AKKINENI NAGESWARA RAO COLLEGE

(WITH POST-GRADUATE COURSES)
(AUTONOMOUS & AFFILIATED TO KRISHNA UNIVERSITY)
POST BOX NO.20, GUDIVADA-521301, KRISHNA DIST., A.P., INDIA
AN ISO 9001:2015 & 14001:2015 CERTIFIED ORGANIZATION

2.6.1: The institution has stated learning outcomes (programme and course outcomes) graduate attributes which are integrated into the assessment process and widely publicised through the website and other documents and attainment of the same are evaluated by the institution

PROGRAMME OUTCOMES &

SPECIFIC OUTCOMES

UG Department of Commerce

B.com. (Commerce) at Akkineni Nageswa Rao College is designed to produce graduates with the main purpose of accounting is to record, analyze, and communicate financial information about a business or organization. It helps stakeholders make informed decisions, evaluate performance, and assess the financial health and position of the entity. The sector of commerce is expanding daily, with new work prospects flooding the market and employment rates rising globally. Getting a great salary at their desired university is a dream of any student. The best way to make that a possibility is to get one of the market's top-salary jobs. One of the most motivational factors for students finding a career, apart from job satisfaction. detailed jobs for commerce students are Charted accountant (CA),marketing manager, Investment Banker ,Human Resource Manager ,Chartered Financial Analyst (CFA) ,Chief Executive Officer (CEO), Cost Management Accountant (CMA), Product Manager, Entrepreneur, etc.

This degree course gives a strong foundation for higher degree programs like Ph.D.

Programme educational Outcomes (PEOs)

PEO1 – Students will able to understand the concepts of commerce.

PEO2 – Programme aims to develop comprehensive professional skills which are required for commerce graduates.

PEO3 – Students will develop an understanding of various commerce functions such as finance, accounting, financial analysis, project evaluation, and cost accounting

PEO4 – Students will be able to prove the proficiency with the ability to engage exams like C.A, C.S and CMA

PEO5 – Students can do commerce oriented research and consequence of this, they can become Professors in Colleges and Universities.

Programme Specific Outcomes (PSOs)

After the successful completion of B.COM program, the students are expected to

PSO1 – To provide strong base on the course relevant to the area of commerce which helps to choose their career

PSO2 – To enhance knowledge and skills among students which built confident to identify their career opportunities in multiple dimensions.

PSO3 – Nurture the students in intellectual, personal, interpersonal and social skills with a focus on relevant professional career particularly, to maximize professional growth.

PSO4 – Empower the students with necessary competencies and decision making skills to foster the innovative thinking to become an entrepreneur

PSO5 – Strengthen the students to become expert in the field of communication with ethical consciousness.

Program Outcomes (POs)

On successful completion of the B.COM program

PO1 – Build the wide range of knowledge in the areas of accounting concepts and techniques to meet the current and future requirement of the industry.

PO2 – Develop the strong knowledge in the areas such as finance, taxation and laws relating to commerce helps to relate the conceptual and analytical skills in the field of auditing, finance etc.

PO3 – In calculate the students to nurture their skills in personal, interpersonal, intellectual and others skills to develop their professional career and growth.

PO4 – Disseminate students to develop decision making and problem solving skills to undertake their own venture as a feasible career option.

PO5 – Orient and motive the students to develop the needed knowledge in business and academics to develop their employability.

R-20 Regulations

S.No	COURSE OUTCOMES	PO`S
	Course: insurance promotion (code: 20IPN1)	
	The student will be able to	
1	Understand the field level structure and functioning of insurance sector and it's role in protecting the risks	3,4
2	Comprehend pertaining skills and their application for promoting insurance coverage.	4,5
3	prepare better for the Insurance Agent examination conducted by IRDA	3,5
4	Plan 'promoting insurance coverage practice' as one of the career options	4,5

S.No	COURSE OUTCOMES	PO`S
	Course: FINACIAL ACCOUNTING (code: 20FAC2)	
	The student will be able to	
1	Understand the concept of consignment and learn the accounting treatment of the various aspects of consignment.	1,2
2	Analyze the accounting process and preparation of accounts in consignment and joint venture.	2,3
3	Distinguish Joint Venture and Partnership and to learn the methods of maintaining records under Joint Venture.	2,4
4	Determine the useful life and value of the depreciable assets and maintenance of Reserves in business entities.	2,5

Course: BUSINESS ECONOMICS(code: 20BEN2)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Describe the nature of economics in dealing with the issues of scarcity of resources	1,2
2	Analyze supply and demand analysis and its impact on consumer behavior.	2,4
3	Evaluate the factors, such as production and costs affecting firms behavior.	1,3
4	Recognize market failure and the role of government in dealing with those failures.	1

Course: BANKING THEORY AND PRACTICE(code: 20BTP3)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Understand the basic concepts of banks and functions of commercial banks.	4
2	Demonstrate an awareness of law and practice in a banking context.	3
3	Engage in critical analysis of the practice of banking law.	4,5
4	Organize information as it relates to the regulation of banking products and services	3,4

Course: ADVERTISING(code: 20ADV2)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Understand the field of Advertising	4
2	Comprehend opportunities and challenges in Advertising sector	5
3	Prepare a primary advertising model	4,5
4	Understand applying of related skills	5

Course: ADVANCED ACCOUNTING(code: 20ADA3)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Understand the concept of Non-profit organizations and its accounting process	1,2
2	Comprehendtheconceptofsingle-entrysystemandpreparationofstatementofaffairs	2,5
3	Familiarize with the legal formalities at the time of dissolution of the	2,4
4	firmPreparefinancialstatementsforpartnershipfirmondissolutionofthefirm	1,2

Course: Marketing (code: 20MKT3)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Develop an idea about marketing and marketing environment.	3
2	Understand the consumer behavior and market segmentation process	5
3	Comprehend the product life cycle and product line decisions.	4,5
4	Know the process of packaging and labeling to attract the customers	3,5

Course: BUSINESS STATISTICS (code: 20BST3)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Formulate complete ,concise ,and correct mathematical proofs.	3,4
2	Frame problems using multiple mathematical and statistical tools ,measuring	3,5
3	Relationships by using standard techniques	3
4	Build and assess data-based models	3,4

Course: ONLINE BUSINESS (code: 20OBS3)		
S.No	**COURSE OUTCOMES**	**PO`S**
	The student will be able to	
1	Understand the online business and its advantages and disadvantages	4,5
2	Recognize new channels of marketing, their scope and steps involved	3,4
3	Analyze the procurement, payment process, security and shipping in online business	3
4	Create new marketing tools for online business	4,5

Course: CORPORATE ACCOUNTING(code: 20CAT4)		
S.No	**COURSE OUTCOMES**	**PO`S**
	The student will be able to	
1	Understand the Accounting treatment of Share Capital and aware of process of book building.	1,2
2	Demonstrate the procedure for issue of bonus shares and buyback of shares.	2,3
3	Comprehend the important provisions of Companies Act, 2013 and prepare final accounts of a company with Adjustments.	1,2
4	Participate in the preparation of consolidated accounts for a corporate group.	2

Course: COST AND MANAGEMENT ACCOUNTING(code: 20CMA4)		
S.No	**COURSE OUTCOMES**	**PO`S**
	The student will be able to	
1	Understand various costing methods and management techniques.	1,2
2	Apply Cost and Management accounting methods for both manufacturing and service industry.	2
3	Prepare cost sheet, quotations, and tenders to organization for different works.	2,3
4	Analyze cost-volume-profit techniques to determine optimal managerial decisions	1,5

Course: INCOME TAX(code: 20ITX4)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Acquire the complete knowledge of the tax evasion, tax avoidance and tax planning.	3,4
2	Understand the provisions and compute income tax for various sources.	3
3	Grasp amendments made from time to time in Finance Act.	4,5
4	Compute total income and define tax complicacies and structure	5

Course: BUSINESS LAWS (code: 20BLA4)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Understand the legal environment of business and laws of business.	3
2	Highlight the security aspects in the present cyber-crime scenario.	4,5
3	Apply basic legal knowledge to business transactions.	4,5
4	Understand the various provisions of Company Law.	4

Course: AUDITING(code: 20AUD4)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	High light the major accounting soft wares in India.	1,5
2	Apply basic so accounting software into business firms for accounting transactions.	2,4
3	Understand the various versions of Tally and other software.	2,4
4	Integrate the concept of different Accounting software for accounting purpose	4

Course: GOODS AND SERVICE TAX(code: 20GST4)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Understand the basic principles underlying the indirect Taxation statutes.	2,3
2	Examine the method of tax credit. Input and output Tax credit and cross Utilization of Input Tax credit.	3,4
3	Identify and analyze the procedural aspects under different applicable statutes related to GST	5
4	Compute the assessable value of transactions related to goods and services for levy and determination of duty liability.	4,5

Course: ADVANCED CORPORATE ACCOUNTING (code: 20COM16A)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Understand Corporate Accounting environment	1,2
2	Record Transactions related to Purchase of Business ,Amalgamation and Reconstruction	1
3	Analyze the situations of Purchase of Business and Liquidation	2,3
4	Create formulas and calculations relating to Amalgamation, Internal Reconstruction and Holding company accounts	3,4

Course: SOFTWARESOLUTIONS TO ACCOUNTING (code: 20COM17A)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Understand the various versions of Tally and other software's.	1,2
2	Understand the technical environment of accounting software's.	1,3
3	Highlight the major accounting software's in India.	1,5
4	Apply basics of accounting software's into business firms for accounting transaction	2,5

Course: MANAGEMENT ACCOUNTING &PRACITES (code: 20COM18A)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Understand the nature and scope of management accounting and differentiate management accounting, financial accounting and cost accounting	1,5
2	Computer actions and draw inferences	1,4
3	Analyze the performance of the organization by preparing funds flow statement and cash flow statements	2,4
4	Prepare cash budget, fixed budget and flexible budget.	2,4

Course: COST CONTROL TECHNIQUES (code: 20COM19A)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Differentiate cost control, cost reduction concepts and identify effective techniques.	1,4
2	Allocate overheads on the basis of Activity Based Costing.3: Evaluate techniques of cost audit and rules for cost record.	1,3
3	Appraise the application of marginal costing techniques to evaluate performances, fix selling price, make or buy decisions.	2,3
4	Differentiate cost control, cost reduction concepts and identify effective techniques.	1,3

Course: STOCK MARKETS(code: 20COM20A)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Expose to theory and functions of the Share Market in Financial Sector as job careers	3,4
2	Study the functioning of capital markets and create awareness among the public	3
3	Acquire knowledge on operations of Share Market and Research skills	4,5
4	Involve in activities of Mutual Funds and stock market firms	3

Course: STOCK MARKET ANALYSIS(code: 20COM21A)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Expose to theory and functions of the monetary and Financial Sector as job careers	3,4
2	Study the functioning of local Capital markets and	2,4
3	Create awareness among the public by giving reporting after analysis	4
4	Acquire knowledge on operations of Share Market and Research skills	3

Course: ADVERTISING AND MEDIA PLANNING(code: 20COM16B)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Understand the role of advertising in business environment	3,4
2	Understand the legal and ethical issues in advertising	3
3	Acquire skills in creating and developing advertisements	3,5
4	Understand up-to-date advances in the current media industry	3,5

Course: SALES PROMOTION &PRACTICE(code: 20COM17B)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Analyze various sales promotion activities	3
2	Get exposed to new trends in sales Promotion	4,5
3	Understand the concepts of creativity in sales promotion	4
4	Enhance skills to motivate the salesperson to reach their targets	4,5

Course: LOGISTICS SERVICES&PRACTICE(code: 20COM18B)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Appraise the Principles of Logistics and its informatics.	3
2	Examine the Financial Issues in Logistics sector performance.	5
3	Describe basic EOQ model and ABC analysis.	3,4
4	Determine warehouse safety rules, concepts of Retail Logistics and strategies of SupplyChain Management.	4,5

Course: EXPORT IMPORT PROCEDURE &PRACTICE (code: 20COM19B)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Understand the significance of Export and Import Management and its role in Economyand as job careers	3,4
2	Acquire knowledge on Procedures of export and import	4
3	Involve in pre and post EXIM activities	3,5
4	Enhance their skills by practicing in foreign trade	5

Course: LIFE INSURANCE WITH PRACTICE (code: 20COM20B)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Understand the Features of Life Insurance , schemes and policies and insurance companies in India	3,4
2	Analyze various schemes and policies related to Life Insurance sector	4,5
3	Choose suitable insurance policy for given situation and respective persons	3,5
4	Acquire Insurance Agency skills and other administrative skills	5

Course: GENERAL INSURANCE WITH PRACTICE(code: 20COM21B)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Understand the Features of General Insurance and Insurance Companies in India	4
2	Analyze various schemes and policies related to General Insurance sector	3
3	Choose suitable insurance policy under Health, Fire, Motor, and Marine Insurances	4,5
4	Acquire General Insurance Agency skills and administrative skills	3,5

Course: DIGITAL MARKETING(code: 20COM16C)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Analyze online Micro and Macro Environment	3,5
2	Design and create website	3,4
3	Discuss search engine marketing	4
4	Create blogs, videos, and share	3

Course: SERVICE MARKETING(code: 20COM17C)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Discuss the reasons for growth of service sector.	3,5
2	Examine the marketing strategies of Banking Services, insurance and education services.	3,4
3	Review conflict handling and customer Responses in services marketing	3,5
4	Describe segmentation strategies in service marketing.	3

Course: **INCOME TAX ASSESSMENT PROCEDURES AND PRACTICE(code: 20COM18C)**

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Understand the basic concepts in computation of tax liability under all heads of incomeof the individuals.	2,3
2	Analyze the clubbing provisions, aggregate income after set-off and carry forward oflosses under the Income Tax Act.	2
3	Compute taxable income and tax liability of individuals and firms.	2,5
4	Acquire the ability to file online returns of income	3

Course: GST PROCEDURE AND PRACTICE(code: 20COM19C)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Understand the concept of Liability and Payment of GST	2,3
2	Create a new company in Tally with GST components and establish environment for GST Voucher entry.	3
3	Comprehend the utilization of input tax credit, and the reverse charge mechanism in GST	2,5
4	Acquire Skills of preparation of GST Returns in accordance with GST Law and Tally	5

Course: E- COMMERCE

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Understand the mechanism of ecommerce	2,4
2	Equip specialization in website designing for e commerce	3,4
3	Enhance their skills in operational services of e commerce	3
4	Involve in activities of e commerce	2,4

Course: E- FILING (code: 20COM21C)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Understand and apply basic knowledge of Indian Tax System	2,4
2	Equip specialization in taxation system	2
3	Enhance their skills in presenting returns	2,5
4	Involve in activities of Charted Accountants for filing returns	2,3

Course: FUNDAMENTAL OF COMMERCE (code:23FC1)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Identify the role commerce in Economic Development and Societal Development.	1,2
2	Equip withthe knowledge of imports and exports and Balance of Payments.	2,4
3	Develop the skill of accounting and accounting principles.	2,3,4
4	They acquire knowledge on micro and micro economics and factors determine demand and supply.	4,5

Course: BUSINESS ORGANISATION (code:23BO1)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Ability to understand the concept of Business Organization along with the basic laws and norms of Business Organization.	3,4,5
2	The ability to understand the terminologies associated with the field of Business Organization along with their relevance and	3,4
3	to identify the appropriate types and functioning of Business Organization for solving different problems.	4
4	The application of Business Organization principles to solve business and industry related problems and to understand the concept of Sole Proprietorship, Partnership and Joint Stock Company etc.	3

Course: FINANCIAL ACCOUNTING (code:23FAC2)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	At the end of the course, the student will able to identify transactions	1,2
2	events that need to be recorded in the books of accounts.	1,4
3	Equip with the knowledge of accounting process	2,4
4	preparation of final accounts of sole trader	1,2

Course: BUSINESS MANAGEMENT (code:23BM2)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Understand the concept of Business Management along with the basic laws and norms.	4,5
2	Able to understand the terminologies associated with the field of Business Management	2,3
3	control along with their relevance.	2,4
4	to identify the appropriate method and techniques of Business Management for solving different problems	2,5

R-18 Regulations

Course: Fundamentals of accounting (code :18FAC11)

S.No	COURSE OUTCOMES	PO`S
	The graduate will be able to	
1	Identify transactions and events that need to be recorded in the books of accounts.	1,2,5
2	Equip with the knowledge of accounting process and preparation of final accounts of sole trader.	1,2,3
3	Develop the skill of recording financial transactions and preparation of reports in accordance with GAAP.	1,2,4
4	Analyze the difference between cash book and pass book in terms of balance and maker reconciliation	4,5

Course: Business organization(code: 18BOG11)		
S.No	**COURSE OUTCOMES**	**PO`S**
	The student will be able to	
1	The concepts &features of business – industry – classification –relationship of trade industry and commerce.	2,3
2	Business functions and entrepreneurship.	3,5
3	Forms of business organizations.	4,5
4	Joint stock company – difference between private limited and public limited companies.	3,4

Course: Business organization and management (code: 18BOM1)		
S.No	**COURSE OUTCOMES**	**PO`S**
	The student will be able to	
1	The concepts &features of business – industry – classification – relationship of trade industry and commerce.	3,4,5
2	Business functions and entrepreneurship.	3,5
3	Forms of business organizations	3,4
4	Joint stock company – difference between private limited and public limited companies	3,4,5
5	Company incorporation, delegations and decentralization ,levels of management	3,5

Course: Business economics (code: 18BE11)		
S.No	**COURSE OUTCOMES**	**PO`S**
	The graduate will be able to	
1	Business economics	2,5
2	Demand analysis – types	3,5
3	Cost and revenue analysis	4,5
4	Break even analysis	1,3

Course: Business environment(code: 18BEN2)

S.No	COURSE OUTCOMES	PO`S
	The graduate will be able to	
1	Business environment	2,3
2	Economic growth	3,4
3	Development and planning	3,5
4	Economic policies	2,4

Course: Fundamentals of accounting -II(code: 18FA22)

S.No	COURSE OUTCOMES	PO`S
	The graduate will be able to	
1	Depreciation methods	1,2
2	Types of provisions & reserves	2,3
3	Bills of exchange problems	1,2
4	Consignment accounts, joint venture accounts	1,2,3

Course: Business economics- II(code: 18BEC2)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Production and costs of business economics	4,5
2	Market structure , types	2,3
3	National income and economic systems	2,5
4	Structural reforms in India	3,4,5

Course: corporate accounting(code: 18CAT3)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Accounting for share capital	1,3,5
2	Issue and redemption of debentures	1,5
3	Valuation of goodwill and shares	4,5
4	Company final accounts - problems	1,2,3

Course: Business statistics(code: 18BST3)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Introduction to statistics	3,4
2	Measures of central tendency	3,4,5
3	Measures of dispersion and skewers	4,5
4	Measure of relation ,time series analysis and index numbers	3,4

Course: Banking theory & practice (code: 18BTP3)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Banking – systems – development in India	1,4,5
2	Relationship between banker to customer	2,4
3	Collecting banker and paying banker	1,2
4	RBI functions	2,5

Course: Accounting for service organization (code: 18ASO4)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Non trading service organization	4,5
2	Bank accounts - problems	1,2
3	Insurance companies – problems	2,3
4	General insurance – problems	2,3

Course: Business Laws(code: 18BLA4)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Indian contract act 1872	3,5
2	Offer and acceptance – capacity of the parties	2
3	Sale of goods act 1930	3
4	Cyber law and procedures	2

Course: Income tax (code: 18ITX4)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Basic concepts of income tax	1,2
2	Salary income – house property	5
3	Capital gains – income other sources, problems	1,2,3
4	Under section 80 c – 80 u deductions	1,2

Course: Entrepreneurship(code: 18ES4)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Entrepreneur vs Entrepreneurship	3
2	Preparation of project report	4,5
3	Small scale industries , project assistance	4,5
4	Government processing – Tax advantages	2,4

Course: Business leadership (code: 18BLS5)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Leadership – trades , skills and styles – leadership development	3,5
2	Qualities of a good leader	3,5
3	Decision making and leadership	4,5
4	Profiles of a few inspirational leaders in business	3,4

Course: cost accounting(code:18CAC5)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	How to prepare a cost sheet	1,3
2	Elements of cost – material control – techniques – methods of pricing	1,3
3	Labor and overheads	3
4	Costing – methods - techniques	1,3

Course: Taxation (code: 18TX5)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Tax structure in India	2,3
2	Planning and recovery	3,5
3	Computation of income	3,4
4	Value added tax – goods and service tax	1,2

Course: Goods and services tax fundamentals (code: 18GST5)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	GST – concepts – justification for introduction of GST	1,2
2	Taxes and duties outside the review of GST	2,4
3	Interstate goods and services tax	1,3
4	Time of supply of goods and services	3,4

Course: Commercial geography (code: 18CEG5)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	The earth internal structure – evaluation – global warming	3,4
2	India – agriculture – problems – development	5
3	India – forestry – conservation – a forestation	4
4	India – minerals and mining – district wise profile	3,4

Course: Central banking(code: 18CBA5)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Evolution and functions of centrals banks in developed and developing countries	1,3
2	Reserve bank of India	3
3	Monetary and credit policies	3,4
4	Supervision of banks	2,4

Course: Rural and farm credit (code: 18RFC5)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Rural credit	3
2	Financial inclusion	5
3	Rural credit agencies	4,5
4	Farm credit – kisan credit card (KCC) scheme	3,4

Course: Media management (code: 18MMA6)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Media management – role of media	4
2	Unique features of print media	4,5
3	Media technology and internet	3,4
4	Media and ethics	4

Course: marketing(code: 18MAR6)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Concepts of marketing	3
2	Consumer markets and buyer behavior	3,4
3	Product life cycle	4,5
4	Promotion and distribution	5

Course: Auditing(code: 18AUD6)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Auditing – meaning , objectives and importance types of audit	1,2
2	Vouching and investigation	1,5
3	Audit vs investigation	1,3
4	Company audit and auditor report – auditor qualifications	3,4,5

Course: management accounting (code: 18MAC6)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	MANAGEMENT ACOUNTING – financial statement analysis and interpretation	4
2	Ratio analysis	3,4
3	Funds flow statement and cash flow statement	1,2
4	Break even analysis and decision making	1,3,5

Course: financial services (code: 18FS6)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Financial services – role of financial services	2
2	Merchant banking services	3
3	Leasing and hire purchase system	5
4	Other financial services – factoring and forfeiting	4,5

Course: Marketing of financial services (code18MFS6)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Difference between goods and services	3
2	Constructing service environment	4
3	Customer loyalty	5
4	Distributing services	3,4

UG Department of Computer Science

Computer science is the study of computers and computational systems. It is a broad field which includes everything from the algorithms that make up software to how software interacts with hardware to how well software is developed and designed. Computer scientists use various mathematical algorithms, coding procedures, and their expert programming skills to study computer processes and develop new software and systems.

Computing is part of everything we do. Computing drives innovation in engineering, business, entertainment, education, and the sciences—and it provides solutions to complex, challenging problems of all kinds.

Computer science focuses on the development and testing of software and software systems. It involves working with mathematical models, data analysis and security, algorithms, and computational theory. Computer scientists define the computational principles that are the basis of all software.

Information technology (IT) focuses on the development, implementation, support, and management of computers and information systems. IT involves working both with hardware (CPUs, RAM, hard disks) and software (operating systems, web browsers, mobile applications). IT professionals make sure that computers, networks, and systems work well for all users.

Principal areas of study and careers within computer science include artificial intelligence, computer systems and networks, security, database systems, human-computer interaction, vision and graphics, numerical analysis, programming languages, software engineering, bioinformatics, and theory of computing.

Some common job titles for computer scientists include:

- Computer Programmer
- Information Technology Specialist
- Data Scientist
- Web Optimization Specialist
- Database Administrator
- Systems Analyst
- Web Developer
- Quality Assurance Engineer
- Business Intelligence Analyst
- Systems Engineer
- Product Manager
- Software Engineer
- Hardware Engineer
- Front-End Developer
- Back-End Developer
- Full-Stack Developer
- Mobile Developer
- Network Administrator
- Chief Information Officer
- Security Analyst
- Video Game Developer
- Health Information Technician

Objectives of Department of Computer Science

1. Possess practical and theoretical knowledge of computer science sufficient to earn a living and contribute to the economic development of the country.
2. Be prepared for advanced education in computer science.
3. Understand and respect the professional standards of ethics expected of computer scientists and appreciate the social impact of computing.
4. Recognize the importance and possess the problem solving skills that are necessary for life-long learning.

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

Programme Educational Objectives (PEOs)	
The**B.Com(ComputerApplications)**program describe accomplishments that graduates are Expected to attain within five to seven years after graduation	
PEO1	To Provide students with specific knowledge and skills relevant to their Disciplines and careers.
PEO2	To make the students acquainted with technical and practical Concepts for understanding the real business problems using different programming Languages.
PEO3	To train the students on practical business applications using high level Programming languages in real world.
PEO4	To make the students aware about the useful applications of different computer Languages that solve real world problems.
PEO5	To enhance the knowledge on visual based programming language and object-oriented language in different business applications using various design principles portraying the concepts of computer applications in business Activities.

PROGRAMME OUTCOMES (POS)

Programme Outcomes(POs)	
After the successful completion of **B.Com(ComputerApplications)** program the students are expected to	
PO1	Develop the accounting, finance, banking, Insurance, marketing as well as the computer application knowledge to the students.
PO2	Create awareness of the students about Business law, Tax Law and legislations Related to business and computer applications
PO3	Get the training to learn how to develop successful computer programs to solve The business problems for increasing the productivity of the e-business.
PO4	Obtain the practical application exposure on MS-office and oracle software.
PO5	Apply object oriented or non-object oriented techniques to solve business computing problems which make students a good programmer.

PROGRAMME SPECIFIC OUTCOMES (PSOs)

The Department of Computer Science, Akkineni Nageswara Rao College (Autonomous) Gudivada, offers Three Year (comprising 6 semesters) Undergraduate Program in Computer Applications with objective of empowering students to acquire all-inclusiveunderstanding of Computer Knowledge both theoretical and practical as an academic discipline. Upon completion of B.Com. Computer Applications Degree Programsuccessfully, the students shall acquire the following skills and competencies.

Programme Specific Outcomes(PSOs)	
After the successful completion of **B.Com(ComputerApplications)** programme, the students are expected to	
PSO1	Know and apply the various business management and computer applications Concepts to solve the real-world problems.
PSO2	Acquire the knowledge on object-based computer applications in various Business fields.
PSO3	Solve the business applications related issues of using oracle and object Oriented programming languages
PSO4	Analyze the real e-business problems by using the different applications of procedure-oriented language programs
PSO5	Enrich the practical knowledge on applications of accounting and programming Languages in business ventures.

COURSE OUTCOMES (COs)

Course Code: 20INT1

Course Name: INFORMATION TECHNOLOGY

Upon completion of this course, the student will be able to		PSO	PO
CO 1	To understand about the fundamentals of computer and its components.	1,4	2,3
CO 2	To earn knowledge of different types of memory, networks.	2,4	2,3,4
CO 3	To know Operating system and different types of Operating system.	1,2	2,3
CO 4	To State & Explain Presentation Software with effective slide shows & animation.	3,5	4,5
CO 5	To State & Explain Excel software for calculation, analysis, logical reasoning and working with multiple worksheets including recording & running a Macro and Pivot Table Concepts.	3,5	4,5
CO6	To create database tables, forms and reports.	3,5	4,5

Course Code: 20EWD2

Course Name: E-COMMERCE AND WEB DESIGNING

Upon completion of this course, the student will be able to		PSO	PO
CO 1	To purchase product online from E-Commerce site and learn the payment gateway system.	1,2	2,3
CO 2	To State & Explain Browser Security & safety through checking SSL certificate.	1,3	4,5
CO 3	To create cyber secure password, Privacy settings on face book.	4,5	2,5
CO 4	To Sate and Explain Payment system & Online banking	1,2	1,2
CO 5	To state & Explain Cyber law.	1,2	1,2
CO 6	Create simple static web page using HTML.	3,5	4,5
CO 7	Compute latest web technologies and tools.	3,5	4,5
CO8	Develop Dynamic web pages by using DHTML.	3,5	4,5
CO9	Design interactive web pages using HTML and Style sheets.	3,5	4,5

Course Code: 20PWC3

Course Name: PROGRAMMING WITH C & C++

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Design, develop and test programs written in 'C' and C++.	1,5	1,3
CO 2	Develop programming skills	2,3	1,3
CO 3	Declaration of variables and constants use of operators and expressions	2,5	2,3
CO 4	learn the syntax and semantics of programming language	1,5	2,3
CO 5	Be familiar with programming environment of C and C++	1,2	3,5
CO 6	Understanding a concept of object thinking within the framework of functional model	3,4	3,5
CO7	Write program on a computer, edit, compile, debug, correct, recompile and run it.	3,5	3,5

Course Code: 20OOP4

Course Name: Object Oriented Programming with Java

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Understand the basic concepts of Object Oriented Programming.	1,2	1,3
CO 2	Write Java programs involving control statements, arrays, String and String Methods.	3,5	3,4
CO 3	Develop reusable programs using the concepts of class, object, inheritance, and polymorphism.	3,5	3,4,5
CO 4	Understands the concept of Packages, Creating a File, Read/Write the Files.	3,5	2,5
CO 5	Apply the concepts of Multithreading and Exception handling to develop efficient codes.	2,5	4,5

Course Code: 20DBM4

Course Name: DATA BASE MANAGEMENT SYSTEM

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Design and model of data in database.	3,5	3,4
CO 2	Store, Retrieve data in database.	1,5	1,4,5

Course Code: 20COM6A

Course Name: BIGDATA ANALYTICS USING R

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Understand data and classification of digital data.	2,4	2,3
CO 2	Understand Big Data Analytics.	2,4	2,3
CO 3	Load data in to R.	1,5	3,4
CO 4	Organize data in the form of R objects and manipulate them as needed.	1,4,5	3,4,5
CO5	Perform analytics using R programming.	4,5	4,5

Course Code: 20COM7A

Course Name: DATA SCIENCE USING PYTHON

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Understand basic concepts of data science	1,2	2,3
CO 2	Understand why python is a useful scripting language for developers.	1,2	2,3
CO 3	Use standard programming constructs like selection and repetition.	1,5	2,3
CO 4	Use aggregated data (list, tuple, and dictionary).	4,5	4,5
CO 5	Implement functions and modules.	3,5	3,4

Course Code: 20COM6B

Course Name: MOBILE APPLICATION DEVELOPMENT

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Identify basic terms ,tools and software related to android Systems	1,2	1,2
CO 2	Describe components of IDE, understand features of android development tools	2,4	3,4
CO 3	Describe the layouts and controls	2,5	3,4
CO 4	Explain the significance of displays using the given view	1,3	4,5
CO 5	Explain the features of services and able to publish android Application	2,4,5	3,5
CO 6	Developing interesting Android applications using MIT App Inventor	4,5	4,5

Course Code: 20COM7B

Course Name: CYBER SECURITY AND MALWARE ANALYSIS

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Understand the computer networks, networking tools and cyber Security	1,2	2,3
CO 2	Learn about NIST Cyber Security Framework	2,4	1,3
CO 3	Understand the OWASP Vulnerabilities	2,4	2,3
CO 4	Implement various Malware analysis tools	2,5	4,5
CO 5	Understand about Information Technology act 2000	1,2	2,3

Course Code: 20COM6C

Course Name: E– COMMERCE APPLICATION DEVELOPMENT

Upon completion of this course, the student will be able to		PSO	PO
CO 1	To apply in an integrative and summative fashion the students' knowledge in all fields of business studies by drafting a website presence plan.	1,2	2,3
CO 2	To understand the factors needed in order to be a successful in Ecommerce	1,2	1,2
CO 3	To gain the skills to bring together knowledge gathered about the different components of building a web presence	1,3	1,2,3
CO 4	To critically think about problems and issues that might pop up during the establishment of the web presence	4,5	1,4,5
CO 5	To apply Word Press as a content management system (CMS), Plan their website by choosing color schemes, fonts, layouts, and more	1,5	4,5

Course Code: 20COM7C

Course Name: REAL TIME GOVERNANCE SYSTEM (RTGS)

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Understand the terms regarding Governance, E-Governance and RTGS	1,2	1,2
CO 2	Learn about E-Governance Infrastructure	2,4	1,2,3
CO 3	Understand the E-Governance implementation in several countries	2,5	2,3
CO 4	Understand the E-Governance implementation in several Indian states	2,5	1,2,3
CO 5	Understand the applications of RTG	2,3	1,3

Course Code: 20COM6D

Course Name: MULTIMEDIA TOOLS AND APPLICATIONS

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Gain knowledge on the concepts related to Multimedia.	1,2	2,3
CO 2	Understand the concepts like image data representation and color modes.	1,4	2,3
CO 3	Understand the different types of video signals and digital audio.	1,2	2,3
CO 4	Know about multimedia data compression types and audio compression standards	1,2	1,2,3
CO 5	Know about basic video compression techniques.	1,2	1,4,5

Course Code: 20COM7D

Course Name: DIGITAL IMAGING

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Gain knowledge about Types of Graphics, Types of Objects and Types of video editing tools	1,2	2,3
CO 2	Show their skills in editing and altering photographs for through a basic understanding of the tool box.	4,5	3,4
CO 3	Gain knowledge in using the layers.	1,5	4,5
CO 4	Gain knowledge in using the selection tools, repair tools.	1,5	4,5
CO5	Gain knowledge in using selection tools, applying filters and can show their skills.	1,5	4,5

COURSE OUTCOMES (COs)

Course Code: 18COM1

Course Name: COMPUTER FUNDAMENTALS & PHOTOSHOP

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Identify the components of a computer system.	1,4	2,3
CO 2	Describe the logical organization, memory, software and peripheral devices of a computer system.	2,4	2,3,4
CO 3	Describe the usage of computers and why computers are essential components in business and society.	1,2	2,3
CO 4	Define binary, hexadecimal and octal number systems and their arithmetic.	3,5	4,5
CO 5	Demonstrate basic skills using Photoshop software.	3,5	4,5
CO6	Demonstrate proficiency with layers and Filters.	3,5	4,5

Course Code: 18ICT12

Course Name: INFORMATION AND COMMUNICATION TECHNOLOGY – I

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Describe the basic parts of computer, elements of computers, characteristics of computer and capabilities of computer.	1,2	2,3
CO 2	Use and operate in the MS WORD 2010, operations such as copying, organizing, deleting, and sorting files and folders.	1,3	4,5
CO 3	Apply the knowledge on how to copy, save, sort, delete, create folder, retrieve, browse the files and apply the short-cut keys in the mouse operations.	4,5	2,5
CO 4	Able to do page-setup and print documents.	1,2	1,2
CO 5	Explain how to embed using the OLE application with other office application.	1,2	1,2

Course Code: 18ICT23

Course Name: ICT – II: INTERNET FUNDAMENTALS AND WEB TOOLS

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Describe various types of network standards and communication software.	1,5	1,3
CO 2	Define and explain about social networks, and online email services.	2,3	1,3
CO 3	Use the web and find information.	2,5	2,3
CO 4	Explain about web browsers and search engines.	1,5	2,3
CO 5	Create simple static webpage using HTML.	1,2	3,5

Course Code: 18OAT3

Course Name: OFFICE AUTOMATION TOOLS

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Compute on spread sheets using different functions and formulas.	1,2	1,5
CO 2	Analyze the data by creating charts, scenarios and what-if analysis.	2,4	3,4
CO 3	Create a simple data base and manipulate the data as per required.	2,4	2,3

Course Code: 5007PRC15

Course Name: PROGRAMMING IN 'C'

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Appreciate and understand the working of a digital computer	3,5	3,4
CO 2	Analyze a given problem and develop an algorithm to solve the Problem	1,5	1,4,5
CO 3	Improve upon a solution to a problem	2,4	1,3
CO 4	Use the 'C' language constructs in the right way	3,5	3,5
CO 5	Design, develop and test programs written in 'C'	3,5	4,5

Course Code: 5007DBM15

Course Name: DATABASE MANAGEMENT SYSTEM

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Design and model of data in database.	2,4	2,3
CO 2	Select, Store, retrieve data in database.	2,4	2,3

Course Code: 5007WTL15

Course Name: WEB TECHNOLOGIES

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Create a graphic, table, form, links within a web page.	1,2	2,3
CO 2	Use cascading style sheets.	1,2	2,3
CO 3	Use operators, variables, arrays, control structures, functions and objects in JavaScript.	1,5	2,3
CO 4	Design interactive web pages using html, style sheets and JavaScript.	4,5	4,5

Course Code: 6007TLY15

Course Name: TALLY

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Use this software for business accounting.	1,2	1,2
CO 2	Compute simple and complex day to day activities associated in an enterprise.	2,4	3,4

Course Code: 6007ECM15

Course Name: E- COMMERCE

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Define and differentiate various types of Ecommerce.	1,2	2,3
CO 2	Describe Hardware and Software Technologies for Ecommerce.	2,4	1,3
CO 3	Describe the process of Selling and Marketing on web.	2,4	2,3
CO 4	Explain the Inter-Organizational Commerce and Intra-Organizational Commerce;	2,5	4,5
CO 5	Describe various types of e-Payment Systems and risks associated with them;	1,2	2,3
CO6	Define and Describe E-business and its Models.	1,2,3	1,3

Course Code: 6007PHP15

Course Name: PHP AND MYSQL

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Develop simple web applications with PHP.	14,5	3,4
CO 2	Use PHP with a MySQL database.	3,5	4,5

DEPTMENT OF ECONOMICS

Economic history is the study of history using methodological tools from economics or with a special attention to economic phenomena. Research is conducted using a combination of historical methods, statistical methods and the application of economic theory to historical situations and institutions. The field can encompass a wide variety of topics, including equality, finance, technology, labour, and business. It emphasizes historicizing the economy itself, analyzing it as a dynamic entity and attempting to provide insights into the way it is structured and conceived. Using both quantitative data and qualitative sources, economic historians emphasize understanding the historical context in which major economic events take place. They often focus on the institutional dynamics of systems of production, labor, and capital, as well as the economy's impact on society, culture, and language. Scholars of the discipline may approach their analysis from the perspective of different schools of economic thought, such as mainstream economics, Austrian economics, Marxian economics, the Chicago school of economics, and Keynesian economics.

