensions and determinants. CO3: Explain about epidemiology and its methods. CO4: Explain meningitis and its management. CO5: Describe about family planning methods. CO6: Discuss about anemia and its management.
<u>IIIrd sem</u> Psycholog y Paper -7	 CO1: Define psychology & relevance to nursing. CO2: Discuss body and mind relationship. CO3: Describe brain and behavior. CO4: Illustrate cognitive process. CO5: Classify theories of motivation. CO6: Explain emotions and stress.
Medical and surgical nursing-I Paper -8	 CO1: Define medical and surgical nursing. CO2: Describe the role of nurse inpatient and family care. CO3: Classify medical and surgical asepsis techniques. CO4: Discuss management of patients with respiratory problems. CO5: Illustrate disease conditions of digestive system. CO6: Integrate the management of patients with blood and cardio vascular problems.
Communit y health nsg-II Paper-9	 CO1: Summarize concept and scope of community health nursing. CO2: Enumerate health planning and policies. CO3: Discuss planning, budgeting and material management. CO4: Organize the staffing and organization of rural health services. CO5: Conclude the components of community health services. CO6: Demonstrate bag technique.

<u>IVth Sem</u> Sociology Paper-10	 CO1: Define sociology, society & community. CO2: Describe family welfare programme. CO3: Classify the family. CO4: Categorize types of communities in India. CO5: Organize social systems. CO6: Develop social control programmes.
Medical and surgical Nsg-II Paper-11	 CO1: Discuss the nursing management of ENT disorders. CO2: Describe the nursing management of Neurological disorders. CO3: Classify the congenital malformations. CO4: Assess and manage unconscious patients with stoke. CO5: Enumerate the disorders of female reproductive system. CO6: Represent the breast self examination.
Mental health nursing Paper-12	 CO1: Define mental health nursing. CO2: Enumerate the mental health team. CO3: Classify the mental health disorders. CO4: Assess the patient condition by mental health assessment. CO5: Analyze mental status examination. CO6: Plan treatment modalities and therapies for mental disorders.
Pharmacol ogy Paper-13	 CO1: Classify the sources of drugs. CO2: Illustrate routes of drug administration. CO3: Describe about chemotherapy. CO4: Categorize the drugs used in GIT CO5: Conclude the drugs used in respiratory system. CO6: Discuss the drugs used in cardiovascular system.
Vth sem Mid wifery and obstetrical nursing-I Paper-14	 CO1: Explain the trends in midwifery and obstetrical nursing. CO2: Describe the female and male reproductive system. CO3: Demonstrate about the fetal development. CO4: Discuss fetal circulation. CO5: Explain the physiological changes during pregnancy. CO6: Test of cardio tomography.

Child health nursing Paper-15	 CO1: Distinguish the growth and development difference between child and adult. CO2: Describe the accepted rights of the child. CO3: Explain baby friendly hospitals. CO4: List out the congenital formations. CO5: Demonstrate the kangaroo mother care. CO5: List out the nutritional deficiency disorders in children. CO6: Discuss the management of common psychiatric problems.
Communi cation and education technolog y. Paper-16	 CO1: Define communication and its types and process. CO2: Discuss the channels and methods of communication. CO3: Explain group dynamics & johari window method. CO4: Demonstrate counseling process & health education principles. CO5: Explain class room management and principles of education. CO6: Demonstrate all methods of teaching and role plays.
VIth sem Midwifery and obstetrical nursing – II Paper-17	 CO1: Explain the new modalities in assessment of high risk pregnancies CO2: List out all the high risk conditions. CO3: Explain hyper emesis graviderium and abortions. CO4: Demonstrate the procedure of cesarean section. CO5: Illustrate the pueperial infections. CO6: Describe about PIH.
Nursing research and statistics Paper-18	 CO1: Summarize the research process CO2: Describe the characteristics of good research. CO3: Define CINHL & research. CO4: Explain qualitative and quantitative designs. CO5: Enumerate the data collection procedure. CO6: Demonstrate utilization of research findings.

Manage	em 🛛	CO1: List out the principles of management.
ent	of	CO2: Explain the functions of management.
nursing	; (CO3: List out the equipment & supplies used in material
services	s. 1	management.
Paper-1	.9	CO4: Discuss human resource management.
		CO5: Explain disaster management.
		CO6: Prepare a list of nursing protocols.

UG DEPARTMENT OF HINDI

COURSE OUTCOMES

Course	Course	Course Outcomes			
Code	Name				
1004	General	CO1: Explain the importance of learning Hindi Literature.			
	Hindi – 1	CO2: Demonstrate how a true fiend analysis not only the good qualities of his			
		friend but also the bed qualities.			
		CO3: Articulate how Rehaman impressed Davudayal in the story			
		"Muktidhan".			
		CO4: Explain how Gudad Sai changed the mind set of Mohan's father.			
		CO5: Assess the moral of the story Haar ki jeet.			
		CO6: Practice letter writing in Hindi for various occasions.			
2004	General	CO1: Develop a sense of love, social commitment towards the Nation.			
	Hindi	CO2: Develop National integration and social responsibility.			
		CO3: Develop creative thinking.			
		CO4: Develop morals and values.			
		CO5: Explain the importance of learning Hindi Language.			
		CO6: Practice Hindi Grammar.			
004	General	CO1: Describe the life and works of Hindi poets.			
	Hindi	CO2: Articulate how emotional development can be achieved through to			
		poetry.			
		CO3: Relate our day to day problems in the contemporary poems.			
		CO4: Illustrate the changes brought in the modern Hindi literature with regard			
		to social, religious, literary and economic conditions.			
		CO5: Develop English to Hindi translation.			
		CO6: Compare and contrast the Hindi literature in Aadikal, Bhakthikal,			
		Rithikal and Adunikkal.			

UG DEPARTMENT OF MICROBIOLOGY

COURSE OUTCOMES

ſ	Course	Course Name	Course Outcomes
	Code		
	1111	Introduction to Microbiology and Microbial diversity	 CO1: Students will develop knowledge on basics and importance of microbiology. CO2: Demonstrate appropriate laboratory skills and techniques related to isolation, staining, identification and control of micro organisms. CO3: Students will understand the evolution of the discipline of microbiology. CO4: Student will understand the contribution made by prominent scientists in this field. CO5: Students will differentiate the types of Growth medias.
	2111	Microbial Physiology and Biochemistry	 CO1: Develop knowledge on microbial Metabolism and Biomolecules. CO2: The students will get express first-hand experience on separation methods. CO3: Evaluate about the microbial growth and nutrition. CO4: Differentiate the types of fermentation techniques. CO5: Demonstrate the basic metabolic activities pertaining to the catabolism and Anabolism of various bio-molecules.
	3111	Molecular Biology and Microbial Genetics	 CO1: Develop knowledge on microbial genetics and molecular biology. CO2: Students will construct a proper knowledge of Bimolecular synthesis and its control. CO3: Develop a good knowledge about the three well known mechanisms by which genetic material is transformed among the microorganisms CO4: Distinguish the concepts of mutagenesis, mutations and mutants and their significance in microbial evolution. CO5: Explain the central dogma of molecular biology and flow of genetic information from DNA to proteins the society.
	4133	Immunology and Medical Microbiology	 CO1: Classify the different types of immune systems. CO2: Demonstrate on collection and handling of laboratory specimens. CO3: Explain the structure classification and chemistry of bio

		molecules and enzymes responsible for sustenance of life in living
		organisms.
		CO4: Develop knowledge on disease transmission and control.
		CO5: Students can predict him-self and society and can work on
		diagnostic approaches to look for safe and prompt decision of
		causative agents and further to identify novel therapy.
4134	Microbial	CO1: Learn to determine the portability of drinking water.
	Ecology and	CO2: Learn about Conversion of waste into fertile lands.
	Industrial	CO3: Illustrate about management of waste and soil nutrients.
	Microbiology	CO4: Experiment has been done on solid waste management and
		treatment.
		CO5: To operate the knowledge about the food preservation, food
		fermentation, food safety, quality control and validation.
5139	Microbial	CO1: Demonstrate with the wide diversity of microbes and their
	Biotechnology	potential use in medicine, agriculture and industry biotechnology
	and r-DNA	regulation and ethics
	Technology	CO2: Knowledge on restriction endonuclease in r-DNA technology
	85	and selection of transformed cells.
		CO3 : Knowledge on cloning vehicles in r-DNA technology
		CO4: Knowledge on of genetically modified crops. And role of
		microorganisms increation of transgenic animals and plants
5140	Diastatistics and	CO1: Develop knowledge on biological data bases
5140	Diostatistics allu	CO1. Develop knowledge on biological data bases.
	Bioinformatics	CO2: This Course provides Understanding understand analytical
		tests and Construction of phylogenetic trees by clustering methods.
		CO3: Understanding protein modelling methods .

DEPARTMENT OF PHYSICS

COURSE OUTCOMES

Course Code	Course Name	Course Outcomes
1102	Semester - 1: Paper-I : Mechanics, Waves & Oscillations	 Semester - 1: Paper-I : Mechanics, Waves & Oscillations CO1: To understand basic theories related with properties of matter and its applications to determine values of various physical quantities associated with matter. CO2: Be able to apply knowledge of the properties of matter to explain natural physical processes and related technological advances. CO3: To learn about fundamentals of verbal and mathematical concepts of waves and oscillations CO4: We should make the students to know their skills required to get the information from the syllabus and use them in a proper way.
2102	Semester - 2: Paper II: Wave Optics	 Semester - 2: Paper II: Wave Optics CO1: Understand the nature of light and principles of Laser and holography. CO2: Analyse the intensity variation of light due to interference, diffraction and polarization. CO3: Solve problems in Optics by selecting the appropriate equations and performing numerical or analytical calculations. CO4: Student can able to operation of optical devices including polarizers, interferometers, and Lasers.
3102	Semester-3: Paper III: Heat and Thermodynamics:	 Semester-3: Paper III: Heat and Thermodynamics: CO1: Students will be able to Perform experiments and interpret the results of observation, including making an assessment of experimental uncertainties. CO2: They develop the ability to apply the knowledge acquired in the classroom and laboratories to specific problems in theoretical and experimental Physics. CO3: To apply the theories learnt and the skills acquired to solve real time problems CO4: To understand the concepts and significance of the various physical phenomena.

4119	Semester - 4: Paper IV: Electricity, Magnetism and Electronics:	 Semester - 4: Paper IV: Electricity, Magnetism and Electronics: CO1: To learn about Gauss law and solve the electric field and magnetic field for various geometric objects and to learn basic electronic concepts in analog and digital theory. CO2: To be Explain all the topics of Experiments, Concepts and Derivations to the student CO3: Apply the principles of electronics in day to day life. CO4: Encourage all the students to study higher educational courses in reputed institutes and to enrich the students with creative, logical and analytical skills and to motivate the students towards research side.
4120	Semester - 4: Paper V: Modern Physics:	 Semester - 4: Paper V: Modern Physics: CO1: To create awareness on the topics of Atomic & Molecular Physics, Quantum mechanics, Nuclear Physics, and Solid state physics. CO2: To be Explain all the topics of Experiments, Concepts and Derivations to the student. CO3: Explain the basic principles of quantum mechanics and apply to Atomic, Molecular structure of energy levels etc CO4: Motivate all the students to pursue PG courses in reputed institutes and to endow the students with creative and analytical skills; this will equip them to become entrepreneurs.
5125	Semester - 5: Paper VI: Low Temperature Physics & Refrigeration	 Semester - 5: Paper VI: Low Temperature Physics & Refrigeration CO1: Identify various methods and techniques used to produce low temperatures in the Laboratory. CO2: Acquire a critical knowledge on refrigeration and air conditioning. CO3: Demonstrate skills of Refrigerators through hands on experience and learns about refrigeration components and their accessories. CO4: Understand the classification, properties of refrigerants and their effects on environment. CO5: Comprehend the applications of Low Temperature

		Physics and refrigeration.
5126	Semester - 5: Paper VII: Solar Energy and Applications	Semester - 5: Paper VII: Solar Energy and Applications
		CO1 : Understand Sun structure, forms of energy coming from the Sun and its measurement.
		CO 2: Acquire a critical knowledge on the working of thermal and photovoltaic collectors.
		CO3 : Demonstrate skills related to callus culture through hands on experience
		CO4 : Understand testing procedures and fault analysis of thermal collectors and PV modules.
		CO5 : Comprehend applications of thermal collectors and PV modules

UG DEPARTMENT OF POLITICAL SCIENCE

COURSE OUTCOMES

Course Code	Course Name	Course Outcomes
1302	Introduction to Political Science	 CO1: Correlate Political Science with allied disciplines like History, Economics, Philosophy and Sociology. CO2: Explain the elements of the state theories of origin of the state and demonstrate the concepts of modern and welfare states. CO3: Differentiate Law, Liberty and Equality and also differentiate power authority and legitimacy. CO4: Explain the nature classification and theory of rights. CO5: Distinguish between Liberalism, Individualism, and Anarchism. Compare Socialism, Marxism and Multiculturalism.
2302	Basic Organs of the Government	 CO1: Differentiate written constitution from unwritten constitution and also differentiate Rigid constitution form flexible constitution. CO2: Distinguish between the powers and functions of Legislature and Judiciary. CO3: Illustrate the merits and demerits of unitary and federal Government compare Parliamentary and Presidential forms of Government. CO4: Explain the significance theories and Principles of Democracy. CO5: Classify different types of political parties.
3302	Indian Government and Politics	 CO1: Demonstrate the constitutional development in India during British rule. Explain the salient features of the Indian constitution. CO2: Illustrate basic structure of the constitution. CO3: Demonstrate mode of appointment powers and function of the President of India. CO4: Explain the mode of appointment process and functions of the Government. CO5: Analyze the Indian Judiciary powers and functions.
4302	Indian Political Process	 CO1: Demonstrate features of Indian Federal System – Centre State relations. CO2: Discuss about Federal Process in India. CO3: Demonstrate Democratic decentralization and Panchayat Raj system.

		CO4: Explain the role of Caste, Religion, Language and
		Regionalism In India.
		CO5: Describe how criminalization of Politics harm the
		democratic system.
		CO6: Articulate the role of NITI Avog. Finance
		Commission Comptroller and Auditor General
		of India Central Vigilance Commission Central
		information commission Loknal and Loavukta
4311	Western Political	CO1: Distinguish between Plate and Aristotle Theory
4511	Thoughts	with regard to Classical Western Political Thought
	Thoughts	CO2. Discuss shout early Medicusl to the beginning of
		CO2: Discuss about early Medieval to the beginning of
		Modern thought.
		CO3: Classify Thomas Hobbes, John Locke and
		Rousseau Theories on Liberal Thought.
		CO4: Classify Jeremy Bentham and John Stuart Mill
		Philosophy with regard to Liberal Democratic thoughts.
		CO5: Compare Karl Marks and Antonio Gramsci
		Philosophies in connection with Philosophical idealism.
5315	E- Governance	
		COI: Acquaint student with the introduction to good
		Governance and how it can be achieved by information and
		communication technology.
		CO2: Understand the growing needs of E-Governance,
		and E Governance Projects and initiatives
		and E-Governance Projects and initiatives. CO4: Provide the practical knowledge about the effective
		delivery of citizen services through online mode
		CO5· Realize the issues and challenges of E. Governance
5316	Local Administration	CO1: Understand the existing context of Local Government
5510		Institutions in India
		CO2: Have knowledge on the need of empowerment and
		autonomy of LGIs
		CO3: Provide an overview on financial resources and
		constitutional provisions.
		CO4: Analyse the issues, problems and conflicts in Local
		Administration.
		CO5: Develop Communication skills to interact with the
		elected members and officials.

UG DEPARTMENT OF SANSKRIT

COURSE OUTCOMES 2022 - 2023

Course Code	Course Name	Course Outcomes
1002	Sanskrit	 CO1: To have knowledge on Language and Literature of Sanskrit various genres of Sanskrit literature. CO2: To Develop patriotism among the students to become a responsible citizens. CO3: To have knowledge about ancient and modern Sanskrit poetry and basic grammar aspects. CO4: To inculcate moral values through teaching Sanskrit poetry and other. To improve functional communication skills in Sanskrit.
2002	Sanskrit	 CO1: To have knowledge on language and literature of Sanskrit various genres of Sanskrit literature. CO2: To Inculcate moral values and develop social responsibility about nature. CO3: To inculcate social values and having knowledge about feminism. CO4: To have knowledge about the struggle of human's to live in the society and have knowledge on vocabulary.
3002	Sanskrit	 CO1:To have knowledge on language and literature of Sanskrit various genres of Sanskrit literature. CO2:To inculcate human values about social evils like untouchability and poverty. CO3:To have knowledge on the importance of Sanskrit and personality development. CO4: To have knowledge how to prosody and figure of speech create interest among students through the rhythm and also poetry represents

UG DEPARTMENT OF TELUGU

COURSE OUTCOMES

Course Code	Course Name	Course Outcomes
1003	General Telugu	 CO1: To have knowledge on Language and Literature of Telugu various genres of Telugu literature CO2: To Develop patriotism among the students to become a responsible citizens CO3: To have knowledge about ancient and modern Telugu poetry and basic grammar aspects CO4: To inculcate moral values through teaching Telugu poetry and other vachana sahityam like kadhanika. CO5: To improve functional communication skills in mother tongue
2003	General Telugu	 CO1: To have knowledge on language and literature of Telugu various genres of Telugu literature. CO2: To Inculcate moral values and develop social responsibility about nature CO3: To inculcate social values and having knowledge about feminism. CO4: To have knowledge about the struggle of human's to live in the society and have knowledge on vocabulary.
3003	General Telugu	 CO1: To have knowledge on language and literature of Telugu various genres of Telugu literature. CO2: The acquired Learning skills through the Telugu Literature will covey into creative skills by the student CO3: Nature of language and important as human and social stability. To have Knowledge in important things in telugu language like letter, word and sentence. Acquired skills on speaking, writing and interpretation CO4: Acquired knowledge on writing skills in poetry, modern poetry, story, essay etc literary aspects to grab the opportunities in creative, social media sectors. Acquired knowledge in translation sector.

3004	Leadership Education	CO1: To have knowledge organization of management - inculcate leadership qualities through understand different theories.
		CO2: To have knowledge on attitude formation, how to motivate the subordinate and develop the personality
		CO3: To learn about the importance of communication to
		maintain an institution or an organization. $\mathbf{CO4}$. To have knowledge shout team building and sharing
		of activities among teams and lead the firm successfully

UG DEPARTMENT OF CHEMISTRY

COURSE OUTCOMES 2022 - 2023

Course Code	Course Name	Course Outcome
1103	Chemistry Paper I Inorganic & Physical Chemistry	 CO1:Differentiate Inter halogen compounds and pseudo halogens. CO2: Define and classify the organo metallic compounds. CO3: Describe the preparation, properties and applications of alkyls of Li and Mg elements. CO4: Identify and judge the structure, type of reaction and mechanism. CO5: Illustrate the nomenclature, synthesis, isomerism and physical properties of alkanes and cycloalkanes. CO6: Differentiate between Ring activating and deactivating groups in benzene.
2103	Chemistry Paper II Organic & General Chemistry	 CO1: Describe the characteristic of the three states of matter. CO2: Determine the differences between solids, liquids and gases. CO3: Explain the liquefaction of gases by (i) Linde's method (ii) Claude's method. CO4: Explain classification and applications of liquid crystals. CO5: Correlate the M.O Diagrams of Diatomic molecules. CO6: Distinguish between Enantiomers and Diastereomers.
3103	Chemistry Paper III Inorganic & Organic Chemistry	CO1: Predict the magnetic and spectral properties of d-block elements.CO2: Distinguish between the Stability of various oxidation states of d-block elements.CO3: Diagram the structures and shapes of metal

		carbonyls. CO4: Explain the SN^1 and SN^2 -reactions with mechanism. CO5: Distinguish aldehydes and ketones. CO6: Prepare monocarboxylic acids and Dicarboxylic acids from acetoacetic ester.
4121	Chemistry Paper IV Inorganic, Organic & Physical Chemistry	 CO1: Describe the applications of Beer-Lambert law for quantitative analysis. CO2: Explain the Selection rules for electronic spectra. CO3: Illustrate how N.M.R technique is useful in quality control and research for determining the contents and purity of a sample as well as its molecular structure. CO4: Distinguish between Elevation of boiling point & Depression of Freezing Point. CO5: Explain the construction and working of Hydrogen electrode and Calomel electrode. CO6: Diagram water-system and Lead-Silver system.
4122	Chemistry Paper V Inorganic & Physical Chemistry	 CO1: Explain Crystal Field Theory to understand the magnetic properties of coordination compounds with CN 4 & 6. CO2: Assess the structures of coordination compounds based on their names. CO3: Calculate the magnetic movement of a complex compound by using spin-only formula. CO4: Classify Amines into 1°, 2°, 3° Amines and write the chemical properties of amines. CO5: Differentiate Cyanides from Isocyanides. CO6: Develop and apply the continuity equation for open and closed Systems.
5127	Chemistry Paper VI Environmental Chemistry	 CO1: Analyze chemical processes involved in different environmental problems (air, Water & soil). CO2: Illustrate air pollution problems and interpret air quality data on chemical Characteristics. CO3: Distinguish various biotic abiotic environmental transformation processes of pollutants. CO4: Estimate the hardness of water by EDTA CO5: Assess Air and Water quality parameters CO6: Measure dose-response relationships as

		the basis of toxicity.
5128	Chemistry Paper VII Green Chemistry and Nanotechnology	 CO1: Analyze chemical processes involved in different process of green synthesis. CO2: Illustrate the evaluation of the type of the reaction CO3: Distinguish Micro wave assisted and Ultra sound assisted green synthesis CO4: Explain the necessity and basic principles of Green chemistry CO5: Assess the 100% atom economic reactions CO6: Differentiate the types of super conductors