PROGRAMME OUTCOMES

PO 1 Area Expertise:

➢ Acquire far reaching information and aptitudes.

➢ Make utilization of the learning in a creative way.

➢ Effectively apply the learning and abilities to address different issues.

PO 2 Life-long Learning and Research:

➢ Learn "how to learn"- Self roused and self coordinated learning.

➢ Adapt to the regularly rising requests of work spot and life.

➢ Be curious and set up circumstances and logical results relationship.

➢ Investigate and report.

PO 3 Modern gear Usage

➢ Use ICT successfully.

➢ Access, recover and utilize confirmed data.

➢ Access, recover and utilize confirmed information. Have learning of programming applications to break down information.

PO 4 Computing Skills and Ethics

➢ Develop basis and logical reasoning procedure.

➢ Use innovation keenly for correspondence, diversion and to support humanity.

➢ Ensure moral practices all through ones undertakings for the prosperity of humanrace.

➢

PO 5 Complex issue Investigation and Solving

- Predict and investigate issues.
- Frame theories.
- Investigate and translate experimental information.
- Plan and execute activity.

PO 6 Perform viably as Individuals and in Teams

- Work proficiently as a person
- Cooperate, facilitate and perform adequately in different groups/gatherings.
- Prioritize regular enthusiasm to singular intrigue.

PO 7 Efficient Communication and Life Skills

- Express considerations in a viable way
- Listen, comprehend and venture sees in a persuading way.
- Decide suitable media to share data
- Develop aptitudes to exhibit huge data unmistakably and briefly to intrigued gatherings.

PO 8 Environmental Sustainability

- Understand reasonably the Environmental difficulties.
- Think fundamentally on condition maintainability measures.
- Propagate and pursue condition cordial practices.

PO 9 Societal commitment

- Render administration for the general great of the general public.
- Involve deliberately in social advancement exercises at Regional, National,worldwide dimensions.
- Have possess pride in volunteering to address societal issues viz: cataclysms,calamities, neediness, scourges.
- Be an enthusiastic native to maintain the estimations of the country

PO 10 Effective Project Management

- Identify the objectives, goals and parts of a venture and choose the fitting time offruition.
- Plan, sort out and direct the undertakings of groups to accomplish the set focuses intime.

  Be capable in recognizing openings and create methodologies for possibilities

PROGRAMME SPECIFIC OUTCOMES

PSO 1: Understand the basic concepts like National Income, Poverty, Employment, International trade. Fiscal and monetary policies, Economic conditions of various historic periods, Satyavahana's Foreign trade, Mathematics, Agriculture economy from ancient period to modern times and their role in administration for formulating relevant policies for effective utilization of resources and tackling variousproblems like unemployment and improved standard of living.

PSO 2: To analyze the economic importance of various sectors like agriculture, industry and service in different dynasties that influence administration like Chola administration (Local self Government), Mauryan administration (Urban Governance) and British administration.

PSO 3: To understand the impact of agriculture and foreign trade in economic development that attract foreign invaders towards India, resulting in changed administration in due course up to and afterindependence.

PSO 4: To provide life skills required for gainful employment by using domain knowledge such as Economic Services, Historians/ History writing and bureaucrats at various level

I Semester - Course Outcome

MICRO ECONOMIC ANALYSIS

CO1	How households and firms interact in various market structures to determine price and quantity of a good produced.
CO2	Understand that economics is about the allocation of scarce resources, that scarcity forces of choice, trade off exist and that every choice as a opportunity cost
CO3	Producers equilibrium with the help of isoquants, expansion path and elasticity of substitutions
CO4	Different types of markets and their features
CO5	Demonstrate marginal productivity theory of distribution , theory of wages identify different types of rent and illustrate different theories of interest and profit.

II Semester - Course Outcomes

MACRO ECONOMIC ANALYSIS

CO1	Difference between Micro and Macro Economics, importance of macro Economics and Macro Economic variables Define and explain the process of calculating national income, identify its components, demonstrate circular flow of income, analyse the various identities with government and international trade
CO2	Demonstrate the meaning and functions of money, illustrate various versions of quantity theory of money Explain the meaning of consumption function, relationship between APC and MPC, consumption and income, concept of multiplier and accelerator, MEC and rate of interest
CO3	Illustrate the meaning of inflation, identify different kinds of inflation, causes and effects of inflation on different sectors of the economy, describe different measures to control it.
CO4	Analyse different phases of trade cycles, demonstrate various phases of trade cycles, understand the impact of cyclical fluctuations on the growth of business, and lay policies to control trade cycles.
CO5	Identify types of banks, explain the meaning and functions of commercial banks, illustrate how bank create credit, and suggest the instruments to control it

DEVELOPMENT ECONOMICS

CO1	Distinction between growth and development with examples, COVID – 19 Impact on Indian economy and sustainable development.
CO2	Factors contributing to development, Choice of Techniques and a few important models and strategies of growth
CO3	The theoretical aspects of a few models and strategies of economic growth
CO4	To know Strategies of Economic Development
CO5	Role and importance of various financial and other institutions in the context of India's economic development

IV Semester - Course Outcomes

ECONOMIC DEVELOPMENT-INDIA AND ANDHRA PRADESH

CO1	Objectives, outlays and achievements of economic plans and growth strategies
CO2	Available Resources, demographic issues, general problems of poverty and unemployment and relevant policies
CO3	Leading issues of current importance relating to India and AP economy, major policies and programmes Covid– 19 and its impact on Indian economy
CO4	Indian Tax system, recent changes, issues of public expenditure and public debt, recent finance commissions and devolution of funds
CO5	Major issues of economic development of Andhra Pradesh after bifurcation andCentral assistance

IV Semester - Course Outcomes

STASTICAL METHODS FOR ECONOMICS

CO1	The definitions, terms and their meaning relating to statistical methods
CO2	various formulae used to measure central tendency
CO3	To know the Histogram, Frequency Polygon and Frequency Curve Different types of Bar diagrams
CO4	Uses of Correlation and Regression analysis, time series and index numbers in economicanalysis
CO5	different kinds of statistical problems using various principles and formulae relating tocentral tendency, correlation, regression, time series and indices to interpret data and suggest solutions to economic problems

V Semester - Course Outcomes

INSURANCE SERVICES

CO1	Evaluate the growth and Development of Insurance Business.
CO2	Identify and analyse the opportunities related insurance services in local rural area
CO3	Apply the concepts and principles of insurance to build a career in Insurance services
CO4	Demonstrate practical skills to enable them to start insurance service agency or earnwage employment in it.
CO5	Understanding the Customer and Case Studies

V Semester - Course Outcomes

BANKING AND FINACIAL SERVICES

CO1	Explain the concept and essentials banking and financial services.
CO2	Identify and analyse the employment opportunities related to banks and other financial institutions.
CO3	Apply the concepts to banking and financial opportunities and formulate ideas related to them
CO4	Demonstrate practical skills to enable them to get employment in Banks and other financial institutions as business correspondents or Common Service Centers or marketing agents.
CO5	To gain basic knowledge of branches of Functional Management: personnel, marketing, strategic management and production management.

UG DEPARTMENT OF HISTORY

PROGRAMME SPECIFIC OUTCOMES (PSOs)

PSO-1: The students obtain wider knowledge of facts and figures of the past and make the learner assimilate the essence of that through multidisciplinary approach. It takes the learners into the intellectual forum through the study of history.

PSO-2: History inculcates a sense of nationalism to enable the student community to face the onslaught of communalism, various movements, welfare activities of contemporary rulers etc.

PSO-3: Students will be familiar with introductory, canonical models of consumer and producer behavior and of macro economy have a basic understanding of the operation of a modern economy be able to evaluate the effects of government interventions in individual markets and in the macro economy.

PSO-4: They can analyze operations of markets under varying competitive conditions. They can analyze causes and consequences of unemployment, inflation and economic growth.

PSO-5: The students understand the basic principles of Politics including governing institutions and branches, political wings and organizations, political behavior and the operation of government at both the national and state levels. Understanding government and politics in a comparative perspective and understand government and politics in a global.

I Semester - Course Outcomes (CO)

Paper-1: Ancient Indian History & Culture (From Indus Valley Cultivation to 13thcentaury A.D)

CO 1: The student understands the history of human beings from Indus valley civilization, the Vedic Period.

CO 2: Identify the importance of archaeological and literary sources, analyze the Jain, Buddhist and Vedic faiths of ancient periods.

CO 3: Analyze the origin of the Mauryan Empire, the Guptas, the Pallavas, and the chola kingdom.

CO 4: Increase the awareness of transition from territorial states to emergence of empires in ancient period **CO 5:** Critically examine the nature of monarchic rule and develop a comprehensive understanding of cultural evolution during ancient period.

II Semester - Course Outcomes (CO)
Paper-2: Medieval Indian History & Culture (1206 A.D. to 1764 A.D.)

CO 1: Learn the foreign invasions on India and their consequences.

CO 2: Understand the socio- economic and cultural conditions of medieval India.

CO 3: Describe the advent of Islam in India and study the traces of Political

CO 4: Cultural expansion of Turks & Afghans. Explain the administration, Art and architecture of Vijayanagara Rulers.

CO 5: Mughals and also analyze the rise of the Marathas and contribution of sivaji. Evaluate the establishment of the British rule in India and understand

Paper-3: Modern Indian History & Culture (1764-1947 A. D)

CO 1: It helps to discover the true nature of the British rule and its disastrous impact on Indian economy and society

CO 2: Gauge the disillusionment of people against the Company's rule even during the early 19th century

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

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

CO 5: Evaluate the undercurrent of communal politics that led to India's partition and identify the enemies of India's integrity and sovereignty

IV Semester - Course Outcomes (CO)
Paper-4: History & Culture of Andhra (from 1512 to 1956 AD)

CO I: Interpret social and culture transformation from medieval to modern Andhra

CO 2: Relate key historical development during medieval period occurring in costal Andhra and Telangana regions and analyze socio-political and economic changes under Qutbshahi rules

CO 3: Understand gradual change, or change in certain aspects of society in Andhra, rather than rapid or fundamental changes, and expansion of English East India Company in Andhra.

CO 4: Outline the issues related to caste, women, widow remarriage, child marriage, social reforms and the laws and policies of colonial administration towards these issues.

CO 5: Apply the knowledge of the regional history to understand the regional, linguistic and other cultural aspirations of the present day society

IV Semester - Course Outcomes (CO)

Paper-5: History of Modern World (From 15th Cent. AD to 1945 AD)

CO 1: Demonstrate advanced factual knowledge of world histories, politics, and cultures

CO 2: Assess and appraise the developments in art, literature, and society during the Renaissance and utilize content knowledge of the Reformation and Counter Reformation to make predictions about the evolution of Christianity in Europe and abroad.

CO 3: Evaluate the causes for the Glorious Revolution and American Revolution and identify the background for the evolution of human rights movement.

CO 4: Understand the main events of the French Revolution and its significance in the shift in European culture from Enlightenment to romantics and to know Russia traditional monarchy was replaced with the world's first Communist state.

CO 5: Develop the intellectual curiosity and habits of thought that will lead to life-long learning and continued engagement with European history, literature, culture, languages, and current affairs and acquire advanced international and intercultural competency through coursework in international studies.

Course 6B: Tourism and Hospitality Services (Skill Enhancement Course (Elective).

CO 1: Understand hospitality as a career for their development.

CO 2: Inculcate interpersonal skills among students.

CO 3: Develop the ability for multitasking and crisis management in their life time.

CO 4: Understands the spirit of teamwork

CO 5: Acknowledge the importance of guest service and satisfaction to all people.

Course 7B: Tourism Guidance and Operating Skills (Skill Enhancement Course

(Elective) CO 1: Acquire tour guiding, operating and soft skills

CO 2: Understand different situations under which one has to work

CO 3: Cultivate cultural awareness and flexibility

CO 4: Understand and apply team spirit

CO 5: Plan and organize tour operations efficiently

20 Regulations

S. No.	Semester	Course Code	Course Title		Course Outcomes (COs)	Programme Specific Outcomes (PSOs)
1	I	20HIS-1	Ancient Indian History & Culture (From Indus Valley Civilization To 13th Century A.D	CO1	The student understand the history of human beings from Indus valley civilization, the Vedic Period	PSO1, PSO2
				CO2	Identify the importance of archaeological and literary sources, analyze the Jain, Buddhist and Vedic faiths of ancient periods.	PSO2
				CO3	Analyze the origin of the Maryann empire, the Guptas, the Pallavas, and the chop kingdom.	PSO2, PSO3, PSO4,PSO5
				CO4	Increase the awareness of transition from territorial states to emergence of empires in ancient period	PSO5
				CO5	Critically examine the nature of monarchic rule and develop a comprehensive understanding of cultural evolution during ancient period.	PSO4
2	II	20HIS-2	Medieval Indian History & Culture (1206A.D-1764A.D)	CO1	Learn the foreign invasions on India and their consequences.	PSO1
				CO2	Understand the socio- economic and cultural conditions of medieval India	PSO1
				CO3	Describe the advent of Islam in India and study the traces of Political	PSO1, PSO2
				CO4	Cultural expansion of Turks & Afghans. Explain the administration, Art and architecture of Vijayanagara Rulers.	PSO1, PSO2

				CO5	Mughals and also analyze the rise of the Marathas and contribution of Savaii. Evaluate the establishment of the British rule in India and understand	PSO5
3	III	20HIS-3	Modern Indian History & Culture (1764-1947)	CO1	It helps to discover the true nature of the British rule and its disastrous impact on Indian economy and society	PSO1, PSO2
				CO2	Gauge the disillusionment of people against the Company's rule even during the early 19th century	PSO1
				CO3	Assess the causes and effects of Reformation movements and also inspire the public to overthrow inequalities of the present day society	PSO2
				CO4	Rise above petty parochial issues after understanding the sacrificial saga of freedom struggle.	PSO2
				CO5	Evaluate the undercurrent of communal politics that led to India's partition and identify the enemies of India's integrity and sovereignty	PSO2
	IV	20HIS-4A	History And Culture Of Andhra (From 1512-1956 A.D)	CO1	Interpret social and culture transformation from medieval to modern Andhra	PSO1, PSO2
				CO2	Relate key historical development during medieval period occurring in costal Andhra and Telangana regions and analyze socio- political and economic change Qutbshahi rules.	PSO1, PSO2
				CO3	Understand gradual change, or change in certain aspects of society in Andhra, rather than rapid or fundamental changes, and expansion of English East India company in Andhra.	PSO2, PSO3
				CO4	Outline the issues related to caste, Women, widow remarriage, child marriage, socio reforms and the laws and policies of colonial administration towards these issues.	PSO2, PSO3

				CO5	Apply the knowledge of the regional history to understand the regional, linguistic and other cultural aspirations of the present day society	PSO2, PSO3
IV	20HIS-4B		History Of Modern World (From 15th cent – 1945 A.D)	CO1	Demonstrate advanced factual knowledge of world histories, politics, and cultures.	PSO2
				CO2	Assess and appraise the developments in art, literature, and society during the Renaissance and utilize content knowledge of the Reformation and Counter Reformation to make predictions about the evolution of Christianity in Europe and abroad.	PSO1
				CO3	Evaluate the causes for the Glorious Revolution and American Revolution and identify the background for the evolution of human rights movement	PSO4
				CO4	Understand the main events of the French Revolution and its significance in the shift in European culture from Enlightenment to Romantics and to know Russia traditional monarchy was replaced with the world first Communist state.	PSO4
				CO5	Develop the intellectual curiosity and habits of thought that will lead to life-long learning and continued engagement with European history, literature, culture languages, and current affairs and acquire advanced international and intercultural competency through coursework in international studies.	
V	20HIS-6B		Tourism And Hospitality Services	CO1	Understand hospitality as a career for their development.	PSO2
				CO2	Inculcate interpersonal skills among students.	PSO1
				CO3	Develop the ability for multitasking and crisis management in their life time.	PSO4
				CO4	Understands the spirit of teamwork.	PSO4

				CO5	Acknowledge the importance of guest service and satisfaction to all people	
V	20HIS-7B		Tourism Guidance And Operating Skills	CO1	Acquire tour guiding, operating and soft skills	PSO2
				CO2	Understand different situations under which one has to work.	PSO1
				CO3	Cultivate cultural awareness and flexibility	PSO4
				CO4	Understand and apply team spirit	PSO4
				CO5	Plan and organize tour operations efficiently	

S. No.	Semester	Course Code	Course Title	Course Outcomes (COs)		Programme Specific Outcomes (PSOs)
1	I	18HIS-1	Ancient Indian History and Culture (From Earliest Times to600 A.D)	CO1	The student understands the history of human beings from Indus valley civilization, the vedicPeriod.	PSO1, PSO2
				CO2	Identify the importance of archaeological and literary sources, analyze the Jain, Buddhist and Vedic faiths of ancient periods.	PSO1
				CO3	Analyze the origin of the Mauryan empire, the Guptas, the Pallavas, and the chola kingdom	PSO2, PSO3
				CO4	Increase the awareness of transition from territorial states to emergence of empires in ancient period.	PSO2
				CO5	Critically examine the nature of monarchic rule and develop a comprehensive understanding of cultural evolution during ancient period.	PSO2, PSO4
2	II	18HIS-2	Early Medieval Indian History and Culture (From 600 −1526)	CO1	Learn the foreign invasions on India and their consequences.	PSO1, PSO2
				CO2	Understand the socio- economic and cultural conditions of medieval India	PSO1
				CO3	Describe the advent of Islam in India and study the traces of Political	PSO1, PSO2
				CO4	Cultural expansion of Turks & Afghans. Explain the administration, Art and architecture of Vijayanagara Rulers	PSO2

					CO5	Mughals and also analyze the rise of the Marathas and contribution of sivaji. Evaluate the establishment of the British rule in India and understand	PSO4
3	III	18HIS-3	Late Medieval And Colonial History Of Indian 1526-1857A.D		CO1	Understand the Local History, National History.	PSO1, PSO2
					CO2	Identify the Mughal's-Mughal History-Shears administration	PSO1
					CO3	Analyze historical maps, biographies, novels, related to medieval period	PSO2
					CO4	Increase the Visit historical places like fort, mountains,& watching historical movies .	PSO2
					CO5	Critically examine 1857revolt.	PSO3, PSO4
4	IV	18HIS-4	Social Reform Movement And Freedom Struggle From A.D 1820s - 1947		CO1	Understand the causes for the Social Religious reform movement	PSO1, PSO2
					CO2	Identify the rice the Antinational and Establishment of Indian National Congress	PSO1
					CO3	Apply the Indian National Congress- Moderates period-Extremist period	PSO3, PSO4, PSO5
					CO4	Analyze the Ghanaian period and their Ideology	PSO2, PSO3
					CO5	Evaluate the movements like Vandemataram Movement, home rule	PSO2, PSO5
5	V	18HIS-5A	Age Of Rationalism And Humanism (The World Between		CO1	Understand the concepts of Feudalism, effect of Geographical Discoveries use of Compass Maps	PSO1
					CO2	Compare the factors for Growth of Renaissance-Transformation form Medieval to Modern World	PSO1, PSO2
					CO3	Analyze the Reformation Counter Reformation Movement-Effects	PSO2

				CO4	Evaluate the emergence of Nation-Origin OF Parliaments	PSO3
			15th &18th Century)	CO5	Demonstrate Factors leading to Revolution –The Glorious- Bill of rights	PSO3
6	V	18HIS-5B	History & Culture of Andhra Desa (12th century - 19thcentury)	CO1	Understand the Andhra kakatiyas- Vijayanagara Empire-Sri Krishna Devaraya.	PSO1, PSO2
				CO2	Remember the Qutub Shahs of Golconda- East Company's Authority over Andhra.	PSO1
				CO3	Apply the Early Uprisings- Peasants and Tribal Revolts.	PSO3, PSO4
				CO4	Analyze and evaluate Culture – Architecture& Sculpture-Factors leading to their Decline	PSO2
				CO5	Demonstrate the Company Rule on Andhra – Administration-Land Revenue Settlements	PSO2
7	VI	18HIS-6A	History of ModernEurope (From 19th Century-1945)(Elective)	CO1	Understand the history of modern Europe	PSO1, PSO2
				CO2	Understand the history of East Asia	PSO1, PSO2
				CO3	Analyze the Contemporary History of the world	PSO2, PSO3
				CO4	Evaluate the causes, of revolutions of History	PSO1, PSO2, PSO3
				CO5	Create interest in world history	PSO3, PSO5

DEPARTMENT OF POLITICAL SCIENCE

Political science is a social science dealing with systems of governance and power, and the analysis of political activities, political institutions, political thought and behavior, and associated constitutions and As a social science, contemporary political science started to take shape in the latter half of the 19th century and began to separate itself from political philosophy and history Into the late 19th century, it was still uncommon for political science to be considered a distinct field from history. The term "political science" was not always distinguished from political philosophy, and the modern discipline has a clear set of antecedents including moral philosophy, political economy, political theology, history, and other fields concerned with normative determinations of what ought to be and with deducing the characteristics and functions of the ideal state. Generally, classical political philosophy is primarily defined by a concern for Hellenic and Enlightenment thought political scientists are also marked by a great concern for "modernity" and the contemporary nation state, along with the study of classical thought, and as such share more terminology with .

The advent of political science as a university discipline was marked by the creation of university departments and chairs with the title of political science arising in the late 19th century. The designation "political scientist" is commonly used to denote someone with a doctorate or master's degree in the field Integrating political studies of the past into a unified discipline is ongoing, and the history of political science has provided a rich field for the growth of both normative and positive political science, with each part of the discipline sharing some historical predecessors..

This degree course gives a strong foundation for higher degree programs like M.A., M.B.A and Ph.D.

	COURSE INTRODUCTION TO POLITICAL SCIENCE (course code:20POL1)	
Sl.No	**Course Outcomes**	**PO's**
	The Graduate will be able to	
1	Recall the previous knowledge about Political Science and understand the nature and scope, traditional and modern approaches of Political Science.	PO1, PO2
2	Understand concepts intrinsic to the study of Political Science.	PO1, PO2,PO3, PO4
3	Have solid theoretical understanding of Rights and its theories along with the basic aspects of certain political ideologies.	PO1, PO2, PO3, PO4
4	Apply the knowledge to observe the field level phenomena	PO1, PO2, PO3, PO4

	COURSE -II BASIC ORGANS OF THE GOVERNMENT(course code:20POL2)	
Sl.No	**Course Outcomes**	**PO's**
	The Graduate will be able to	
1	Understand the Origin and Evolution of the concept of Constitutionalism and classification of Constitutions.	PO1, PO2, PO3, PO4
2	Acquaint themselves with different theories of origin of State.	PO1, PO2, PO3, PO4
3	Understand and analyses organs and forms of Governments along with a deep insight into the various agents involved in the political process.	PO1, PO2, PO3, PO4
4	Apply the knowledge to analyse and evaluate the existing systems	PO1, PO2, PO3, PO4

	COURSE -III INDIAN GOVERNMENT AND POLITICS(course code:20POL3)	
Sl.No	**Course Outcomes**	**PO's**
	The Graduate will be able to	
1	Acquire knowledge about the historical background of Constitutional development in India, appreciate philosophical foundations and salient features of the Indian Constitution	PO1, PO2, PO3, PO4
2	Analyze the relationship between State and individual interms of Fundamental Rights and Directive Principles of State Policy.	PO1, PO2, PO3, PO4
3	Understand the composition of and functioning of Union Government as well as State Government and finally	PO1, PO2, PO3, PO4
4	Acquaint themselves with the judicial system of the country and its emerging trends such as judicial reforms.	PO1, PO2, PO3, PO4

COURSE -IV
INDIAN POLITICAL PROCESS (course code:20POL4)

Sl.No	Course Outcomes	PO's
	The Graduate will be able to	
1	Know and understand the federal system of the country and some of the vital contemporary emerging issues.	PO1, PO2, PO3, PO4
2	Evaluate the electoral system of the country and to identify the areas of electoral reforms.	PO1, PO2, PO3, PO4
3	Know the constitutional base and functioning of local governments with special emphasis on 73rd& 74th Constitutional Amendment Acts.	PO1, PO2, PO3, PO4
4	Understand the dynamics of Indian politics, challenges faced and gain a sensitive comprehension to the contributing factors.	PO1, PO2, PO3, PO4
5	Apply the knowledge and critically comprehend the functioning of some of the regulatory and governance institutions	PO1, PO2, PO3, PO4
6	Propose theoretical outline alternate models	PO1, PO2, PO3, PO4

COURSE 5
WESTERN POLITICAL THOUGHT(course code:20POL5)

Sl.No	Course Outcomes	PO's
	The Graduate will be able to	
1	Understand the fundamental contours classical, western political philosophy, basic features of medieval political thought and shift from medieval to modern era.	PO1, PO2, PO3, PO4
2	Understand the Social Contract Theory and appreciate its implications on the perception of State in terms of its purposes and role.	PO1, PO2, PO3, PO4
3	Acquaint with the Liberal and Marxist philosophy and analyze some trends in Western Political Thought.	PO1, PO2, PO3, PO4
4	Critically analyse the evolution of western political thought	PO1, PO2, PO3, PO4

	COURSE-6 **OFFICE MANAGEMENT** **(course code:20POL6C)**	
Sl.No	**Course Outcomes**	**PO's**
	The Graduate will be able to	
1	Understand fundamental knowledge of Office Management that can be applied to a career.	PO1, PO2, PO3, PO4
2	Have knowledge on office administration and identify job competencies.	PO1, PO2, PO3, PO4
3	Understand the importance of record management and allied sections.	PO1, PO2, PO3, PO4
4	Comprehend the administrative process in office	PO1, PO2, PO3, PO4
5	Identify the challenges in the background of ICT.	PO1, PO2, PO3, PO4
6	Enhance skills, strategies and techniques to compete with the global competencies in office management	PO1, PO2, PO3, PO4

	COURSE-7 **PERSONNEL ADMINISTRATION** **(course code:20POL7C)**	
Sl.No	**Course Outcomes**	**PO's**
	The Graduate will be able to	
1	Understand Personnel Administration that can be applied to a career.	PO1, PO2, PO3, PO4
2	Acquire knowledge on recruitment, selection and training and identify job competencies.	PO1, PO2, PO3, PO4
3	Understand the importance and role of civil services in Indian Governance.	PO1, PO2, PO3, PO4
4	Provide an overview on issues in administration.	PO1, PO2, PO3, PO4
5	Enhance skills, strategies and techniques for redressal of grievances in Administration	PO1, PO2, PO3, PO4

COURSE 1
BASIC CONCEPTS OF POLITICAL SCIENCE(course code:18POL1)

Sl.No	Course Outcomes	PO's
	The Graduate will be able to	
1	Understand Nature and Scope of political science ,Normative ,historical, Empirical	PO1, PO2, PO3, PO4
2	Acquire knowledge Evolution of the Modern State social Democratic and Neo Liberal concepts.	PO1, PO2, PO3, PO4
3	Understand the nationality and Nation, Culture and Civic Nationalism	PO1, PO2, PO3, PO4
4	Provide an overview Civil and Social rights ,Universal andDifferentioal Citizenship	PO1, PO2, PO3, PO4
5	Enhance skills, Freedom, EqualityJustuce	PO1, PO2, PO3, PO4

COURSE-2
CONEPTS ,THEORIES AND INSTITUTIONS(course code:18POL2)

Course Outcomes	PO's
The Graduate will be able to	
Understand Nature of Constitutional law ,Theory of Separation of Powers. Features of Parliamentary and Presidential and government	PO1, PO2, PO3, PO4
Acquire knowledge features of Federal form of Government	PO1, PO2, PO3, PO4
Understand the Classical and Modern Representative Democracy	PO1, PO2, PO3, PO4
Provide an role and function of the judiciary	PO1, PO2, PO3, PO4
Enhance skills, importance of Human rights .	PO1, PO2, PO3, PO4

COURSE-3
INDIAN CONSTITUTION
(course code:18POL3)

Course Outcomes	PO's
The Graduate will be able to	
Understand Legacy of the Indian National Movement on the Constitution ,Nature and Composition of the Constituent Assembly	PO1, PO2, PO3, PO4
Acquire knowledge Preamble the Underlying values of the Indian Constitution	PO1, PO2, PO3, PO4
Understand the Limitation on the Fundamental Rights ,Judicial Interpretation of Fundamental Rights	PO1, PO2, PO3, PO4
Provide an unity and Federal feature in the Indian Constitution, Union and State Government	PO1, PO2, PO3, PO4
Enhance skills, Indian Constitution and Ushering of Social Revolution in India Executives. Over legislature and Judiciary,	PO1, PO2, PO3, PO4

COURSE-4	
INDIAN POLITICAL PROCESS (course code:18POL4)	
Course Outcomes	**PO's**
The Graduate will be able to	
Understand Legacy Transition from Tradition to Modernity, Transition from pre-capitalism to capitalism	PO1, PO2, PO3, PO4
Acquire knowledge Social structure and Democratic Process,Hieracchy to Identity ; Role of Agency Intermediate and Dait Caste Communities3	PO1, PO2, PO3, PO4
Understand the Religion and Politics Competing Communism ;Mojoritarian and Minoritariam Role of the State Toward religion	PO1, PO2, PO3, PO4
Provide an unity Role of the State toward religon	PO1, PO2, PO3, PO4
Enhance skills, Evolution of Party System in India Idology and Social bases of major Political Partes	PO1, PO2, PO3, PO4

COURSE-5(paper-5)	
INDIAN POLITICAL THOUGHT	
(course code:18POL5)	
Course Outcomes	**PO's**
The Graduate will be able to	
Understand Legacy ancient Indian Political Thought Manu ,koutilya	PO1, PO2, PO3, PO4
Acquire knowledge Rommohan Roy religious And Social Reform,Pandita ramabai gender	PO1, PO2, PO3, PO4
UnderstandDadabai Naoroji :Drain and Poverty ,Ranade M.G.role of the state and Religious Reform	PO1, PO2, PO3, PO4
Provide an unityV.D savarkar hunduva or Hindu Cultural Nationalism	PO1, PO2, PO3, PO4
Enhance skills, Gandhi –Swaraj and Satyagraha ,Democratic Socialism,Annilation of Cast System.	PO1, PO2, PO3, PO4

COURSE-5(paper-6) WESTERN POLITICAL THOUGHT (course code:18POL6)	
Course Outcomes	**PO's**
The Graduate will be able to	
Understand Legacy Plato, Aristotle ,Democracy, Citizenship.	PO1, PO2, PO3, PO4
Acquire knowledge St.Auguststine:Early City and Heavenly City Evil ,Freewill, Moral action	PO1, PO2, PO3, PO4
Understand Thomas Hobbes,Lock,Russeau human natural ,Social Contract Liberty, state	PO1, PO2, PO3, PO4
Provide an unity Jeremy Bentham Utilitaraism, J.S Mill Individual liberty,Reprsentative Government	PO1, PO2, PO3, PO4
Enhance skills, Hegel,Karal Marx freedom. Surplus Value.	PO1, PO2, PO3, PO4

COURSE-6(paper6-(C)E) LOCAL SELF –GOVERNMENT IN ANDHRA PRADESH(course code:18POL6C)	
Course Outcomes	**PO's**
The Graduate will be able to	
Understand Legacy Constitution Provision local Self – Government,Recomandation of Balwantrai Mehta and Ashok Mehta Committees on local self government.	PO1, PO2, PO3, PO4
Acquire knowledge 73rd,74th amendment Rural ,Local bodies basic features	PO1, PO2, PO3, PO4
Understand GramaPanchyath, ZillaPrishad ,Mandal Perished	PO1, PO2, PO3, PO4
Provide an unity Nagar Panchayaths, Muncipalities,Muncipal Corporations.	PO1, PO2, PO3, PO4
Enhance skills,Emarging patterns of Leadership	PO1, PO2, PO3, PO4

COURSE-6(paper6-(C-1)
INTERNATIONS RELATIONS (course code:18POL6C1)

Course Outcomes	PO's
The Graduate will be able to	
Understand Legacy Balance Nationalisnterests,CollectivesSecurity,Diplomacy..	PO1, PO2, PO3, PO4
Acquire knowledgeIdealism- Woodrow willson ,Classical Realism – Hansmargenthu,Neo-realism.	PO1, PO2, PO3, PO4
Understand Cause of First World war, Second world war	PO1, PO2, PO3, PO4
Provide an Organition of cold War ,Risend Fail of Detente	PO1, PO2, PO3, PO4
Enhance skills, The role of UNO in the protection of International peace.	PO1, PO2, PO3, PO4

COURSE-6(paper6-(C-2)
INDIAN FOUREIN POLICY(course code:18POL6C2)

Course Outcomes	PO's
The Graduate will be able to	
Understand Legacy Detrminatso of Indian Forigen Policy, Continuity and change in Indian Foreign Policy.	PO1, PO2, PO3, PO4
Acquire knowledge UNO the role of Indian the Non – Alignment Movement.	PO1, PO2, PO3, PO4
Understand Indo- Us Relations Pre Cold war era ,Indo- China Relations Pre –cold war , post Cold War.	PO1, PO2, PO3, PO4
Provide an Indo- Pakistan Relation	PO1, PO2, PO3, PO4
Enhance skills, India role in SAARC .	PO1, PO2, PO3, PO4

COURSE-6(paper6-(C-3)
CONTEMPARARY GLOBAL ISSUES. (course code:18POL6C3)

Course Outcomes	PO's
The Graduate will be able to	
Understand Economics Conception of Globalization Political Conception of Globalization.	PO1, PO2, PO3, PO4
Acquire knowledge International Monitory Fund- Nature , Roland Function. World Bank, WTO.	PO1, PO2, PO3, PO4
Understand The role of Nationa State in the Cotext of Globalization ,Consequence of Globalization..	PO1, PO2, PO3, PO4
Provide an Ecological issues Intrnational Agreements on Climate change	PO1, PO2, PO3, PO4
Enhance skills, International Terrorism Non State Actoresand State Terrorism.	PO1, PO2, PO3, PO4

R20 regulation

	2020-2023				
Program Code	**Program Name**	**Course Code**	**Title of Course**	**Need Local/National/ Regional/ Global**	**Description about the need addressed**
1051	B.A Political Science	20POL1	INTRODUCTION TO POLITICAL SCIENCE	National	It used to basic knowledge in politics.
1051	B.A Political Science	20POL2	BASIC ORGANS OF THE GOVERNMENT	Global	It used in government power and functions.
1051	B.A Political Science	20POL3	INDIAN GOVERNMENT AND POLITICS	National	It is use organs of the Government.
1051	B.A. Poltical Science	20POL4-A	INDIAN POLITICAL PROCESS	National	It is Used to how to caste in religion in political system
1051	B.A Political Science	20POL4-B	WESTERN POLITICAL THOUGHT	Global	Understand , the Plato ,auristotil ,philosophers
1051	B.A.Political Science	20POL6C	OFFICE MANAGEMENT	Local	It is used to how management office
1051	B.A Political Science	20POL7C	PERSONNEL ADMINISTRATION	Local	It is used in administration in beurocracy in office.