UG DEPARTMENT OF ZOOLOGY

Nature of the Course – Local / National / Regional / Global Developmental Needs

Course Code	Course Name	Nature of the Course – Local /National/ Regional/ Global developmental needs	Course Outcomes
1107	Animal Diversity – Biology of Non-Chordates	Global	 CO1: Classify different animals using general taxonomic rules. CO2: Classify Protozoa to Coelenterate with taxonomic keys. CO3: List out the general characters and explain evolutionary significance of Ctenophore. CO4: Classify phylum Platyhelminthes to Annelida phylum using examples from parasitic adaptation and vermin composting. CO5: Illustrate phylum Arthropoda to Mollusca using examples and importance of insects and Molluscans. CO6: Differentiate Echinodermata to Hemichordate with suitable examples and larval stages in relation to the phylogeny.
2107	Animal Diversity- Biology of Chordates	National and Global	 CO1: Describe general taxonomic rules on animal classification of chordates. CO2: Classify Protochordata to Mammalian with taxonomic keys. CO3: Illustrate Reptiles with specific structural adaptations. CO4: Explain mammals with specific structural adaptations. CO5: Illustrate the significance of dentition and evolutionary significance. CO6: Illustrate the origin and evolutionary relationship of different phyla from Protochordata to Mammalian.

3107	Cellbiology, Genetics ,Molecular biology and	Global	CO1: Describe the basic unit of the living organisms and differentiate the organisms by their cell structure. CO2: Assess the structure and function of
	Evolution		 plasma membrane and different cell organelles of eukaryotic cell. CO3: Demonstrate the history of origin of branch of genetics gain knowledge on heredity interaction of genes, various types of inheritance patterns existing in animals. CO4: Illustrate various aspects of genetics involved in sex-determination human karyotyping and mutations of chromosomes resulting in various disorder. CO5: Explain the central dogma of molecular biology and flow of genetic information from DNA to proteins. CO6: Illustrate the principles and forces of evolution of life on earth, the process of evolution of new species and apply the same to develop new and advanced varieties of animals for the benefit of the society.
4107	Animal physiology, Cellular metabolism, and Embryology	Global	 CO1: Illustrate the functions of important animal physiological systems including digestion, cardio respiratory and renal systems. CO2: Explain the muscular system and the neuro endocrine regulation of animal growth development and metabolism with a special knowledge of hormonal control of human reproduction. CO3: Explain the structure classification and chemistry of bio molecules and enzymes responsible for sustenance of life in living organisms. CO4: Demonstrate the basic metabolic activities pertaining to the catabolism and anabolism of various bio-molecules. CO5: Analyze the key events in The early embryonic development starting from the formation of gametes up to gastrulation formation of primary germ layer.
4135	Immunology and Animal biotechnology	Global	CO1: Illustrate the applications of biotechnology in the fields of industry and agriculture including animal cell-tissue culture stem cell technology and genetic engineering. CO2: Explain the tools and techniques of

			animal biotechnology.
			CO3: Demonstrate hybridoma technology and
			write its applications.
			CO4: Explain reproductive technologies and
			transgenic animals in animal biotechnology.
			CO5: Explain fermentation and its types.
			CO6: Illustrate monoculture in fishes and
			polyploidy in fishes.
5136	Sustainable	Global	CO1: Compare bundh breeding and induced
	Aquaculture		breeding of carp.
	management		CO2: Estimate water quality parameters and
			soil characteristics for fish and shrimp culture.
			CO3: Distinguish different types of foods and
			feeds such as supplementary feeds,
			Principal foods and artificial diets, feed
			additives and preservatives
			CO4: Evaluate principles of disease diagnosis
			and health management.
			COS: Analyze fish marketing methods and
			COGE Explain genetic improvement of fish
			stocks, gypogenesis and regenic transgenic
			Fish and cryopreservation of gametes
5144	Deathemyest	Clabal	CO1. Explain the appaant of fish
5144	tochnology of	Global	preservation cleaning lowering of temperature
	Fish and		Prising of temperature and use of selt
	fisheries		CO2 . Illustrate the methods of fish
	1151101105		preservation
			CO3 •Explainprocessing of fish and
			preservation of fish and fish hyproducts
			CO4·Demonstrate sea weed products such as
			agar algil and carrageen
			CO5 : Interpret quality control of fish and
			fishery products.
			CO6: Explain about sea food quality assurance
			and systems and maintain national and
			international standards

DEPARTMENT OF MATHEMATICS & STATISTICS

Nature of the Course – Local / National / Regional / Global Developmental Needs 2022 - 2023

Programme	Course Name	Nature of the Course– Local/Nation al/ Regional/ Global developmental needs	Course Outcomes
MATHEM ATICS (UG)	SEMESTER – I PAPER – I DIFFERENTIAL EQUATIONS	Global	 CO1: Analyze real world scenarios to recognize when ordinary differential equations(ODEs) or system of ODEs are appropriate, formulate problems about the scenarios, creatively model these scenarios (using technology, if appropriate) in order to solve the problems using multi approaches, judge if the results are reasonable and then interpret and clearly communicate the results. (K4) CO2: Construct ODEs and system of ODEs concepts that are encountered in the realworld, understand and be able to communicate the underlying mathematics involved to help another person gain insight into the situation. (K3) CO3: Apply ODEs and systems of ODEs in various situations and use correct mathematical terminology, notation and symbolic process in order to engage in work, study and conversation on topics involving ODEs and system of ODEs with colleagues in the field of Mathematics, Science or Engineering. (K3)

SEMESTER – II PAPER – II SOLID GEOMETRY	Global	 CO1: Determine geometrical terminology for angles, triangles, quadrilaterals and circles. (K3) CO2: Calculate angles using a protractor. (K3) CO3: Apply geometrical results to determine unknown angles. (K4) CO4: Calculate line and rotational symmetries. (K3) CO5: Calculate the areas of triangles quadrilaterals and circles and shapes based on these. (K3)
SEMESTER – III PAPER - III ABSTRACT ALGEBRA	Global	 CO1: Assess properties implied by the definitions of groups and rings. (K5) CO2: Classify various canonical types of groups(including cyclic groups and groups of permutations). (K4) CO3: Analyze and demonstrate examples of subgroups, normal subgroups and quotient groups. (K4) CO4: Analyze and demonstrate examples of ideals and quotient rings. (K4) CO5: Apply the concepts of isomorphism and homomorphism for groups and rings.(K3) CO6: Compare rigorous proofs of propositions arising in the context of abstract algebra. (K3). CO7: Assess properties implied by the definitions of rings. (K5) CO8: Analyze and demonstrate examples of ideals and quotient rings. (K4)
SEMESTER – IV PAPER - IV REAL ANALYSIS	Global	 CO1: Describe the real line as a complete, ordered field. (K2) CO2: Determine the basic topological properties of subsets of the real numbers. (K3) CO3: Apply the definitions of convergence to sequences, series and functions. (K3) CO4: Determine the continuity, differentiability and integrability of functions definedon subsets of the real

		 line. (K3) CO5: Apply the Mean Value Theorem and the Fundamental Theorem of Calculus to problems in the context of real analysis. (K3) CO6: Produce rigorous proofs of results that arise in the context of real analysis. (K3)
SEMESTER – IV PAPER – V LINEAR ALGEBRA	Global	 CO1: Solve systems of linear equations. (K3) CO2: Analyze vectors in Rn geometrically and algebraically. (K4) CO3: Apply the concepts of the terms span, linear independence, basis and dimension to various vector spaces and subspaces. (K4) CO4: Apply matrix algebra and the related matrices to linear transformations. (K3) CO5: Compute and use determinants. (K3)
SEMESTER – V PAPER – VI NUMERICAL METHODS	Global	 CO1: Apply numerical methods for approximating the solution of problems of continuous mathematics. (K3) CO2: Analyze the error incumbent in any such numerical approximation. (K4) CO3: Apply a variety of numerical algorithms using appropriate technology. (K3) CO4: Compare the viability of different approaches to the numerical solution of problems arising in roots of solution of non-linear equations, interpolation and approximation, numerical differentiation and integration, solution of linear systems. (K4) CO5: Solve the selected class of differential equations using Taylor, Picards, Euler's,Runge Kutta, Adams and Milne's. (K3)