R18 regulations

Program Code	Program Name	Course Code	Title of Course	Need Local/National/ Regional/ Global	Description about the need addressed
1051	B.A. Political Science	18POL1	BASIC CONCEPTS OF POLITICAL SCIENCE	National	Use to basic knowledge to political science
1051	B.A. Political Science	18POl2	CONEPTS ,THEORIES AND INSTITUTIONS	Global	Used in insracture to what why ,how to political science.
1051	B.A	18POL3	INDIAN CONSTITUTION	National	Used for how to role in constitutions
1051	B.A Political Science	18POL4	INDIAN POLITICAL PROCESS	National	Used to how to caste in religion in political system
1051	B.A. Political Science	18POL5A	INDIAN POLITICAL THOUGHT	National	Used to political thinkers philosopher.
1051	B.A Political Science	. 18POL5-B	Western Political Thought	Global	Understand , the Plato ,auristotil ,philosophers
1051	BA.Political Science	18POl6 C (E)	LOCAL SELF – GOVERNMENT IN ANDHRA PRADESH	Local	Used in local structure of gramasabha ,zillaparishad
1051	B.A. Political Science	18POL6C 1	International Relations	Global	Used in international issues, in for competitive.
1051	B.A. Political Science	18POL6C 2	INDIAN FOUREIN POLICY	Global	Finding the what is the foreign Policy .

UG Department of Mathematics

B.Sc. (Mathematics) at Akkineni Nageswara Rao College is the culmination of in-depth knowledge of algebra, calculus, geometry, differential equations and several other branches of mathematics. This also leads to study of related areas like computer science, Financial Mathematics, statistics and many more. Thus, this program helps learners in building a solid foundation for higher studies in mathematics. The skills and knowledge gained has intrinsic beauty, which also leads to proficiency in analytical reasoning. This can be utilized in modeling and solving real life problems. Students undergoing this program learn to logically question assertions, to recognize patterns and to distinguish between essential and irrelevant aspects of problems. They also share ideas and insights while seeking and benefitting from knowledge and insight of others. This helps them to learn behave responsibly in a rapidly changing interdependent society.

Students completing this program will be able to present mathematics clearly and precisely, make vague ideas precise by formulating them in the language of mathematics, describe mathematical ideas from multiple perspectives and explain fundamental concepts of mathematics to non-mathematicians. Completion of this program will also enable the learners to join teaching profession in primary and secondary schools. This program will also help students to enhance their employability for government jobs, jobs in banking, insurance and investment sectors, dataanalyst jobs and jobs in various other public and private enterprises.

This degree course gives a strong foundation for higher degree programs like M.Sc., M.C.A and Ph.D.

PROGRAM EDUCATIONAL OBJECTIVES

PEO 1: Mathematics graduates will acquire Knowledge in functional areas of mathematics and apply in all the fields of learning.

PEO 2: Mathematics will prepare the students to communicate mathematical ideas effectively and develop their ability to collaborate both intellectually and creatively in diverse contexts.

PEO 3: Mathematics recognizes the need for lifelong learning and demonstrates the ability to explore some mathematical content independently.

PEO 4: Mathematics rewarding careers in Education, Industry, Banks, MNCs and Pursue Higher studies.

PROGRAM SPECIFIC OUTCOMES

PSO1: Maintain a core of Mathematical and technical knowledge that is adaptable to changing technologies and provides a solid foundation for extended learning.

PSO2: Familiarize the students with suitable tools of mathematical analysis to handle issues and problems in mathematics and related sciences.

PSO3: Develop Critical thinking, problem solving skills, creative thinking, self-confidence for eventual success in career.

PSO4: Equipped with ample knowledge to clear discipline specific competitive exams conducted by service commission and other organizations like CSIR – NET, GATE, ICET etc.

PROGRAM OUTCOMES

PO1: Students acquired the Knowledge of Differential Equations of first order and first degree Orthogonal Trajectories, Differential Equations of the first order, understand the Concept of the Plane, The Line, Sphere, Cones, Cylinders and Conicoids.

PO2: Learned the concept of Groups, Subgroups, and Rings. Understand the Concept of Real Numbers, Sequences, Continuous Functions, Differentiation, Riemann Integration and Vector spaces.

PO3: Mathematical literacy in multiple integrals like double and triple integrals, vector differentiation and vector integration.**PO4:** Learned to gain the Knowledge to apply the previous Knowledge on Integration & Differentiation to understand –Beta & Gamma functions and analyze the basic concepts of Bessel's equations, Hermite Polynomials, Laguerre Polynomials and Legendre's equation.

Course: Differential Equations(code 20MAT1)

S .No	COURSE OUTCOMES	PO`S
	The graduate will be able to	
1	Classify differential equations based on their order and degree and solve them analytically	1,3
2	Apply appropriate method to solve differential equations of first order and first degree	1,3
3	Apply the acquired knowledge to solve first order and higher degree differential equations	1,3
4	Identify family of orthogonal trajectories for a family of curves	1,3
5	Apply suitable method to solve higher order differential equations with constant and variable coefficients	1,3

Course: Three Dimensional Analytical Solid Geometry (code 20MAT2)

S .No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Distinguish the geometry of planes, lines, spheres ,cones and cylinders and describe their properties	1,3
2	Explain properties and concepts in 3D solid geometry and use them in real life situations	1,3
3	Solve problems on planes, lines, spheres ,cones, cylinders and coincides by the acquired knowledge	1,3
4	Apply vector methods to solve certain problems on planes and lines	1,3
5	Analyze methods of solving problems on planes, lines and spheres and apply related method to solve them	1,3

Course: Abstract Algebra(code 20MAT3)

S .No	COURSE OUTCOMES	PO`S
	The graduate will be able to	
1	Demonstrate the structure of group, sub-structures, cyclic group and their properties	1,2,3
2	Classify non-abelian group of functions(permutations)and illustrate its characteristics	1,2
3	Realize the importance of normal subgroup of a group to develop quotient group of it and Analyze a group by the notion of a co-set and apply Lagrange's theorem for finite groups.	1,2,3
4	Analyze properties of group isomorphism to describe the isomorphic groups and its generalization, group homomorphism	1,2
5	Classify the algebraic systems equipped with one and two binary operations and explain their properties. And Illustrate different types of rings, fundamentals, sub structures, ring isomorphism and their properties	1,2,3

Course: Real Analysis (code 20MAT4-A)

S .No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Identify the nature of a sequence whether bounded, monotonic, convergent and divergent by employing relevant results	1,2,3
2	Describe the nature of a series by applying suitable test of Convergence	1,2,3
3	Illustrate the significance of real number system, real valued and Real variable functions, mean-value theorems, fundamental theorem and applications	1,2,3
4	Identify continuity of a function and type of discontinuity by applying acquired knowledge	1,2,3
5	Categorize real valued and real variable functions as continuous, differentiable and integrable functions by applying learned Principles and results	1,2

Course: Linear Algebra (code 20MAT4-B)

S .No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Describe the algebraic systems vector space, subspace and linner product space and their properties	1,2,3
2	Demonstrate a basis for a finite dimensional vector space and an orthonormal basis for a finite dimensional inner product space	1,2,3
3	Analyze a linear transformation on a finite dimensional vector space and describe the dimension of range space and null space	1,2,3
4	Apply suitable technique to find rank of a matrix and solve the system of linear equations	1,2,3
5	Determine the eigen values and Eigen vectors for a square matrix and apply suitable method to find the inverse of it	1,2,3

Course: Multiple Integrals and Applications of Vector Calculus(code 20MAT6B)

S .No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Apply the double and triple integration, analyze the region of the integration and change of variables in double & triple integrals	1,3
2	Solve problems on gradient of a scalar function, divergent and curl of a vector function by applying their properties	1,3
3	Evaluate line, circulation, surface & volume integrals of scalar and vector functions.	1,3
4	Understand the significance of Gauss, Green and Stoke theorems and apply them to evaluate certain integrals	1,2,3

Course: Integral Transforms with Applications (code 20MAT7B)

S .No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Apply Laplace transforms to solve ordinary differential equations with constant and variable coefficients	1,3,4
2	Employ Laplace transforms to solves simultaneous and partial differential equations with boundary conditions	1,3,4
3	Apply Laplace transforms to solve different integral equations and realize the significance of Laplace transforms	1,3,4
4	Determine the importance of Fourier series ,finite Fourier series and their properties and functions	1,3,4
5	Determine Fourier transforms, finite Fourier Sine and Cosine transforms of functions	1,3,4

Course: Differential Equations(code 18MAT1)

S .No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Classify differential equations based on their order and degree and solve them analytically	1,3
2	Apply appropriate method to solve differential equations of first order and first degree	1,3
3	Apply the acquired knowledge to solve first order and higher degree differential equations	1,3
4	Identify family of orthogonal trajectories for a family of curves	1,3
5	Apply suitable method to solve higher order differential equations with constant and variable coefficients	1,3

Course: Solid Geometry (code 18MAT2)

S .No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Distinguish the geometry of planes, lines, spheres ,cones and cylinders and describe their properties	1,3
2	Explain properties and concepts in 3D solid geometry and use them in real life situations	1,3
3	Solve problems on planes, lines, spheres ,cones, cylinders and coincides by the acquired knowledge	1,3
4	Apply vector methods to solve certain problems on planes and lines	1,3
5	Analyze methods of solving problems on planes, lines and spheres and apply related method to solve them	1,3

Course: Abstract Algebra(code 18MAT3)

S .No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Demonstrate the structure of group, sub-structures, cyclic group and their properties	1,2,3
2	Classify non-abelian group of functions(permutations)and illustrate its characteristics	1,2
3	Realize the importance of normal subgroup of a group to develop quotient group of it and Analyze a group by the notion of a co-set and apply Lagrange's theorem for finite groups.	1,2,3
4	Analyze properties of group isomorphism to describe the isomorphic groups and its generalization, group homomorphism	1,2
5	Analyze methods of solving problems on planes, lines and spheres and apply related method to solve them	1,3

Course: Real Analysis (code 18MAT4)

S .No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Identify the nature of a sequence whether bounded, monotonic, convergent and divergent by employing relevant results	1,2,3
2	Describe the nature of a series by applying suitable test of Convergence	1,2,3
3	Illustrate the significance of real number system, real valued and Real variable functions, mean-value theorems, fundamental theorem and applications	1,2,3
4	Identify continuity of a function and type of discontinuity by applying acquired knowledge	1,2,3
5	Categorize real valued and real variable functions as continuous, differentiable and integrable functions by applying learned Principles and results	1,2

Course: Ring Theory and Vector Calculus(code 18MAT5-A)

S .No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Classify the algebraic systems equipped with one and two binary operations and explain their properties.	1,2,3
2	Illustrate different types of rings, fundamentals, sub structures, ring isomorphism and their properties	1,2,3
3	Solve problems on gradient of a scalar function, divergent and curl of a vector function by applying their properties	1,3
4	Evaluate line, circulation, surface & volume integrals of scalar and vector functions.	1,3
5	Understand the significance of Gauss, Green and Stoke theorems and apply them to evaluate certain integrals	1,2,3

Course: Linear Algebra (code 18MAT5-B)

S .No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Describe the algebraic systems vector space, subspace and linear product space and their properties	1,2,3
2	Demonstrate a basis for a finite dimensional vector space and an orthonormal basis for a finite dimensional inner product space	1,2,3
3	Analyze a linear transformation on a finite dimensional vector space and describe the dimension of range space and null space	1,2,3
4	Apply suitable technique to find rank of a matrix and solve the system of linear equations	1,2,3
5	Determine the eigen values and Eigen vectors for a square matrix and apply suitable method to find the inverse of it	1,2,3

Course: Numerical Analysis (code 18MAT6-A)

S .No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Demonstrate the approximations and errors in numerical Computations	1,3,4
2	Realize the significance of numerical methods and employ suitable Method to solve algebraic and transcendental equations	1,3,4
3	Compute the pth root of a number using numerical methods	1,3,4
4	Determine a polynomial which fits the given data and entry for a Given argument using suitable interpolation formula with equal and unequal intervals	1,3,4
5	Determine argument for a given entry using suitable inverse interpolation formula	1,3,4

Course: Integral Transforms (code 18MAT6-B)

S .No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Apply Laplace transforms to solve ordinary differential equations with constant and variable coefficients	1,3,4
2	Employ Laplace transforms to solve simultaneous and partial differential equations with boundary conditions	1,3,4
3	Apply Laplace transforms to solve different integral equations and realize the significance of Laplace transforms	1,3,4
4	Recognize the importance of Fourier transforms and their properties	1,3,4
5	Determine Fourier transforms ,finite Fourier Sine and Cosine transforms of functions	1,3,4

Course: Advance Numerical Analysis(code 18MAT6-C)

S .No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Identify the significance of numerical methods and apply the least Square method to determine the curve which fits the data	1,3,4
2	Evaluate the derivative of a tabulated function using suitable Interpolation formula	1,3,4
3	Evaluate the integral of a tabulated function using suitable Numerical integration rule and compute error by comparing with the exact value	1,3,4
4	Apply suitable directive method to solve system of' n' linear equations in 'n' unknowns	1,3,4
5	Apply the appropriate method to solve 1st order and 1st degree initial value problems and compute the error by comparing with analytical method	1,3,4

UG Department of Physics

B.Sc. (Physics) at Akkineni Nageswara Rao College (Autonomous) is designed to produce graduates with strong emphasis to acquire knowledge that lay basis for the development of scientific attitudes for rational reasoning, critical thinking and skills for problem solving, ability to apply the knowledge acquired in the classroom and laboratory experimental Physics leading to initiating research. The B.Sc. (Physics) undergraduate programme is designed on learning outcome based curriculum which provides an environment that inculcate rational, ethical, moral attitudes and values in the students making them Globally, Nationally and locally suitable.

B.Sc. (Physics) undergraduate programme course gives a strong foundation for higher degree programs like M.Sc., M.Tech., Ph.D., Integrated Research.

Programme Educational Objectives (PEOs)

Programme Specific Outcomes Number	Upon completion of B.Sc. Physics Degree programme, the graduates will be able to
PEO1	➢ Utilizing the physics concepts and Physics theories in the day to day life to make better decision and choice
PEO2	➢ Succeed in obtaining employment appropriate to their interests, education and become a valuable physicist.
PEO3	➢ Technical Proficiency appropriate to their interests and education
PEO4	➢ Professional Growth through life-long learning, higher education, research and creative pursuits in their areas of specialization.
PEO5	➢ Skills that improve leadership qualities in a technical and social response through innovative manner.

Programme Specific Outcomes (PSOs)

Programme Specific Outcomes Number	Upon completion of B.Sc. Physics Degree programme, the graduates will be able to
PSO1	Gain a wide spectrum of skills which will enable them to solve both theoretical and experimental problems.
PSO2	Secure jobs in the field of Education, and in industries which require scientific knowledge.
PSO3	Understanding the importance of renewable and non renewable energy and its applications.
PSO4	Acquire the skill to gauge the physical properties of materials.
PSO5	Apply knowledge and skills to solve real time problems

Programme Outcomes (POs)

Programme Outcome Number	Upon completion of B.Sc. Physics Degree programme, the students will be able to
PO1	Describe the basic laws and to understand the basic concepts, fundamental principles, and the scientific theories related to various scientific phenomena and their relevancies in the day-to-day life.
PO2	Understand the theories which describe the nature of physical phenomena and to establish them by experiments.
PO3	Apply theories learnt and the skills acquired to solve real time problems and practicals.
PO4	Discuss a wide range new ideas for the sustainable developments and to solve problems
PO5	Know how interdisciplinary knowledge and skills acquired through Elective Courses or Skill enhancement courses helps in providing better solutions.

SEMESTER-I	I B.Sc. (M.P.C.) (M.P.CS.)	PHYSICS	18PHY 1 :: 18PHY1P	**R18**
				2018-2019 (2018-2021 Batch)
				2019-2020 (2019-2022 Batch)
No. Teaching Hours per week		No. of Credits		**Paper – I**
Theory : 4	Practical: 3	Theory: 3	Practical: 2	**Paper-I(P)**

Paper-I: MECHANICS AND PROPERTIES OF MATTER

Objectives:

➢ Introduces the concepts of variable mass system and its application to rocket motion, Rutherford experiment, impact parameter, scattering cross section.

➢ Understands the motion of rigid body using the rotational kinematic relations, the principle and working of gyroscope and its applications

➢ Learn the general characteristics of central forces, the application of Kepler's laws to describe the motion of planets and satellite in circular orbit through the study of law of Gravitation.

➢ Understand postulates of Special theory of relativity and its consequences such as length contraction, time dilation, relativistic mass and mass-energy equivalence.

COURSE OUTCOME NUMBER	Upon successful completion of this course, students will have the knowledge and skills to:	PROGRAM OUTCOME NUMBER
CO1	Know the Kepler's laws of motion and its consequences for everyday use.	PO5
CO2	Understand the concepts of variable mass system, rocket motion, Rutherford scattering experiment, impact parameter, scattering cross section.	PO2
CO3	Apply the postulates of Special theory of relativity to various cases in daily life.	PO3
CO4	Define the rotational kinematic relations for the motion of rigid body	PO1
CO5	Discuss the applications of gyroscope, precession of equinoxes, freely rotating symmetric top. Apply the learnt to perform various practicals	PO4, PO3

SEMESTER-II	I B.Sc. (M.P.C.) (M.P.CS.)	PHYSICS	18PHY 2 ::18PHY2P	**R18** 2018-2019 (2018-2021 Batch) 2019-2020 (2019-2022 Batch)
No. Teaching Hours per week		No. of Credits		**Paper – II :: PAPER-II(P)**
Theory : 4	Practical: 3	Theory: 3	Practical: 2	

<div align="center">

Paper-II: Waves and Oscillations

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Objectives:

➢ Examine phenomena of simple harmonic motion, differences between un-damped, damped and forced oscillations and the concepts of resonance and quality factor with reference to damped harmonic oscillator.

➢ Understand the coupled oscillations, formulations for its motion and solve them to obtain normal modes of oscillation and their frequencies in simple mechanical systems.

➢ Describe the formation of harmonics and overtones in a stretched string and

➢ Know about Ultrasonic waves, their production methods and detection techniques and their applications.

COURSE OUTCOME NUMBER	Upon successful completion of this course, students will have the knowledge and skills to:	PROGRAM OUTCOME NUMBER
CO1	Know the phenomenon of damped and forced oscillations, the resonance, quality factor, and formation of harmonics and overtones in a stretched string.	PO5
CO2	Understand the concepts simple harmonic wave motion, characteristics, phase of waves	PO2
CO3	Apply in knowing the resultant of wave motion, phase and characteristics	PO3
CO4	Define Ultrasonic waves, production methods and detection techniques to find the velocity, wavelength of for chosen parameters	PO1
CO5	Discuss the various cases simple harmonic motion in daily life and apply to perform various laboratory experiments.	PO4, PO3

SEMESTER-III	II B.Sc. (M.P.C.) (M.P.CS.)	PHYSICS	18PHY 3::18PHY3(P)	**R18** 2018-2019 (2018-2021 Batch) 2019-2020 (2019-2022 Batch)
No. Teaching Hours per week		No. of Credits		**Paper – III :: Paper-III(P)**
Theory : 4	Practical: 3	Theory: 3	Practical: 2	

Paper-III: Wave Optics

Objectives

· To help students to understand the nature of light, its propagation and interaction with matter which is essential to constantly emerging newest technologies.

· To provide hands-on experience in optics which will be greatly appreciated in the modern industrial job market.

COURSE OUTCOME NUMBER	Upon successful completion of this course, students should have the knowledge and skills to:	PROGRAM NUMBER
CO1	Know the phenomena of interference in thin films and various phenomena of light occurring in nature, the principle and working of various laser systems.	PO5
CO2	Understand lasers and its use in holography the principle of propagation of light in optical fibers	PO2
CO3	Apply the basic optics knowledge to lens system layout, lens performance criteria, optical aberration and correction of aberrations.	PO3
CO4	Define an electromagnetic wave, properties of light caused by the wave nature such as polarization, interference and diffraction	PO1
CO5	Discuss the diffraction grating formula to solve problems about diffraction gratings and apply to perform related experiments in the lab.	PO4

SEMESTER-V	III B.Sc. (M.P.C.) (M.P.CS.)	PHYSICS	18 PHY 5B:: 18PHY5B(P)	R18 2018-2019 (2018-2021 Batch) 2019-2020 (2019-2022 Batch)
No. Teaching Hours per week		No. of Credits		Paper–5B Paper-5B(P) Total: 60 hrs
Theory : 4	Practical: 3	Theory: 3	Practical: 2	

Paper-5B:: MODERN PHYSICS

Objectives

- Introduces the concepts on Modern Physics topics such as atomic models, atoms in fields, matter waves, Uncertainty principle and wave mechanics.

- The students will understand the concepts of Zeeman effect, Raman effect, photoelectric effect, quantum mechanics, solid state physics

- Assist to understand the atomic and molecular physics.

COURSE OUTCOME NUMBER	Upon successful completion of this course, students will have the knowledge and skills to:	PROGRAM OUTCOME NUMBER
CO1	Know the concept of Matter waves and Uncertainty principle.	PO5
CO2	Understand the concepts of Atomic physics, Modern Physics, basic elementary quantum mechanics and nuclear physics	PO2
CO3	Apply the concept of superconductors to daily life and perform related laboratory work.	PO3
CO4	Define Elementary particles based on their mass, charge, spin, half life and interaction	PO1
CO5	Discuss the basic properties of nuclei, characteristics of Nuclear forces, salient features of Nuclear models, different nuclear radiation detectors.	PO4

SEMESTER-VI	III B.Sc. (M.P.C.) (M.P.CS.)	PHYSICS	18 PHY6A :: 18PHY6A(P)	**R18** 2018-2019 (2018-2021 Batch) 2019-2020 (2019-2022 Batch)
No. Teaching Hours per week		No. of Credits		**Paper – 6A :: Paper-6A(P)**
Theory : 4	Practical:3	Theory: 3	Practical: 2	

APER-6A: Analog and Digital Electronics

Objectives

➢ To perform the analysis and design of various digital electronic circuits.

➢ To impart how to design Digital Circuits.

➢ To introduce the students the basic properties of Op-Amp, analysis and design of electronic circuits using Op-Amp.

➢ Learn and understand the Basics of digital electronics and able to design basic logic circuits, combinational and sequential circuits.

III B. Sc, Semester-VI Cluster Elective Syllabus Paper: 6B :: 6B(P)	Paper Code: 18 PHY6B :: 18PHY6B(P)	**R18** 2018-2019 (2018-2021 Batch) 2019-2020 (2019-2022 Batch)	No. Teaching Hours per week: 4 No. of Credits : 3

PAPER-6B: Introduction to Microprocessors and Microcontrollers

Objectives

➢ Learn and understand the Basics of digital electronics and able to design basic logic circuits, combinational and sequential circuits.

➢ Understand the fundamentals of 8051 Microcontroller

➢ To provide sufficient detailed knowledge of a microcontroller so that students use breadboard

➢ Learn to program a microcontroller and demonstrate its function in a real time application in the laboratory

COURSE OUTCOME NUMBER	Upon successful completion of this course, students should have the knowledge and skills to:	PROGRAM OUTCOME NUMBER
CO1	Know the development of microprocessor, summarize the features of 8- bit Microprocessor.	PO5
CO2	Understand the addressing modes and the instruction set of the microprocessor/ microcontroller which is used for programming the processor and controller.	PO2
CO3	Apply the assembly language programs in basic mathematical operators and Discuss the scheme of interfacing	PO3
CO4	Define the addressing modes and instruction set of 8085 microcontroller	PO1
CO5	Discuss the architecture of microprocessor, microcontroller and apply to complete related practicals in the lab.	PO4, PO3

III B. Sc, Semester-VI Cluster Elective Syllabus Paper: 6C ::6C(P)	Paper Code: 18 PHY 6C 18PHY6C(P)	**R18** 2018-2019 (2018-2021 Batch) 2019-2020 (2019-2022 Batch)	No. Teaching Hours per week: 4 No. of Credits : 3

PAPER-6C : Computational Methods and Programming

Objectives

➢ To provide complete knowledge of C language.

➢ to develop logics which will help students to create programs.

➢ Learn the applications in C by learning the basic programming.

COURSE OUTCOME NUMBER	Upon successful completion of this course, students should have the knowledge and skills to:	PROGRAM OUTCOME NUMBER
CO1	Know the basic concepts of programming.	PO5
CO2	Understand object oriented Pprogramming concepts through C++ programs for solving simple problems.	PO2
CO3	Apply and execute C programs for simple applications	PO3
CO4	Define the tokens, data types and different operators used in the Programming language and apply to execute various programs in the lab.	PO1 PO3
CO5	Discuss the basic elements of a C program including arithmetic and logical operators, functions, control structures, and arrays.	PO4

III B. Sc, Semester-VI Cluster Elective Syllabus Paper: 6-D :: 6D(P)	Paper Code: 18 PHY 6D 18 PHY 6D(P)	**R18** 2018-2019 (2018-2021 Batch) 2019-2020 (2019-2022 Batch)	No. Teaching Hours per week: 6 No. of Credits : 5

PAPER-6D: Electronic Instrumentation   Project work

Objectives

➢ Learn the Basics of designing of electronic circuits.

➢ To introduce the students the properties of design of electronic circuits using using various components and sensors.

➢ To perform the design of various digital electronic circuits..

➢ To provide sufficient detailed knowledge so that students can use breadboard, program for electronic devices and demonstrate its function in a real time application in the laboratory

COURSE OUTCOME NUMBER	Upon successful completion of this course, students should have the knowledge and skills to:	PROGRAM OUTCOME NUMBER
CO1	Know the different types of electronic devices and their working.	PO2
CO2	Understand the basic electronic devices in designing an electronic circuit	PO4
CO3	Analyze the knowledge of the programming which is used for several electronics devices.	PO1
CO4	Describe the various sensors for simple applications	PO5
CO5	Discuss the performance characteristics of each measuring instruments and , various sensors.	PO3

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SEMESTER-I	I-B.Sc M.P.C. & M.P.CS.	PHYSICS	20 PHY 1 :: 20PHY1(P)	2020-2021 (2020-2023 Batch) 2021-2022 (2021-2024 Batch) 2022-2023 (2022-2025 Batch)
No. Teaching Hours per week		No. of Credits		**R20**
Theory : 4	Practical: 2	Theory: 3	Practical: 2	**Paper – I**

Paper-I: MECHANICS, WAVES AND OSCILLATIONS

Objectives:

➢ Introduces the concepts of variable mass system and its application to rocket motion, Rutherford experiment, impact parameter, scattering cross section.

➢ Understands the motion of rigid body using the rotational kinematic relations, the principle and working of gyroscope and its applications like precession of equinoxes, precessional motion of a freely rotating symmetric top.

➢ Learn the general characteristics of central forces, the application of Kepler's laws to describe the motion of planets and satellite in circular orbit through the study of law of Gravitation.

➢ Understand postulates of Special theory of relativity and its consequences such as length contraction, time dilation, relativistic mass and mass-energy equivalence.

➢ Examine phenomena of simple harmonic motion, differences between un-damped, damped and forced oscillations and the concepts of resonance and quality factor with reference to damped harmonic oscillator.

➢ Understand the coupled oscillations, formulations for its motion and solve them to obtain normal modes of oscillation and their frequencies in simple mechanical systems.

➢ Describe the formation of harmonics and overtones in a stretched string and

➢ Know about Ultrasonic waves, their production methods and detection techniques and their applications.

COURSE OUTCOME NUMBER	Upon successful completion of this course, students will have the knowledge and skills to:	PROGRAM OUTCOME NUMBER
CO1	Understand the concepts of variable mass system and its application to rocket motion, the Rutherford scattering experiment, impact parameter, scattering cross section	PO2
CO2	Apply the rotational kinematic relations for the motion of rigid body, gyroscope, precession of equinoxes, freely rotating symmetric top and complete various experiments in the lab.	PO1, PO3
CO3	Formulate the postulates of Special theory of relativity and apply to various cases in daily life.	PO4
CO4	Realize Phenomenon of simple harmonic motion, damped and forced oscillations, the resonance, quality factor, and formation of harmonics and overtones in a stretched string	PO5
CO5	Use Ultrasonic waves production methods and detection techniques to find the velocity, wavelength of ultrasonic waves for chosen parameters	PO3

SEMESTER-I	I-B.Sc. M.P.C. M.P.CS. M.S.CS.	Skill Development course **ELECTRICAL APPLIANCES**	20EAS1	**R20** 2020-2021 (2020-2023 Batch) 2021-2022 (2021-2024 Batch) 2022-2023 (2022-2025 Batch)
No. of Teaching Hours per week Theory :2		No. of Credits Theory: 2		**Paper – I**

Paper-I: ELECTRICAL APPLIANCES

Objectives:

➢ Introduces the concepts related to electricity.
➢ Introduces the knowledge of various electrical measuring devices.
➢ Understands the direct and alternating currents.
➢ Learn various electrical connections and basics of house wiring.
➢ Understands about the prevention and safety of electrical shock.
➢ Know about various electrical appliances and working.

COURSE OUTCOME NUMBER	Upon successful completion of this course, students will have the knowledge and skills:	PROGRAM OUTCOME NUMBER
CO1	Understand various electrical analog and digital meters measuring devices.	PO2
CO2	Acquire the working knowledge of various electrical generators and motors.	PO1
CO3	Learn about single phase and three phase connections, basics of electrical wiring with electrical protection devices.	PO4
CO4	Realizes the working principles of different household domestic appliances.	PO5
CO5	Gain necessary skill to repair the electrical appliances for the general troubleshoots and wiring faults	PO3

SEMESTER-II	I B.Sc. (M.P.C.) (M.P.CS.)	PHYSICS	20PHY2::20PHY2(P)	**R20** 2020-2021 (2020-2023 Batch) 2021-2022 (2021-2024 Batch) 2022-2023 (2022-2025 Batch)
No. Teaching Hours per week		No. of Credits		**Paper – II :: Paper-II (P)**
Theory : 4	Practical: 3	Theory: 3	Practical: 2	

Paper-II :: Wave Optics

Objectives

- To help students to understand the nature of light, its propagation and interaction with matter which is essential to constantly emerging newest technologies.
- To provide hands-on experience in optics which will be greatly appreciated in the modern industrial job market.

COURSE OUTCOME NUMBER	Upon successful completion of this course, students should have the knowledge and skills to:	PROGRAM OUTCOME NUMBER
CO1	Know the phenomena of interference in thin films and various phenomena of light occurring in nature, the principle and working of various laser systems.	PO5
CO2	Understand lasers and its use in holography the principle of propagation of light in optical fibers	PO2
CO3	Apply the basic optics knowledge to lens system layout, lens performance criteria, optical aberration and correction of aberrations.	PO3
CO4	Define an electromagnetic wave, properties of light caused by the wave nature such as polarization, interference and diffraction	PO1
CO5	Discuss the diffraction grating formula to solve problems about diffraction gratings and apply to perform related experiments in the lab.	PO4, PO3

SEMESTER-II	I-B.Sc M.P.C. M.P.CS. M.S.CS.	Skill Development course **SOLAR ENERGY**	20SEY2	**R20** 2020-2021 (2020-2023 Batch) 2021-2022 (2021-2024 Batch) 2022-2023 (2022-2025 Batch)
No. of Teaching Hours per week		No. of Credits		**Paper – II**
Theory :2		Theory: 2		

Paper-I: SOLAR ENERGY

Objectives:

Students after successful completion of the course will be able to:

- ➢ Acquire knowledge on solar radiation principles with respect to solar energy estimation.
- ➢ Get familiarized with various collecting techniques of solar energy and its storage
- ➢ Learn the solar photovoltaic technology principles and different types of solar cells for energy conversion and different photovoltaic applications.

COURSE OUTCOME NUMBER	Upon successful completion of this course, students will have the knowledge and skills:	PROGRAM OUTCOME NUMBER
CO1	Know the principles that underlie the ability of various natural phenomena to deliver solar energy	PO5
CO2	Understand the working knowledge of various Solar energy measuring devices.	PO2
CO3	Apply the technologies that are used to harness the power of solar energy.	PO3
CO4	Describe how existing crystalline silicon based solar cells operate and will be able to design solar power systems of multiple sizes from a residential rooftop to a complete solar farm.	PO1
CO5	Discuss creating professional manpower in Solar technology	PO4

SEMESTER-III	II B.Sc. (M.P.C.) (M.P.CS.)	PHYSICS	20 PHY 3 :: 20PHY3P	**R20** 2020-2021 (2020-2023 Batch) 2021-2022 (2021-2024 Batch)
No. Teaching Hours per week		No. of Credits		**Paper – II :: Paper-3(P)**
Theory : 4	Practical: 3	Theory: 3	Practical: 2	

ER-3: HEAT AND THERMODYNAMICS

Objectives

- To identify the unique vocabulary associated with thermodynamics through the precise definition of basic concepts to form a sound foundation for the development of the scientific principles.
- To Understand the meaning of heat and work, the basic concepts of thermodynamics such as system, state, state postulate, equilibrium, process, cycle, energy, and various forms of energy.
- To understand the engineering significance of the second law of thermodynamics: maximum work and maximum efficiency in reversible processes.
- To apply the first and second law to the analysis of engine and refrigeration cycles, using common idealizations for such cycles.
- Students will be able to recognize and solve a variety of types of problems concerning with thermodynamics and will be able to investigate, understand, and innovate in real life situations.

COURSE OUTCOME NUMBER	Upon successful completion of this course, students will have the knowledge and skills to:	PROGRAM OUTCOME NUMBER
CO1	Know about Black-body radiation as the thermal electromagnetic radiation and the statistical principles to the mechanical behavior of large number of small particles.	PO5
CO2	Understand the microscopic behavior of molecules, interactions and the concepts of transport phenomena of heat transfer, mass transfer and momentum transfer .	PO2
CO3	Apply low temperatures concept of Joule Thomson effect, Liquefaction of gases to everyday use.	PO3
CO4	Define thermodynamic potentials from first principles and derive the Maxwell relations and apply to related practicals.	PO1, PO3
CO5	Discuss the First Law and define heat, work, thermal efficiency and the difference between various forms of	PO4

SEMESTER-IV	II B.Sc. (M.P.C.) (M.P.CS.)	PHYSICS	20 PHY 4A::20 PHY 4A(P)	**R20**	
				2020-2021 Batch)	(2020-2023
				2021-2022 Batch)	(2021-2024
No. Teaching Hours per week		No. of Credits		**Paper–4A :: Paper-4A(P)**	
Theory : 4	Practical: 3	Theory: 3	Practical: 2		

Paper-4A: Electricity, Magnetism and Electronics

Objectives

- Introduces the concepts of electric charges, electric fields, effects of electrostatics and the laws of electrostatics, concept of magnetostatics and its effects exhibited by current carrying Conductors, concepts of electromagnetic induction and its effects, the existence of electromagnetic waves and the concepts and effects of Varying and Alternating currents
- Emphasize the relation between electricity, magnetism, electro-magnetic induction, and electromagnetic waves.
- Understand the development of materials that lead to the evolution of various semiconductor devices.
- Know the working of various semiconductor devices along with the various parameters of the devices and apply the physical laws to derive the relations between them

COURSE OUTCOME NUMBER	Upon successful completion of this course, students will have the knowledge and skills to:	PROGRAM OUTCOME NUMBER
CO1	Know about the magnetic effects of electric current in different cases, electromagnetic induction, Biot and Savart's law and Ampere's circuital and the generation of magnetic fields by electrical currents.	PO5
CO2	Understand the electric field in different cases, Gauss law and its application, the relationship between electric field vector, electric displacement vector, electric polarization, Susceptibility, Permittivity and Dielectric constant.	PO2
CO3	Apply the Phenomenon of resonance in LCR AC-circuits, sharpness of resonance, Q-factor, Power factor and the complete the laboratory comparative study of series and parallel resonant circuits	PO3
CO4	Demonstrate the operation of p-n junction diodes, zener diodes, light emitting diodes and transistors, the operation of basic logic gates and universal gates and their truth tables.	PO1

SEMESTER-IV	II B.Sc. (M.P.C.) (M.P.CS.)	PHYSICS	20PHY 4B :: 20PHY4B(P)	**R20** 2020-2021 (2020-2023 Batch) 2021-2022 (2021-2024 Batch)
No. Teaching Hours per week		No. of Credits		**Paper–4B :: Paper-4B(P)**
Theory : 4	Practical: 3	Theory: 3	Practical: 2	

<div align="center">

Paper-4B:: MODERN PHYSICS

</div>

Objectives

- Introduces the concepts on Modern Physics topics such as atomic models, atoms in fields, matter waves, Uncertainty principle and wave mechanics.

- The students will understand the concepts of Zeeman effect, Raman effect, photoelectric effect, quantum mechanics, solid state physics

- Assist to understand the atomic and molecular physics.

COURSE OUTCOME NUMBER	Upon successful completion of this course, students will have the knowledge and skills to:	PROGRAM OUTCOME NUMBER
CO1	Know the concept of Matter waves and Uncertainty principle.	PO5
CO2	Understand the concepts of Atomic physics, Modern Physics, basic elementary quantum mechanics and nuclear physics	PO2
CO3	Apply the concept of superconductors to daily life and perform related laboratory work.	PO3
CO4	Define Elementary particles based on their mass, charge, spin, half life and interaction	PO1
CO5	Discuss the basic properties of nuclei, characteristics of Nuclear forces, salient features of Nuclear models, different nuclear radiation detectors.	PO4

SEMESTER-VI	III B.Sc. M.P.C. M.P.CS.	PHYSICS	20PHY6C :: 20PHY6C(P)	**R20** 2020-2021 (2020-2023 Batch)	
No. Teaching Hours per week			No. of Credits	**Paper – 6C:: paper-6C(P)**	
Theory : 3	Practical:3	Theory: 3	Practical: 2		

Paper-6C: APPLICATIONS OF ELECTRICITY & ELECTRONICS

Objectives

- Identify various components present in Electricity and Electronics Laboratory.
- Acquire knowledge of each component like resistors, capacitors, inductors, power sources etc. and its application.
- Demonstrate skills of constructing simple electronic circuits consisting of basic circuit elements.
- Understand the need & Functionality of various DC and AC Power sources.
- Comprehend the design, applications and practices of various Electrical and Electronic devices
- Learn about trouble shooting of various Electrical and Electronic devices.

COURSE OUTCOME NUMBER	Upon successful completion of this course, students will have the knowledge and skills to:	PROGRAM OUTCOME NUMBER
CO1	Identify the various components and instruments used in Electricity and Electronics.	PO5
CO2	Understand the need and Functionality of various DC & AC Power sources.	PO2
CO3	Apply the design, applications of various electrical and Electronic devices for everyday use perform laboratory work.	PO3
CO4	Describe the various components like resistors, capacitors, inductors, power sources etc., their methods of identification, utility and their uses.	PO1
CO5	Discuss the construction of simple electronic circuits consisting of basic circuitelements.	PO4

SEMESTER-VI	III B.Sc. M.P.C. M.P.CS.	PHYSICS	20 PHY7-C:: 20PHY7C(P)	**R20** 2020-2021 (2020-2023 Batch)
No. Teaching Hours per week		No. of Credits		**Paper – 7C :: Paper-7C(P)**
Theory : 3	Practical:3	Theory: 3	Practical: 2	

Paper-7C: ELECTRONIC INSTRUMENTATION

Objectives

- Identify various facilities required to set up a basic Instrumentation Laboratory.

- Acquire a critical knowledge of various Electrical Instruments used in the Laboratory.

- Demonstrate skills of using instruments like CRO, Function Generator, Multimeter etc.

   Through hands on experience.

- Understand the Principle and operation of different display devices used in the display systems and different transducers

- Comprehend the applications of various biomedical instruments in daily life like B.P. meter, ECG, Pulse Oxymeter etc. and know the handling procedures with safety and security

COURSE OUTCOME NUMBER	Upon successful completion of this course, students will have the knowledge and skills to:	PROGRAM OUTCOME NUMBER
CO1	Know the life assisting and therapeutic devices, design and applications of various biomedical devices, their trouble shooting .	PO5
CO2	Understand the various recording methods used in medical field	PO2
CO3	Relate various electrical and non electrical parameters	PO3

***

<u>UG Department of Chemistry</u>

U.G (Chemistry) at Akkineni Nageswara Rao College is designed to produce post graduates with higher-order critical, analytical, problem-solving and research skills; ability to think rigorously and independently to meet expectations of industries, research organization and academic institutions. The program focuses on theoretical and practical aspects of physical, analytical, organic and inorganic chemistry aspects with opportunities for project work in the ubject area. Organic chemistry specialization encompasses the topics of catalysis, organometallic chemistry, the chemistry of polygenes, chemo-, region- and enation selective synthesis, heterocyclic chemistry, flour containing compounds and NMR and other spectroscopic and chromatographic techniques. Furthermore, this course deals with life and life processes associated with nearly every aspect of our existence. All the key molecules of life, such as DNA, proteins, lipids, and carbohydrates are organic compounds.

This degree course gives a strong foundation for higher degree programs like Ph.D. Programme Educational Objectives

The PEOs of the B.Sc. program in Chemistry are as follows:

PEO-1: Chemistry graduates will be well prepared for successful careers in the profession at an industry and/or in government in one or more of discipline of chemistry.

PEO-2: Chemistry graduates will be academically prepared to become licensed professional chemists in due course and will contribute effectively in serving the society.

PEO-3: Chemistry graduates will be engaged in professional activities to enhance their own achievement and simultaneously contribute in service of humankind.

PEO-4: Chemistry graduates will be successful in higher education in Chemistry.

PEO-5: Chemistry graduates will provide leadership quality to work in all kind of circumstances, diverse environment such as interdisciplinary and multidisciplinary learning systems.

PROGRAM OUTCOMES

Programme Outcomes (POs) are attributes of the graduates of the programme that are indicative of the graduates' ability and competence to work as science professional upon graduation. Program Outcomes are statements that describe what students are expected to know or be able to do by the time of graduation. They must relate to knowledge and skills that the students acquire from the programme. The achievement of all outcomes indicates that the student is well prepared to achieve the program educational objectives down the road. The following 12 Pos have been chosen by the Chemistry Department. The B.Sc. Chemistry curriculum has been designed to fully meet all the 12 Programme Outcomes. The students will be able to

PO-1: Apply knowledge of Chemistry to solution of complex scientific problems. (Scientific knowledge)

PO-2: Identify, formulate and analyze complex scientific problems using principles of chemistry. (Problem analysis)

PO-3: Propose of solutions for complex scientific problems and plan of chemical processes that meet the specified needs with appropriate considerations of public health and safety, and cultural, societal, and environmental considerations (Design/development of solutions)

PO-4: Use research based methods including analysis and interpretation of data and synthesis of chemical products leading to logical conclusions (Conduct investigations of complex problems)

PO-5: Create, select, and apply appropriate techniques, resources, and modern scientific and IT tools including prediction and modeling complex scientific activities with an understanding of limitations (Modern tool usage)

PO-6: Apply reasoning within the contextual knowledge to access societal, health, safety, legal, and cultural issues and the con-sequent responsibilities relevant to the professional scientific practice (The chemist and society)

PO-7: Understand the impact of the professional scientific solutions in the societal and environmental contexts, and demonstrate the knowledge of, and the need for sustainable developments (Environment and sustainability)

PO-8: Apply ethical principles and commit to professional ethics and responsibilities and norms of scientific practice (Ethics)

PO-9: Function effectively as an individual independently and as a member or

leader in diverse teams, and in multidisciplinary settings (Individual and team work)

PO-10: Communicate effectively on complex scientific activities with the science community and with society at large such give and receive clear instructions (Communication)

PO-11: Demonstrate knowledge and understanding of scientific management principles and apply those to one's own work as a member of a team to manage projects in multidisciplinary environments (Project management and finance)

PO-12: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broad-est. context of technological change (Life-long Learning).

The Programme Specific Outcomes (PSOs) are specific statements that describe the professional career accomplishments that the program is designed. The PSOs of the B.Sc. Program in (Hons.) Chemistry at University of Wollongong, Australia are designed in such a way that at the end:

Programme Specific Outcomes

PSO-1 Chemistry graduates will be able to understand the basic concepts related with organic, chemistry covering various organic reagents and various types of reactions along with their mechanisms. Along with this students will also learn practical aspects of organic chemistry specially elemental analysis and functional groups.

PSO-2: Chemistry graduates will be understand various topics of inorganic chemistry which will be a base to improve their career in the area of inorganic chemistry. Here student will learn various theories of inorganic chemistry and their application to define coordination complexes.

PSO-3: Chemistry graduates will learn herein physical properties of various compounds through thermodynamics, electrochemical study, colligative properties etc.

Course: Inorganic & Physical Chemistry(code 20 CHE1)

S .No	COURSE OUTCOMES	PO`S
	The graduate will be able to	
1	Take up the knowledge of preparation, structure, bonding aspects and chemical properties of p-block elements	1,2,4
2	Take up the knowledge of preparation, structure, bonding aspects and chemical properties of metal pi complexes, compounds of non – transitional elements and also spectral properties, magnetic properties and applications of Lanthanides and actinide complexes.	1,2,4
	Understand the core areas of physical chemistry based around the different solid molecules	1,2
4	Understand the core areas of physical chemistry based around the different gases state, liquid crystals various gas law.	1,2
5	Understand the important aspects of surface phenomenon and the physical chemistry involved in it. Evaluate Dilute solutions.	1,2,5

Course: Organic& General Chemistry (code 20CHE2)

S .No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Memorize the concepts, principles and theories related to formation of C – C single bond, C – C double bond, Deal's Alder related reactions	2
2	Know the various types of organic reactions, their mechanisms and intermediates involved, and their applications in synthesis.	1,4,7
3	Interpret the concept of aromaticity and the main properties of benzenoid and non-benzenoid aromatic compounds and distinguish between aromatic, non-aromatic and anti-aromatic compounds by their structures and chemical consequence of aromaticity.	1,7,2
4	Assimilate the knowledge of non-valence cohesive forces, VSEPR theory, MO theory, MO diagrams and implications of MO theory.	1,2,7
5	Summarize outline stereo chemistry of carbon compounds.	1'2

Course: Organic Chemistry& Spectro Scopy (code 20CHE3)		
S .No	**COURSE OUTCOMES**	**PO`S**
	The graduate will be able to	
1	Understand the definition types of elimination reactions and differentiate between the various mechanisms, orientation rules and perceives factors favoring elimination over substitution.	1,7,2
2	Know the various types of organic reactions, their mechanisms and intermediates involved, and their applications in synthesis. of carbonyl compounds.	1,4,7
3	Evaluate Carboxylic acids and derivations preparations and Chemical properts	1,7,2
4	Apply the knowledge of spectroscopy in establishing the structure of organic molecules.	1,5,7
5	Comprehend the advanced concepts of molecular absorption spectroscopy.	1,2,5

Course: Inorganic' Organic & Physical Chemistry (code 20CHE4-A)		
S .No	**COURSE OUTCOMES**	**PO`S**
	The student will be able to	
1	Memorize the synthetic roots and applications of oregano metallic compounds.	2,7
2	Memorize the reactions and cyclic structures of Carbohydrates.	2
3	Memorize the synthetic routes and reactions related to three, four, five, six membered and fused heterocyclic compounds.	2,7
4	Know the various types of organic reactions, their mechanisms and nature of Nitrogen compounds	2,7
5	Understand the concepts of thermodynamics	1

Course: Inorganic& Physical Chemistry (code 20CHE4-B)

S .No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Comprehend the bonding, structural aspects, properties and applications of complexes basing on CFT & MO theory and evidences in support of M-L bond.	1,2,3
2	properties of complexes and bioinorganic chemistry	2
3	Apply the concepts of formulate Phase diagrams.	3,6
4	Understand the basic concepts of electrochemical cells, concentration cells in producing electricity electro chemistry.	1,2,7
5	Evaluate the role of concepts of chemical kinetics.	,2,7

Course: Analytical Methods in Chemistry-1 (code 20CHE6B)

S .No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Understand the significance of statistical rules and principles in quantitative analysis.	1,2,5
2	Apply the knowledge of qualitative and quantitative analysis.	1,2,6
3	Exercise that how far the purification and chromatographic techniques are useful in assessing the purity of the compound.	1,3,7
4	Evaluate that how far a compound is purified / separated using purification and chromatographic techniques.	1,5,7
5	Apply the knowledge of water analysis.	1,2,

Course: Analytical Methods in Chemistry-2 (code 20CHE7B)

S .No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Apply the knowledge of spectroscopy in establishing the structure of organic molecules.	1,5,7
2	Analyze the spectral data to ascertain the structure of unknown molecules.	1,4,2
3	Exercise the knowledge gained in purification and chromatographic techniques in their chosen job role.	1,4,6
4	Exercise that how far the purification and chromatographic techniques are useful in assessing the purity of the compound.	1,3,7
5	Evaluate that how far a compound is purified / separated using purification and chromatographic techniques.	1,5,7

Course: Inorganic & Organic Chemistry(code 18CHE1)		
S .No	**COURSE OUTCOMES**	**PO`S**
	The student will be able to	
1	Take up the knowledge of preparation, structure, bonding aspects and chemical properties of p-block elements	1,2,4
2	Memorize the synthetic roots and applications of organo metallic compounds.	2,7
3	Know the various types of organic reactions, their mechanisms and intermediates involved, and their applications in synthesis.	1,4,7
4	Memorize the concepts, principles and theories related to formation of C – C single bond, C – C double bond, Deals Alder related reactions	2
5	Interpret the concept of aromaticity and the main properties of benzenoid and non-benzenoid aromatic compounds and distinguish between aromatic, non-aromatic and anti-aromatic compounds by their structures and chemical consequence of aromaticity.	1,7,2

Course: Physical &General Chemistry (code 18CHE2)		
S .No	**COURSE OUTCOMES**	**PO`S**
	The student will be able to	
1	Understand the core areas of physical chemistry based around the different solid molecules	1,2
2	Describe gaseous state-Compression factors-law of corresponding state.	3
3	Develop skills in problem solving, critical thinking and analytical reasoning in finding the CST of phenol water system and partition coefficient.	1,2
4	Analyze surface chemistry and MO theory and evidences in support of M-L bond.	1,2
5	Outline Stereochemistry of carbon compounds	1,3

Course: Inorganic &Organic Chemistry (code 18CHE3)

S .No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Take up the knowledge of preparation, structure, bonding aspects and chemical properties of metal pi complexes, compounds of non – transitional elements and also spectral properties, magnetic properties and applications of Lanthanides and actinide complexes.	1,2,4
2	Employ theories of bonding in metals	2
3	Understand the definition types of elimination reactions and differentiate between the various mechanisms, orientation rules and perceives factors favoring elimination over substitution.	1,7,2
4	Know the various types of organic reactions, their mechanisms and intermediates involved, and their applications in synthesis. of carbonyl compounds.	1,4,7
5	Evaluate Carboxylic acids and derivations preparations and Chemical property's	1,7,2

Course: Spectroscopy & Physical Chemistry (code 18CHE4)

S .No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Describe Spectroscopy	1
2	Compute Beer- Lamberts law and applications	3
3	Develop skills in problem solving, critical thinking and analytical reasoning in finding the CST of phenol water system and partition coefficient.	1,2
4	Understand the basic concepts of electrochemical cells, concentration cells in producing electricity electro chemistry.	1,2,7
5	Apply the concepts of formulate Phase diagrams.	3,6

Course: Inorganic, Organic & Physical Chemistry-1 (code18 CHE5-A)

S .No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Comprehend the bonding, structural aspects, properties and applications of complexes basing on CFT & MO theory and evidences in support of M-L bond.	1,2,3
2	properties and Reactivity of complexes and	2,3
3	Know the various types of organic reactions, their mechanisms and Nitro hydro cobras	2,7
4	Know the various types of organic reactions, their mechanisms and nature of Nitrogen compounds	2,7
5	Understand the concepts of thermodynamics	1

Course: Inorganic, Organic & Physical Chemistry-2 (code 18CHE5-B)

S .No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Compute reactivity of metal complexes	2
2	properties of complexes and bioinorganic chemistry	2
3	Memorize the reactions and cyclic structures of Carbohydrates.	2
4	Memorize the synthetic routes and reactions related to three, four, five, six membered and fused heterocyclic compounds.	2,7
5	Evaluate the role of concepts of chemical kinetics.	2,7

Course: Analytical Methods in Chemistry (code 18CHE6-A)

S .No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Understand the significance of statistical rules and principles in quantitative analysis. Apply the knowledge of qualitative and quantitative analysis.	1,2,5,6
2	understand the concepts of errors, significant figures, Precision, accuracy standard deviation and confidence limit.	1,2,6
3	Students gain knowledge on the principles ofSolvent extraction and Ion exchange.	1,3,7
4	Evaluate that how far a compound is purified / separated using purification and chromatographic techniques.	1,5,7
5	Identify different element by column Chromatography, Paper chromatography TLC.	

Course: Organic Spectroscopy Techniques (code 18CHE6-B)

S .No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Students gain knowledge on the concepts of Beer's law and the quantitative determinationof Metal ions.	1,3
2	Students gain knowledge on concepts of UV-Visible spectroscopy.	2,5
3	Students gain knowledge on concepts of nuclear magnetic resonance spectroscopy.	3,6
4	Students gain knowledge on concepts of nuclear magnetic resonance spectroscopy.	1,4
5	Students gain knowledge on concepts of Massspectrometry.	3,5

Course: Advance Organic Reactions (code 18CHE6-C)

S .No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Students gain knowledge on principles of Organic photochemistry and photo reduction reaction.	2,4
2	Students acquire knowledge on Norrish, photofries rearrangement, Dip methane rearrangement reactions.	1,5,6
3	Students gain knowledge on the protection ofdifferent functional groups.	1,3
4	Students acquire knowledge on Mannish, Shapiro, stark-examine, Witting reactions andumpolung.	2,3
5	Students acquire knowledge on new syntheticreactions.	1,3

s.no	Course: Pharmaceutical and Medicinal Chemistry (code 18CHE D)	
s.no	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Students gain understanding of basicterminology of pharmacy.	2,5
2	Students gain knowledge on the nomenclatureand classification of drugs.	1,3
3	Students gain understanding of antibiotics,cardiovascular drugs and antimicrobials.	1,5
4	Students acquire knowledge about Antipyretics, analgesics, diuretics, anti-inflammatory drugs and antidiabetics.	1,3,6
5	Student's gains awareness on HIV-AIDs,causes, prevention, tests, treatment and antiretroviral drugs.	2,3

Course:	20 CHE1P	
	COURSE OUTCOMES	**PO`S**
s.no	After completion of the course, the student will be able to :	
	Apply the procedures of quantitative analysis and tests for identification of cations and anions in mixture analysis	1,5
Course:	20CHE2P	
	COURSE OUTCOMES	PO`S
s.no	After completion of the course, the student will be able to :	
	Define Titrimetric (volumetric analysis)	4
Course:	20CHE3P	
	COURSE OUTCOMES	PO`S
s.no	After completion of the course	
	To apply the procedure of recrystallisation of organic compound preparation IR Spectral analysis	1,6, 3
Course:	20CHE4AP	
	COURSE OUTCOMES	PO`S
s.no	After completion of the course	
	Memorize the basic principles involved in organic quantitative analysis	1,3,5
Course:	20CHE4BP	
	COURSE OUTCOMES	PO`S
s.no	After completion of the course, the student will be able to :	
	Define Titrimetric (volumetric) analysis) partition coefficient and conductanc strong & weak acids and bases.	2,5
Course:	20CHE6BP	
	COURSE OUTCOMES	PO`S
s.no	After completion of the course, the student will be able to :	
	Determine the rate constants of first order reactions, P^H and conductance	1,2
Course:	20CHE7BP	
	COURSE OUTCOMES	PO`S
s.no	After completion of the course	
	Estimate color metric Titration &Analysis Chromatography	1,2

R-18 Regulations Practical's

Course:	18CHE1P	
	COURSE OUTCOMES	PO`S
s.no	After completion of the course	
	Apply the procedures of quantitative analysis and tests for identification of cat and anions in simple salts analysis	1,5
Course:	18CHE2P	
	COURSE OUTCOMES	PO`S
s.no	After completion of the course	
	Apply the procedures of quantitative analysis and tests for identification of cations and anions in mixture analysis	1,5
Course:	18CHE3P	
	COURSE OUTCOMES	PO`S
s.no	After completion of the course	
	Define Titrimetric (volumetric)analysis	4
Course:	18CHE4P	
	COURSE OUTCOMES	PO`S
s.no	After completion of the course	
	conductance of strong & weak acids and bases	2
Course:	18CHE5AP	
	COURSE OUTCOMES	PO`S
s.no	After completion of the course :	
	Memorize the basic principles involved in organic quantitative analysis	1,3,5
Course:	18CHE5BP	
	COURSE OUTCOMES	PO`S
s.no	After completion of the course :	
	Determine the rate constants of first order reactions and partition coefficient of benzoic acid between benzene and water, potentiometric titrations of Fe(II) with Kmno4.	1,2
Course:	18CHE6AP	
	COURSE OUTCOMES	PO`S
s.no	After completion of the course :	
	PH and conductance of strong & weak acids and bases, potentiometric titrations of Fe(II) with K2Cr2O7	1,2,5
Course:	18CHE6BP	
	COURSE OUTCOMES	PO`S
s.no	After completion of the course, the student will be able to :	
	Prepare Green Synthesis	1
Course:	18CHE6CP	
	COURSE OUTCOMES	PO`S
s.no	After completion of the course :	
	Prepare Organic Compounds	4
Course:	18CHEDP	
	COURSE OUTCOMES	PO`S
s.no	After completion of the course :	
	Comprehend the ability to draft and communicate the practical work.	1,2,7

UG Department of Computer Science(B.COM)

Computer science is the study of computers and computational systems. It is a broad field which includes everything from the algorithms that make up software to how software interacts with hardware to how well software is developed and designed. Computer scientists use various mathematical algorithms, coding procedures, and their expert programming skills to study computer processes and develop new software and systems.

Computing is part of everything we do. Computing drives innovation in engineering, business, entertainment, education, and the sciences—and it provides solutions to complex, challenging problems of all kinds.

Computer science focuses on the development and testing of software and software systems. It involves working with mathematical models, data analysis and security, algorithms, and computational theory. Computer scientists define the computational principles that are the basis of all software.

Information technology (IT) focuses on the development, implementation, support, and management of computers and information systems. IT involves working both with hardware (CPUs, RAM, hard disks) and software (operating systems, web browsers, mobile applications). IT professionals make sure that computers, networks, and systems work well for all users.

Principal areas of study and careers within computer science include artificial intelligence, computer systems and networks, security, database systems, human-computer interaction, vision and graphics, numerical analysis, programming languages, software engineering, bioinformatics, and theory of computing.

Some common job titles for computer scientists include:

- Computer Programmer
- Information Technology Specialist
- Data Scientist
- Web Optimization Specialist
- Database Administrator
- Systems Analyst
- Web Developer
- Quality Assurance Engineer
- Business Intelligence Analyst
- Systems Engineer
- Product Manager

- Software Engineer
- Hardware Engineer
- Front-End Developer
- Back-End Developer
- Full-Stack Developer
- Mobile Developer
- Network Administrator
- Chief Information Officer
- Security Analyst
- Video Game Developer
- Health Information Technician

Objectives of Department of Computer Science

1. Possess practical and theoretical knowledge of computer science sufficient to earn a living and contribute to the economic development of the country.
2. Be prepared for advanced education in computer science.
3. Understand and respect the professional standards of ethics expected of computer scientists and appreciate the social impact of computing.
4. Recognize the importance and possess the problem solving skills that are necessary for life-long learning.

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

PEO1	Assess their skills in systematic planning, designing, developing, testing and implementing complex computing applications in the field of Cloud Computing, Machine Learning, Embedded Programming, Mobile and Web Application Development.
PEO2	Appraise In-depth knowledge and sustainable learning leading to innovation, permutation, modernization and research in multidisciplinary field to fulfill global interest.

PROGRAMME OUTCOMES (POs)

On successful completion of Graduate Program, Graduating Students/ Graduateswillbe able to

PO 1	Provide students with fundamental knowledge and ability to expertise inComputer Science.
PO 2	Provide insight to problem solving to succeed in Technical Profession throughprecise education and to prepare students to excel in postgraduate programs.
PO 3	To inculcate in students professional, effective communication skills, team work, multidisciplinary approach and an ability to relate issues to broader socialcontext.
PO 4	Prepare students to be aware of excellence, leadership, written ethical codes and guidelines and lifelong learning needed for successful professional career by providing them with an excellent academic environment.
PO 5	Empower the students in academic, social, psychological and economic arenasby developing relevant competencies.
PO 6	Interpret and apply the implications of environment awareness initiativesincorporated in curriculum.
PO 7	Participation and contribution to community development activities throughNCC, NSS etc.
PO 8	Acquire sufficient knowledge base in the Domain Specific area leading to thepursuit of advanced level of study in the chosen Domain Specific area.
PO 9	Adaptability and capacity building to the ever changing needs of the industryand employment opportunities.
PO 10	Inculcate the human values through curricular, co-curricular and extracurricularactivities.

PROGRAMME SPECIFIC OUTCOMES (PSOs)

The Department of Computer Science, The Department of Computer Science, Akkineni Nageswara Rao College (Autonomous) Gudivada, offers Three Year (comprising 6 semesters) Undergraduate Program in Computer Science with objective of empowering students to acquire all- inclusive understanding of Computer Knowledge both theoretical and practical as an academic discipline. Upon completion of B. Sc. Computer Science Degree Program successfully, the students shall acquire the following skills and competencies.

PSO 1	Ability to apply foundations of Mathematics, Principles of Physics/Statisticsand Theory of Computer Science in solving the real-world problems.
PSO 2	Identify, formulate, review research literature, and analyzes complex problems reaching substantiated conclusions using first principles of mathematics and Computer science.
PSO 3	Design solutions for complex problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental Considerations.
PSO 4	Create, select, and apply appropriate techniques, resources, and modern IT tools including prediction and modeling to complex activities with an understanding of the limitations.
PSO 5	Understand the impact of the professional solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PSO 6	Function effectively as an individual, and as a member or leader in diverseteams, and in multidisciplinary settings.
PSO 7	Recognize the need for, and have the preparation and ability to engage in independent and lifelong learning in the broadest context of technological change.

COURSE OUTCOMES (COs)

Course Code: 20CMP1

Course Name: Problem solving in C

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Understand the basics of computer; Internal Structure.	1,2	1,4,8
CO 2	Apply logical skills to analyze a given problem.	2,4	1,3,8
CO 3	Develops programs Using C language, logical skills applied.	3	2,4,8
CO 4	Understanding 'C' language constructs like Iterative statements, array processing pointers etc.	2,3	2,8,9
CO 5	Apply 'C' language constructs and write a C language program.	5,7	4,5,9

Course Code: 20CMP2

Course Name: Data Structures Using C

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Understand data structures for data storage and processing.	1,2	1,2,4
CO 2	Comprehend Data Structure and their real-time applications - Stack, Queue, Linked List, Trees and Graph	2,4	1,2,4,5
CO 3	Choose a suitable Data Structures for an application	2,3	2,4,5
CO 4	Develop ability to implement different Sorting and Search methods	3,4	2,4,9
CO 5	Have knowledge on Data Structures basic operations like insert, delete, search, update and traversal	2,3	1,2,8
CO 6	Design and develop programs using various data structures.	2,3	5,8,9
CO 7	Implement the applications of algorithms for sorting, pattern matching etc	4,5,7	2,8,9

Course Code: 20CMP3

Course Name: Data Base Management System

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Gain knowledge of Database and DBMS.	1,2	1,2,4
CO 2	Understand the fundamental concepts of DBMS with special emphasis on relational data model.	2,3,4	1,2,5
CO 3	Demonstrate an understanding of normalization theory and apply such knowledge to the normalization of a database	1,3	2,8,9
CO 4	Model database using ER Diagrams and design database schemas based on the model.	2,4	2,5,8
CO 5	Create a small database using SQL.	3,7	4,8,9
CO 6	Store, Retrieve data in database.	4,7	2,8,9

Course Code: 20CMP4-A

Course Name: Object Oriented Programming through Java

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Understand the benefits of a well-structured program	1,2	1,2,5
CO 2	Understand different computer programming paradigms	2,3	1,2,3
CO 3	Understand underlying principles of Object-Oriented Programming in Java	3,5	2,5,8
CO 4	Develop problem-solving and programming skills using OOP concepts	3,4	2,5,8
CO 5	Develop the ability to solve real-world problems through software development in high-level programming language like Java	4,5	5,8,9

Course Code: 20CMP4-B

Course Name: Operating Systems

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Know Computer system resources and the role of operating system in resourcemanagement with algorithms	1,2	1,2,4
CO 2 Understand operating system architecture design and its Services.	2,4	1,2,5
CO 3 Gain knowledge of various types of operating systems including Unix and Android.	3,4	4,8,9
CO 4 Understand various process management concepts including scheduling,synchronization, and deadlocks.	2,7	2,4,5
CO 5 Have a basic knowledge about multithreading.	2,3	2,5,8
CO 6 Comprehend different approaches for memory management.	3,7	5,8,9
CO 7 Understand and identify potential threats to operating systems and the securityfeatures design to guard against them.	3,5	2,4,8
CO 8 Specify objectives of modern operating systems and describe how operating systemshave evolved over time.	4,5	4,8,9
CO 9 Describe the functions of Contemporary Operating System.	2,4	1,2,4

Course Code: 20CMP6-A

Course Name: WEB INTERFACE DESIGNING TECHNOLOGIES

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Understand and appreciate the web architecture and services.	1,3	1,6,8
CO 2 Gain knowledge about various components of a website.	3,4	4,5,8
CO 3 Demonstrate skills regarding creation of a static website and an interface to dynamic website.	3,4	4,6,8
CO 4 Learn how to install word press and gain the knowledge of installing various plugins to use in their websites.	2,4	1,5,8

Course Code: 20CMP7-A

Course Name: WEB APPLICATIONS DEVELOPMENT USING PHP AND MYSQL

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Write simple programs in PHP.	1,3,4	1,2,8
CO 2	Understand how to use regular expressions, handle exceptions, and validate data using PHP.	3,4	2,5,6
CO 3	Apply In-Built functions and Create User defined functions in PHP programming.	2,4	3,5,8
CO 4	Write PHP scripts to handle HTML forms.	3,4	2,6,9
CO 5	Write programs to create dynamic and interactive web based applications using PHP and MYSQL.	2,4	2,8,9
CO 6	Know how to use PHP with a MySQL database and can write database driven web pages.	4,7	1,6,8

Course Code: 20CMP6-B

Course Name: INTERNET OF THINGS

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Appreciate the technology for IoT	1,2	2,6,8
CO 2	Understand various concepts, terminologies and Architecture of IoT systems.	1,5	4,5,8
CO 3	Understand various applications of IoT	2,5	1,8,9
CO 4	Learn how to use various sensors and actuators for design of IoT.	1,4	2,6,8
CO 5	Learn how to connect various things to Internet.	1,3	1,4,5
CO 6	Learn the skills to develop simple IOT Devices.	1,4	2,8,9

Course Code: 20CMP7-B

Course Name: APPLICATION DEVELOPMENT USING PYTHON

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Understand and appreciate the web architecture and services.	1,3	1,6,8
CO 2	Examine Python syntax and semantics and be fluent in the use of Python flow control and functions.	2,3	2,4,8
CO 3	Demonstrate proficiency in handling Strings and File Systems.	3,4	5,6,8
CO 4	Create, run and manipulate Python Programs using core data structures like Lists, Dictionaries and use Regular Expressions.	2,4	2,5,8
CO 5	Interpret the concepts of Object-Oriented Programming as used in Python.	1,3	1,6,8
CO 6	Apply concepts of Python programming in various fields related to IOT, Web Services and Databases in Python.	3,5	4,8,9

Course Code: 20CMP6-C
Course Name: DATA SCIENCE

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Develop relevant programming abilities.	1,4	1,4,5
CO 2	Demonstrate proficiency with statistical analysis of data.	1,2	3,5,6
CO 3	Develop the ability to build and assess data-based models.	3,4	4,6,9
CO 4	Demonstrate skill in data management	1,2	1,3,5
CO 5	Apply data science concepts and methods to solve problems in real-world contexts and will communicate these solutions effectively	1,2,4	3,6,9

Course Code: 20CMP7-C

Course Name: Python for Data Science

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Identify the need for data science and solve basic problems using Python built-in data types and their methods.	1,2	1,2,5
CO 2	Design an application with user-defined modules and packages using OOP concept	1,3	3,4,8
CO 3	Employ efficient storage and data operations using NumPy arrays.	3,4	2,6,8
CO 4	Apply powerful data manipulations using Pandas.	3,4	3,6,8
CO 5	Do data pre-processing and visualization using Pandas.	4,5	3,6,9

COURSE OUTCOMES (COs)

Course Code: 18COM1

Course Name: COMPUTER FUNDAMENTALS & PHOTOSHOP

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Identify the components of a computer system.	2,6	1,4
CO 2	Describe the logical organization, memory, software and peripheral devices of a computer system.	1,3	1,8
CO 3	Define binary, hexadecimal and octal number systems and their arithmetic.	3,4	2,8
CO 4	Demonstrate basic skills using Photoshop software.	1,3	3,8
CO 5	Demonstrate proficiency with layers and Filters.	3,6	3,8

Course Code: 18ICT12

Course Name: ICT –I- COMPUTER FUNDAMENTALS AND OFFICE TOOLS

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Describe the basic parts of computer, elements of computers, characteristics of computer and capabilities of computer.	1,2	1,8
CO 2	Use and operate in the MS WORD 2010, operations such as copying, organizing, deleting, and sorting files and folders.	2,3,6	1,9
CO 3	Apply the knowledge on how to copy, save, sort, delete, create folder, retrieve, browse the files and apply the short-cut keys in the mouse operations.	2,3,6	2,8
CO 4	Able to do page-setup and print documents.	3,6	2,8
CO 5	Explain how to embed using the OLE application with other office application.	3,6	2,8

Course Code: 18COM2

Course Name: PROGRAMMING IN 'C'

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Explain the features of C language.	2,4	1,2
CO 2	State the structure and model of C programming language.	3,5	2,3
CO 3	Practice the use of conditional and looping statements.	3,5	4,5
CO 4	Describe the code reusability with the help of user defined functions.	2,4	1,2
CO 5	Demonstrate the use of C features like arrays, structures, pointers and files.	1,2	3,4
CO 6	Work with strings and files.	3,5	4,5

Course Code: 18ICT23

Course Name: ICT – II--INTERNET FUNDAMENTALS AND WEB TOOLS

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Describe various types of network standards and communication software.	1,2	2,3
CO 2	Define and explain about social networks, and online email services.	1,2	1,2
CO 3	Use the web and find information.	2,5	3,4
CO 4	Describe how the Internet works.	2,3	2,3
CO 5	Explain about web browsers and search engines.	2,4	3,4
CO6	Create simple static webpage using HTML.	4,5	4,5

Course Code: 18COM3

Course Name: OBJECT ORIENTED PROGRAMMING USING JAVA

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Explain the principles of Object-Oriented Programming.	1,2	2,3
CO 2	Describe how object-oriented concepts are incorporated into the Java programming language.	2,3	1,2
CO 3	Develop problem-solving and programming skills using OOP concept.	3,5	4,5
CO 4	Describe the benefits of a well-structured program.	1,2	3,4
CO 5	Develop efficient Java applets and applications using OOP concept.	4,5	4,5