	SEMESTER – V PAPER – VII MATHEMATICAL SPECIAL FUNCTIONS	Global	 CO1: Apply integral calculus and special functions of various problem and to know the application of some basic mathematical methods via all these special functions. (K3) CO2: Classify and explain the functions of different types of differential equations.(K2) CO3: Interpret purpose and functions of the gamma and beta functions. (K2) CO4: Apply the gamma function, beta function and special functions to evaluate different types of integral calculus problems. (K3)
STATISTICS	SEMESTER – I PAPER – I DESCRIPTIVE STATISTICS	Global	CO1: Knowledge of Statistics and its scope and importance in various areas such as Medical, Engineering, Agricultural and Social Sciences etc. CO2: Knowledge of various types of data, their organization and evaluation of summary measures such as measures of central tendency and dispersion etc. CO3: Knowledge of other types of data reflecting quality characteristics including concepts of independence and association between two attributes CO4: Insights into preliminary exploration of different types of data. CO5: Knowledge of correlation, regression analysis, regression diagnostics, partial and multiple correlations.
	SEMESTER – II PAPER – II PROBABILITY AND PROBABILITY DISTRIBUTIONS	GLOBAL	 CO1: Ability to distinguish between random and non-random experiments, CO2: Knowledge to conceptualize the probabilities of events including frequentist and axiomatic approach. Simultaneously, they will learn the notion of conditional probability including the concept of Bayes' Theorem, CO3: Knowledge related to concept of discrete and continuous random

			variables and their probability distributions including expectation and moments CO4: Knowledge of important discrete and continuous distributions such as Binomial, Poisson, Geometric, Negative Binomial and Hyper-geometric, normal, uniform, exponential, beta and gamma distributions. CO5: Acumen to apply standard discrete and continuous probability distributions to different situations
S F S I	SEMETER – III PAPER – III STATISTICAL INFERENCE	GLOBAL	 CO1: Concept of law large numbers and their uses CO2: Concept of central limit theorem and its uses in statistics CO3: Concept of random sample from a distribution, sampling distribution of a statistic, standard error of important estimates such as mean and proportions, CO4: Knowledge about important inferential aspects such as point estimation, test of hypotheses and associated concepts, CO5: Knowledge about inferences from Binomial, Poisson and Normal distributions as illustrations, CO6: Concept about non-parametric method and some important non-parametric tests.
S F S J I F	SEMESTER – IV PAPER – IV SAMPLING TECHNIQUES AND DESIGN OF EXPERIMENTS	GLOBAL	 CO1: Introduced to various statistical sampling schemes such as simple, stratified and systematic sampling. CO2: An idea of conducting the sample surveys and selecting appropriate sampling techniques, CO3: Knowledge about comparing various sampling techniques. CO4: Carry out one way and two way Analysis of Variance, CO5: Understand the basic terms used

		in design of experiments, CO6: Use appropriate experimental
		designs to analyze the experimental data
SEMESTER – IV PAPER – V APPLIED STATISTICS	GLOBAL	CO1: Time series data, its applications to various fields and components of time series, CO2: Fitting and plotting of various growth curves such as modified exponential, Gompertz and logistic curve, CO3: Fitting of trend by Moving Average method, CO4: Measurement of Seasonal Indices by Ratio-to-Trend , Ratio-to-Moving Average and Link Relative methods CO5: Applications to real data by means of laboratory assignments. CO6: Interpret and use a range of index numbers commonly used in the business sector CO7: Perform calculations involving simple and weighted index numbers CO8: Understand the basic structure of the consumer price index and perform calculations involving its use CO9: Various data collection methods enabling to have a better insight in policy making, planning and systematic implementation, CO11: Population growth curves, population estimates and projections, CO12: Real data implementation of various demographic concepts as
		outlined above through practical assignments.
SEMESTER – V PAPER – VI OPERTAIONS RESEARCH – I	GLOBAL	CO1: To know the scope of OperationsResearchCO2: To link the OR techniques withbusiness environment and life sciences

			 CO3: To convert real life problems into mathematical models CO4: To find a solution to the problem in different cases CO5: To inculcate logical thinking to find a solution to the problem
S P C F	SEMESTER – VI PAPER – VII OPERTAIONS RESEARCH – II	GLOBAL	 CO1: To solve the problems in logistics CO2: To find a solution for the problems having space constraints CO3: To minimize the total elapsed time in an industry by efficient allocation of jobs to the suitable persons. CO4: To find a solution for an adequate usage of human resources CO5: To find the most plausible solutions in industries and agriculture when a random environment exists.

PG DEPARTMENT OF ENGLISH

Nature of the Course – Local / National / Regional / Global Developmental Needs

Course Code	Course Name	Nature of the Course – Local /National/ Regional/ Global developmental needs	Course Outcomes
ELL 101	INTRODUCTION TO LITERATURE	Global	After studying the course the students will be familiar with and define different types of genres with examples under the broad division.
ELL 102	POETRY:THE RENAISSANCE TO THE 18 TH CENTURY	Global	After studying the course the students will have knowledge about the currents of poetry from Britain which embody its most vigorous and energetic spirit, the trend setting movements that manifested the wide ranging poetic ideas and styles of the respective periods. The students will have been trained to read, enjoy and appreciate poetry.
ELL 103	DRAMA: THE RENAISSANCE TO THE18 TH CENTURY	Global	After studying the course the students will be able to recognise various manifestations of Tragedy and Comedy and showcase the evolution of British Drama through various political, social and cultural changes.
ELL 104	PROSE & FICTION: THE RENAISSAN CE TO THE 18 TH CENTURY	Global	After studying the course the students will be aware of the growth of the Fictional and Non- Fictional forms in Britain. The prose part in the course exposes the students to epigrammatic, allegorical and journalistic styles of prose writing. It concentrates on the conflict between contemporary social reality, social ideals, human and gender interests that were reflected in the novels.
ELL 105	INTRODUCTI ON TO THE STUDY OF	Global	After studying the course the students will be able to see the logical and sequential interconnection of the areas of Linguistics

	LANGUAGE & LANGUAGE SKILLS		and Language Teaching. Incidentally, this course also gives practice of English Phonetics by giving due importance to its theoretical study.
ELL 201	POETRY: 19 TH CENTURY	Global	After studying the course the students will have been exposed to the best representative examples of poetry from Romantic and Victorian periods which help the student thoroughly understand the literary situations of the periods in relation to their social contexts.
ELL 202	DRAMA: 19 TH & 20 TH CENTURIES	Global	After studying the course the students will be able to understand myriad variety of strands in 19 th and 20 th Century dramas in Britain from the witty and epigrammatic comedies of Oscar Wilde to the grave plays of Samuel Beckett in which characters inhabit the waste land of post- war world.
ELL 203	PROSE & FICTION: 19 TH CENTUR	Global	After studying the course the students will be conscious of a range of works in prose and fiction which give the student an opportunity to understand the cultural conditions of the nineteenth century.
ELL 204	THE 20 TH CENTURY BRITISH LITERATURE	Global	After studying the course the students will be familiar with the representative texts from poetry, drama, prose and fiction of the twentieth century and the student will be able to appreciate the nuances and thought of this significant century.
ELL 205	INTRODUCTIO N TO COMMUNICATI ON SKILLS	Global	After studying the course the students will be acquainted with the skills that the student wishes to learn to make him/her fit to the fast growing need for communication skills in the contemporary world.
ELL 301	AMERICAN LITERATURE: EARLY TO THE 19 TH CENTURY	Global	After studying the course the students will be acquainted with the literature of America, the transitional socio-historical records leading to the texts of the American Renaissance, and a fair sampling of the nineteenth century classics.
ELL 302	INDIAN WRITING IN ENGLISH	National/ Global	After studying the course the students will have the exposure to various cultures and traditions of India. This also enables the students to sympathize and empathize with various thematic strands as they all come
			under the broad concept of "Indianness".
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ELL 303	POST COLONIAL LITERATURE	Global	After studying the course the students will be aware of the common experience of colonization, as well as the special and distinctive characteristics of the respective countries they are produced in. The students will be familiar with those theories which have great potential to reinforce the understanding of postcolonial issues and for abrogating Eurocentric concepts.
304	CRITICISM	Giobai	able to see the signals of shift from traditional critical attitudes to modern ways of critical observation, as the course offers a variety of approaches exhibited by modern literary criticism.
ELL 305	INTRODUCTIO N TO ENGLISH LANGUAGE TEACHING.	Global	After studying the course the students will have a basic and detailed k n o w l e d g e t o t h e approaches to EnglishLanguage Teaching, as the course introduces various approaches, methods of English Language Teaching, and provides a comprehensive view of teaching of the language skills, testing, vocabulary, pronunciation and many important components. The concepts of Lesson Plan and Peer Teaching equip the student with practical knowledge of Class room Management.
ELL 401	AMERICAN LITERATURE: MODERN & CONTEMPOR ARY	Global	After studying the course the students will be knowledgeable about the representative works from the last century reflecting ethnic, linguistic, political, cultural and social concerns including those of gender and race will figure in the discussions.
ELL 402	INDIAN LITERATURE IN ENGLISH TRANSLATIO N	National	After studying the course the students will be familiar with some basic concepts of Indian aesthetics and Indian poetics. It familiarizes the students to some important literary and socio-cultural movements in India.
ELL 403	CONTEMPORA RY LITERARY THEORY	Global	After studying the course the students will be having the exposure to some of the seminal essays that have influenced contemporary criticism. The student will be aware of the way varied disciplines have merged and interfused to give a new orientation to literary

			appreciation.
ELL 404	ENVIRONMENT AL LITERATURE	Global	After studying the course the students will be conscious of a range of literary, non-literary, and audio-visual texts reflecting environmental concerns for appreciation and study, given the interdisciplinary nature of the course.
ELL 405 (A)	FURTHER STUDIES IN THEORY & PRACTICE OF ENGLISH LANGUAGE TEACHING	Global	After studying the course the students will be able to realize the scope and wide application of the purpose-driven ELT and the foundational concepts of its emerging areas. The students will be to see the existence of purpose and needs from both the teacher's and the learner's point of view in the language teaching-learning situation.
ELL 405 (B)	TRANSLATIO N: THEORY & PRACTICE	Global	After studying the course the students will be able to do 'Translation' as a practice and get trained to feel confident in attempting to translate various texts using appropriate methods.
ELL 405 (C)	MODERN CLASSICS IN ENGLISH TRANSLATIO N	Global	After studying the course the students will be familiar with various cultures across the world by means of issues available in English translation.
ELL 405 (D)	WOMEN'S WRITING	Global	After studying the course the students will be familiar with and aware of a range of literary texts about gender oriented issues from cultural, religious, social, racial, regional perspectives.

DEPARTMENT OF MANAGEMENT STUDIES

Nature of the Course – Local / National / Regional / Global Developmental Needs 2022 - 2023

Programme	Course Name	Nature of the Course– Local/Nation al/ Regional/ Global developmental needs	Course Outcomes
MRA	MBA CP 101.	National/ Global	CO: After studying the Course the students will
TVID/X	PERSPECTIVES OF MANAGEMENT	Hational/ Global	get familiarized with the Principles, Theory, Process and Practice of Management.
	MBACP 102: ACCOUNTING FOR MANAGEMENT	National	CO: After studying the Course the students will get an insight into the principles and techniques of accounting and theirutilization in business planning and Decision-making.
	MBA CP 103: BUSINESS ENVIRONMENT	National	CO: After studying the Course the students will get familiarized With the National and International business environments and their Implications to business.
	MBA CP 104: MANAGERIAL ECONOMICS	National/ Global	CO: After studying the Course students will comprehend the economic Concepts and theories and their applicationsin Management decision- Making.
	MBA CP 105: MANAGERIAL COMMUNICATION SKILLS	National/ Global	CO: After studying the Course the students will get familiarized with the principles, techniques and skills of Communication.
	MBA CP 106: ORGANISATIONAL BEHAVIOUR	National/ Global	CO: After studying the Course the students will get familiarize with the levels of organizational behaviour, group dynamics, conflicts, change and Organisational culture.
	MBA CP 107: QUANTITATIVE TEACHNIQUES FOR MANAGEMENT	National/ Global	CO: After studying the Course the students will get an insight into the Statisticaland Mathematical techniques and theirapplications in business decision making.
	MBA CP 201: MARKETING MANAGEMENT	National/ Global	CO: After studying the Course students the will get an understanding of the Concepts, process and strategies of Marketing management.
	MBA CP 202: FINANCIAL MANAGEMENT	National/ Global	CO: After studying the Course the students will get familiarized with the basic Process, decisions and techniques of Financial Management.
	MBA CP 203: HUMAN RESOURCE MANAGEMENT	National/ Global	CO: After studying the Course the students will get an insight into the basic Concepts of Human Resource Management and the various functions of HRM including Industrial Relations in the liberalized environment.

MBA CP 204: OPERATIONS MANAGEMENT	National/ Global	CO: After studying the Course the students will get familiarized with the decision making process and various aspects of Production and Operations Management.
MBA CP 205: OPERATIONS RESEARCH	National/ Global	CO: After studying the Course the students will get familiarized with the application of the Operations Research tools in the business decision making.
MBACP206:COMPUTERAPPLICATIONSINMANAGEMENT	National/ Global	CO: After studying the Course the students will get an insight into the Basic features of Computer Systems and their Application in the Managerial Decision Making.
MBA CP 207: RESEARCH METHODOLOGY FOR MANAGEMENT	National/ Global	CO: After studying the Course the students will get an insight into the basic process and techniques of Research Methodology for the purpose of Management decision making and for conducting Research different levels.
MBA CP 301: ENTREPRENEURSHIP	National/ Global	CO: After studying the Course the students will get familiarized with the Principles and process of Entrepreneurship and become enthused to float start- Ups
MBA CP 302 VUCA MANAGEMENT	National/ Global	CO: After studying the Course the students will become aware of the Volatile, Uncertain, Complex and Ambiguous nature and challenges of the Business environment and would be able to design appropriate strategies to combat the challenges.
MBA CP 303: CORPORATE LEGAL FRAMEWORK	National	CO: After studying the Course the students will get an exposure to the corporate laws affecting the operations of business enterprises.
MBA FM 304: FINANCIAL MARKETS AND SERVICES	National	CO: After studying the Course the students will gain an in-depth knowledge and skills in the Concepts and Practical dynamics of Financial Markets and Financial Services.
MBA FM 305: SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT	National	CO: After studying the Course the students will get an Insight into the Concepts and Practical applications of Security Analysis and Portfolio Management and gain practical skills to operate as Security Analysts and Share Consultants.
MBA MM 304 – CONSUMER BEHAVIOUR AND CUSTOMER RELATIONSHIP MANAGEMEN T	National/ Global	CO: The study of the Course will enable the students to comprehend the totality and Dynamics of Consumer Behaviour and design suitable CRM strategies.
MBA MM 305: SERVICES MARKETING	National/ Global	CO: On completion of the Course the students will get exposed and enabled to design effective strategies for Services Marketing.
MBA HRM 304: INDUSTRIAL RELATIONS	National	CO: After studying the Course the students will get familiarized with the Dynamics of Industrial Relations and would emerge as

		effective HR Managers.
MBA HRM 305: COMPENSATION AND WELFARE MANAGEMENT	National	CO: The study of this Course will expose the students to the Concepts and Strategies of Compensation and Welfare Management and enable them to design conducive compensation packages in the corporate world.
MBA CP 401: STRATEGIC MANAGEMENT	National/ Global	CO: On completion of the Course the students will gain the knowledge of different corporate competitive strategies and emerge as strategists to transform companies into strategic organisations.
MBA FM 402: FINANCIAL DERIVATIVES	National	CO: After studying the Course the students will get an insight into the Concepts and Practical applications of derivatives in the Security markets and would emerge as the Share Consultants with expert Knowledge.
MBA FM - 403: BEHAVIORALFINAN CE	National/ Global	CO: After studying the Course the students will get an Corporate Investment Decision Making under Risk and Uncertainty and also various Psychological and Neuropsychological factors of investors that result in their investment behaviours.
MBA FM - 404: INTERNATIONAL FINANCIAL MANAGEMENT	National/ Global	CO: After studying the Course the students will get familiarized with the Issues, instruments and institutions of the International Financial Management that would help them to take up global business successfully.
MBA MM 402: SALES AND DISTRIBUTION MANAGEMENT	National/ Global	CO: On completion of the Course the students will get insights into the issues of personal selling, prospecting and managing of field Sales Force and physical distribution and logistics.
MBA MM – 403: ADVERTISING AND BRAND MANAGEMENT	National/ Global	CO: After studying the Course the students will get an insight into the Concepts and Practical applications of Advertising and Brand Management and emerge as Advertising Designers.
MBA MM - 404: RETAIL MANAGEMENT	National	CO: The study of this Course will bestow the students with the knowledge and Practical skills of managing organized Retail Stores and Malls.
MBA HRM 402: PERFORMANCE MANAGEMENT AND COUNSELLING	National/ Global	CO: After studying the Course the students will get an insight into the Strategies of Performance Management and Counselling
MBA HRM - 403: STRATEGIC HUMAN RESOURCE MANAGEMENT	National/ Global	CO: After studying the Course the students will get familiarized with the Concepts and issues of Strategic Human Resource Management.
MBA HRM - 404: INTERNATIONAL HUMAN RESOURCE MANAGEMENT	National/ Global	CO: On completion of the Course the students will be endowed with the concepts and strategies of International Human Resource Management and emerge as Vibrant HR Managers in the MNCs.

DEPARTMENT OF COMPUTER SCIENCE

Nature of the Course – Local / National / Regional / Global Developmental Needs

2022 - 2023

Course Code	Course Name	Nature of the Course – Local /National/ Regional/ Global developmental needs	Course Outcomes
MCA-20101	Discrete Mathematical Structures	Global	 C101.1: Understand about introduction of discrete mathematical structures. C101.2: Understand the Counting Techniques and Recurrence relations. C101.3: Understand about in detail about Graphs and Trees. C101.4: Understand about Boolean Algebra and Models of Computation.
MCA-20102	Management Accountancy	Global	 C102.1: Understand the basic concept of Principles Of Accounting and Final Accounts. C102.2: Understand about in detail about Ratio Analysis. C102.3: Understand about the concepts of Costing, Budget and Budgetary Control, Marginal Costing. C102.4: Understanding the Introduction To Computerized Accounting System.
MCA-20103	C Programming & Data Structures	Global	 C103.1: Understand the Fundamentals and Basic concepts of C Programming. C103.2: Understand about in detail about Arrays, Functions and Pointers. C103.3: Understand the concepts of Derived Data Types and Data Structures. C103.4: Understand the concepts of Linked Lists, Trees, Graphs, Searching and Sorting.
MCA-20104	Computer Organization	Global	C104.1: Understand the basics of Digital Logic Circuits and Digital Components.C104.2: Understand about the Concepts of Data Representation, Register Transfer and Micro Operations.

			C104.3: Understand the concept of Basic Computer Organization and Design and Central Processing Unit. C104.4: Understand about the concept of Input /Output Organization and Memory Organization.
MCA-20105	Operating Systems	Global	 C105.1: Understand the concept of Introduction to Operating Systems and ProcessManagement. C105.2: Understand about Process Synchronization and Deadlocks in detail. C105.3: Understand about the concept of Memory Management, File System Implementation, Mass-storage structure. C105.4: Understand the concept of Protection and Case Study.
MCA-20106	Design & Analysis of Algorithms	Global	 C106.1: Understand about the Asymptotic Notations, Mathematical Analysis of Non- recursive and recursive Algorithms and Selection Sort and Bubble sort, Sequential Search and Exhaustive Search. C106.2: Understand about the Divide-and- Conquer technique, Decrease-and-Conquer and Transform-and-Conquer techniques. C106.3: Understand the Optimal Binary Search Trees, The Knapsack Problem Prim's Algorithm, Kruskal's Algorithm, Dijkstra's Algorithm. C106.4: Understand about the Decision Trees, P, NP and NP- complete problems, Backtracking, Branch-and-Bound, Approximation Algorithms for NP-hard Problems.
MCA-20107	C Programming & Data Structures Lab	Global	 C107.1: Able to write code for different types of programs using C Programming. C107.2: Able to write code programs of Data Structures. C107.3: The students are able to write/code and own programs using C Programming.
MCA-20108	Operating Systems and Computer Organization	Global	C108.1: The students able to write code in UNIX operating system using some basic commands.C108.2: The students able to write code some

	Lab		 basic programs using Shell Programming. C108.3: The students are able to write/code different types of algorithms using C/C++/JAVA. C108.4: The students able to do Digital Logic Design Experiments C108.5: The students able to write 8085/86AssemblyLanguage Programs
MCA-20109	Bridge Course* Fundamentals of Computers (For General B.Sc/B.A./B.C omStudents)	Global	C109.1: Explain the concept of input and output devices of Computers and how it works and recognize the basic terminology used in computer programming C109.2: Able to develop techniques of writing algorithms pseudo codes and logic C109.3: Summarize the concepts of Operating Systems C109.4: Recognize the Computer networks, types of networks and topologies, network devices and get introduction to internet and email.
MCA-20110	Bridge Course Lab* Fundamentals of Computers Lab (For General B.Sc/B.A./B.Co mStudents)	Global	 C110.1: Understand about the internal parts of a computer, peripherals, I/O ports, connecting cables C110.2: Able to install Operating System, able to write basic command line interface commands on MSDOS C110.3: Know about Internet, Browsing, Email C110.4: Able to work on Office Tools such as Word processors, Spreadsheets and Presentation tools C110.5: Able to Write Algorithms, Flow Charts for simple programs in C
MCA-20201	Computer Networks	Global	 C201.1: Understand the basics of computer networks and Data Communication. C201.2: Understand about Data Link Layer, IEEE Standards, design issues in networks. C201.3: Understand Internet Transport Protocols and different types of protocols. C201.4: Overview of various types of Network Devices and different types of Networks
MCA-20202	Object Oriented Programming throughJAVA	Global	 C202.1: Understand Introduction to OOP and concept of Inheritance. C202.2: Understand about Interfaces, Packages and Enumeration, Exceptions & Assertions. C202.3: Understand about MultiThreading and Applets.