Course Code: 18COM4

Course Name: DATA STRUCTURES

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Describe how arrays, records, linked structures, stacks, queues, trees, and graphs are represented in memory and used by algorithms.	1,2	2,3
CO 2	Demonstrate different methods for traversing trees	4,5	3,4
CO 3	Compare alternative implementations of data structures with respect to performance	2,4	1,2
CO 4	Compare and contrast the benefits of dynamic and static data structures implementations.	2,4	2,3
CO5	Describe the concept of recursion, give examples of its use, describe how it can be implemented using a stack.	2,5	4,5
CO6	Discuss the computational efficiency of the principal algorithms for sorting, searching, and hashing.	2,5	4,5

Course Code: 5003CSC15-A

Course Name: DATABASE MANAGEMENT SYSTEM

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Describe the fundamental elements of relational database management systems.	1,2	2,3
CO 2	Explain the basic concepts of relational data model, entity-relationship model, relational database design, relational algebra and SQL.	1,2	2,3
CO 3	Design ER-models to represent simple database application scenarios.	3,4	3,4
CO 4	Design and model the data in database.	2,3	3,4
CO 5	Select, Store, Retrieve data in database.	4,5	4,5

Course Code: 5003CSC15-B

Course Name: SOFTWARE ENGINEERING

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Explain the requirements of the software projects.	1,2	1,2
CO 2	Analyze software requirements with existing tools	2,4	2,3
CO 3	Explain different testing methodologies	1,2	3,4
CO 4	Apply the basic project management practices in real life projects	4,5	4,5
CO 5	Convert the requirements model into the design model and demonstrate use of software and user interface design principles.	3,5	4,5
CO 6	Justify role of SDLC in Software Project Development and they can evaluate importance of Software Engineering in PLC.	4,5	2,4

Course Code: *6*03CSC15-A*

Course Name: OPERATING SYSTEMS

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Analyze the concepts of processes in operating system and illustration of the scheduling of processor for a given problem instance.	2,4	3,4
CO 2	Explain the dead lock situation and provide appropriate solution so that protection and security of the operating system is also maintained.	1,2	2,3
CO 3	Analyze memory management techniques, concepts of virtual memory and disk scheduling.	1,4	2,3
CO 4	Explain implementation of file systems and directories along with the interfacing of IO devices with the operating system.	1,4	4,5

Course Code: 6*03CSC15-B

Course Name: WEB TECHNOLOGIES

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Compute latest web technologies and tools.	1,2	2,3
CO 2	Design interactive web pages using HTML and Style sheets.	3,5	4,5
CO 3	Develop dynamic Web Pages by using JavaScript and DHTML.	3,5	4,5
CO 4	Write a well formed / valid XML document.	2,3	1,3

Course Code: 6*03CSC15A1

Course Name: FOUNDATION OF DATA SCIENCE

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Apply hypotheses and data into actionable predictions.	1,3	3,4
CO 2	List out and transfer the results and effectively communicate the findings using visualization techniques.	2,4	1,4

Course Code: 6*03CSC15A2

Course Name: BIG DATA TECHNOLOGIES

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Review tips and tricks for Big Data use cases and solutions.	1,2	1,3
CO 2	Review build and maintain reliable, scalable, distributed systems with Apache Hadoop.	2,5	2,4
CO3	Able to apply Hadoop ecosystem components.	2,5	4,5

Course Code: 6*03CSC15B1

Course Name: DISTRIBUTED SYSTEMS

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Create models for distributed systems.	1,2	2,4
CO 2	Apply different techniques learned in the distributed system.	1,3	4,5

Course Code: 6*03CSC15B2

Course Name: CLOUD COMPUTING

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Compare the strengths and limitations of cloud computing	1,2	1,3
CO 2	Identify the architecture, infrastructure and delivery models of cloud computing	1,4	1,4
CO3	Choose the appropriate cloud player, Programming Models and approach.	2,4	2,4
CO4	Describe the core issues of cloud computing such as security, privacy and interoperability	1,2	2,3
CO5	Design Cloud Services and Set a private cloud.	3,5	4,5

Course Code: 6*03CSC1

Course Name: PHP – MYSQL & WORDPRESS

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Develop simple web applications with PHP.	3,5	4,5
CO 2	Explain relational databases and MySQL	1,4	1,2
CO 3	Use PHP with a MySQL database.	1,2	1,3
CO 4	Use the MVC pattern to organize your code	1,2	1,3
CO 5	Work with form data, Strings, numbers and dates.	1,5	3,4
CO 6	Create and use arrays and functions	1,5	3,4
CO 7	Work with cookies and sessions	1,5	3,4
CO 8	Use regular expressions, handle exceptions, and validate data	1,5	3,4

Course Code: 6*03CSC15C2

Course Name: ADVANCED JAVA SCRIPT: JQuery, Ajax, Angular JS & JSON

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Create a dynamic website using advanced features of JavaScript.	3,5	4,5
CO 2	Create a website with good and attractive design	3,5	4,5

UG Department of Statistics

Statistics is used in different ways in different contexts. For a cricket fan, Statistics is the information about runs scored or wickets taken by a player. For the manager of a manufacturing unit, Statistics may be the information about the process control. For a medical researcher investigating the effects of a new drug, Statistics is the evidence of research efforts. For a college student, Statistics shows the grades or marks scored in a course. Thus, in all these illustrations, Statistics refers to quantitative data in the area under study. Statistics as a subject is an important branch of knowledge and is devoted to various techniques of collection, presentation, analysis and interpretation of data. It is a science of learning from data. The subject provides tools for making decisions when conditions of uncertainty prevail. Hence Statistical tools and techniques are used in almost all fields which are indispensable for people working in fields like agriculture, business, management, economics, finance, insurance, education, biotechnology and medical science, etc. For the last two decades, large amount of data has been handled with the help of computers and more sophisticated statistical techniques can be used in an effective manner to draw valid conclusions. Knowledge of different aspects of Statistics has become crucial in the present scenario. There is a continuous demand for statisticians in fields of education, industry, software and research. The syllabi of three-year B.Sc. (General) degree course in Statistics are framed in such a way that the students at the end of the course, can be thorough in statistical techniques for pursuing higher studies and simultaneously can apply statistical tools judiciously to a variety of data sets to arrive at some valid conclusions.

To mould the students in order to compete with global Statistical needs and to place them technically on par with the present competitive world.

Objectives of the department

1. To develop enthusiasm towards Statistics in students.
2. To develop understanding in applications of Statistics.
3. To describe Statistical methods and their impact in solving real life problems.
4. To enable the students to apply different Statistical methods in practice.
5. To make the scientific process efficient with the help of different Statistical applications.

Programme Educational Objectives (PEO's)

PEO 1: Find employment utilizing their statistical knowledge in government, public and Private sectors

PEO 2: Perform data analysis and make interpretations with knowledge attained during the Course of study

PEO 3: Gain knowledge to pursue higher studies in statistics

PEO 4: Write code to extract and reformat real data and to utilize statistical programming environments.

PEO 5: Serve as biostatistician, statistical investigator, statistical assistant with knowledge in statistics

Programme Specific Outcomes (PSO'S)

On successful completion of the B.Sc. Statistics program, the students are expected to

PSO1: Apply the concepts, principles and methods of statistics to various fields of study

PSO2: Understand the importance and value of statistical principles and convert a problem description into testable research hypotheses.

PSO3: Select appropriate statistical tools to investigate a research hypothesis.

PSO4: Perform data analysis by apply appropriate statistical methodology and interpret result in a variety of settings.

PSO5: Compute statistical measures using software and programs.

PSO6: Apply likelihood principles and calculus to derive fundamental results in probability, estimation and hypothesis testing.

PSO7: Select standard experiment designs, with consideration of selection process, data collection, issues of bias, causality and confounding, based on specifications of a scientific study.

Write code to extract and reformat real data and to utilize statistical programming environments.

PSO8: Acquire skills to write competitive examinations and get opportunities for job placements in various sectors.

PSO9:

PSO10: Move for higher level learning

Programme Outcomes (PO's)

At the end of the programme students will have:

PO1: Disciplinary Knowledge: The proposed curriculum is expected to provide the students a good overall knowledge of Statistics covering various aspects. As a result, they will not only be able to understand the important statistical techniques but also able to apply some commonly used statistical techniques to other fields.

PO2: Critical Thinking: The proposed course is designed to enrich the students with ability to examine basic statistical issues in a more logical and methodical manner. It is expected that the students will strengthen themselves both computationally and analytically.

PO3: Problem Solving: The students will be able to examine various hypotheses involved, and will be able to identify and consult relevant resources to find their rational answers.

PO4: Analytical Reasoning: The students are expected to develop capability to identify logical flaws and loopholes in the arguments of practicing Statisticians, analyze and synthesize data from a variety of sources and accordingly draw conclusions.

PO5: Research Related Skills: The students should be able to develop original thinking for formulating new problems and providing their solutions. As a result, they will be able to develop thought provoking skills for their own subject as well as for those who are Practicing Statistics.

PO6: Communication Skills and Team Work: The students are expected to develop effective and confident Communication skill after completion of the course. They will have an ability to work in a team as well as in isolation

COURSE: I Descriptive Statistics and Probability (18STA1)	
S.No	**COURSE OUTCOMES**	**PO`S**

S.No	COURSE OUTCOMES	PO`S
	The graduate will be able to	
1	Interpret diagrammatic data presentation which makes it easier for a common Man to understand the given data.	1,4,5
2	Identify the relationships among the three measures of central tendency for symmetrical and skewed distributions	1,4,5
3	Determine the reliability of an average and compare variability of two or more series	1,3,5
4	Acquire problem solving skills using moments, random variables.	1,2,3
5	Use probabilistic reasoning and the foundations of probability theory to understand and assess probabilistic engineering experiments in terms of sample spaces, event algebras, and classical probability.	1,2,3, 5

Course: II Mathematical Expectation and Probability Distributions (18STA2)		
S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Understand the concept and evaluate moment generating functions for different kinds of probability distributions.	1,2,3,4
2	Apply the Uniform and Normal distribution to different situations in day to day life, in quality control and in the research field.	1,2,3,4,5
3	Relate the distributions through limiting cases.	1,4,5
4	Interpret Exponential Laplace, Cauchy, Gamma and Beta distributions in real life situations.	1,23,4
5	Identify different real life problems to apply discrete distributions (Binomial, Poisson, Negative Binomial Geometric and Hyper geometric) and continuous distributions (Uniform, Normal and Exponential) to draw valid inferences.	1,2,3,4,5

Course: III Statistical Methods (18STA3)		
S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Explain the bivariate data	1,3,5
2	Interpret the correlation and Regression between two variables	1,2,5
3	Fitting of least square curves	1,2,3,4
4	Differentiate between quantitative and qualitative data and apply Association and Contingency techniques using Attributes.	1,2,3,5,
5	Recall the definitions of t, F and $\chi 2$ distributions in terms of statistics of a sample from a Normal distribution.	1,2,3,5,6

Course: IV STATISTICAL INFERENCE (18STA4)		
S.No	COURSE OUTCOMES	PO`S
	The graduate will be able to	
1	Describe different methods of Estimation	1,4,
2	Explain the definitions and concepts of hypothesis testing	1,2,5
3	Apply Large sample tests to different situations	1,2,4,5
4	Interpret small sample tests	1,2,4,5
5	Distinguish between the Parametric and the Non-Parametric tests	1,2,4

Course: 5(A) Sampling techniques and Design of experiment (18STA-5A)		
S.No	COURSE OUTCOMES	PO`S
	The graduate will be able to	
1	Design and implement surveys with the sampling designs (simple random, systematic, and stratified).	1,6,
2	Estimate sample size for different sampling designs in order to estimate population level point estimates and testing null hypothesis	1,2,5
3	Understand stratified and systematic random samples..	1,2,
4	Compute and interpret the results of ANOVA and F-test	1,3,5
5	Interpret the analysis of Basic designs (CRD, RBD and LSD)	1,3,5

Course : 5(B) Quality and Reliability (18STA-5B)		
S.No	COURSE OUTCOMES	PO`S
	The graduate will be able to	
1	Differentiate the concepts of Quality Control(SQC) and Statistical Process Control (SPC)	1,4,6
2	Construct different control charts for variables (x-bar, R charts) and attributes (p, np and c charts)	1,4,6
3	Identify different acceptance sampling plans and differentiate them.	1,2,
4	Distinguish between quality and reliability	1,2,4
5	Describe reliability methods	1,2,4

COURSE: 6A – APPLIED STATISTICS (18STA-6A)		
S.No	COURSE OUTCOMES	PO`S
	The graduate will be able to:	
1	Interpret the Chronological data and its importance in Economy	1,5,
2	Apply Trend derivation methods	1,4,5
3	Construction of index numbers.	1,5
4	Evaluate Mortality, Fertility, Reproduction rates.	1,3,6,
5	Interpret the functions of NSSO, CSO	1,5,

Course: 6B -Operations Research (18STA-6B)		
S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Introduction of OR and models.	1,3
2	Formulation of Linear Programming problems, Graphical Procedure, Graphical solutions of LP Problems	1,2,3
3	Assumptions, Limitations, Advantages of LPP, Procedure of Simplex method	1,23
4	Apply the artificial variable Techniques.	1,2,3
5	Apply the dominance rule to game with and without saddle point	1,3,

Course: 6c –Optimization Techniques (18STA-6C)		
S.No	**COURSE OUTCOMES**	**PO`S**
1	Formulation of assignment problem	1,2,3
2	Determine the optimal sequence.	1,3,5
3	Apply the initial basic feasible solutions.	1,3
4	Apply the optimum solution through IBFS.	1,3
5	Determination of CPM and PERT.	1,3,6

6D-Statistics Project (18STA-6D)		
S.No	**COURSE OUTCOMES**	**PO`S**
	After completion of the course, the student will be able to :	
1	Synthesize knowledge from various areas of learning, and apply it critically and creatively to real-life situations.	1,4,5
2	Gain important skills to prepare them for future learning and challenges.	6

COURSE: I Descriptive Statistics and Probability (18STA1P)		
S.No	**COURSE OUTCOMES**	**PO`S**
	After completion of the course, the student will be able to :	
1	Computation of mean, median and mode.	2,3
2	Computation of quartile deviation.	2,3
3	Computation of mean deviation	2,3,6
4	Computation of Standard deviation.	2,3
5	Establish the relation between Non-central and central moments.	2,3,5

Course: II Mathematical Expectation and Probability Distributions (18STA2P)

S.No	COURSE OUTCOMES	PO`S
	After the completion of the course, Students will be able to	
1	Fitting of Binomial Distribution – Recurrence relation method.	2,3,4
2	Fitting of Poisson Distribution - Recurrence relation method.	2,3,4
3	Fitting of Negative Binomial Distribution.	2,3
4	Fitting of Geometric Distribution.	2,3
5	Fitting of Normal Distribution - Areas methods.	2,3

COURSE: III Statistical Methods (18STA3P)

S.No	COURSE OUTCOMES	PO`S
	After completion of the course, the student will be able to :	
1	Fitting of straight line.	2,3,4
2	Fitting of exponential curves	2,3,4
3	Fitting of power curve.	2,3,4
4	Computation of correlation coefficient & Fitting of Regression lines.	2,3,4,5
5	Computation of Contingency coefficients	2,3,4,5

COURSE: IV STATISTICAL INFERENCE (18STA4P)

S.No	COURSE OUTCOMES :	PO`S
	After completion of the course, the student will be able to	
1	Apply the procedure for Large sample tests for mean(s), proportion(s), and standard deviations.	2,3,4
2	Apply the procedure for Small sample tests for Single and Double t-test, Paired t-test.	2,3,4

COURSE: 5(A) Sampling techniques and Design of experiments -18STA-5A(P)

S.No	COURSE OUTCOMES	PO`S
	After completion of the course, the student will be able to :	
1	Estimation of population mean, variance by SRSWOR	2,3,4
2	Comparison of proportional	2,3,4
3	Construction of ANOVA-CRD, RBD, LSD	3,4,5

COURSE: 5(B) Quality and Reliability-18STA-5B(P)

S.No	COURSE OUTCOMES	PO`S
	After completion of the course, the student will be able to :	
1	Construction of attribute charts with fixed and varying sample size	2,3,4
2	Construction of variable charts with fixed and varying sample size	2,3,4

COURSE: 6A – APPLIED STATISTICS-18STA-6A(P)

S.No	COURSE OUTCOMES	PO`S
	After completion of the course, the student will be able to :	
1	Measurement of Linear Trend, Seasonal Indices	3,4,6
2	Construction of reversible tests, cost of living index numbers.	3,4,5
3	Estimate the mortality and Fertility rates	3,4,6
4	Construction of the Life tables	3,4,6

COURSE: 6B -Operations Research-18STA-6B(P)

S.No	COURSE OUTCOMES	PO`S
	After completion of the course, the student will be able to :	
1	Apply the Graphical solution	2,3,4
2	Apply the Simplex Method	2,3,4
3	Apply the Artificial variable techniques(Big-M, Two-Phase)	2,3,4
4	Apply the Dominance property	2,3,4

S.No	COURSE OUTCOMES	PO`S
	COURSE:6c –Optimization Techniques-18STA-6C(P)	
	After completion of the course, the student will be able to :	2,3,4
1	Apply the Assignment Problem	2,3,4
2	Apply the Travelling Salesman Problem	2,3,4
3	Apply the Sequencing Problem	2,3,4
4	Apply the IBFS for Transportation Problems.	2,3,4
5	Construct the CPM method.	2,3,4

Course: I : Descriptive Statistics (20STA1)		
S.No	**COURSE OUTCOMES**	**PO`S**
	The student will be able to	
1	Interpret diagrammatic data presentation, Identify the relationships among the three measures of central tendency for symmetrical and skewed distributions for the given data.	1,4,5
2	Determine the reliability of an average and compare variability of two or more series	1,4,5
3	Fitting of least square methods.	1,2,3,4
4	Interpret the correlation and Regression between two variables	1,2,5
5	Differentiate between quantitative and qualitative data and apply Association and Contingency techniques using Attributes	1,2,3,5

Course: **II: Probability Theory and Distributions** (20STA2)		
S.No	**COURSE OUTCOMES**	**PO`S**
	The student will be able to	
1	Use probabilistic reasoning and the foundations of probability theory to understand and assess probabilistic engineering experiments in terms of sample spaces, event algebras, classical probability, and Kolmogorov's axioms.	1,2,3,5,
2	Explain the random variable and its types.	1,3,5
3	Understand the concept and evaluate moment generating functions for different kinds of probability distributions.	1,2,3,4
4	Identify different real life problems to apply discrete distributions (Binomial, Poisson, Negative Binomial Geometric and Hyper geometric).	1,2,3,4,5
5	Identify different real life problems to apply continuous distributions (Uniform, Normal and Exponential) to draw valid inferences.	1,2,3,4,5

Course: **III:** Statistical **Inference (20STA3)**		
S.No	**COURSE OUTCOMES**	**PO`S**
	The student will be able to	
1	Recall the definitions of t, F and $\chi 2$ distributions in terms of statistics of a sample from a Normal distribution.	1,2,3,5,6
2	Describe different methods of Estimation	1,4,
3	Explain the definitions and concepts of hypothesis testing	1,2,5
4	Apply Large and small sample tests to different situations	1,2,4,5
5	Distinguish between the Parametric and the Non-Parametric tests	1,2,4

COURSE: IV: Sampling Techniques and Designs of Experiments (20STA-4A)

S.No	COURSE OUTCOMES:	PO`S
	The student will be able to	
1	Design and implement surveys with the sampling designs (simple random, systematic, and stratified).	1,6
2	Estimate sample size for different sampling designs in order to estimate population level point estimates and testing null hypothesis	1,2,5
3	Compute and interpret the results of ANOVA and F-test	1,2
4	Interpret the analysis of Basic designs (CRD, RBD and LSD)	1,3,5
5	Explain the concept of Fractional Factorial Designs	1,3,5

Course: V: Applied Statistics (20STA-4B)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Interpret the Chronological data and its importance in Economy	1,5
2	Apply Trend derivation methods	1,4,5
3	Fitting of growth curves.	1,4,5
4	Construction of index numbers.	1,5
5	Construct the Life and Abridge table for living beings from different age groups, Estimate the Birth and Death rates, and Examine the Reproduction rates through GRR and NRR.	1,3,6

Course: 6A -Operations Research-I (20STA-6A)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Introduction of OR and models.	1,3
2	Formulation of Linear Programming problems, Graphical Procedure, Graphical solutions of LP Problems	1,2,3
3	Assumptions, Limitations, Advantages of LPP, Procedure of Simplex method	1,2,3
4	Apply the artificial variable Techniques.	1,2,3
5	Apply the duality and dual simplex methods.	1,3

Course: 7A -Operations Research-II (20STA-7A)		
S.No	**COURSE OUTCOMES**	**PO`S**
	The student will be able to	
1	Formulation of assignment problem.	1,2,3
2	Apply the initial basic feasible solutions and optimum solution through IBFS	1,3
3	Determine the optimal sequence.	1,3,5
4	Determination of CPM and PERT.	1,3,6
5	Apply the dominance rule to game with and without saddle point	1,3

COURSE : I Descriptive Statistics (20STA1P)		
S.No.	**COURSE OUTCOMES**	**PO`S**
	After completion of the course, the student will be able to :	
1	Draw the Graphical, Diagrammatic presentation of data	2,3,5
2	Computation of non-central, central moments, 1 and 2 and Sheppard's corrections for grouped data	2,3,5
3	Fitting of least square methods	2,3,4
4	Computation of correlation coefficient and regression lines for ungrouped data	2,3,4,5
5	Computation of Yule's coefficient of association and Pearson's, Tcherprow's coefficient of contingency	2,3,4,5

Course: II: Probability Theory and Distributions (20STA2P)		
S.No	**COURSE OUTCOMES**	**PO`S**
	After completion of the course, the student will be able to :	
1	Fitting of discrete distributions.	2,3,4
2	Fitting of Continuous distributions.	2,3,4

Course: III: Statistical Inference (20STA3P)

S.No	COURSE OUTCOMES	PO`S
	After completion of the course, the student will be able to :	
1	Apply the Large sample tests	2,3,4
2	Apply the Large sample tests	2,3,4
3	Apply Nonparametric tests.	2,3,4

Course: IV: Sampling Techniques and Designs of Experiments -20STA-4A(P)

S.No	COURSE OUTCOMES	PO`S
	After completion of the course, the student will be able to :	
1	Stratified random sampling with proportional and optimum allocations. Comparison between proportional and optimum allocations with SRSWOR.	2,3,4
2	Systematic sampling with N= nk. Comparison of systematic sampling with Stratified and SRSWOR.	2,3,4
3	ANOVA - one - way classification with equal and unequal number of observations	3,4,5
4	Analysis of RBD	3,4,5
5	Analysis of LSD	3,4,5

Course: V:Applied Statistics -20STA-4B(P)

S.No	COURSE OUTCOMES	PO`S
	After completion of the course, the student will be able to :	
1	Measurement of trend by method of moving averages, method of Least squares (linear and parabola).	3,4,6
2	Determination of seasonal indices	3,4,6
3	Computation of simple and weighted index numbers.	3,4,5
4	Computation of various Mortality and Fertility rates	3,4,6
5	Construction of Life Tables	3,4,6

Course: 6A -Operations Research-I -20STA-6A (P)

S.No	COURSE OUTCOMES	PO`S
	After completion of the course, the student will be able to :	
1	Construct graphical method	2,3,4
2	Apply simplex method	2,3,4
3	Construct Big- M l method	2,3,4
4	Apply Two- phase simplex method	2,3,4
5	Apply Dual simplex method	2,3,4

Course: 7A -Operations Research-II -20STA-7A (P)

S.No	COURSE OUTCOMES	PO`S
	After completion of the course, the student will be able to :	
1	Apply Hungarian method	2,3,4
2	Obtain Optimum basic feasible solutions	2,3,4
3	Find out total elapsed time by Johnson's rule.	2,3,4
4	Construction of CPM and PERT	2,3,4
5	Apply Dominance property.	2,3,4

UG Department of English

PROGRAM OUTCOMES (POs)

At the end of the programme students will have:

PO1: Essential Knowledge: Comprehensive discipline knowledge and understanding, the ability to engage with different schools of thought and to apply their knowledge in practice including in multi-disciplinary or multi-professional contexts.

PO2: Creative and critical thinking and problem solving abilities: Be effective problem solvers, able to apply critical and evidence-based thinking to conceive innovative responses to future challenges.

PO3: Teamwork and communication skills: Be able to convey ideas and information effectively to a range of audiences for a variety of purposes and contribute in a positive and collaborative manner to achieving common goals.

PO4: Motivation and preparation in life-long learning: Exhibit life-long skills; broad based multiple career oriented general skills; self and field based learning skills; digital skills; social responsibility and compassionate commitment; preparedness for living, learning and working in any environment.

PO5: Professionalism and leadership readiness: Be able to engage in professional behaviour and have the potential to be entrepreneurial and take leadership roles in their chosen occupations and communities.

PO6: Intercultural and ethical competency: Be responsible and effective global citizens whose personal values and practices are consistent with their roles as responsible members of society.

PO7: Self-awareness and emotional intelligence: Be self-aware and reflective, flexible and resilient and act with integrity and take responsibility for their actions as empowered women.
PO8: Social responsibility: Be sensitive to and demonstrate agency in matters of environment, gender and other social issues to promote an equitable society.

Programe Specific Outcomes (PSOs)

At the end of the Programme the student will be able to

PSO1: Demonstrate fundamental knowledge of domain areas.

PSO2: Acquire competence to apply and communicate principles, techniques and skills to analyze and interpret texts and data and draw conclusions.

PSO3: Demonstrate problem-solving skills in real-life situations by drawing from imbibed theories and principles

PSO4: Develop communicative competence, creative and critical thinking, practical, technical and employability skills, social sensibility and responsibility.

ENGLISH PRAXIS COURSE – I
A COURSE IN COMMUNICATION AND SOFT SKILLS

Sl.No	Course Outcomes	PO's
	The Graduate will be able to	
1	Use grammar effectively in writing and speaking.	PO1,PO2,PO4,PO8
2	Demonstrate the use of good vocabulary.	PO1,PO2,PO4,PO8
3	Develop good writing skills.	PO1,PO2,PO4,PO8
4	Acquire ability to use Soft Skills in professional and daily life.	PO1,PO2,PO3,PO4,PO5,PO7,PO8

ENGLISH PRAXIS COURSE – II
A COURSE IN READING AND WRITING SKILLS

Sl.No	Course Outcomes	PO's
	The Graduate will be able to	
1	Use reading skills effectively and comprehend different texts	PO1,PO2,PO4,PO8
2	Analyze what is being read and use good writing strategies	PO1,PO2,PO4,PO8
3	Build up a repository of active vocabulary and apply it to everyday situations	PO1,PO2,PO4,PO8
4	Improve writing skills independently for future needs	PO1,PO2,PO3,PO4, PO5,PO7,PO8

ENGLISH PRAXIS COURSE – III
A COURSE IN CONVERSATIONAL SKILLS

Sl.No	Course Outcomes	PO's
	The Graduate will be able to	
1	Understand texts from various linguistic, critical and creative concepts and categories.	PO1,PO2,PO4,PO8
2	Situate one's own reading in terms of society, religion, caste, region, gender and politics.	PO1,PO2,PO4,PO8
3	Demonstrate critical thinking	PO1,PO2,PO4,PO8
4	Enhance conversational skills by observing the professional interviews	PO1,PO2,PO3,PO4, PO5,PO7,PO8

General English Semester -I		
Sl.No	Course Outcomes	PO's
	The Graduate will be able to	
1	Outline and interpret the critical ideas, values and themes of different writers of different genres.	PO1,PO2,PO4,PO8
2	Analyze prose to identify main and subordinate ideas, distinguish various modes of argument, define audience and purpose, and outline methods of development.	PO1,PO2,PO4,PO8
3	Deal with language exercises including paraphrasing, note-making and report writing.	PO1,PO2,PO4,PO8
4	Able to ethically gather, understand, evaluate and synthesize information from a variety of written and electronic sources.	PO1,PO2,PO3,PO4,PO5,PO7,PO8

General English Semester -II		
Sl.No	Course Outcomes	PO's
	The Graduate will be able to	
1	Outline and interpret critical ideas , values and themes of different writers of different genres.	PO1,PO2,PO4,PO8
2	Analyze prose, poetry, short fiction, drama to distinguish various modes of argument and outline methods of development.	PO1,PO2,PO4,PO8
3	Demonstrate with the practical, emotional, intellectual and creative aspects of language by integrating knowledge and skills.	PO1,PO2,PO4,PO8
4	Build pieces of writing on different themes and topics like summarizing news report, editing of the passages, Letters, Dialogue narrative form using the methodologies given.	PO1,PO2,PO3,PO4,PO5,PO7,PO8

Communication and Soft Skills – I (CSS - I) Semester -II		
Sl.No	Course Outcomes	PO's
	The Graduate will be able to	
1	Understand and improve conversation skills.	PSO6
2	Learn intonation and the right pronunciation	PSO6
3	Build vocabulary and comprehend texts.	PSO6
4	Develop career oriented skills.	PSO6

General English Semester -III		
Sl.No	**Course Outcomes**	**PO's**
	The Graduate will be able to	
1	Outline and interpret critical ideas , values and themes of different writers of different genres.	PO1,PO2,PO4,PO8
2	Analyze prose, poetry, short fiction, drama to distinguish various modes of argument and outline methods of development.	PO1,PO2,PO4,PO8
3	Demonstrate with the practical, emotional, intellectual and creative aspects of language by integrating knowledge and skills.	PO1,PO2,PO4,PO8
4	Build pieces of writing on different themes and topics like summarizing news report, editing of the passages, Letters, Dialogue narrative form using the methodologies given.	PO1,PO2,PO3,PO4,PO5,PO7,PO8

Communication and Soft Skills – II (CSS - II) Semester -III		
Sl.No	**Course Outcomes**	**PO's**
	The Graduate will be able to	
1	Comprehend soft skills and develop a positive attitude	PSO6
2	Improve Interview and Public speaking aptitude	PSO6
3	Interpret texts and sharpen writing skills.	PSO6
4	Develop career oriented life skills	PSO6

Communication and Soft Skills – III (CSS - III) Semester -IV		
Sl.No	**Course Outcomes**	**PO's**
	The Graduate will be able to	
1	Develop a positive attitude and adopt a confident body language.	PSO6
2	Apple netiquette and soft skills to everyday interactions.	PSO6
3	Learn to be emotionally intelligent.	PSO6
4	Develop writing skills and communicating on the internet.	PSO6

SKILL DEVELOPMENT COURSE		
Business Communication Skills		
Sl.No	Course Outcomes	PO's
The Graduate will be able to		
1	Understand the types of business communication and correspondence	PSO6
2	Comprehend the processes like receiving, filing and replying	PSO6
3	Acquire knowledge in preparing good business communications	PSO6
4	Acquaint with organizational communication requirements and presentations.	PSO6

SKILL DEVELOPMENT COURSES		
JOURNALISTIC REPORTING		
Sl.No	Course Outcomes	PO's
The Graduate will be able to		
1	Understand the evolution of journalism with a focus on its development in India.	PSO6
2	Comprehend the role of Press in the Indian democracy and various reporting methods.	PSO6
3	Realize the ethical aspects of Journalism in India	PSO6
4	Develop basic writing skills for newspapers, Radio and Television.	PSO6

UG Department of Hindi

PROGRAM OUTCOMES (POs)

At the end of the programme students will have:

PO1: Essential Knowledge: Comprehensive discipline knowledge and understanding, the ability to engage with different schools of thought and to apply their knowledge in practice including in multi-disciplinary or multi-professional contexts.

PO2: Creative and critical thinking and problem solving abilities: Be effective problem solvers, able to apply critical and evidence-based thinking to conceive innovative responses to future challenges.

PO3: Teamwork and communication skills: Be able to convey ideas and information effectively to a range of audiences for a variety of purposes and contribute in a positive and collaborative manner to achieving common goals.

PO4: Motivation and preparation in life-long learning: Exhibit life-long skills; broad based multiple career oriented general skills; self and field based learning skills; digital skills; social responsibility and compassionate commitment; preparedness for living, learning and working in any environment.

PO5: Professionalism and leadership readiness: Be able to engage in professional behaviour and have the potential to be entrepreneurial and take leadership roles in their chosen occupations and communities.

PO6: Intercultural and ethical competency: Be responsible and effective global citizens whose personal values and practices are consistent with their roles as responsible members of society.

PO7: Self-awareness and emotional intelligence: Be self-aware and reflective, flexible and resilient and act with integrity and take responsibility for their actions as empowered women. PO8: Social responsibility: Be sensitive to and demonstrate agency in matters of environment, gender and other social issues to promote an equitable society.

Programe Specific Outcomes (PSOs)

At the end of the Programme the student will be able to

PSO1: To prepare and motivate students for research studies in Hindi language and literatureand related fields.

PSO2: To provide advanced knowledge of different theories of hindi language and literature and empowering the students to pursue higher degree/research at reputed academic institutions.

PSO3: To nurture analytical qualities or skills,thinking power,creativity through assignments &project works.

PSO4:To assist students in preparing(personal guidance,books) for competitive exams.

e.g-NET/SET,staff selection commission,Banking sector/Govt. of India undertakings(Rajbhasha Sahayak or Hindi officer/Translator),School service Commission etc.

PSO5:To encourage the students for original thinking/thought/decision making.To imbibe the effective communication in both mediums of expression (oral and writing).