			C202.4: Understand the concept of Event Handling and Abstract Window Toolkit.
MCA-20203	Database Management Systems	Global	 C203.1: Able to understand the Introduction of Database System, Data Modeling Using the Entity-Relationship Model C203.2: Able to understand Relational Data Model and Relational Database Constraints, Relational Algebra and Relational Calculus, Schema Definition, Basic Constraints and Queries C203.3: Able to understand Relational Database Design, Indexing Structures forfiles C203.4: Able to understand Transaction Processing, Concurrency ControlTechniques
MCA-20204	Formal Languages and Automata Theory	Global	 C204.1: Understand the concept of Finite Automata and Regular Expressions, Regular sets &Regular Grammars. C204.2: Understand the concept of Context Free Grammars and Languages, Push down Automata C204.3: Understand about Turing Machines, Universal Turing Machines and Undecidability in detail. C204.4: Understand the concept of The Propositional calculus and The Predicate calculus.
MCA-20205	Data Mining Concepts and Techniques	Global	C205.1: Able to understand about the overview of Data Warehouse Basic Concepts, DataWarehouse Modelling, Pre-processing C205.2: Able to understand about the Introduction to Data Mining , Basic Statistical Descriptions of Data, Data Visualization, Measuring data Similarity and Dissimilarity C205.3: Able to understand about the Concept Description, Generalization by AOI , Mining Frequent Patterns, Associations and Correlations, Mining Frequent Item set C205.4: Able to understand about the Basic Concepts of Classification ,Different Methods of Classification
MCA-20206	Elective-I 1. Artificial Intelligenceand Expert Systems 2.Internet of Things 3.Image	Global	C206.1: Able to understand about the Introduction to Internet of Things, IoT Enabling Technologies, IoT Levels & Deployment Templates Domain Specific IoTs C206.2: Able to understand about the IOT &

	Processing		M2M, SNMP
			C206.3: Able to understand about the IoT
			Platforms Design Methodology
			C200.4: Able to understand about the for
	Object Oriented	Clobal	C207 1. Studente con chile to verite programs in
MCA_20207	Programming	Global	Lava using OOP
WICA-20207	throughIAVA		C207 2 • Students can able to code programs
	Lab		related to real life scenario.
	200		C207.3: Students can able to code programs in
			Java using Inheritance and using
			Adapter classes.
MCA-20208	Database	Global	C208.1: Able to write SQL queries using DDL,
	Management		DML, DCL commands
	Systems Lab		C208.2: Able to write SQL queries on
			aggregate and conversion functions
			exception handling control structures
			C208 4. Able to write PL/SOL programs on
			cursors, procedures, triggers.
	Skill	Global	C209.1: Able to understand the basics of
MCA-20209	Development		Python Programming language
	Coursewith		C209.2: Able to use various functions and
	Python		methods of Python Programming
			C209.3: Able to comprehend Multithread
			Programming and GUI Programming
			C209.4: Able to understand Web Programming
	I.C.	C1 1 1	and Database Programming
MCA-20301	Information Security and	Global	C301.1: Able to understand the security
	Cryptography		number theory
	Cryptography		C301.2: Able to Symmetric key and
			Asymmetric key cryptographic algorithms
			C301.3: Able to understand the User
			Authentication Mechanisms ,System security
			C301.4: Able to understand the Internet
			Security Protocols and Network Security
MCA-20302	Big Data	Global	C302.1: Understand about introduction to Big
	Analytics		Data and Hadoop
			C3U2.2: Understand about Real Time
			Analytics, Map Reduce Programming
			Machine Learning Man Reduce Advanced
			Programming
			C302.4: Understand about Graph
			Representation in Map Reduce, Graph

			Analytics in Spark, Programming with RDDs-
			Basics, Spark SQL overview
MCA-20303	Object Oriented Software	Global	C303.1: Able to understand about the Introduction to Object Oriented Software
	Engineering		Engineering, Object Orientation, Requirements Engineering C303.2: Able to understand about the Unified Modeling Language & Use Case Modeling, Class Design and Class Diagrams C303.3: Able to understand about the Software Design and Architecture, Design Patterns
			C303.4: Able to understand about the Software Testing, Software Project Management, Software Process Models
MCA-20304	Web Technologies	Global	 C304.1: Understand the concept of Web Basics, Markup languages for processing, identifying, and presenting information in web pages, introduction of XML and processing of XML Data with Java. C304.2: Understand about the concept of Server side programming with Java Servlets and JS. C304.3: Understand about the concept of Server side programming with Java Servlets and JSP. C304.4: Understand about the concept of PHP language for server side scripting and able to design Web based applications.
MCA-20305	Elective II 1. Blockchain Technology 2. Cloud Computing 3. Machine Learning and Deep Learning	Global	C305.1: Able to understand about the Cloud Computing basics, Intranet and Cloud, Services and Business Applications, Salesforce.com, Organization and Cloud Computing C305.2: Able to understand about the Hardware and Infrastructure, Overview of Software as a Service, Overview of Industries Software plus Services, Mobiledevice Integration C305.3: Able to understand about Developing the Applications like Google, Microsoft, Intuit QuickBase, Local Clients and thin clients C305.4: Able to understand about the Migrating the Cloud, Cloud Services
MCA-20306	Elective-III 1. Business Intelligenceand	Global	C306.1: Understand about Key concepts in data science, including tools, approaches, and application scenarios

	Visualization 2. Robotics 3.Foundations of Data Science		 C306.2: Understand about Topics in data collection, sampling, quality assessment and repair C306.3: Understand about Topics in statistical analysis and machine learning C306.4: Understand about State-of-the-art tools to build data-science applications for different types of data, including text and CSV data
MCA-20307	Web Technologies and Object Oriented Software Engineering Lab	Global	 C307.1: Students can able to create Web pages using HTML/DHTML and using CSS in it. C307.2: Students can able to write Java Script Programs to demonstrate theworking of conditional, looping statements, arrays, functions, event handling, validation controls. C307.3: Students can able to develop simple applications like client server programming using Java Script, Servlets, ASP, JSP and a web application with database connectivity.
MCA-20308	Big Data Analytics lab	Global	C308.1: Able to implement data structures, generic typesC308.2: Able to setup and install HadoopC308.3: Able to implement file management tasks and programs in Hadoop
MCA-20309	Innovation, Entrepreneurshi p and Intellectual Property Rights	Global	 C309.1: Able to understand Role and importance Technology developments, Innovation in Current Environment C309.2: Able to understand Entrepreneurship and Its Evolution C309.3: Able to understand Intellectual Property Law C309.4: Able to understand Patent Law – Rights and Limitations
MCA-20310	Summer Internship	Global	 C310.1: The concept and types of Organizations C310.2: The concept, nature and functions of Management C310.3: The Managerial skills and roles C310.4: The traits of successful Leaders

	C310.5: Various styles of leadership
	C310.6: The profiles of some successful business leaders

PG DEPARTMENT OF MATHEMATICS

Nature of the Course – Local / National / Regional / Global Developmental Needs

2022 - 2023

Course Code	Course Name	Nature of the Course – Local /National/ Regional/ Global developmental needs	Course Outcomes
M101	Paper I–Algebra1	Global	 CO1: Describe the definitions of Automorphism, Conjugacy and G- sets with it's examples. CO2: Discuss finitely generated abelian groups and invariants of finite abelian groups. CO3:Explain Sylow's first theorem, Sylow's second theorem and Sylow's third theorem with it's examples. CO4: Discuss ideals and homomorphism, Maximal ideal and prime ideal, Nilpotent ideal and nil ideal. CO5: Simply explain Zorn's lemma. CO6: Learn the unique factorization domain, principal ideal domain and Euclidean domain.
M102	Paper II–Real Analysis-1	Global	 CO1: Describe the finite countable and uncountable sets, Metric spaces and Compact sets. CO2: Explain the convergent sequences & Cauchy sequences & some special sequences. CO3: Solve the problems to using ratio and root tests and analyze power series. CO4: Understand the limits of functions & continuity and compactness and Monotonic functions. CO5: Learn the Mean value theorems, L-Hospital's Rule and Taylor's theorem.
M103	Paper III – Differential Equations	Local, National and Global	CO1: Applications of second order linear differential equations will be studied.CO2: Solve Homogeneous equations and use of a known solution to find another.

			 CO3: Recognise differential equations that can be solved by each of three methods. CO4: Solve the boundary value problems and by Strum Comparison theorem solved Eigen values, Eigen functions. CO5: Review of Power Series and solved first and second order linear equations to verify ordinary, regular singular points. CO6: Understand the linear system and solved homogeneous linear system with constant Coefficients.
M104	Paper IV– Topology	Global	 CO1: Gain an understanding the algebra of sets, functions, Product of sets, Partitions and equivalence relations. CO2: Learn the basic concepts of open set and closed sets and apply these two sets in real life examples. CO3: Develop the Knowledge on Topological spaces through the participating in a Quiz. CO4: Know the Weak Topologies. CO5: Understand the Tychnoff's theorem and Ascoli's theorem.
M105	Paper V–Discrete Mathematics	Local, National and Global	 CO1: Discuss relations, properties of binary relations in a set, Relation matrix and graph of a relation, partition and covering of a set, equivalence relations, compatibility relation, composition of binary relations. CO2: Discuss lattices as partially ordered sets, some properties of lattices, lattices as algebraic systems. CO3: Explain Boolean algebra, sub algebra, direct product and homomorphism. CO4: Acquire the knowledge from Boolean forms and free Boolean algebras, values of Boolean expressions. CO5: Describe representations and minimizations of Boolean functions. CO6: Explain finite state machines, Introductory sequential circuits, equivalence of Finite State Machines.
M201	Paper I–Algebra- II	Global	CO1: Discuss the definitions of Irreducible polynomials and Eisenstein criterion, Algebraic extensions and algebrically closed fields with it's examples. CO2: Explain splitting fields and normal extensions, multiple roots, finite fields and Separable extensions.

			 CO3: Simply explain fundamental theorem of Galois theory and fundamental theorem of algebra. CO4: Explain applications of Galois theory to classical problems. CO5: Solve the problems by using radicals, ruler and compass construction.
M202	Paper II–Real Analysis - II	Global	 CO1: Learn the definition and existence of the Riemann stieltjes Integral. CO2: Acquire the Knowledge of uniform convergence and uniform convergence & continuity and Integration. CO3: Apply the stone wierstrass theorem for obtain results von the function of algebra. CO4: Understand the Linear Transformations and the contraction principle. CO5: Give seminars on the implicit function theorem, the Rank theorem & Derivatives of higher order for improving subject.
M203	Paper III – Complex Analysis -I	Global	 CO1: Discuss the elementary properties and solved the examples of Analytic functions. CO2: Understand the mobius transformations. CO3: Know the fundamentals of Analytic functions, to studied Riemann Stieltjes integrals and Analyze Power Series representation of Analytic function. CO4: Learn the Cauchy's theorem and the homotopic version of Cauchy's theorem. CO5: Examine functions are analytic in a punctured disk.
M204	Paper IV–Linear Algebra	National &Global	 CO1: Explain elementary canonical forms, annihilating polynomials, invariant subspaces. CO2: Discuss Simultaneous triangulation and simultaneous diagonalization. CO3: Describe direct –sum decompositions, invariant direct-sums. CO4: Discuss the primary decomposition theorem, cyclic subspaces and Annihilators. Learned cyclic decompositions and the rational forms. CO5: Acquire the knowledge in the Jordan forms, computation of invariant factors, semi simple operators. CO6: Discuss Bilinear forms, symmetric bilinear forms and skew symmetric Bilinear

			forms.
M205	Paper V–Probability Theory and Statistics	Local, National and Global	 CO1: Discuss Sample spaces, events and the axioms of Probability. CO2: Learn some elementary theorems and Boole's inequality. CO3: Give brief explanation on Conditional probability and studied Bayes theorm. CO4: Discuss Discrete and Continuous Random variables and studied Binomial, Poisson, Normal and uniform distributions. CO5: Learn meaning of Correlation, Scatter diagram Karl person's coefficient of Correlation, Rank Correlation. CO6: Know types of sampling, parameters and solved some problems on tests of significance.
M301	Paper I – Functional Analysis	Global	 CO1: Learn linear transformations, continuous linear transformations, Hahn banach theorem in Banach spaces. CO2: Explain the open mapping theorem and the conjugate of an operator. CO3: Discuss the definition and some simple properties in Hilbert spaces, orthogonal compliments and orthonormal sets. CO4: Describe the conjugate space, the adjoint of an operator, self-adjoint operators. CO5: Acquire the knowledge in normal and unitary operators and also in projections. CO6: Discuss matrices, determinants and the spectrum of an operator, the spectral theorem in Finite-Dimensional Spectral Theory.
M302	Paper II – Lebesgue Theory	Global	 CO1: Explain algebra of sets, lebesgue measure, outer measure, measurable set and lebesgue measure. CO2: Discuss non- measurable set, measurable function, Little woods's three principles. CO3: Describe the Riemann integral, the lebesgue integral of a bounded function over a set of finite measures. CO4: Explain the integral of a non-negative function, the general lebesgue integral convergence in measure. CO5: Acquire the knowledge in differentiation of monotonic functions, functions of bounded variation, differentiation of an integral. CO6: Learn Lp-spaces, the Holder's and Minkowski inequalities, convergence and Completeness.

M303	Paper III – Analytical Number Theory	Local, National and Global	 CO1: Discuss Mobius function, Euler totient function and also explained relation between them. CO2: Learn the Dirichlet inverse and Mobius inversion formula, mangoldt function and Liouville's function. CO3: Describe big oh notation and Euler summation formula. CO4:Explain chebyshev'sfunction,Shapiro's theorem and it's applications. CO5:Learn reduced residue system and Euler-Fermat theorem, Lagrange theorem and it's applications.
M304	Paper IV–Partial Differential Equations	Local, National and Global	 CO1: Recall the basic concepts of Partial Differential Equations. CO2: Explain the Pfaffian Differential forms and equations and some exercises. CO3: Solve the problems on cauchy's Method of characteristics & compatiable system of first order equations. CO4: Know the Partial Differential Equations of the second order and solve the linear hyperbolic equations. CO5: Understand the elementary solutions, and Method of separation of variables of solving Laplace equation and the wave equation.
M305	Paper V–Elective – I Commutative Algebra	Global	 CO1: Review the definition and elementary properties of rings. CO2: Discuss the prime and maximal ideals and explain the various elementary operations performed on ideals. CO3: Give the definition and elementary properties of modules and gave brief treatment of tensor products. CO4: Discuss how tensor products behave for exact sequences. CO5: To educate the definitions and simple properties of the formation of fractions. CO6: Discuss the decomposition of an ideal into Primary ideals and establish the uniquenesstheorems.

M401	Paper I–Measure	Global	CO1: Explain convergence and completeness
	Theory		in measure spaces.
			CO2: Discuss measurable functions,
			integration, general convergence theorems.
			CO3: Describe signed measures, the Raydon-
			Nikodym theorem, the LP spaces.
			CO4: Explain outer measures and
			measurability, the Extension theorem.
			CO5: Discuss the Lebesgue- stieltjes integral,
			product measures.
			CO6: Acquire the knowledge in integral
			operators, inner measure, extension by sets of
26400		T 1 3 T 1 1	measure 0, caratheodory outer measure.
M402	Paper II –	Local, National	COI: Determine the roots of a polynomial
	Numerical Analysis	and Global	equation and obtain the initial approximations
			to the roots by solved some problems in
			different methods.
			CO2: To find the roots of the equations by
			some of the iteration methods.
			COS: Discuss the methods to construct the intermediating polynomials to a function and
			interpolating polynomials to a function and
			CO4. To evoluate the derivative of a function
			in the closed form by Numerical methods
N/402	Dener III Creat	T 1 N 1	In the closed form by Numerical methods.
11405	Paper III–Graph Theory	Local, National	trass and fundamental circuits
	Theory	allu Global	CO2: Know the cut sets and connectivity and
			separability
			CO3. Acquire the Knowledge of Planar
			graphs and Dual graphs
			CO4: Explain the Matrix representation of
			graphs and Application to a switching network
			in real life
			CO5 : Describe the coloring covering and
			Partitioning and further Operation Research.
M404	Paper IV–Linear	Local. National	CO1: Discuss the formulation of linear
	programming	and Global	programming problems, graphical solution and
			general solution of linear programming
			problem.
			CO2: Describe simplex method and two-
			phase method, Big- M method and to resolve
			degeneracy in linear programming problem,
			solved problems in simplex method.
			CO3: Explain the concept of duality in linear
			programming and comparison of the solution
			of the dual and primal.
			CO4: Learn the formulation of assignment

			 problem, Reduction theorem and Hungarian assignment method, traveling salesman problems. CO5: Explain formation of transportation problem, methods to find initial basic feasible solution and North-West corner rule, lowest cost entry method and Vogel's approximation method. CO6: Discuss optimality test, degeneracy in
			transportation problems and unbalanced transportation problem.
M405	Paper V–Elective- II Discrete Dynamical Systems	Local, National and Global	 CO1: Discuss Phase portrait, periodic points and stable sets, differentiability and it's implications. CO2: Explain the Sarkovskii's theorem and some basic problems. CO3: Learn the definitions of parameterized families of functions and bifurcations Canset's, symbolic dynamics and chaos. CO4: Describe topological Conjugacy, period doubling casade, Newton method. CO5: Solve the problems on Numerical solutions of differential equations on Newton's method in complex plane.

P G DEPARTMENT OF CHEMISTRY

Nature of the Course – Local / National / Regional / Global Developmental Needs

2022 - 2023

Course Code	Course Name	Nature of the Course– Local/National/ Regional/ Global developmental needs	Course Outcomes
200CHT1 1	GENERAL CHEMISTR Y-I	Local -National- Regional- Global developmental needs	 To learn about basic fundamentals of Quantum Chemistry and Molecular Spectroscopy. To learn about wave mechanics of simple systems with contact potential energy, particle in one dimensional box. To learn about concepts of microwave and IR_spectroscopy To learn about Raman spectroscopy and electronic spectra of diatomic molecules
CP 200CHT1 2	INORGANIC CHEMISTRY-I	Local -National- Regional- Global developmental needs	 Acquire the knowledge on VSEPR,Valence bond and molecular orbital theories in explaining the structure of simple molecules. Acquire the knowledge on preparation, structure and mechanisms of boranes,carboranes,metallocarboranes and cage componds To learn about crystal field theory, crystal field splitting pattern in different geometries and calculation of crystal field stabilization energy Acquire the knowledge on how to draw Orgel and Tanabe_Sugano diagrams for metal complexes
CP 200CHT1 3	ORGANIC CHEMISTRY -I	Local -National- Regional- Global developmental needs	 Acquire the knowledge on Nature of bonding in organic molecules and Aromaticity. To understand the Stereo Chemistry & Molecular representation of organic molecules.

CD	DUNCICAL	Less National	 Acquire the knowledge of Heterocyclic compounds. To learn about Chemistry of some typical natural products (Alkaloids and Terpenoids).
200CHT1 4	CHEMISTRY-I	Regional- Global developmental needs	 Acquire knowledge on Acquire knowledge on Micelles and Macro molecules Acquire knowledge on Chemical Kinetics Acquire knowledge on
CP 20OCHP1 5	INORGANIC CHEMISTRY PRACTICAL	Local -National- Regional- Global developmental needs	 To Synthesis the inorganic complexes like (i) Tetraamminecopper(II) sulphate (ii) Potassium tris-oxalato ferrate(III) trihydrate (iii) Tris-thiourea copper(I) sulphate Hands on experience on Semi micro qualitative analysis of six radical mixtures Anions: CO32-, S2-, SO32-, Cl-, Br -, I -, NO3 -, SO4 2-, CH3COO - C2O42-, C4 H4 O6 2-, PO4 3-, CrO4 2-, AsO4 3-, F -, BO3 3- Cations : Ammonium (NH4+) 1st group: Hg, Ag, Pb, Tl, W 2nd group: Hg, Pb, Bi, Cu, Cd, As, Sb, Sn, Mo 3rd group: Fe, Al, Cr, Ce, Th, Ti, Zr, V, U, Be 4th group: Zn, Mn, Co, Ni 5th group: Ca, Ba, Sr 6th group: Mg, K, Li
CP 20OCHP16	ORGANIC CHEMISTRY PRACTICALS	Local -National- Regional- Global developmental needs	 Hands on experience on Preparation, recrystallization, and determination of melting point & yield of the following compounds: (i) Aspirin, (ii) Nerolin, (iii) Chalcone, (iv) p-Nitro acetanilide, (v) 2,4,6- Tribromo aniline, (vi) m-Dinitrobenzene, (vii) Phthalimide, (viii) Diels-Alder adduct.
CP 200CHP17	PHYSICAL CHEMSITRY PRACTICALS	Local -National- Regional- Global developmental needs	 Acquire practical knowledge on Determination of critical solution temperature of phenol-water system Acquire practical knowledge on Effect of added electrolyte on the CST of phenol- water system Acquire practical knowledge on Conductometric titration of Strong acid versus Strong base