20 Regulations:

	HINDI -SEMESTER-I	
Sl.No	Course Outcomes	PO's
	The Graduate will be able to	
1	मानव मूल्य॒ का पहचानकर समाज कल्याण हतु दन क लिए तयार रहना ।	PO1,PO2,PO4,PO8
2	आधुनिक युग कᴐ भावनाN का पहचानकर सामाजिक सम3याNका सामना करते इए ,निरंतर आगे बढना ।	PO1,PO2,PO4
3	विRयाᴐथय॒ का श&दावली स एक भाषा का अनुवाद कर सकता ह ।	PO1,PO2,PO4,PO7, PO8
4	छाᴐᴐ का इस ᴐᴐकरण क ᴐᴐरा भाषा म निपुणता आती ह।	PO1,PO2,PO4,PO8
5	छाᴐᴐ के इस लेखन ᴐᴐरा लिखत काय॔ बढ़ता है और संᴐᴐेषण का विकास होᴐᴐ है ।	PO1,PO4,PO6,PO7, PO8

	HINDI-SEMESTER-II	
Sl.No	Course Outcomes	PO's
	The Graduate will be able to	
1	मानव मूल्य॒ का पहचानकर समाज कल्याण हतु तयार रहना ।	PO1,PO2,PO4,PO8
2	आधुनिक युग कᴐ भावनाN को पहचान क आर सामाजिक सम3याNका सामना करते - इये,निरंतर आगे बढ़ना ।	PO1,PO2,PO4
3	विषयु का विव3लेशन करक ,विषय॒ का अपना अनुकूल बनाकर समाज मे आगे बढ़ने के लिए ᴐᴐयास करना ।	PO1,PO2,PO4,PO7, PO8
4	ᴐहण ᴐकय गय पाᴐᴐशᴐ क ᴐᴐरा विᴐहाᴐᴐधय॒ का ᴐᴐन मापन ᴐकया जा सकता है।	PO1,PO2,PO4,PO8
5	हमारी भाषा का उपयोग,हम ᴐकस भाषा का ᴐᴐयोग करत ह, उसक ᴐᴐरा समाज कल्याण, विᴐहाᴐᴐधय॒ के उᴐᴐल भिवᴐय हेतु उपयोगी होना चाᴐहिए।	PO1,PO4,PO6,PO7, PO8

**HINDI-SEMESTER-III**
Sl.NO	**Course Outcomes**	**PO's**
	The Graduate will be able to	
1	दोहों के द्वारा विह्रिदयों मॅ समाज सुधार की भावना,मानव मूल्यों का विकास हो सकेगा।	PO1,PO2,PO4,PO8
2	हिन्दी साहित्य के इतिहास के द्वारा हिन्दी भाषा और साहित्य की मुखता से परिचित हो सकेंगे।	PO1,PO2,PO4,PO8
3	समाज मॅ हिन्दी भाषा के परिचित हो सकेंगे और हिन्दी भाषा का ज्ञान प्राप्त कर दूसरों से आसानी से संभाषित करने मॅ सक्षम हो सकेंगे ।	PO1,PO2,PO4,PO8
4	समाज कल्याण के विषयों का समझकर विरयार्थ2 अपने ज्ञान का विकास कर सकेंगे ।	PO1,PO2,PO3,PO4, PO5,PO7,PO8
5	प्रयोजनमूलक हिन्दी ज्ञान कर सकेंग आर हिन्दी मं पत्राचार का कौशल विकसित कर सकेंगे ।	PO1,PO2,PO4,PO6, PO7

R18 Regulations:

<table>
<tr><td colspan="3" align="center">Hindi
Semester -I</td></tr>
<tr><td>Sl.No</td><td>Course Outcomes</td><td>PO's</td></tr>
<tr><td colspan="3" align="center">The Graduate will be able to</td></tr>
<tr><td>1</td><td>मानव मू␂य␂ को पहचानकर समाज क␂याण हेतु देने के ␂लिए तैयार रहना ।</td><td>PO1,PO2,PO4,PO8</td></tr>
<tr><td>2</td><td>आधु␂निक युग क␂ भावनाN का पहचानकर सामा␂जिक सम3याN का सामना करते इए ,␂निरंतर आगे बढना ।</td><td>PO1,PO2,PO4</td></tr>
<tr><td>3</td><td>␂वR␂या␂थय␂ का श&दावली से एक भाषा का अनुवाद कर सकता है ।</td><td>PO1,PO2,PO4,PO7,PO8</td></tr>
<tr><td>4</td><td>छा␂␂␂ का इस ␂␂करण क ␂␂रा भाषा म␂ ␂निपुणता आती ह।</td><td>PO1,PO2,PO4,PO8</td></tr>
<tr><td>5</td><td>छा␂␂␂ क इस लेखन ␂␂रा ␂लिखत काय´ बढ़ता ह और स␂␂षण का ␂विकास हो␂␂ा है ।</td><td>PO1,PO4,PO6,PO7,PO8</td></tr>
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<table>
<tr><td colspan="3" align="center">Hindi
Semester -II</td></tr>
<tr><td>Sl.No</td><td>Course Outcomes</td><td>PO's</td></tr>
<tr><td colspan="3" align="center">The Graduate will be able to</td></tr>
<tr><td>1</td><td>मानव मू␂य␂ को पहचानकर समाज क␂याण हेतु तैयार रहना ।</td><td>PO1,PO2,PO4,PO8</td></tr>
<tr><td>2</td><td>आधु␂निक युग क␂ भावनाN को पहचान के आर सामा␂जिक सम3याN का सामना करते - इये,␂निरंतर आगे बढ़ना ।</td><td>PO1,PO2,PO4,PO8</td></tr>
<tr><td>3</td><td>␂विषय का ␂वि3लेशन करके ,␂विषय␂ को अपना अनुकू ल बनाकर समाज मे आगे बढ़ने के␂लिए ␂␂यास करना ।</td><td>PO1,PO2,PO4,PO8</td></tr>
<tr><td>4</td><td>␂हण ␂कये गये पा␂␂␂श␂ के ␂␂रा ␂वि␂␂␂धय␂ का ␂␂␂न मापन ␂कया जा सकता है।</td><td>PO1,PO2,PO3,PO4,PO5, PO7,PO8</td></tr>
<tr><td>5</td><td>हमारी भाषा का उपयोग,हम ␂कस भाषा का ␂␂योग करते है, उसके ␂␂रा समाज क␂याण, ␂वि␂␂␂धय␂ के उ␂वल भिव␂य हेतु उपयोगी होना चा␂हए।</td><td></td></tr>
</table>

Hindi		
Semester -III		
Sl. No	**Course Outcomes**	**PO's**
	The Graduate will be able to	
1	दोह□ के □□रा □वh□□दय□ म𝑀 समाज सुधार क□ भावना,मानव मू□य□ का □विकास हो सकेगा।	PO1,PO2,PO4,PO8
2	□ह:दी सा□ह:य के इतिहास के □□रा □ह:दी भाषा और सा□ह:य क□ ○□मुखता से प□रिचत हो स𝑘𝑀७ग७ ।	PO1,PO2,PO4,PO8
3	समाज म𝑀 □ह:दा भाषा क प□रिचत हा स𝑘𝑀७ग आर □ह:दा भाषा का ○□□न ○□□□□ कर दूसर□ से आसानी से सं○□□े□षित करने म𝑀 स○□□म हो स𝑘𝑀७ग७ ।	PO1,PO2,PO4,PO8
4	समाज क□याण के □विषय□ को समझकर □व𝑅याथ2 अपने ○□□न का □विकास कर स𝑘𝑀७ग७ ।	PO1,PO2,PO3,PO4,PO5,PO7,PO8
5	○□योजनमूलक □ह:दी ○□○□□ कर स𝑘𝑀 ग आर □ह:दी म प○□□चार का कौशल □विकिसत कर स𝑘𝑀७ग७ ।	

AKKINENI NAGESWARA RAO COLLEGE, GUDIVADA

DEPARTMENT OF HINDI UG - PROGRAMME OUTCOMES
हिन्दी विभाग - स्नातक परिणाम कार्यक्रम

डा. के.जानकी देवी

प्राध्यापिका

ए.एन.आर कालेज, गुडिवाड़ा

इस कोर्स पूरा होने के बाद सभी छात्र ऐसा कर पाएंगे।

1 Year UG Programme - Under CBCS Semester - I

SEM - I

1. ''साहित्य की सर्वांगींण'' महत्ता पर डा. महावीर प्रसाद द्विवेदी जी चर्चा करते हैं। श्रेष्ट साहित्य की विशेषता और कमजोरियों का विश्लेषण करने की योग्यता।

2. उदात्त आदर्श का पालन करने वाला व्यक्ति सच्चा वीर पुरूष हैं इस विषय को समझने की योग्यता।

3. आचार्य रामचंन्द्रशक्ल जी इस निबंध में साहित्य के साथ-साथ मित्रता जीवन को प्रभावित करते हैं। इस विषय को जानने समझने की योग्यता ।

4. मानवीय मूल्यों के प्रति मानव व्यवहार की उदारता को समझने की योग्यता।

5. धार्मिक साहित्य को जानने की योग्यता ।

6. मानवीय चरित्रों की अवतारणा तथा उनमें सहज व्यक्तित्व की प्रतिष्ठा का सुन्दरतम उदाहरण है इस कहानी। इस विषय को समझने की योग्यता।

7. हिन्दी साहित्य और व्याकरण के अध्ययन के माध्यम से विद्यार्थी में स्वाध्याय करने की और समझने की योग्यता।

SEM - II

1. हिन्दी साहित्य के अध्ययन के द्वारा संस्कृति, साहित्य, और समाज का परस्पर संबंध और एक दुसरे के पूरक। इस विषय को समझने की योग्यता।

2. साहित्य में ऐतिहासिक, सांस्कृतिक एंव राष्ट्रीय चेतना को समझने की और बहुसांस्कृतिकता को आत्मसात करने की योग्यता।

3. नैतिक मूल्य के प्रति जागरूकता और उनके प्रचार प्रसार के लिए रुचि उत्पन्न होने की योग्यता।

4. समाज में व्याप्त स्वार्थ प्रकृति तथा अपनी पहचान के लिए तड़पती नारी का चित्रण चित्रा मुद्गल ने वर्णन किया है। इस विषय को समझने की योग्यता।

5. वर्तमान समाज के प्रति संवेदनशील दृष्टी का विकास करने की योग्यता।

6. साहित्य के माध्यम से वर्तमान समाज में फैले भ्रष्टाचारों को जानने की योग्यता।

7. हिन्दी साहित्य और व्याकरण के अध्ययन के माध्यम से विद्यार्थी में मूल भूत कौशल का विकास करने की योग्यता।

SEM - III

1. साहित्य के विभिन्न रूपों, विधाओं, कालखंडों और आंदोलनों की पहचान करना, उनके बारे में चर्चा करना तथा आलेख लिखने की योग्यता।

2. पद्यों को गंभीरता पूर्वक पढ़ने की योग्यता।

3. भाषा संबंधी कौशल का विकास करने की योग्यता।

4. उच्चारण, वर्तनी और लिपि का सही-सही ज्ञान करने की योग्यता।

5. समाज और समुदाय के प्रति संवेदनशील दृष्टी का विकास करने की योग्यता।

6. योग और आध्यात्म का प्रशिक्षण ताकि विद्यार्थी का शारीरिक और मानसिक विकास करने की योग्यता।

7. साहित्य के विभिन्न कालखंडों को समझने की योग्यता तथा संक्रमण काल के मध्य की स्थितियों को समझने की योग्यता।

8. सामाजिक, धार्मिक, क्षेत्रीय, लैंगिक, राजनैतिक और आर्थिक संदर्भ में साहित्य को जानने की योग्यता।

9. अनुवाद के माध्यम से पारस्परिक संबंधों को खोज करने की योग्यता।

10. शोध-पत्र हेतु योजना बनाना और शोध-पत्र लिखने की योग्यता।

11. व्यक्तिगत शोध के साथ-साथ प्रश्न निर्माण और उत्तर देने की योग्यता का विकास।

12. सूचना (Notice) परिपत्र (Circular Letter) एवं तकनीकी कौशल से परिचय करने की

AKKINENI NAGESWARA RAO COLLEGE, GUDIVADA

HINDI -SEMESTER-I

Credits-3   **NO. OF HOURS: 60**

COURSE OUT COMES -2018 TO 2022   *COURSE CODE-20HIN1*

CO1   -मानव मू‍य‍ को पहचानकर समाज क‍याण हेतु देने के‍लिए तैयार रहना ।

CO2 -आधु‍निक युग क‍ भावनाN का पहचानकर सामा‍जिक सम३याNका सामना
करते इए ,‍निरंतर आगे बढना   ।

CO3 -‍विᴙया‍थय‍ को श&दावली से एक भाषा का अनुवाद के आर सकता है ।

CO4 -छा‍‍ को इस ‍‍ाकरण के   ‍‍ारा भाषा मे ‍निपुणता आती है।

CO5 -छा‍‍ के   इस लेखन ‍‍ारा ‍लिखित काय॔ बदता है और सं‍‍ेषण का

‍विकास हो‍‍ा है ।

AKKINENI NAGESWARA RAO COLLEGE, GUDIVADA

HINDI -SEMESTER-II

Credits-3   **NO. OF HOURS: 60**

COURSE OUT COMES -2018 TO 2022   *COURSE CODE-20HIN2*

CO1 - मानव मू्य□ को पहचानकर समाज क□याण हेतु तैयार रहना ।

CO2 –आधु□नक युग क□ भावनाN को पहचान के आर सामा□जक सम3याN का सामना करते -.इये,□नरंतर आगे बढ़ना ।

CO3–□वषय का □व3लेशन करके,□वषय□ को अपना अनुकूल बनाकर समाज मे आगे बढ़ने.के□लए ○□यास करना ।

CO4 –□हण □कये गये पा□○□ंश□ के   □○रा □व□h○□□धय□ का ○□○न मापन

□कया जा सकता है।

CO5–हमारी भाषा का उपयोग,हम □कस भाषा का ○□योग करते है, उसके □○रा समाज. क□याण,□व□h○□□धय□ के उ□वल भिव॰य हेतु उपयोगी होना चा□हए

AKKINENI NAGESWARA RAO COLLEGE, GUDIVADA

HINDI -SEMESTER-III

Credits-3   **NO. OF HOURS: 60**

COURSE OUT COMES -2018 TO 2022   *COURSE CODE-20HIN3*

CO1 –दोह□ के   □□रा □□ह□□दय□ म□ᴍ समाज सुधार क□ भावना,मानव मू□य□ का □विकास हो सकेगा।

CO2 –□ह:दी सा□ह:य के इतिहास के   □□रा □ह:दी भाषा और सा□ह:य क□ ०□मुखता से प□रिचत हो स□□□गे ।

CO3 –समाज क□याण के   □विषय□ को समझकर □विᴚᴀᴛᴢ अपने ०□□न का □विकास कर स□□□गे ।

CO4 –समाज म□ᴍ □ह:दी भाषा के   प□रिचत हो स□□□गे और □ह:दी भाषा का ०□□न ०□□□ कर दूसर□ से आसानी से सं०□□े□षित करने म□ᴍ स□□□म हो स□□□गे ।

CO5 –०□योजनमूलक □ह:दी ०□□□ कर स□□□गे और □ह:दी मे प०□□ाचार का कौशल □विकसित कर स□□□गे ।

UG Department of Telugu

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

PO1:Domain expertise

- Acquire knowledge and skills
- Applyt hemeffectively and innovatively

PO2:Continuous learning and research

- Continuous learning with self-motivation
- Adapt to the evolving demands and needs of life
- investigatetosee causeandeffectrelationship

PO3:Using modern equipment

- Use ICT effectively
- Use it for communication and innovation

PO4:Following ethics

- Ensure ethical practices in work place and life
- Follow ethics in all endeavors

PO5:Complex problem solving

- Predict and analyze problems
- Investigate and interpret empirical data
- Plan and execute action for problemsolving

PO6:Perform effectively both as individual andi n team

- Work efficiently as anindividual
- Cooperate,coordinate and ensure successful team work
- Prioritize common interest to individual interest

PO7:Efficient communication and life skills

- Listen,understand and express thoughts in an effective manner
- Choose appropriate mediato share information

PO8: Environmental sustainability

- Understand environmental challenges
- Think critically nenvironments ustainability measures
- Follow and propagate environment friendly practices

PO9:Societal contribution

- Render service for the general good of the society
- Involve voluntarily in social development activities at

Regional,National,and global levels

- Take pride in volunteering to address calamities, disasters,poverty,&epidemics
- Be a patriotic citizen to uphold the values of the nation

PROGRAM SPECIFIC OUTCOMES

PSO1:**:To understand and the nature, scope and concepts ofAccounting, Business Operations and Management.**

  PSO2: To equip the students with leadership skills and knowledge incomputing skills.

కేజ్యు।-PAPER-1 Pracheena Telugu Kavitvam (ప్రాచీన తెలుగు కవిత్వం)

COURSE OBJECTIVES

CO 1

ప్రాచీన తెలుగు సాహిత్యం యొక్క ప్రాచీనతను, విశిష్టతను గుర్తిస్తారు తెలుగు సాహిత్యంలో ఆదికవి నన్నయ గారి కాలంనాటి భాషా సంస్కృతులను. ఇతిహాస కాలం నాటి రాజనీతి విషయాల పట్ల పరిజ్ఞానాన్ని సంపాదించగలరు.

CO 2.

శివ కవుల కాలం నాటి మత పరిస్థితులను, భాషా విశేషాలను గ్రహిస్తారు. తెలుగు నుడికారం, సామెతలు, లోకోక్తులు మొదలైన భాషాంశాల పట్ల పరిజ్ఞానాన్ని పొందగలరు

CO 3.

తిక్కన భారతం లాంటి మత ధార్మిక పరిస్థితులను, తిక్కన కవితా శిల్పాన్ని, నాటకీయతను అవగాహన చేసుకోగలరు.

CO 4.

ఎర్రన సూక్తి వైచిత్రిని, ఇతిహాస కవిత్వంలోని విభిన్న రీతుల పట్ల అభిరుచిని పొందగలరు. శ్రీనాథుని కాలం నాటి కవితా విశేషాలను మొల్ల కవితా విశిష్టతను గుర్తించగలరు

CO 5.

తెలుగు పద్యం స్వరూప స్వభావాలను సాహిత్యాభివృద్ధిని పెంపొందించుకుంటారు.

ప్రాచీన కావ్య భాషలోనే వ్యాకరణాంశాలను అధ్యయనం చేయడం ద్వారా భాషా సామర్థ్యాన్ని రచనలో మెళకువలను గ్రహించగలరు.

CONTENT	CO	HOURS
<u>**యూనిట్□□1**</u> యూనిట్□□□ □రాజనీతి□□నన్నయ□మహాభారతం□□సభాపర్వం□□ప్రథమాశ్వా సం□□□□□□□□□పద్యాలు□	**1,5**	**10**
<u>**యూనిట్-II**</u> దక్షయజ్ఞం- నన్నెచోడుడుకుమారసంభవం- ద్వితీయాశ్వాసం(49-86 పద్యాలు)	**2 &5**	**10**
<u>**యూనిట్-III**</u> దౌమ్యధర్మోపదేశం- తిక్కనమహాభారతం- విరాటపర్వం- ప్రథమాశ్వాసం(116-146)	**3 &5**	**10**

		4&5	09
యూనిట్-IV పలనాటిబెబ్బులి- శ్రీనాథుడు (పల్నాటివీరచరిత్ర-ద్విపదకావ్యం(పుట108-112)			
యూనిట్-V సీతారావణసంవాదం - మొల్లరామాయణము- సుందరకాండము (40-87)		4 &5	09
వ్యాకరణాంశాలు -సంధులు,అలంకారాల, సమాసాలు,ఛందస్సు		5	12

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1
CO1	3	3	3			3	3	3	3
CO2	3	3	3			3	3	3	3
CO3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3		3			3

(course code: 20TEL2)

COURSE OBJECTIVE

అభ్యసన ఫలితాలు : ఈ కోర్సు విజయవంతంగా ముగించాక, విద్యార్థులు క్రింది అభ్యసన ఫలితాలను పొందగలరు.

CO 1. ఆంగ్లభాష ప్రభావం కారణంగా తెలుగులో వచ్చిన ఆధునిక సాహిత్యాన్ని దాని విశిష్టతను గుర్తిస్తారు.

CO 2. సమకాలీన ఆధునిక సాహిత్య ప్రక్రియలైన "వచన కవిత్వం, కథ, నవల, నాటకం, విమర్శ"లపై
అవగాహనపొందుతారు.

CO 3. భావకవిత, అభ్యుదయ కవితాలక్ష్యాలను గూర్చిన జ్ఞానాన్ని పొందుతారు. అస్తిత్వవాద ఉద్యమాలపుట్టుకను,
ఆవశ్యకతను గుర్తిస్తారు.

CO 4.కథాసాహిత్యం ద్వారా సామాజిక చైతన్యాన్ని పొందుతారు. సిద్ధాంతాల ద్వారా కాకుండా, వాస్తవ పరిస్థితులను తెలుసుకోవడం
ద్వారా సిద్ధాంతాన్ని సమీక్షించగలరు.

CO 5. ఆధునిక తెలుగు కల్పనాసాహిత్యం ద్వారా సామాజిక, సాంస్కృతిక, రాజకీయ చైతన్యాన్ని పొందుతారు.

CONTENT	CO	HOURS
యూనిట్-I : ఆధునిక కవిత్వం 1. ఆధునిక కవిత్వం– పరిచయం 2. కొండవీడు – దువ్వూరి రామిరెడ్డి ('కవికోకిల' గ్రంథావళి–ఖండకావ్యాలు–నక్షత్రమాల సంపుటి నుండి 3. మాతృసంగీతం – అనిసెట్టి సుబ్బారావు ('అగ్నివీణ' కవితాసంపుటి నుండి) 4. 'కాతకో నూలుపోగు' – బందారు ప్రసాదమూర్తి ('కలనేత' కవితాసంపుటి నుండి)	1,2,3 &4	12
యూనిట్–II : కథానిక 5. తెలుగు కథానిక – పరిచయం 6. భయం (కథ) – కాళీపట్నం రామారావు 7. స్వేదం ఖరీదు....?– (కథ) – రెంటాల నాగేశ్వరరావు	1, 2, 3 &4	12
యూనిట్–III : నవల 8. తెలుగు 'నవల' – పరిచయం 9. రథచక్రాలు (నవల) – మహీధర రామ్మోహన రావు (సంక్షిప్త ఇతివృత్తం మాత్రం) 10.రథచక్రాలు (సమీక్షా వ్యాసం) – డా॥యల్లాప్రగడ మల్లికార్జునరావు	1,2,3,4	12
యూనిట్–IV: నాటకం 11. తెలుగు 'నాటకం' – పరిచయం 12. యక్షగానము (నాటిక) – ఎం.వి.ఎస్. హరనాథరావు. 13."అపురూప కళారూపాల విధ్వంసదృశ్యం 'యక్షగావము' (సమీక్షా వ్యాసం)" –చా॥కందిమళ్ళసాంబశివరావు	1, 2, 3 &4	12

యూనిట్ –V : విమర్శ	1, 2, 3 &4	12
14. తెలుగు సాహిత్య విమర్శ – పరిచయం 15. విమర్శ–స్వరూప స్వభావాలు; ఉత్తమ విమర్శకుడు–లక్షణాలు		

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1
CO1	3	3	3			3	3	3	3
CO2	3	3	3		3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3		3	3

Telugu Paper-3   సృజనాత్మక రచన
Course code :20TEL3

COURSE OBJECTIVE

ఈకోర్సువిజయవంతంగాముగించాక, విద్యార్థులుఈక్రిందిఅభ్యసనఫలితాలనుపొందగలరు.
Co 1:తెలుగుసాహిత్యఅభ్యసనద్వారానేర్చుకున్ననైపుణ్యాలను,
సృజనాత్మకనైపుణ్యాలుగామార్చుకోగలరు.
Co 2:విద్యార్థులుభాషాతత్త్వాన్ని, భాషయొక్కఆవశ్యకతను, భాషయొక్కప్రాధాన్యాన్నిగుర్తిస్తారు.
మనిషివ్యక్తిగతజీవనానికి, సామాజికవ్యవస్థపటిష్ఠతకుభాషప్రధానమనితెలుసుకుంటారు.
తెలుగుభాషలోనికీలకాంశాలైనవర్ణం -
పదం,వాక్యాలప్రాధాన్యాన్నిగుర్తిస్తూవ్యాగ్రూపలిఖితరూపవ్యక్తీకరణద్వారాభాషానైపుణ్యాలనుమె
రుగుపరచుకోగలరు.
Co 3:భాషానైపుణ్యాలనుఅలవర్చుకోవడంతోపాటువినియోగించడంనేర్చుకుంటారు. రచనా,
భాషణనైపుణ్యాలనుసృజనాత్మకరూపంలోవ్యక్తీరించగలరు.
Co 4:ప్రాచీనపద్యరచనతోపాటుఆధునికకవిత, కథ,
వ్యాసం,మొదలైనసాహిత్యప్రక్రియలనిర్మాణాలకుసంబంధించినసిద్ధాంతవిషయాలనునేర్ప
డంతోపాటువారిలోరచనానైపుణ్యాలనుపెంపొందించుకోగలరు.
Co 5:సృజనరంగం, ప్రసారమాధ్యమరంగాల్లోఉపాధిఅవకాశాలనుఅందిపుచ్చుకోగలరు

అనువాదరంగంలోనైపుణ్యంసంపాదించగలరు

CONTENT	CO	HOURS
యూనిట్- 1 వ్యక్తీకరణనైపుణ్యాలు 1.భాషప్రాథమికఅంశాలు: భాష-నిర్వచనం,లక్షణాలు,ఆవశ్యకతప్రయోజనాలు 2.వర్ణం-పదం-వాక్యం: వాక్యలక్షణాలు, సామాన్య- సంయుక్త-సంశ్లిష్టవాక్యాలు 3.భాషానిర్మాణంలోవర్ణం-పదం-వాక్యంప్రాధాన్యత	1,2,3 &4	12
యూనిట్-II సృజనాత్మకరచన 4.కవితారచన : ఉత్తమకవిత-లక్షణాలు 5.కథారచన : ఉత్తమకథ-లక్షణాలు 6.వ్యాసరచన : ఉత్తమవ్యాసంలక్షణాలు	1, 2, 3 &4	12

	యూనిట్ - III: అనువాదరచన		12
	7.అనువాదం-నిర్వచనం, అనువాదపద్ధతులు.		
	8.అనువాదసమస్యలు- భౌగోళిక, భాషా, సాంస్కృతికసమస్యలు, పరిష్కారాలు		
	9.అభ్యాసము :ఆంగ్లంనుండితెలుగుకు, తెలుగునుండిఆంగ్లానికిఒకపేరానుఅనువదించడం.		
యూనిట్- IV మాధ్యమాలకురచన-1(ముద్రణామాధ్యమం /(పింట్మీడియా)	10. ముద్రణామాధ్యమం (అచ్చుమాధ్యమం): పరిచయం, పరిధి, వికాసం	1, 2, 3 &4	12
	11.వివిధరకాలపత్రికలు-, పరిశీలన, పత్రికాభాష, శైలి, వైవిధ్యం		
	12.పత్రికారచన : వార్తారచన, సంపాదకీయాలు, సమీక్షలు-అవగాహన		
యూనిట్-V మాధ్యమాలకురచన-2 (ప్రసారమాధ్యమంఎలక్ట్రానిక్మీడియా)	13.ప్రసారమాధ్యమాలు: నిర్వచనం, రకాలు, విస్తృతిప్రయోజనాలు	1, 2, 3 &4	12
	14.శ్రవణమాధ్యమాలు- రచన: రేడియోరచన, ప్రసంగాలునాటికలు, ప్రసారసమాచారం		
	15. దృశ్యమాధ్యమాలు- రచన: వ్యాఖ్యానం(యాంకరింగ్), టెలివిజనరచన		

<mark>**Mapping of Course Outcomes with program and Program Specific Outcomes (CO,PO & PSO Matrix)**</mark>

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1
CO1	3	3	3			3	3	3	3
CO2	3	3	3			3	3	3	3
CO3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3		3			3

1 వ సెమిస్టర్ సిలబస్ (సాహితీ నందనం) (Course Code:18TEL1)

ప్రాచీన కవిత్వం

1.గంగా శంతనుల కథ–నన్నయ   2. ద్రౌపది పరిదేవనం –తిక్కన

పై రెండు పాఠాలను చదవటం వల్ల ఆంధ్ర మహా భారతం పట్ల కనీస అవగాహన , భీష్మని లాగా ఇచ్చిన మాటకు కట్టుబడటం , ఉత్తమ కుటుంబ, మానవ సంబంధాలు ఏర్పరచుకోవడం, తెలుస్తాయి . ప్రాచీన భారత సంస్కృతిపై అవగాహన, ప్రాచీన సాహిత్యం పట్ల ఆసక్తి పెరుగుతుంది

ఆధునిక కవిత్వం

3.కన్యక గురజాడ అప్పారావు –సంఘ సంస్కరణ , రాజరిక పాలన , గర్వం-నాశనం , అరాచకత్వం , స్త్రీ చైతన్యం ,సనాతన ధర్మాలు

4.దేశ చరిత్రలు శ్రీ శ్రీ – చరిత్రను ఒక కొత్త కోణంలో తెలుసుకోవచ్చు . ఆయా దేశాల చరిత్రను అధ్యయనం చేసే ఆలోచన కలుగుతుంది.

కథానికలు

5.చింతలతోపు   పాపినేని   శివశంకర్,వ్యవసాయం ,రైతులకష్టాలు,అప్పులు,ఆత్మహత్యలు,ప్రభుత్వవైఫల్యాలు

6.సావు కూడు బండి నారాయణ స్వామి –ఆకలి,అప్పులు,కరువు,విచిన్నమవుతున్న మానవ సంబంధాలు

వ్యాకరణం 7.సంధులు : సవర్ణ దీర్ఘ , గుణ, వృద్ధి, యణాదేశ, త్రిక, గసడదవాదేశ,

రుగాగమ, టుగాగమ అత్వ ఇత్వ ఉత్వ

8.సమాసాలు: తత్పురుష,కర్మధారయ, ద్వంద్వ, ద్విగు, బహుర్వీహి

9.అక్షర దోషాలు దోషాలు సరిదిద్ది సాధురూపాలు రాయాలి

విద్యార్థి కృత్యాలు:

10. శ్రీ శ్రీ దేశ చరిత్రలకి సంబంధించి పేరడీలు సేకరణ

11.విద్యార్థులచే ముత్యాల సరాల ఛందస్సులో కవిత రచన

2 వ సెమిస్టర్ సిలబస్ (సాహితీ కౌముది) (Course Code:18TEL2)

ప్రాచీన కవిత్వం

1.సాయుజ్యము –ధూర్జటి

భక్తి భావం, ఈర్ష్య లేకుండా నిష్కల్మష మనస్సు తో భగవంతుని సేవించడం, పొరుగువారి పనుల్ని హేళన చేయకుండా వుండటం

2.సుభద్రా పరిణయం -చేమకూర వెంకట కవి-

తెలుగువారి వివాహ సంప్రదాయాలు , సంస్కృతి, పెళ్ళిలోని ఆచారాలు పద్ధతులు

ఆధునిక కవిత్వం

3.ఫిరదౌసి లేఖ-గుర్రం జాషువా

జాషువా కవితా మాధుర్యం , రాజ అహంకారం ,కవుల ఆక్రోశం

4.చెట్టు -గెడ్డాపు సత్యం

చెట్టు వల్ల లాభాలు –ప్రకృతి,పర్యావరణ సమతుల్యత

కథానికలు

5.నమ్ముకున్న నేల ఆచార్య కేతు విశ్వ నాథ రెడ్డి –

రాయలసీమ ప్రాంత జీవన విధానం – కరువులు,రైతులు పొలాల్ని అమ్ముకోవడం ,అప్పులపాలవడం, ఆత్మహత్యలు

6.'అమ్మకి ఆదివారం లేదా'? రంగనాయకమ్మ

స్త్రీ చైతన్యం –పురుషాధిక్యత

7.నవల – బతుకాట డా.వి.ఆర్.రాసాని

వృత్తి కళాకారుల జీవన విధానం , జానపద భారత కథలు , నాటకాలు , నాటకాలు వేసేవాళ్ళ పరిస్థితులు,రాయలసీమ ప్రాంతంలో ఈ వీధినాటకాలు ఇప్పటికీ నిలిచే వున్నాయి.

3 వ సెమిస్టర్ సిలబస్ (సాహితీ సౌరభం) (Course Code:18TEL3)

ప్రాచీన కవిత్వం 1.వామానావతారం- బమ్మెర పోతన

.దశావతార పరిచయం , భాగవతం, పురాణాల పట్ల అవగాహన,మాట స్థిరత్వం, దాన గుణం అలవర్చుకోవడం , ఇచ్చిన మాట తప్పకపోవడం.

2శాలివాహన విజయం – కొరవి గోపరాజు

జానపద కథా ధోరణి. ఇది కాస్త వాస్తవిక జీవితానికి దూరంగా వుంటుంది.అన్ని నమ్మలేం.

ఆధునిక కవిత్వం 3.హరిజన శతకం -కుసుమ ధర్మన్న

ఈ సమాజంలోని చీలికలు తెలుస్తాయి.కృతయుగం ధర్మాలు,నేటి కలియుగ ధర్మాలు,హరిజనుల దుస్థితి

4.సంక్రాంతి సంబరం –రాయప్రోలు సుబ్బారావు

తెలుగువారి పండుగైన సంక్రాంతి వైభవం, కొత్త కోడళ్ళు కొత్త అల్లుళ్ళు సందడి, పశువుల అలంకరణ

గద్య భాగం (వ్యాస సంపుటి)

5.తెలుగు భాష -ఆచార్య గుజ్జర్లమూడి కృపాచార్య

తెలుగు భాష గొప్పదం , చక్కగా మాట్లాడటం రాయటం, చదవటం నేర్చుకోవచ్చు .

6.వ్యక్తిత్వ వికాసం –ఆచార్య రాచపాలెం చంద్ర శేఖర రెడ్డి

మానవ వ్యక్తిత్వం వికాసం చెందటానికి తోడ్పడే విషయాలు, వ్యక్తిత్వాన్ని నాశనం చేసే విషయాలు , ఈ సమాజంలో ఎలా బతాకాల్నో , ఎలా బతకకూడదో మొదలగు విషయాలు తెలుస్తాయి .

7.అసమర్థుని జీవయాత్ర – త్రిపురనేని గోపీచంద్

వివిధ దశలలో ,సందర్భాల్లో ,సమయాల్లో మానవ మనస్తత్వం ఎలా వుంటుందో తెలుస్తుంది. మనిషి ఏమీ చేయకుండా సోమరై ఎలా చనిపోతాడో తెలుపుతుంది ఈ నవల .

8.ఛందస్సు –ఉత్పలమాల,చంపకమాల,శార్దూలము,మత్తేభము, కందం, తేటగీతి, ఆటవెలది

9.అలంకారాలు –ఉపమ,రూపక,ఉత్ప్రేక్ష ,స్వభావోక్తి,అతిశయోక్తి,అర్థాంతరన్యాసం,దృష్టాంతం

10.విద్యార్థి కృత్యాలు:

a) తెలుగు వారాలు,తిథులు ,నక్షత్రాలు,సంవత్సరాల పేర్లు తెలుసుకోవడం

b) వ్యక్తిత్వాన్ని ఏవిధంగా మెరుగుపరచుకోవచ్చో ఒక వ్యాసం రాయడం

c) అంత్యానుప్రాసాలంకారంలో సొంతంగా కవిత రచన

P.G. DEPARTMENT OF COMMERCE AND BUSINESS ADMINISTRATION

PROGRAME OUTCOMES (PLO's)

1. Critical Thinking:

Think critically and analyze Business Problems related to Marketing, Finance, Production and Operations, Human Resources, Entrepreneurship and General Management.
2. Effective Communication:

Identify and understand the need for Business Communication in written and oral, formal and informal forms and the role of computers and software in solving problems related to Business and can use of tools to locate and retrieve business communication about topics or techniques relating to Business
3. Social Interaction:

Function individually and as a member or leader in team with the fundamental and advanced knowledge gained in the field of Business and other allied disciplines, i.e.. Economics.
Commerce, Mathematics, Psychology, etc.

4. Effective Citizenship:

Apply conceptual Knowledge gained in the field of Business Management to assess social, legal. Cultural, safety, health issues and the relevant consequences of it.
5. Ethics:

To record and analyze the pragmatic results by maintaining professional ethics, values, responsibilities and norms of the Management Practices.
6. Environment and Sustainability:

Understand the issues of environmental factors and sustainable development.

7. Self-directed and lifelong learning:

Engage in independent and lifelong learning of the concepts related to Business Management in broadest context of Socio-technological changes.

Programme Specific Outcomes (P.S.Os) of MBA include: managerial skills, decision making, leadership and entrepreneurial abilities, logical and practical approach, risk taking approaches, Critical Thinking, Effective Communication, Social Interaction and governance, Effective Citizenship, Ethical approaches, Comprehension of Environment and Sustainability and Self-directed and lifelong learning.

Course: MANAGEMENT PROCESS AND ORGANIZATION BEHAVIOUR (code 18MBA101)		
S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Understand Fundamental concepts, functions, principles of management, challenges and trends.	1,6,7
2	Describe Planning, process of planning, types of organizations and staffing.	2,3,7
3	Explain Motivation, leadership and control systems and techniques.	4,5,6
4	Identify Concept of Organizational behavior and theories determinants of individual behavior.	2,4,5,7
5	Analyze Group dynamics, organizational culture, diagnosis and group performance.	6,7

Course: MANAGERIAL ECONOMICS (code 18MBA102)		
S.No.	COURSE OUTCOMES	PO`S
1	Understand Concept of economics, managerial economics, types of demand and demand forecasting	1,4,6,2
2	Explain Theories of firm and production analysis	1,4,6,7
3	Define Market structures, cost analysis, profit analysis and maximization of profit and wealth	1,4,6,3
4	Describe Indian economic environment and its associated concepts with its measurement	1,4,6,5
5	Analyze Trade cycles and the corrective measures on investment and consumption functions	2,5,8

Course: :-BUSINESS ANALYTICS FOR MANAGERIAL DECISION MAKING (18 MBA 103)

S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Define Concept of Business analytics to explore, analyze the business problems	1,2,4,6
2	Describe the data exploring to find new patterns and relationships through mathematics and statistics	1,4,6,7
3	Explain Predictive analytics tools and techniques for the purpose of mutual dependence of various factors and groups	1,4,6,3
4	Analyze Application of analytics to various business functions and services	1,4,6,5,7
5	Understand Integration between analytics and business research for an effective and efficient decision making	1,2,4,6

Title of the Course:- MANAGERIAL COMMUNICATION (18 MBA 104)

S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Understand Concept of communication, communication skills and sensitize them to become successful managers	1,4,2
2	Explain Communication in business organizations to handle day-to-day managerial responsibilities	1,4,6,5
3	Describe Business correspondence, managerial writing and effective presentation skills.	1,6,3
4	Evaluate Media management, meeting documentation and negotiation strategies.	1,4,6,7
5	Analyze Communication networks, employment communications both manual and technology enabled	1,4,6,3

Title of the Course:- LEGAL FRAMEWORK FOR BUSINESS (18 MBA 105)		
S.No.	**COURSE OUTCOMES**	**PO`S**
	students will be able to	
1	Understand Indian Contract Act and its essentials	1,6,7
2	Define Limited Liability Partnership Act, its conversion and financial disclosures	2,3,7
3	Explain Sale of Goods Act and the Negotiable Instruments Act	4,5,6
4	Analyze Companies Act and its amendments	2,4,5,7
5	Evaluate Cyber laws in India, Consumer Protect Act and the Competition Act	6,7

Title of the Course :- FINANCIAL STATEMENTS ANALYSIS AND REPORTING (18 MBA 106)		
S.No.	**COURSE OUTCOMES**	**PO`S**
	students will be able to	
1	Define the Basic concepts and principles of Accounting and preparation of Journals, Ledgers, Trial balance and financial statements	1,4,2
2	Understanding on preparation and analysis of financial statements	1,4,6,5
3	Explain the issue of shares and preparation of company accounts	1,6,3
4	Evaluate the concepts of financial reporting and auditing, legal requirements, International Financial Reporting Standards and sustainability reporting.	1,4,6,7
5	Analyze Cost management and Cost accounting techniques	1,4,6,3

Course: Title of the Course:- BUSINESS ENVIRONMENT(18 MBA 107)

S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Understand Concept of environment, business environment and its components, regulatory bodies	1,3,6
2	Explain Indian economy and its participants	1,3,4
3	Evaluate Industrial plans and policies and their relevance to different sectors, competitiveness and to world economy..	2,4,6
4	Analyze International and Globalization opportunities and challenges with its determinants..	4,5,6
5	Evaluate the Agencies for sustainability and development of Indian business and the functioning of MNCs.	1,5,7

Course: Title of the Course:- PERSONALITY DEVELOPMENT(18 MBA 109)

S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Understand their personality and achieve their highest goal of life	1,3,6
2	Analyse how to lead the nation and mankind to peace and prosperity	1,3,4
3	Describe the emotional self -regulation	2,4,6
4	Examine the positive approaches for work and duties	4,5,6
5	Develop a versatile personality	1,5,7

MBA II SEMESTER:-

Title of the Course:- MARKETING MANAGEMENT (18 MBA 201)

S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Define Basic Marketing Concepts, Marketing environment and changing marketing practices.	1,4,2
2	Understand Strategic marketing planning, Product life cycle and price setting.	1,4,6,5
3	Describe Marketing communication, promotion decisions and IMC planning process.	1,6,3
4	Evaluate Marketing channel system, Channel management and market logistic decisions.	1,4,6,7
5	Analyze Marketing organization structures, marketing audit and relationship marketing.	1,4,6,3

Title of the Course :- HUMAN RESOURCE MANAGEMENT (18 MBA 202)

S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Define Fundamental concepts of HRM, Qualities and role of HR Manager and models of HRM.	1,3,6
2	Understand Human Resource Planning, Recruitment and selection and placement.	1,3,4
3	Describe Training Programmes and performance appraisal.	2,4,6
4	Evaluate Promotion, Career planning, compensation management and employee welfare measures.	4,5,6
5	Analyze Quality of work life, changing role of HR and HR audit	1,5,7

Title of the Course: FINANCIAL MANAGEMENT (code22MBA203)

S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Describe Conceptual overview, financial decisions, financial planning and forecasting.	1,4,2
2	Define financial leverage, cost of capital, measurement of cost of capital.	1,6,5
3	Understand Components, determinants and theories of capital structure and capital budgeting.	1,6
4	Evaluate Concept of working capital, determinants and dividend policy and theories.	1,7
5	Develop financial analysis through ratio analysis.	1,4,6,3

Title of the Course:- OPERATIONS MANAGEMENT (18 MBA 204)

S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Understand operations, facilities location, layout design and world class manufacturing.	1,4,2
2	Define Operations planning and control, scheduling, work design, work measurement and sampling.	1,4,5
3	Describe Concept of maintenance management, waste management and technology management.	1,6,3
4	Evaluate Materials management, purchase management, stores management and inventory.	1,4,6,7
5	Analyze Statistical quality control, ISO standards, 6 Sigma and total quality management.	1,4,3

S.No.	COURSE OUTCOMES	PO`S

Title of the Course:- ENTREPRENEURSHIP AND SMALL BUSINESS MANAGEMENT (18 MBA 205)

S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Define Concept of Entrepreneur, types, growth, trends in women and rural entrepreneurship.	1,4,2
2	Discuss Business opportunities, industrial analysis and preparing a business plan.	1,4,6,5
3	Explain Preparation of Budget report, sources of finance and venture capital.	1,6,3
4	Understand Concept of MSMEs, industrial sickness and export oriented units.	1,4,6,7
5	Analyze the Role of commercial banks and other agencies to support entrepreneurs	1,4,6,3

Title of the Course :- MANAGEMENT INFORMATION SYSTEMS (18 MBA 206)

S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Understand information technology, computer hardware and cloud computing.	1,2,6
2	Explain MIS planning and design and systems development life cycle.	2,3,6
3	Define Concept of DBMS, Data warehousing and mining and Artificial Intelligence.	3,5,7
4	Evaluate Application on ERP to the functions of management.	1,5,7
5	Describe Digital Firm, Mobile Computing, BPO Management and IPRs to ITES.	2,4,6

Title of the Course :- OPERATIONS RESEARCH (18 MBA 207)		
S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Define Concept of Operations Research and application of OR models for problem solving.	1,6
2	Understand Duality in Linear Programming and Project Management.	2,3,6
3	Explain Transportation models and assignment problems.	3,5,7
4	Describe Game theory and decision theory.	1,5,7
5	Evaluate Queuing model, simulation and its application to management problems.	2,7

Course: MS EXCELL & ACCOUNTING TALLY LAB (Code – 18 MBA210)		
S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Understand the importance of MS Excel and Accounting Tally skills for a business person	1,3,6
2	Analyse the variables and application of formulas to determine the outcomes	1,3,4
3	Describe the application of formulas in financial management using MS Excel	2,4,6
4	Understand the fundamentals of Computerized accounting using Tally	4,5,6
5	Examine the preparation of final accounts using Tally	1,5,7

MBA III SEMESTER :-

Title of the Course:- STRATEGIC MANAGEMENT (18 MBA 301)

S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Define Fundamental concepts of Strategy, Strategic Management and Strategic decision making.	1,3
2	Understand Strategic analysis and choice through various tools and techniques to gain the distinctive competencies.	1,3,4
3	Describe Resources allocation, relationship between strategy and various issues to confirm the best corporate level strategy.	2,6
4	Evaluate Awareness on different growth and retrenchment strategies.	4,5,6
5	Analyze Execution of strategy/strategies and the evaluation and control process.	1,7

Title of the Course :- PROJECT MANAGEMENT (18 MBA302)

S.No	COURSE OUTCOMES	PO`S
	students will be able to	
1	Define the fundamental concepts of Project, Project life cycle, Project appraisal and selection.	1,6,7
2	Describe Demand forecasting techniques with the help of market survey and market feasibility.	2,3,7
3	Understand Project technical feasibility through materials, location, layout, organization and different evaluation review techniques.	4,5,6
4	Develop Project financial analysis, investment appraisal, revenue and cost estimations.	2,4,5,7
5	Explain Project Management stages and Project abandonment aspects	6,7

Title of the Course:- CONSUMER BEHAVIOUR & MARKETING RESEARCH (18 MBA 303 MKT)

S.No	COURSE OUTCOMES	PO`S
	students will be able to	
1	Understand the concepts of Consumer, Consumer behavior, Models of Consumer behavior.	1,5,7
2	Analyze Individual determinants of consumer behavior.	2,4,7
3	Describe Consumer decision making process and application to models of Consumer behavior.	4,5,6
4	Develop the concept of Marketing research, Process and the integration with different phases of business.	2,5,7
5	Evaluate Application of marketing research, effectiveness and the ethical issues.	6,7

Title of the Course :- SERVICES MARKETING (18 MBA 306 MKT)

S.No	COURSE OUTCOMES	PO`S
	students will be able to	
1	Describe the concepts of services, services marketing, the trends and opportunities.	1,6,5
2	Explain Consumer behavior of services, determinants, STP for services in competitive markets.	2,3,7
3	Define the services marketing mix elements.	4,5,4
4	Understand Customer satisfaction and service quality management with the available measuring tools.	2,4,1,7
5	Analyze Service customer relationship, service recovery and service audit.	6,7

Title of the Course:- FINANCIAL INSTITUTIONS AND MARKETS (18 MBA 303 FIN)

S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Understand the concepts of Financial Institutions, Indian Banking System and the control mechanism.	1,3,6
2	Explain the development banks and their functions and functioning.	1,3,4
3	Describe International financing institutions with their objectives and functions	2,4,6
4	Define Basic concepts of financial markets, market system, intermediaries and their regulations.	4,5,6
5	Evaluate different financial markets such as bond market, debt market, capital markets and money markets.	1,5,7

Title of the Course:- SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT (18 MBA 305 FIN)

S.No.	COURSE OUTCOMES	PO`S
1	Define concepts in the field of investments, risk and techniques for measurement of risk.	1,3,6
2	Describe valuation of shares and bonds through different scientific approaches	1,3,4
3	Explain Fundamental and technical analysis with their relevance in security/securities selection.	2,4,6
4	Understand the concepts of portfolio and portfolio management tools and techniques.	4,5,6
5	Evaluate Methods of portfolio performance in the context of Indian	4,2

Title of the Course:- HUMAN RESOURCE PLANNING (18MBA303HRM)		
S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Understand Human Resource Planning, Process for HRP and various approaches to HRP.	1,3,6
2	Describe the HR forecasting, evaluating HR planning effectiveness and development of sample HR plan.	1,3,4
3	Evaluate Development, engagement, driving factors of talent management and motives.	2,4,6
4	Define the concepts of career, career management and lead for succession planning.	4,5,6
5	Evaluate HR Accounting, Methods of HRA, HRIS and Impact of globalization.	1,5,7

Title of the Course :- PERFORMANCE AND REWARD MANAGEMENT (18 MBA 304HRM)		
S.No	COURSE OUTCOMES	PO`S
	students will be able to	
1	Understand the concepts of Performance, Performance management and the Role in Strategic planning.	1,4,3
2	Define Performance appraisal system, Approaches, methods, symptoms and causes for poor performance.	5,6,1
3	Describe Employee development plan, process for employee development plans through various techniques.	2,3,4
4	Develop Reward system and the determinants for individual pay structure	2,3
5	Evaluate Compensation plan and systems in the organization and retirement benefits.	4,5,6

Title of the Course :-   CREATIVITY AND INNOVATION LAB   (18 MBA 310)

S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Understand building blocks of innovation	1,3,6
2	Be familiar with processes and methods of creative problem solving : observation, definition, representation, evaluation and decision making	1,3,4
3	Enhance their creative and innovative thinking skills	2,4,6
4	Be familiar with creative and innovative thinking styles	4,5,6
5	Practice and value teaming, communication and diversity	1,5,7

Title of the Course :- LEADERSHIP AND CHANGE MANAGEMENT (18 MBA 311)		
S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Understand their leadership journeys and their crucibles by reflecting up on framing their life stories and experiences to data	1,2,3
2	Analyse how and why leaders lose their way and the self-awareness needed to avoid derailment	4,5,1
3	Evaluate the leadership principles, values and ethical boundaries, and how the leaders will respond under pressure when challenged	1,2,7
4	Describe what is motivating them, both extrinsically, and intrinsically to become a leader.	7,1,3

Title of the Course:- SALES AND DISTRIBUTION MANAGEMENT (18 MBA 404 MKT)

S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Understand Concepts of Sales and Sales Management, Trends and challenges in Sales Management.	1,2,3
2	Describe Sales forecasting, Design sales territories and sales meeting.	4,6
3	Explain Sales force management.	7,6,1
4	Evaluate the overview of marketing channels.	3,2
5	Explain Logistics and supply chain management	6,7,1

Title of the Course:- RETAIL MANAGEMENT (18 MBA 405MKT)

S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Define fundamentals of Retailing, Theories of Retail development, Opportunities and challenges of Retailing.	4,6,5
2	Describe Retail market strategy, Location Theories and Legal considerations.	3,4,1
3	Understand Scope and process of Retail management.	6,7,5
4	Develop Pricing and promotion of Retail management.	4,2,1
5	Analyze Retail store management.	6,7,1

Title of the Course :- STRATEGIC HRM (18 MBA 404 HRM)

S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Define the framework of SHRM, Approaches, Developing plans and strategies.	1,6
2	Describe Strategic planning of SHRM.	2,3,6
3	Understand SHRM Strategy implementation.	3,5,7
4	Develop Recruitment and Retention strategies	1,5,7
5	Evaluate the SHRM Evaluation process	2,7

Title of the Course :- STRESS MANAGEMENT (18 MBA 406 HRM)		
S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Understand the concept of Stress, Symptoms for Stress and Model of Stress.	1,3,6
2	Describe Causes of Frustration, conflict and pressure at work place and society.	1,3,4
3	Develop Sources of managerial stress and decision making under stress.	2,4,6
4	Analyze Consequences of stress.	4,5,6
5	Evaluate Stress management techniques.	1,5,7

Title of the Course:- FINANCIAL DERIVATIVES (18 MBA 404FIN)		
S.No.	COURSE OUTCOMES	PO`S
1	Describe the Concept of financial derivatives, Derivatives market in India and abroad.	4,5,6
2	Understand Classification of contracts	1,3,2
3	Define Future markets, Future price spot and price trading	7,5,4
4	Analyze the concept of options, types and market participations and motivations.	5,4,1
5	Develop the concept of Swaps, Valuation of Swaps and Swap pricing.	6,1,4

Title of the Course:- INTERNATIONAL FINANCIAL MANAGEMENT (18 MBA 405FIN)		
S.No.	COURSE OUTCOMES	PO`S
1	Define the concept of MNCs and International Financial Management features, objectives and importance.	4,5
2	Describe International Monetary System, Foreign Exchange Market and Global Financial Markets.	1,3,2
3	Understand Management of Exposure and International Capital Budgeting.	4,5
4	Explain International Portfolio Management and International Project Financing.	7,5,4
5	Analyze International Working Capital management and International Taxation	1,5,7

Title of the Course:- EMPLOYABILITY SKILLS LAB (18 MBA 408ESL)

S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Business communication, resume writing and interview skills.	1,6
2	Pronunciation etiquette, leadership, skills.	2,3,6
3	Develop non-technical skills and competencies that has always been an important part of effective and successful participation in the workplace.	3,5,7
4	Making student's employable bye honing their skills to meet the demands of today's world.	1,5,7
5	Helpful in enhancing performance of the student in the career and life.	2,7

Title of the Course:- SELLING &NEGOTIATION SKILLS (18 MBA409 S&SNS)

S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	To imbibe in the student, critical sales competencies that drive buying decisions.	2,3,5
2	To give insights into how to boost individual and organizational productivity through sales lead management.	6,7,2
3	To introduce basic theoretical principles and particular steps in the negotiating process.	4,1,5

R-22 REGULATIONS

M.B.A. - Semester -1

Course : MANAGEMENT PROCESS AND ORGANIZATION BEHAVIOUR (Code – 22MBA101)		
S.No	COURSE OUTCOMES	PO`S
	students will be able to	
1	Understand Fundamental concepts, functions, Principles of Management, challenges and trends.	1,6,7
2	Describe Planning, process of planning, types of organizations and staffing.	2,3,7
3	Explain Motivation, leadership and control systems and techniques.	4,5,6
4	Identify Concept of Organizational behavior and theories determinants of individual behavior.	2,4,5,7
5	Analyze Group dynamics, organizational culture, diagnosis and group performance.	6,7

Course: MANAGERIAL ECONOMICS (22MBA102)		
S.No	**COURSE OUTCOMES**	**PO`S**
	students will be able to	
1	Understand Concept of economics, managerial economics, types of demand and demand forecasting	1,4,6,2
2	Explain Theories of firm and production analysis	1,4,6,7
3	Define Market structures, cost analysis, profit analysis and maximization of profit and wealth	1,4,6,3
4	Describe Indian economic environment and its associated concepts with its measurement	1,4,6,5
5	Analyze Trade cycles and the corrective measures on investment and consumption functions	1,4,6,2

Course: BUSINESS ENVIRONMENT & BUSINESS LAWS (Code – 22MBA103)		
S.No	**COURSE OUTCOMES**	**PO`S**
	students will be able to	
1	Understand Concept of environment, business environment and its components, regulatory bodies.	1,2,6
2	Explain Indian economy and its participants and Evaluate the Agencies for sustainability and development of Indian business and the functioning of MNCs	2,3,6
3	Evaluate Industrial plans and policies and their relevance to different sectors, competitiveness and to world economy and Analyze International and Globalization opportunities and challenges with its determinants.	3,5,7
4	Understand Indian Contract Act and its essentials, Define Limited Liability Partnership Act, its conversion and financial disclosures, Explain Sale of Goods Act and the Negotiable Instruments Act.	1,5,7
5	Analyze Companies Act and its amendments and Evaluate Cyber laws in India, Consumer Protect Act and the Competition Act.	2,4,6

Course: FINANCIAL REPORTING AND ANALYSIS (code 22MBA104)		
S.No	**COURSE OUTCOMES**	**PO`S**
	students will be able to	
1	Define the Basic concepts and principles of Accounting and preparation of Journals, Ledgers, Trial balance and financial statements.	1,4,6,2
2	Understanding on preparation and analysis of financial statements.	1,4,6,7
3	Explain the issue of shares and preparation of company accounts.	1,4,6,3
4	Evaluate the concepts of financial reporting and auditing, legal requirements, International Financial Reporting Standards and sustainability reporting.	1,4,6,5
5	Analyze Cost management and Cost accounting techniques	1,4,6,2

Course: BUSINESS ANALYTICS FOR MANAGERIAL DECISION MAKING (code 22MBA105)		
S.No	**COURSE OUTCOMES**	**PO`S**
	students will be able to	
1	Define Concept of Business analytics to explore, analyze the business problems.	1,2,6
2	Describe the data exploring to find new patterns and relationships through mathematics and statistics.	2,3,6
3	Explain Predictive analytics tools and techniques for the purpose of mutual dependence of various factors and groups.	3,5,7
4	Analyze Application of analytics to various business functions and services.	1,5,7
5	Understand Integration between analytics and business research for an effective and efficient decision making.	2,4,6

Course: MANAGERIAL COMMUNICATION (code 22MBA106)		
S.No	**COURSE OUTCOMES**	**PO`S**
	students will be able to	
1	Understand Concept of communication, communication skills and sensitize them to become successful managers.	1,4,6,2
2	Explain Communication in business organizations to handle day-to-day managerial responsibilities.	1,4,6,5
3	Describe Business correspondence, managerial writing and effective presentation skills.	1,4,6,3
4	Evaluate Media management, meeting documentation and negotiation strategies.	1,4,6,7
5	Analyze Communication networks, employment communications both manual and technology enabled.	1,4,6,3

Course: PERSONALITY DEVELOPMENT THROUGH LIFE ENLIGHTENMENT SKILLS (code 22PG101)

S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Define Basic Personality Concepts and achieve their highest goals of life.	1,2,6
2	Lead the Nation and Mankind to peace and prosperity.	2,3,6
3	Evaluate emotional self-regulation systems.	3,5,7
4	Develop a positive approach to work and duties.	1,5,7
5	Analyse the techniques for managing stress in routine life	2,4,6

Course: MS EXCEL & ACCOUNTING TALLY (code 22PG108)

S.No	COURSE OUTCOMES	PO`S
	students will be able to	
1	Define Basic versions of MS Excel, the advanced data options available.	1,6,7
2	Describe various advanced versions of Microsoft OS.	2,3,7
3	To Evaluate proficiency in creating solutions for data management and reporting.	4,5,6
4	Develop and exporting data and reports obtained in Tally software.	2,4,5,7
5	Analyze the financial results derived from Tally.	6,7

M.B.A. - Semester – II

Course: MARKETING MANAGEMENT (code 22MBA201)

S.No	COURSE OUTCOMES	PO`S
	students will be able to	
1	Define Basic Marketing Concepts Marketing environment and changing marketing practices.	1,3,6
2	Understand Strategic marketing planning, Product life cycle and price setting	1,3,4
3	Describe Marketing communication, promotion decisions and IMC planning process.	2,4,6
4	Evaluate Marketing channel system, Channel management and market logistic decisions	4,5,6
5	Evaluate Marketing channel system, Channel management and market logistic decisions.	1,5,7

**Course: HUMAN RESOURCE MANAGEMENT (code 22MBA202)**
S.No	**COURSE OUTCOMES**	**PO`S**
	students will be able to	
1	Define Fundamental concepts of HRM, Qualities and role of HR Manager and models of HRM.	1,6,7
2	Understand Human Resource Planning, Recruitment and selection and placement.	2,3,7
3	Describe Training Programmes and performance appraisal.	4,5,6
4	Evaluate Promotion, Career planning, compensation management and employee welfare measures.	2,4,5,7
5	Analyze Quality of work life, changing role of HR and HR audit.	6,7

**Course: FINANCIAL MANAGEMENT (code 22MBA203)**
S.No	**COURSE OUTCOMES**	**PO`S**
	students will be able to	
1	Describe Conceptual overview, financial decisions, financial planning and forecasting.	1,4,6,2
2	Define financial leverage, cost of capital, measurement of cost of capital.	1,4,6,5
3	Understand Components, determinants and theories of capital structure and capital budgeting.	1,4,3
4	Evaluate Concept of working capital, determinants and dividend policy and theories.	1,4,6,7
5	Develop financial analysis through ratio analysis.	1,6,3

**Course: ENTREPRENEURSHIP AND SMALL BUSINESS MANAGEMENT (code 22MBA204)**
S.No	**COURSE OUTCOMES**	**PO`S**
	students will be able to	
1	Define Concept of Entrepreneur, types, growth, trends in women and rural entrepreneurship	1,3,6
2	Discuss Business opportunities, industrial analysis and preparing a business plan	1,3,4
3	Explain Preparation of Budget report, sources of finance and venture capital	2,4,6
4	Understand Concept of MSMEs, industrial sickness and export oriented units	4,5,6
5	Analyze the Role of commercial banks and other agencies to support entrepreneurs	1,5,7

Course: RESEARCH METHODOLOGY & INTELECTUAL PROPERTY RIGHTS (Code 22PG201)

S.No	COURSE OUTCOMES	PO`S
	students will be able to	
1	Understand basic concepts of research and its methodologies.	1,2,6
2	Develop the basic framework of Research process.	2,3,6
3	Describe the ability to write a research report and thesis .	3,5,7
4	Demonstrate Knowledge and understanding of IPRs	1,5,7
5	Analyze IPR filing and Rights	2,4,6

Course: OPERATIONS RESEARCH (code 22MBA206)

S.No	COURSE OUTCOMES	PO`S
	students will be able to	
1	Define Concept of Operations Research and application of OR models for problem solving	1,4,6,2
2	Understand Duality in Linear Programming and Project Management	1,4,6,5
3	Explain Transportation models and assignment problems	1,4,6,3
4	Describe Game theory and decision theory	1,4,6,7
5	Evaluate Queuing model, simulation and its application to management problems	1,4,6,3

Course: CONSUMER BEHAVIOUR (code 22MBA207)

S.No	COURSE OUTCOMES	PO`S
	students will be able to	
1	Understand the concepts of Consumer, Consumer Behavior, Models of Consumer Behavior.	1,3,6
2	Analyze Individual determinants of consumer Behavior.	1,3,4
3	Describe Consumer decision making process and application to models of Consumer Behavior.	2,4,6
4	Evaluate Consumer Behavior concepts to real world Marketing problems and develop better marketing programmes and strategies.	4,5,6
5	Analyze the current trends in Consumer Behavior.	1,5,7

Course: SELLING & NEGOTIATION SKILLS (code 22 MBA208)		
S.No	**COURSE OUTCOMES**	**PO`S**
	students will be able to	
1	Understand and appreciate the skills and competencies required to be an effective sales person.	1,6,7
2	Evaluate sales effectively and manage their respective territories.	2,3,7
3	Describe the qualities for a good negotiator.	4,5,6
4	Manage conflict in the negotiation process.	2,4,5,7
5	Analyze the advantages and limitations of various negotiation strategies	6,7

| S.No | COURSE OUTCOMES | PO`S |

M.B.A. - SEMESTER – I

Course: MANAGEMENT PROCESS AND ORGANIZATION BEHAVIOUR (code 20MBA101)

S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Understand Fundamental concepts, functions, principles of management, challenges and trends.	1,4,6,2
2	Describe Planning, process of planning, types of organizations and staffing.	1,4,6,7
3	Explain Motivation, leadership and control systems and techniques.	1,4,6,3
4	Identify Concept of Organizational behavior and theories determinants of individual behavior.	1,4,6,5
5	Analyze Group dynamics, organizational culture, and diagnosis the group performance.	1,4,6,2

Course: MANAGERIAL ECONOMICS (code 20MBA102)

S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Understand Concept of economics, managerial economics, types of demand and demand forecasting	1,2,6
2	Explain Theories of firm and production analysis	2,3,6
3	Define Market structures, cost analysis, profit analysis and maximization of profit and wealth	3,5,7
4	Describe Indian economic environment and its associated concepts with its measurement	1,5,7
5	Analyze Trade cycles and the corrective measures on investment and consumption functions	2,4,6

Course: BUSINESS ANALYTICS FOR MANAGERIAL DECISION MAKING (code 20MBA103)

S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Define Concept of Business analytics to explore, analyze the business problems	1,4,6,2
2	Describe the data exploring to find new patterns and relationships through mathematics and statistics	1,4,6,7
3	Explain Predictive analytics tools and techniques for the purpose of mutual dependence of various factors and groups	1,4,6,3
4	Analyze Application of analytics to various business functions and services	1,4,6,5
5	Understand Integration between analytics and business research for an effective and efficient decision making	1,4,6,2

Course: MANAGERIAL COMMUNICATION (code 20MBA104)		
S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Understand Concept of communication, communication skills and sensitize them to become successful managers	1,2,6
2	Explain Communication in business organizations to handle day-to-day managerial responsibilities	2,3,6
3	Describe Business correspondence, managerial writing and effective presentation skills	3,5,7
4	Evaluate Media management, meeting documentation and negotiation strategies	1,5,7
5	Analyze Communication networks, employment communications both manual and technology enabled	2,4,6

Course: LEGAL FRAMEWORK FOR BUSINESS (code 20MBA105)		
S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Understand Indian Contract Act and its essentials	1,3,6
2	Define Limited Liability Partnership Act, its conversion and financial disclosures	1,3,4
3	Explain Sale of Goods Act and the Negotiable Instruments Act	2,4,6
4	Analyze Companies Act and its amendments	4,5,6
5	Evaluate Cyber laws in India, Consumer Protect Act and the Competition Act	1,5,7

Course: FINANCIAL STATEMENTS ANALYSIS AND REPORTING (code 20MBA106)		
S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Define the Basic concepts and principles of Accounting and preparation of Journals, Ledgers, Trial balance and financial statements	1,6,7
2	Understanding on preparation and analysis of financial statements	2,3,7
3	Explain the issue of shares and preparation of company accounts	4,5,6
4	Evaluate the concepts of financial reporting and auditing, legal requirements, International Financial Reporting Standards and sustainability reporting	2,4,5,7
5	Analyze Cost management and Cost accounting techniques	6,7

Course: BUSINESS ENVIRONMENT (code 20MBA107)		
S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Understand Concept of environment, business environment and its components, regulatory bodies	1,2,6
2	Explain Indian economy and its participants	2,3,6
3	Evaluate Industrial plans and policies and their relevance to different sectors, competitiveness and to world economy	3,5,7
4	Analyze International and Globalization opportunities and challenges with its determinants	1,5,7
5	Evaluate the Agencies for sustainability and development of Indian business and the functioning of MNCs	2,4,6

Course: Title of the Course:- PERSONALITY DEVELOPMENT (Code: 22 MBA 107/ 22 PG 101)		
S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Understand their personality and achieve their highest goal of life	1,3,6
2	Analyse how to lead the nation and mankind to peace and prosperity	1,3,4
3	Describe the emotional self -regulation	2,4,6
4	Examine the positive approaches for work and duties	4,5,6
5	Develop a versatile personality	1,5,7

M.B.A. - Semester – II - Paper Code

Course: MARKETING MANAGEMENT (code 20MBA201)		
S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Define Basic Marketing Concepts, Marketing environment and changing marketing practices	1,3,6
2	Understand Strategic marketing planning, Product life cycle and price setting	1,3,4
3	Describe Marketing communication, promotion decisions and IMC planning process	2,4,6
4	Evaluate Marketing channel system, Channel management and market logistic decisions	4,5,6
5	Analyze Marketing organization structures, marketing audit and relationship marketing	1,5,7

Course: HUMAN RESOURCE MANAGEMENT (code 20MBA202)		
S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Define Fundamental concepts of HRM, Qualities and role of HR Manager and models of HRM	1,3,6
2	Understand Human Resource Planning, Recruitment and selection and placement	1,3,4
3	Describe Training Programmes and performance appraisal	2,4,6
4	Evaluate Promotion, Career planning, compensation management and employee welfare measures	4,5,6
5	Analyze Quality of work life, changing role of HR and HR audit	1,5,7

Course: FINANCIAL MANAGEMENT (code 20MBA203)		
S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Describe Conceptual overview, financial decisions, financial planning and forecasting	1,4,6
2	Define financial leverage, cost of capital, measurement of cost of capital	3,6,7
3	Understand Components, determinants and theories of capital structure and capital budgeting	2,3,6
4	Evaluate Concept of working capital, determinants and dividend policy and theories	1,4,6,7
5	Develop financial analysis through ratio analysis	1,5,7

Course: OPERATIONS MANAGEMENT (code 20MBA204)		
S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Understand operations, facilities location, layout design and world class manufacturing	1,6,7
2	Define Operations planning and control, scheduling, work design, work measurement and sampling	2,3,7
3	Describe Concept of maintenance management, waste management and technology management	4,5,6
4	Evaluate Materials management, purchase management, stores management and inventory	2,4,5,7
5	Analyze Statistical quality control, ISO standards, 6 Sigma and total quality management	6,7

Course: ENTREPRENEURSHIP AND SMALL BUSINESS MANAGEMENT   (code 20MBA205)

S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Define Concept of Entrepreneur, types, growth, trends in women and rural entrepreneurship	1,3,6
2	Discuss Business opportunities, industrial analysis and preparing a business plan	1,3,4
3	Explain Preparation of Budget report, sources of finance and venture capital	2,4,6
4	Understand Concept of MSMEs, industrial sickness and export oriented units	4,5,6
5	Analyze the Role of commercial banks and other agencies to support entrepreneurs	1,5,7

Course: MANAGEMENT INFORMATION SYSTEMS (code 20MBA206)

S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Understand information technology, computer hardware and cloud computing	1,2,6
2	Explain MIS planning and design and systems development life cycle	2,3,6
3	Define Concept of DBMS, Data warehousing and mining and Artificial Intelligence	3,5,7
4	Evaluate Application on ERP to the functions of management	1,5,7
5	Describe Digital Firm, Mobile Computing, BPO Management and IPRs to ITES	2,4,6

Course: OPERATIONS RESEARCH (code 20MBA207)

S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Define Concept of Operations Research and application of OR models for problem solving	1,4,6,2
2	Understand Duality in Linear Programming and Project Management	1,4,6,5
3	Explain Transportation models and assignment problems	1,4,6,3
4	Describe Game theory and decision theory	1,4,6,7
5	Evaluate Queuing model, simulation and its application to management problems	1,4,6,3

S.No.	COURSE OUTCOMES	PO`S
	Course: Title of the Course:- **MS EXCEL& ACCOUNTING TALLY LAB (20 MBA 210)**	
	students will be able to	
1	Understand the importance of MS Excel and Accounting Tally skills for a business person	1,3,6
2	Analyse the variables and application of formulas to determine the outcomes	1,3,4
3	Describe the application of formulas in financial management using MS Excel	2,4,6
4	Understand the fundamentals of Computerized accounting using Tally	4,5,6
5	Examine the preparation of final accounts using Tally	1,5,7

M.B.A. - SEMESTER – III - PAPER CODE

S.No.	COURSE OUTCOMES	PO`S
	Course: STRATEGIC MANAGEMENT (code 20MBA301)	
	students will be able to	
1	Define Fundamental concepts of Strategy, Strategic Management and Strategic decision making	1,3,6
2	Understand Strategic analysis and choice through various tools and techniques to gain the distinctive competencies	1,3,4
3	Describe Resources allocation, relationship between strategy and various issues to confirm the best corporate level strategy	2,4,6
4	Evaluate Awareness on different growth and retrenchment strategies	4,5,6
5	Analyze Execution of strategy/strategies and the evaluation and control process	1,5,7

S.No.	COURSE OUTCOMES	PO`S
	Course: PROJECT MANAGEMENT (code 20MBA302)	
	students will be able to	
1	Define the fundamental concepts of Project, Project life cycle, Project appraisal and selection	1,6,7
2	Describe Demand forecasting techniques with the help of market survey and market feasibility	2,3,7
3	Understand Project technical feasibility through materials, location, layout, organization and different evaluation review techniques	4,5,6
4	Develop Project financial analysis, investment appraisal, revenue and cost estimations	2,4,5,7
5	Explain Project Management stages and Project abandonment aspects	6,7

Course: CONSUMER BEHAVIOUR & MARKETING RESEARCH(code 20MBA303MKT)		
S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Understand the concepts of Consumer, Consumer behavior, Models of Consumer behavior	1,4,6
2	Analyze Individual determinants of consumer behavior	3,6,7
3	Describe Consumer decision making process and application to models of Consumer behavior	2,3,6
4	Develop the concept of Marketing research, Process and the integration with different phases of business	1,4,6,7
5	Evaluate Application of marketing research, effectiveness and the ethical issues	1,5,7

Course: SERVICES MARKETING(code 20MBA306MKT)		
S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Describe the concepts of services, services marketing, the trends and opportunities	1,4,5
2	Explain Consumer behavior of services, determinants, STP for services in competitive markets	1,4,6,7
3	Define the services marketing mix elements	2,6,3
4	Understand Customer satisfaction and service quality management with the available measuring tools	1,4,7
5	Analyze Service customer relationship, service recovery and service audit	1,4,6

Course: FINANCIAL INSTITUTIONS AND MARKETS (code 20MBA303FIN)		
S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Understand the concepts of Financial Institutions, Indian Banking System and the control mechanism	1,4,6,2
2	Explain the development banks and their functions and functioning	1,4,6,7
3	Describe International financing institutions with their objectives and functions	1,4,6,3
4	Define Basic concepts of financial markets, market system, intermediaries and their regulations	1,4,6,5
5	Evaluate different financial markets such as bond market, debt market, capital markets and money markets	1,4,6,2

Course: SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT (code 20MBA305FIN)		
S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Define concepts in the field of investments, risk and techniques for measurement of risk	1,3,5
2	Describe valuation of shares and bonds through different scientific approaches	2,3,7
3	Explain Fundamental and technical analysis with their relevance in security/securities selection	1,6,7
4	Understand the concepts of portfolio and portfolio management tools and techniques	2,6,7
5	Evaluate Methods of portfolio performance in the context of Indian scenario	1,6,4

Course: HUMAN RESOURCE PLANNING (code 20MBA303HRM)		
S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Understand Human Resource Planning, Process for HRP and various approaches to HRP	1,4,6
2	Describe the HR forecasting, evaluating HR planning effectiveness and development of sample HR plan	3,6,7
3	Evaluate Development, engagement, driving factors of talent management and motives	2,3,6
4	Define the concepts of career, career management and lead for succession planning	1,4,6,7
5	Evaluate HR Accounting, Methods of HRA, HRIS and Impact of globalization	1,5,7