			 4. Acquire practical knowledge on Dissociation constant of weak acid (CH3COOH) by conductometric method 5. Acquire practical knowledge on Conductometric titration of Weak acid vs Strong base. 6. Acquire practical knowledge on Determination of cell constant 7. Acquire practical knowledge on Adsorption of acetic acid on animal charcoal or silica gel 8. Acquire practical knowledge on Acid- catalyzed hydrolysis of methyl acetate 9. Acquire practical knowledge on Determination of partial molar volume of solute –H2O system by apparent molar volume method.
CP 20OCHT21	GENERAL CHEMISTRY- II	Local -National- Regional- Global developmental needs	 To learn about basic fundamental concepts of Quantum chemistry Acquire the knowledge on symmetry element, symmetry operation and point groups To learn about accuracy and precision in doing experiments, understands the different errors and methods for minimising errors To learn about introduction to computer programming_FORTRAN
CP 20OCHT22	INORGANIC CHEMISTRY- II	Local -National- Regional- Global developmental needs	 To learn about classification of clusters and different structural pattern of metal clusters Acquired knowledge on 16&18 electron rule ,bonding modes of CO,NO Acquire the knowledge on how to determine stability constant of particular complex through spectrophotometric and pH_metric method To learn about different types of electron transfer reaction and factors affecting them
CP 20OCHT23	ORGANIC CHEMISTRY- II	Local -National- Regional- Global developmental needs	 Acquire knowledge on Aliphatic Nucleophilic Substitution, Nucleophilic Aromatic substitution and Elimination Reactions. To understand Addition to Carbon – Carbon Multiple Bonds Reactions,Addition to Carbon – Hetero Multiple Bonds Reactions. To understand Types of molecular

CP 20OCHT24	PHYSICAL CHEMISTRY- II	Local -National- Regional- Global developmental	 rearrangements, migratory aptitude. 4. Acquire Basic principles and importance of UV, IR, NMR and Mass, Protection of carbonyl, Hydroxyl, carboxylic and Amine groups. 1. To understand Physical methods of molecular structural elucidation. 2. Acquire knowledge on Thermodynamics and Statistical Thermodynamics
		liceus	 Acquire knowledge on types of Electrochemical Cells Acquire knowledge on Electrode- Electrolyte interface structure models.
CP 20OCHP25	INORGANIC CHEMISTRY PRACTICALS	Local -National- Regional- Global developmental needs	 To understand Volumetric Determination of Ferric iron by photochemical reduction To understand Volumetric Determination of Nickel by EDTA To understand Volumetric Determination of Calcium and Magnesium in a mixture by EDTA To understand Volumetric Determination of Ferrocyanide by Ceric sulphate To understand Volumetric Determination of Copper(II) in presence of iron(III) To understand Gravimetric Determination of Zinc as Zinc pyrophosphate To understand Gravimetric Determination of Nickel from a mixture of Copper and Nickel
CP 20OCHP26	ORGANIC CHEMISTRY PRACTICALS	Local -National- Regional- Global developmental needs	1. To understand Systematic qualitative analysis of an organic mixture containing two compounds Identification of method of separation and the functional group(s) present in each of them and preparation of one solid derivative for the conformation of each of the functional group(s).
CP 20OCHP27	PHYSICAL CHEMISTRY PRACTICALS	Local -National- Regional- Global developmental needs	 Acquire knowledge on Distribution of iodine between CHCl3 and water Acquire knowledge on Distribution of I2 between CHCl3 and aq.KI solution- calculation of equilibrium constant. Acquire knowledge on Determination

CP 200CHT31	ORGANIC REACTION MECHANISM S-I &ORGANIC PHOTO CHEMISTRY	Local -National- Regional- Global developmental needs	 of Coordination number of cuprammonium cation. 4. Acquire knowledge on Titration of Fe+2 Vs K2Cr2O7 – potentiometry 5. Acquire knowledge on Titration of mixture Strong acid and weak acid versus Strong base by conductometry 6. Acquire knowledge on Titration of Strong acid Vs Strong Base – pH – metry. 7. Acquire knowledge on Titration of mixture of (NaHCO3 + Na2CO3) Vs HC1 – pH- metry. 8. Acquire knowledge on Titration of Strong acid Vs Strong Base using Quinhydrone electrode. 9. Acquire knowledge on Verification of Beer-Lambert's law by Iron-thiocyanate system –colorimetry. 10. Acquire knowledge on Determination of single electrode potential of Cu2+/Cu and estimate the given unknown concentration. 1. To deep learning of Aliphatic Electrophilic Substitution reactions. 2. To understand Principles of asymmetric synthesis. 3. Acquire knowledge on Photochemical energy, Frank Condon Principle, Types of
			Electronic Excitation and Molecular orbital view of excitation, Jablonski Diagram, singlet and triplet states, dissipation of photochemical energy, photosensitization, quenching, quantum efficiency and quantum yield, Determination of Quantum yield and Photo Chemistry of Carbonyl Compounds. 4. Acquire knowledge on different types of photo chemical rearrangement reactions.
CP 20OCHT32	ORGANIC SPECTROSCO PY-I	Local -National- Regional- Global developmental needs	 To understand UV-Visible spectroscopy and it's applications. To understand Infrared spectroscopy and it's applications. To understandNuclear Magnetic Resonance Spectroscopy(1HNMR&13C NMR) and it's applications. To understand Mass spectrometry and

			it's applications.
CP 20OCHT33	MODERN ORGANIC SYNTHESIS-I	Local -National- Regional- Global developmental needs	 Acquire knowledge on Formation of C- C single bonds. Acquire knowledge on Formation of Carbon-Carbon double bonds. Acquire knowledge on Reactions of unactivated C-H bonds and organoboranes. Acquire knowledge on Protecting groups and simple applications of microwave and ultrasound assisted reactions.
CP 200CHT34	CHEMISTRY OF NATURAL PRODUCTS	Local -National- Regional- Global developmental needs	 Acquire knowledge on Introduction, isolation, general methods of structure elucidation and physiological action, degradation, classification based on nitrogen heterocyclic ring, structure, stereochemistry, synthesis and biosynthesis ofAlkaloids. Acquire knowledge on Occurrence, isolation, general methods of structure determination, isoprene rule. Structure determination, stereochemistry, biosynthesis and synthesis ofTerpenoids. Acquire knowledge on Occurrence, isolation, general methods of structure determination, isoprene rule. Structure determination, isoprene rule. Structure determination, stereochemistry, biosynthesis and synthesis of Steroids. Acquire knowledge on Occurrence, isolation, general methods of structure determination, isoprene rule. Structure determination, stereochemistry, biosynthesis and synthesis of Steroids. Acquire knowledge on Occurrence, isolation, general methods of structure determination, stereochemistry, biosynthesis and synthesis of Steroids.
CP 200CHP35	Multistep Synthesis of Organic Compounds	Local -National- Regional- Global developmental needs	1. Acquire knowledge on how to synthesis Organic Compounds.
CP 200CHP36	Estimations and Chromatograph y	Local -National- Regional- Global developmental needs	1. Acquire knowledge on how to Estimate and Separate the Organic Compounds.
CP 20OCHT41	ORGANIC REACTION MECHANISM S-II and PERICYCLIC	Local -National- Regional- Global developmental needs	 Acquire knowledge on Free Radical Reactions, Quantitative relationships between Molecular structure and Chemical reactivity and Rearrangements. To understand knowledge on

	REACTIONS		 Methodologies in asymmetric synthesis. 3. Acquire knowledge on Molecular orbital symmetry, frontier orbitals of some compounds, classification of pericyclic reactions and Electrocyclic reactions. 4. To understand FMO,PMOapproach for the explanation of sigma tropic rearrangements under thermal and photochemical conditions, sigmatropic rearrangements.
CP 20OCHT42	ORGANIC SPECTROSCO PY-II	Local -National- Regional- Global developmental needs	 Acquire knowledge on Optical Rotatory Dispersion and The octant rule- application in structural studies-α- halo keto rule. To understand Improving the PMR spectrum, Simplification of complex spectra,2D NMR spectroscopy. To understand how to deduce the structure of unknown compound by using fallowing spectral data (UV, IR, NMR (1H&13C) and mass spectrometry). To understand Separation Techniques and Instrumental Techniques (GC,HPLC,XRD).
CP 20OCHT43	MODERN ORGANIC SYNTHESIS-II	Local -National- Regional- Global developmental needs	 Acquire knowledge on OrganoSilanes and it's Synthetic applications. To understand properties and Synthetic applications of the oxidizing reagents in the oxidation of functional groups like alkenes, alkynes, alcohols, aldehydes and ketones. To understand different types of Catalytic reductions, properties and Synthetic applications of the Reducing reagents in the reduction of functional groups. Acquire knowledge on Retro Synthetic Analysis.
CP 20OCHT44	BIO- ORGANIC CHEMISTRY	Local -National- Regional- Global developmental needs	 Acquire knowledge on Biopolymers and Enzymes. Acquire knowledge on Antimalarials& Antibiotics. Acquire knowledge on Vitamins and Prostaglandins. Acquire knowledge on Nucleic Acids.
CP 20OCHP45	Chromatographi c Separation and Isolation	Local -National- Regional- Global	1. Acquire knowledge on Thin layer chromatography: Determination of purity of a given sample, monitoring the progress of

	&Identification	developmental	chemical reactions, identification of unknown
	of Natural	needs	organic compounds by comparing the Rf
	Products		values of known standards.
			2. Acquire knowledge on Isolation and
			identification of Natural Products .
СР	Spectral	Local -National-	1. To understand how to deduce the
200CHP46	Identification of	Regional-	structure of unknown compound by using
20000111.0	Organic	Global	fallowing spectral data (UV, IR, NMR
	Compounds	developmental	(1H&13C) and mass spectrometry).
	(UV,IR,1HNM	needs	
	R,14CNMR and		
	Mass)		