Course: PERFORMANCE AND REWARD MANAGEMENT(code 20MBA304HRM)		
S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Understand the concepts of Performance, Performance management and the Role in Strategic planning	1,6,7
2	Define Performance appraisal system, Approaches, methods, symptoms and causes for poor performance	2,3,7
3	Describe Employee development plan, process for employee development plans through various techniques	4,5,6
4	Develop Reward system and the determinants for individual pay structure	2,4,5,7
5	Evaluate Compensation plan and systems in the organization and retirement benefits	6,7

Course: Title of the Course:- CREATIVITY & INNOVATION LAB (20 MBA 310)		
S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Understand Concept of environment, business environment and its components, regulatory bodies	1,3,6
2	Explain Indian economy and its participants	1,3,4
3	Evaluate Industrial plans and policies and their relevance to different sectors, competitiveness and to world economy..	2,4,6
4	Analyze International and Globalization opportunities and challenges with its determinants..	4,5,6
5	Evaluate the Agencies for sustainability and development of Indian business and the functioning of MNCs.	1,5,7

M.B.A. - SEMESTER – IV - PAPER CODE

Course: INTERNATIONAL BUSINESS (code 20MBA401)		
S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Understand the fundamentals of International Business, International Business Environment and ethics in international business	1,4,5
2	Define International Trade Theories, Trading Blocks and World Trade Organisation	2,4,6
3	Describe International Monetary System, Global Capital Market and Balance of payments	4,5,6
4	Develop Strategy and structure of International Business	1,6,7
5	Analyze International Business Operations	1,4,5,6

Course: E-BUSINESS (code 20MBA402)		
S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Define Basic concepts of E-Commerce and business models for e-commerce	1,4,6
2	Describe technologies of World Wide Web and strategies for website development	3,6,7
3	Understand E-Marketing and E-Commerce	2,3,6
4	Analyze Technology support to Customer Relations Management	1,4,6,7
5	Explain Electronic Payments Systems	1,5,7

\textbf{Course: SALES AND DISTRIBUTION MANAGEMENT (code 20MBA404MKT)}		
S.No.	**COURSE OUTCOMES**	**PO`S**
	students will be able to	
1	Understand Concepts of Sales and Sales Management, Trends and challenges in Sales Management	1,4,6,2
2	Describe Sales forecasting, Design sales territories and sales meeting	1,4,6,7
3	Explain Sales force management	1,4,6,3
4	Evaluate the overview of marketing channels	1,4,6,5
5	Explain Logistics and supply chain management	1,4,6,2

\textbf{Course: RETAIL MANAGEMENT (code 20MBA405MKT)}		
S.No.	**COURSE OUTCOMES**	**PO`S**
	students will be able to	
1	Define fundamentals of Retailing, Theories of Retail development, Opportunities and challenges of Retailing	1,4,5
2	Describe Retail market strategy, Location Theories and Legal considerations	1,4,6,7
3	Understand Scope and process of Retail management	2,6,3
4	Develop Pricing and promotion of Retail management	1,4,7
5	Analyze Retail store management	1,4,6

\textbf{Course: STRATEGIC HRM (code 20MBA404HRM)}		
S.No.	**COURSE OUTCOMES**	**PO`S**
	students will be able to	
1	Define the framework of SHRM, Approaches, Developing plans and strategies	1,2,6
2	Describe Strategic planning of SHRM	2,3,6
3	Understand SHRM Strategy implementation	3,5,7
4	Develop Recruitment and Retention strategies	1,5,7
5	Evaluate the SHRM Evaluation process	2,4,6

Course: STRESS MANAGEMENT (code 20MBA406HRM)		
S.No	COURSE OUTCOMES	PO`S
	students will be able to	
1	Understand the concept of Stress, Symptoms for Stress and Model of Stress	1,6,7
2	Describe Causes of Frustration, conflict and pressure at work place and society	2,3,7
3	Develop Sources of managerial stress and decision making under stress	4,5,6
4	Analyze Consequences of stress	2,4,5,7
5	Evaluate Stress management techniques	6,7

Course: FINANCIAL DERIVATIVES (code 20MBA404FIN)		
S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Describe the Concept of financial derivatives, Derivatives market in India and abroad	1,4,5
2	Understand Classification of contracts	1,4,6,7
3	Define Future markets, Future price spot and price trading	2,6,3
4	Analyze the concept of options, types and market participations and motivations	1,4,7
5	Develop the concept of Swaps, Valuation of Swaps and Swap pricing	1,4,6

Course: INTERNATIONAL FINANCIAL MANAGEMENT (code 20MBA405)		
S.No.	COURSE OUTCOMES	PO`S
	students will be able to	
1	Define the concept of MNCs and International Financial Management features, objectives and importance	1,2,6
2	Describe International Monetary System, Foreign Exchange Market and Global Financial Markets.	2,3,6
3	Understand Management of Exposure and International Capital Budgeting	3,5,7
4	Explain International Portfolio Management and International Project Financing	1,5,7
5	Analyze International Working Capital management and International Taxation	2,4,6

S.No.	COURSE OUTCOMES	PO`S
	Course: **Title of the Course:- EMPLOYABILITY SKILLS LAB (20 MBA 408)**	
	students will be able to	
1	Understand the importance of communication styles	1,3,6
2	Analyse the presentation skills for communication	1,3,4
3	Understand the demands of today's world and to enhance their performance for better career and life goal setting	2,4,6
4	Describe the various case studies and the application of communication techniques	4,5,6
5	Examine the business etiquettes, interview patterns and group discussion skills.	1,5,7

PG Computer Science

COs, PSOs and POs Mapping

Master of Computer Application(MCA)

Preamble

The Master of Computer Application (MCA) programme was started in   with a view to produce high quality information system professionals. Till 2019, the programme was a full time three year (6 semesters) degree programme. From the academic session 2020-21, the All India Council for Technical Education (AICTE) has reduced the duration of MCA degree programme from the three years to current two years. Students having completed bachelor's degree of minimum three years duration in any discipline with at least 50% marks in Major/Honours subject or 55% marks in aggregate for no major/honours, or 55% marks in aggregate in BCA are admitted to the programme. Admission is based on the performance in the University entrance examinations.

The MCA programme provides intensive theoretical and practical training in various aspects of Computer Science and Information System development. It was started with the intention to train the students in the topics in emerging fields of Computer Science and its applications. With new innovations constantly on the horizon, the demand of skilled computer science professional keeps rising in the industries. Our graduates of the MCA programme can fill up the demand. The curriculum of the MCA programme has been designed and evolved keeping this in mind and according to the model prescribed by the AICTE. Courses offered include Mathematical Foundation for Computer Science, Algorithms and Data Structures, Computer organization, Operating Systems, Computer Networks, Image Processing, Database System etc. The project works in the programme are intended to equip the students to go deeper into area of computer applications. The curriculum is organized with few core courses and many electives to give the students enough exposure to specialization like Soft Computing, Machine learning etc.

1. Qualification descriptors for the graduates

   Knowledge & Understanding
   1. Graduates develop an in-depth knowledge in the fundamentals of Computer Science and its applications.
   2. Graduates develop the ability and confidence to analyse problem and design solution in complex computing environment using state of the art techniques, tools and resources.
   3. Graduates acquire expert awareness and competency to supervise and moderate the computer science applications in various domains.

2. **Skills & Techniques**

   1. Graduates develop skill set for using knowledge in computer science to create the ability to configure and operate complex software systems, packages, tools, and applications for sustainability in various domains.
   2. Graduates have the right communication skills required for success in their profession.
   3. Graduates equip themselves with techniques of design of experiments, analysis and interpretation of data and synthesis of information to provide a valid conclusion.

3. Competence

   1. Graduates develop the competency to adapt to the changing trends of computer applications.
   2. Graduates are ready to work individually as well as in teams, in industry, academia, research, and entrepreneurship.
   3. Graduates are ready for pursuing lifelong learning to enhance the adaptability to the changing trends and career opportunities in computer applications.

4. **Graduates Attributes**

1. Graduate will have an in-depth technical knowledge in the field of computer application.

2. Graduate will have various computing skills like the analysis, design, and

   development ofinnovative software products to meet the industry needs

3. Graduate will pursue lifelong learning and to do research as computing professionals and scientists.
4. Graduate will communicate and function effectively in teams in multidisciplinary fields within the global, societal and environmental context.
5. Graduate will develop competency, creativity, and innovativeness in the field, with the ability to adapt to the changing trends and career opportunities in computer application.

PROGRAMME OUTCOMES (POS)

On successful completion of Graduate Program, Graduating Students/ Graduateswill be able to

PO 1	Apply knowledge of computing fundamentals, computing specialization, mathematics, and domain knowledge appropriate for the computing specialization to the abstraction and conceptualization of computing models from defined problems and requirements.
PO 2	Identify, formulate, research literature, and solve complex Computing problems reaching substantiated conclusions using fundamental principles of Mathematics, Computing sciences, and relevant domain disciplines.
PO 3	Design and evaluate solutions for complex computing problems, and design and evaluate systems, components, or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.
PO 4	Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions.
PO 5	Create, select, adapt and apply appropriate techniques, resources, and modern computing tools to complex computing activities, with an understanding of the limitations.
PO 6	Understand and commit to professional ethics and cyber regulations, responsibilities, and norms of professional computing practice.
PO 7	Recognize the need, and have the ability, to engage in independent learning for continual development as a Computing professional.
PO 8	Demonstrate knowledge and understanding of computing and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO 9	Communicate effectively with the computing community, and with society at large, about complex computing activities by being able to comprehend and write effective reports, design documentation, make effective presentations, and give and understand clear instructions.
PO 10	Understand and assess societal, environmental, health, safety, legal, and cultural issues within local and global contexts, and the consequential responsibilities relevant to professional computing practice
PO 11	Function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary environments.
PO 12	Identify a timely opportunity and using innovation to pursue that opportunity to create value and wealth for the betterment of the individual and society at large.

PROGRAMME SPECIFIC OUTCOMES (PSOs)

The Department of Computer Science, Two Year (comprising 4 semesters) Postgraduate Program in Computer Science with objective of empowering students to acquire all-inclusive understanding of Computer Knowledge both theoretical and practical as an academic discipline. Upon completion of Computer Science Post graduation Program successfully, the students shall acquire the following skills and competencies.

PSO 1	Develop an ability to apply knowledge in the computing discipline.
PSO 2	Develop ability to design and conduct experiments, as well as interpret data
PSO 3	Develop ability to demonstrate team work with the ability of leadership, analytical reasoning for solving time critical problems and strong human values for responsible professional.
PSO 4	Develop ability to use current technologies, skills and models for computing practice.

COURSE OUTCOMES (COs)

Course Code: 18MCA101

Course Name: BASICS OF ICT

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Define different types of data storing, processing and various compression techniques.	3	1, 2, 12
CO 2	Outline the internal structure and mechanism of data storage devices and CPU. Functionality of different display devices. He / She can also distinguish different types of software (system, packaged and application), operating systems and programming languages.	3	1, 2, 12
CO 3	Define various types of computer networks and concepts of security (Cryptography, Digital signature and firewalls) which gives awareness of procedures and tools to protect the computer system from viruses.	3	1, 2, 12
CO 4	Compute numerical data using spread sheet text data with word processing applications. Knowledge on internet applications.	3	1, 2, 12
CO 5	Explain various types of information needed at various levels of management, E-Commerce and impacts of IT on society.	3	1, 2, 12

Course Code: 18MCA102

Course Name: PROGRAMMING AND PROBLEM SOLVING

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Provide details of his knowledge of C language.	1	1, 3, 12
CO 2	Develop logics which will help them to create programs, applications in C.	3	1, 2, 12
CO 3	Easily switch over to any other language in future.	3	1, 2, 12
CO 4	Identify tasks in which the numerical techniques learned are applicable and apply them	1	1, 3, 12

Course Code: 18MCA103

Course Name: COMPUTER ORGANIZATION

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Identify, Distinguish and apply different number systems and codes.	3	1, 2, 12
CO 2 Distinguish the digital representation of data in a computer system.	3	1, 2, 3, 12
CO 3 Discriminate the general concepts in digital logic design, including logic elements, and their use in combinational and sequential logic circuit design.	3	1, 2, 3, 12
CO 4 Extricate computer arithmetic formulate and solve problems, Distinguish the performance requirements of systems	3	1, 2, 3, 12
CO 5 Identify, Distinguish and apply different number systems and codes.	3	1, 2, 3, 12

Course Code: 18MCA104

Course Name: DISCRETE MATHEMATICAL STRUCTURES

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Display his efficiency in handling with discrete structures.	1	1 ,2
CO 2 Apply set theory and handling formal of notations of size, matching, ordering, and planarity.	1	1 ,2
CO 3 Solve concrete combinational problems.	1	1 ,2
CO 4 Deal with notations of mapping and via that notation ability to tackle various notations of infinity like countable, uncountable etc.	1	1 ,2
CO 5 Use graphs as unifying theme of various combinational problems.	1	1 ,2

Course Code: 18MCA105

Course Name: ACCOUNTING & FINANCIAL MANAGEMENT

Upon completion of this course, the student will be able to	PSO	PO
CO 1	To provide the basic concepts & principles of Accounting and preparation of journals, ledgers, trail balance and financial statements.	3	1, 2, 12
CO 2	To facilitate the students about the Distinguishing on cost management and Cost. Accounting techniques, classification, Marginal costing and budgetary control.	3	1, 2, 12
CO 3	To enhance knowledge among the students on the standard costing, finance function, financial decision making.	3	1, 2, 12
CO 4	To create awareness on the concepts of financial analysis of financial statements.	3	1, 2, 12
CO 5	To impart the knowledge about the concept of working capital management.	3	1, 2, 12

Course Code: 18MCA106P

Course Name: COMPUTER ORGANIZATION LAB

Upon completion of this course, the student will be able to	PSO	PO
CO 1	Design logic gates and realization of OR,AND,NOT AND XOR Functions using universal gates	1	1, 3, 12
CO 2	Define and implement combinational circuits like half adder/full adder, MUX, DECODER.	3	1, 2, 12
CO 3	Design and implement sequential circuits like flip-flops, counters and shift registers.	3	1, 2, 12

Course Code: 18MCA107P

Course Name: C PROGRAMMING LAB

Upon completion of this course, the student will be able to	PSO	PO
CO 1	Analyze programming problems to choose when regular loops should be used and when recursion will produce a better program.	3	1, 2, 12
CO 2	Design and implement programs that use functions, arrays and pointers.	1	1,12

Course Code: 18MCA201

Course Name: OPERATING SYSTEMS

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Define the basic concepts of operating system, its functions and services.	2	1, 12
CO 2 Express various views and management policies adopted by operating system as pertaining with Processes, Deadlock, memory, File and I/O operations.	2	1, 2, 12
CO 3 Compare the various algorithms and comment about performance of various algorithms used for Processes, Deadlock, memory, File and I/O operations.	2	1 ,2, 12
CO 4 Knowledge of basic concepts towards Process Synchronization and related issues.	2	1, 2, 12
CO 5 Better understanding on Protection & Security.	2	1, 2, 12

Course Code: 18MCA202

Course Name: OBJECT ORIENTED PROGRAMMING SYSTEMS

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Understand the concept and underlying principles of Object-Oriented Programming.	1	1, 12
CO 2 Understand how object-oriented concepts are incorporated into the Java programming language.	1	1, 2, 3, 4, 12
CO 3 Knowledge of the structure and model of the Java programming language	1	1, 2, 3, 4, 12
CO 4 Develop efficient Java applets and applications using OOP concept	1	1, 2, 3, 4, 12

Course Code: 18MCA203

Course Name: DATA STRUCTURES

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Implement mathematical functions and analyze algorithms and algorithm correctness.	1	1, 12
CO 2 Apply stings and Arrays.	1	1, 2, 3, 4, 12
CO 3 Describe stack, queue and linked list operations, tree concepts.	1	1, 2, 3, 4, 12
CO 4 Have knowledge of Graphs and Sorting and Searching Techniques.	1	1, 2, 3, 4, 12

Course Code: 18MCA204

Course Name: COMPUTER NETWORKS

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Understand and explore the basics of Computer Networks and Various Protocols	3	1, 2, 12
CO 2 Administrate a network and schedule flow of information	3	1, 2, 12
CO 3 Examine the network security issues in Mobile and ad hoc networks.	3	1, 2, 12
CO 4 Demonstrate the TCP/IP and OSI fashions with merits and demerits.	3	1, 2, 12
CO 5 Evaluate the shortest path by using Routing algorithms	3	1, 2, 12

Course Code: 18MCA205

Course Name: PROBABILITY & STATISTICS

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Use basic concepts in probability theory and statistical analysis.	1	1 ,2
CO 2	Learn the fundamental theory of distribution of random variables, the basic theory and techniques of parameter estimation and tests of hypotheses.	1	1 ,2
CO 3	Derive Small Sample Tests and applications of t, F distribution with life examples. Large sample test, critical values, Bi variety data, Concept of correlation & Regression. To fit linear regression lines, multiple correlation coefficient.	1	1 ,2

Course Code: 18MCA206P

Course Name: DATA STRUCTURES LAB USING JAVA

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Implement Object Oriented programming concept for developing skills of logic building activity.	1	1, 12
CO 2	Demonstrates how to achieve reusability using inheritance, interfaces and packages.	1	1, 2, 3, 4, 12
CO 3	Demonstrate and use of different exception handling mechanisms and concept of multithreading.	1	1, 2, 3, 4, 12

Course Code: 18MCA207P

Course Name: OPERATING SYSTEM & NETWORKS LAB

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Demonstrate the knowledge of Systems Programming and Operating Systems.	1	1, 2, 3, 5, 12
CO 2 Compare and analyze the different implementation approach of system programming and operating system abstractions.	1	1, 2, 3, 5, 12
CO 3 Implementing operating systems scheduling algorithms.	1	1, 2, 3, 5, 12
CO 4 Implement network Programming to obtain IP address, Machine Name and communications etc..	1	1, 2, 3, 5, 12
CO 5 Demonstrate the knowledge of Systems Programming and Operating Systems.	1	1, 2, 3, 5, 12

Course Name: 18MCA208

Course Name: SEMINAR

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Effectively communicate by making a power point presentation.	1	1, 2, 5, 12

Course Code: 18MCA301

Course Name: DESIGN AND ANALYSIS OF ALGORITHM

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Analyze the asymptotic performance of algorithms.	1, 2	1, 2, 3, 4, 5, 12
CO 2	Demonstrate a familiarity with major algorithms and data structures.	1, 2	1, 2, 3, 4, 5, 12
CO 3	Apply important algorithmic design paradigms and methods of analysis.	1, 2	1, 2, 3, 4, 5, 12
CO 4	Develop algorithms for sorting, searching, insertion and matching.	1, 2	1, 2, 3, 4, 5, 12
CO 5	Acquire knowledge in NP Hard and complete problem.	1, 2	1, 2, 3, 4, 5, 12

Course Code: 18MCS302

Course Name: DATABASE MANAGEMENT SYSTEMS

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Describe the fundamental elements of relational database management systems.	1	1, 2, 3, 12
CO 2	Design ER-models to represent simple database application scenarios.	1	1, 2, 3, 4, 5, 12
CO 3	Convert the ER-model to relational tables, populate relational database and formulate SQL queries on data.	1	1, 2, 3, 4, 5, 12
CO 4	Improve the database design by normalization.	1	1, 2, 5, 12
CO 5	Understands the properties of transaction management and recovery management.	1	1, 2, 3, 4, 12

Course Code: 18MCA303

Course Name: WEB TECHNOLOGIES

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Students are able to develop a dynamic webpage by the use of java script and DHTML.	1	1, 3, 12
CO 2 Students will be able to write a server side java application called Servlet to catch form data sent from client, process it and store it on database.	3	1, 2, 12
CO 3 Students will be able to write a server side java application called JSP to catch form data sent from client and store it on database.	3	1, 2, 12

Course Code: 18MCA304

Course Name: OBJECT ORIENTED SOFTWARE ENGINEERING

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Plan a software engineering process life cycle.	1,	1, 2, 12
CO 2 Able to elicit, analyze and specify, design and develop the code.	1,	1, 2, 3, 12
CO 3 Develop the code from the design and effectively apply relevant standards and perform testing, and quality management and practice.	1,	1, 2, 12
CO 4 Use modern engineering tools necessary for software project management, time management and software reuse.	1,	1, 2, 12
CO 5 Plan a software engineering process life cycle.	1,	1, 2, 12

Course Code: 18MCA305

Course Name: OPERATIONS RESEARCH

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Use quantitative methods and techniques for effective decisions– making.	1	1 ,2
CO 2 Apply model formulation and applications that are used in solving business decision problems.	1	1 ,2

Course Code:

18MCA306P Course

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Construct problem definition statements for real life applications and implement a database for the same.	3	1, 2, 12
CO 2 Write queries in SQL to retrieve any type of information from a data base.	3	1, 2, 3, 12
CO 3 Create and populate a RDBMS, using SQ	3	1, 2, 3, 12

Course Code: 18MCA307P

Course Name: WEB TECHNOLOGIES LAB

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Implement dynamic web pages with validation using JavaScript objects by applying different event handling mechanism.	1	1, 3, 12
CO 2 Build well-formed XML Document and implement Web Service using Java.	3	1, 2, 12
CO 3 Use AJAX Programming Technique to develop RIA.	3	1, 2, 12
CO 4 Develop simple web application using server side PHP programing and Database Connectivity using MySQL.	1	1, 3, 12

Course Code: 18MCA308P

Course Name: MINI PROJECT

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Undertake short research projects in a team under the direction of members of the faculty.	1	1, 12
CO 2 Prepare detailed report describing the project and results.	1	1, 12
CO 3 Undertake fabrication work of new experimental set up/devices or develop software packages.	1	1, 12

Course Code: 18MCA401

Course Name: DATA MINING TECHNIQUES

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Distinguish the basics of data warehouse and Data Mining concepts, functionalities and Patterns.	1	1, 3, 12
CO 2	Construct the data warehouse, its techniques and concepts.	3	1, 2, 12
CO 3	Classify the data by implementing various algorithms.	3	1, 2, 12

Course Code: 18MCA402

Course Name: MOBILE COMPUTING

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Define the basic concepts of worldwide networks, wireless transmission and generations of Mobile systems.	3	1, 2, 12
CO 2	Perceive the architecture and common technologies for mobile communication.	3	1, 2, 12
CO 3	Grasp the IP network protocols and methods used in IP routing of packets.	3	1, 2, 12
CO 4	Apprehend the working of Mobile IP.	3	1, 2, 12
CO 5	Describe NGNs, operating systems, application development using WML, XML in Mobiles.	3	1, 2, 12

Course Code: 18MCA403

Course Name: CRYPTOGRAPHY & NETWORK SECURITY

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Identify information security goals, classical encryption techniques and decryption techniques to solve problems related to confidentiality and authentication	1, 2	1, 2
CO 2 Apply different digital signature algorithms to achieve authentication and create secure applications.	1, 2	1, 2, 4, 12
CO 3 Apply network security basics, analyze different attacks on networks and evaluate the performance of firewalls and security protocols like SSL, IPSec, and PGP.	1, 2	1, 2, 3, 12
CO 4 Apply the knowledge of cryptographic utilities and authentication mechanisms to design secure applications.	1, 2	1, 2, 12
CO 5 Identify information security goals, classical encryption techniques and decryption techniques to solve problems related to confidentiality and authentication	1	1, 2, 6, 12

Course Code: 18MCA404

Course Name: CLOUD COMPUTING

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Articulate the main concepts, key technologies, strengths, limitations and issues of virtualization.	3	1, 2, 12
CO 2 Understand the open source architectures and services of cloud computing.	3	1, 2, 12
CO 3 Develop and deploy cloud applications using popular cloud platforms.	3	1, 2, 12
CO 4 Explore the risks, consequences and costs of cloud computing and understand the implementations of AAA model in the cloud.	3	1, 2, 12

Course Code: 18MCS405.1

Course Name: ADVANCED DATABASE MANAGEMENT SYSTEMS

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Track the algorithms for query processing and optimization.	1	1, 2, 3, 12
CO 2 Learn the concepts of database system architecture and system catalog.	1	1, 2, 3, 4, 5, 12
CO 3 Follow distributed database concepts and advanced concepts of design.	1	1, 2, 3, 4, 5, 12
CO 4 Know OODBMS standards & emerging database technologies & applications.	1	1, 2, 5, 12

Course Code:

18MCA405.2 Course

Name: TCP/IP

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Understand the TCP/IP and OSI models and it importance.	3	1, 2, 12
CO 2 Explain DNS, HTTP, E-mail, Telnet and FTP protocols in detail.	3	1, 2, 12
CO 3 Understand Internet protocol with routing algorithms and IPV4 and IPV6.	3	1, 2, 12
CO 4 Explain the role of TCP protocol and various congestion avoidance techniques.	3	1, 2, 12
CO 5 Define basic CISCO router functionality and Precautions while, selecting the router accessories and simple configuration.	3	1, 2, 12

Course Code: 18MCA405.3

Course Name: SOFTWARE TESTING

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Investigate the reason for bugs and analyze the principles in software testing to prevent and remove bugs.	1	1, 3, 12
CO 2	Generate test cases and apply software testing techniques.	3	1, 2, 12
CO 3	Identify the inputs and deliverables of the testing.	3	1, 2, 12

Course Code: 18MCA405.4

Course Name: DISTRIBUTED OPERATING SYSTEMS

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Distinguish the processor that frequently relinquishes control and must depend on the processor to regain control.	3	1, 2, 12
CO 2	Explain difference between application programs and the hardware.	3	1, 2, 12
CO 3	Recognize procedures that enable a group of people to use a computer system.	3	1, 2, 12
CO 4	Control the execution of application programs.	3	1, 2, 12
CO 5	Use an interface between applications and hardware	3	1, 2, 12

Course Code: 18MCA405.5

Course Name: ARTIFICIAL INTELLIGENCE

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Demonstrate knowledge of the building blocks of AI as presented in terms of intelligent agents	1,	1, 2, 3, 12
CO 2 Analyze and formalize the problem as a state space, graph, design heuristics and select amongst different search or game based techniques to solve them.	1,	1, 2, 3, 12
CO 3 Formulate and solve problems with uncertain information using Bayesian approaches.	1,	1, 2, 3, 12
CO 4 Apply concept Natural Language processing to problems leading to understanding of cognitive computing.	1,	1, 2, 3, 12

Course Code: 18MCA405.6

Course Name: THEORY OF COMPUTATION

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Explain different types of machine structure for regular languages.	3	1, 2, 12
CO 2 Understand the laws and properties of Regular expressions and Regular languages.	3	1, 2, 12
CO 3 Describe the Grammars and PDA's.	3	1, 2, 12
CO 4 Interpret the knowledge of CFL and Turing machine Un-decidable problems.	3	1, 2, 12

Course Code: 18MCA406P

Course Name: DATA MINING LAB

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Apply mining techniques for realistic data.	1	1, 3, 12
CO 2	Implement the classification and clustering techniques on various types of data set.	3	1, 2, 12
CO 3	Distinguish how to import and export CSV files.	3	1, 2, 12
CO 4	To develop and visualization of data mining algorithms.	1	1, 3, 12

Course Code: 18MCA407P

Course Name: SOFTWARE ENGINEERING LAB

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Sketch a Modelling with UML for project development.	2	1, 12
CO 2	Apply different modelling techniques for project.	2	1, 2, 12

Course Code: 18MCA408P

Course Name: TESTING TOOLS LAB

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Design test planning.	1	1, 3, 12
CO 2	Apply the software testing techniques in commercial environment.	3	1, 2, 12
CO 3	Use practical knowledge of a variety of ways to test software.	3	1, 2, 12

Course Code: 18MCA501

Course Name: DATA SCIENCES

Upon completion of this course, the student will be able to	PSO	PO
CO 1	Explain the motivation for big data systems and identify the main sources of Big Data in the real world.	3	1, 2, 12
CO 2	Demonstrate an ability to use frameworks like Hadoop, NOSQL to efficiently store retrieve and process Big Data for Analytics.	3	1, 2, 12
CO 3	Implement several Data Intensive tasks using the Map Reduce Paradigm.	3	1, 2, 12
CO 4	Apply several newer algorithms for Clustering Classifying and finding associations in Big Data	3	1, 2, 12
CO 5	Design algorithms to analyze big data like streams, Web Graphs and Social Media data.	3	1, 2, 12

Course Code: 18MCA502

Course Name: DOT NET PROGRAMMING

Upon completion of this course, the student will be able to	PSO	PO
CO 1	Explain the concepts of different languages such as VB,C#,ASP.NET and ADO.NET	1,	1, 4, 12
CO 2	Develop different types of applications.	1,	1, 3, 4, 12
CO 3	Design Web applications that can access data from data base.	1,	1, 3, 4, 12

Course Code: 18MCA503

Course Name: PRINCIPLES OF PROGRAMMING LANGUAGES

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Illustrate languages and program behaviour, precisely reason about state, effects and mutation.	3	1, 2, 12
CO 2 Demonstrate about the mechanisms for abstraction and modularization.	3	1, 2, 12
CO 3 Develop programs that implement various formalisms, mechanisms and language features.	3	1, 2, 12
CO 4 Generalize open questions about advanced language features and reflect critically.	3	1, 2, 12

Course Code: 18MCA504.1

Course Name: DISTRIBUTED DATABASES

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Apply the Introductory Distributed Data base Concepts and its Structures	1, 2	1, 3, 4
CO 2 Describe terms related to Distributed object database design and management.	1, 2	1, 3, 4
CO 3 Implement the Transaction Management and query Processing techniques in DDBMS.	1, 2	1, 3, 4
CO 4 Set up the importance and application of emerging data base technology	1, 2	1, 2, 3, 4

Course Code: 18MCA504.2

Course Name: SOFTWARE DESIGN PATTERNS

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Describe the Unique issues in ad-hoc / Sensor Networks.	1,	1, 2, 3, 12
CO 2	Define Current Technology Trends for the implementation and deployment of wire-less ad-hoc Networks	1,	1, 2, 3, 12
CO 3	Hypothesize the Challenges in Designing MAC, Routing and Transport Protocols for wireless ad-hoc Networks	1,	1, 2, 3, 12
CO 4	Discuss the challenges in designing routing and transport protocols for wireless ad-hoc networks	1,	1, 2, 3, 12
CO 5	Comprehend the various sensor network platforms, tools and applications.	1, 2	1, 3, 4

Course Code: 18MCA504.3

Course Name: DOT NET PROGRAMMING

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Identify key entities and relationship in the problem domain.	1,	1, 4, 12
CO 2	Analyze a software development and express its essence succinctly and precisely	1,	1, 3, 4, 12
CO 3	Design a module to solve a problem and evaluate alternatives.	1,	1, 3, 4, 12

Course Code: 18MCA504.4

Course Name: NEURAL NETWORKS

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Describe the learning and Generalization issues in Neural Computation.	1	1, 3, 12
CO 2	Distinguish the Basic idea behind most common learning Algorithms for multi-layer Perceptions radical basic function networks and Kohonen self- organizing maps	3	1, 2, 12
CO 3	Implement Common learning algorithms using an existing package.	3	1, 2, 12
CO 4	Apply Neural Networks to Classification and reorganization Problems.	1	1, 3, 12

Course Code: 18MCA504.5

Course Name: IMAGE PROCESSING

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Identify the fundamental concepts of image.	1, 2	1, 2
CO 2	Explain different Image enhancement techniques.	1, 2	1, 2, 4, 12
CO 3	Distinguish and review image transforms	1, 2	1, 2, 3, 12
CO 4	Analyze the basic algorithms used for image processing & image compression with morphological image processing.	1, 2	1, 2, 12
CO 5	Contrast Image Segmentation and Representation.	1	1, 2, 6, 12
CO 6	Design & Synthesize Color image processing and its real world applications.	1	1, 2, 6, 12

Course Code: 20MCA504.6

Course Name: COMPILER DESIGN

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Identify the basics of compiler design and apply for real time applications. ¾ Comparison of different translation languages.	2,	1, 12
CO 2	Predict the importance of code optimization.	2,	1, 12
CO 3	Define compiler generation tools and techniques.	2,	1, 2, 12

Course Code: 18MCA505.1

Course Name: EMBEDDED SYSTEMS

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Explain different challenges in designing an embedded system.	3,	1, 12
CO 2	Design custom single, optimizing and general purpose processors.	3,	1, 12
CO 3	Describe Universal Asynchronous Receiver/ Transmitter.	3,	1, 12
CO 4	Explain microprocessor interfacing, arbitration methods, interrupts and semaphores.	3,	1, 12

Course Code: 18MCA505.2

Course Name: INFORMATION SYSTEMS AUDITING

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Illustrate the fundamental concepts of information systems auditing and IT applications.	1	1, 3, 12
CO 2	Identify the security controls in organization.	3	1, 2, 12
CO 3	Describe the trend of computer security threats and remedies.	3	1, 2, 12
CO 4	Apply physical, logical and operational security controls.	1	1, 3, 12

Course Code: 18MCA505.3

<u>Course Name: INTERNET OF THINGS</u>

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Apply the concepts of IOT in different applications.	1,	1,
CO 2	Identify the different technology	1,	2, 3, 4
CO 3	Analysis and evaluate protocols used in IOT and data received through sensors.	1,	2, 3,
CO 4	Design and develop smart city in IOT.	1,	1, 2, 3

Course Code: 18MCA505.5

Course Name: <u>SIMULATION AND ANALYSIS</u>

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Define basic concepts in modelling and simulations	1, 2	1, 3, 4
CO 2	Identify various simulation models.	1, 2	1, 3, 4
CO 3	Construct a model for a given set of data and motivate its validity.	1, 2	1, 3, 4
CO 4	Analyze output data produced by a model and test validity of the model.	1, 2	1, 2, 3, 4

Course Code: 18MCS506P

Course Name: <u>DOT NET PROGRAMMING LAB</u>

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Develop different types of applications.	1,	1, 4, 12
CO 2	Design Web applications that can access data from data base	1,	1, 3, 4, 12

Course Code: 20MCA507P

Course Name: DATA SCIENCES LAB

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Explain the processing and storing huge volumes of data by using MAPREDUCE and HDFS.	1,	1, 2, 12
CO 2	Construct map reduce programs by using various data sets.	1,	1, 2, 3, 12
CO 3	Create files and directories in local file system.	1,	1, 2, 12
CO 4	Run PIG, HIVE tables and perform various queries on tables.	1,	1, 2, 12

Course Code: 18MCS508P

Course Name: TECHNICAL REPORT WRITING

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Study research papers for understanding of a new field, in the absence of a textbook, to summarize and review them.	3	1, 2, 12
CO 2	Impart skills in preparing detailed report describing the project and results.	3	1, 2, 12
CO 3	Effectively communicate by making an oral presentation before an evaluation committee.	3	1, 2, 12

Course Code: 18MCA601

Course Name: PROJECT WORK

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Analyze, design and implement a software project using SDLC model.	3	1, 2, 12
CO 2	Work as a team and to focus on getting a working project done with in a stipulated time.	3	1, 2, 12

Course Code: 20MCA101

Course Name: PROGRAMMING AND PROBLEM SOLVING USING PHYTON

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Provide details of his knowledge of C language.	1	1, 2, 3, 5, 12
CO 2	Develop logics which will help them to create programs, applications in C.	1	1, 2, 3, 5, 12
CO 3	Easily switch over to any other language in future.	1	1, 2, 3, 5, 12
CO 4	Identify tasks in which the numerical techniques learned are applicable and apply them to write programs, and hence use Computers effectively to solve the task.	1	1, 2, 3, 5, 12

Course Code: 20MCA102

Course Name: COMPUTER ORGANIZATION

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Able to design digital circuits by simplifying the Boolean functions	3	1, 2, 12
CO 2	Able to understand the organization and working principle of computer hardware components	3	1, 2, 3, 12
CO 3	Able to understand mapping between virtual and physical memory	3	1, 2, 3, 12
CO 4	Acquire knowledge about multiprocessor organization and parallel processing	3	1, 2, 3, 12
CO 5	Able to understand the importance of the hardware-software interface.	3	1, 2, 3, 12
CO 6	Able to trace the execution sequence of an instruction through the processor.	3	1, 2, 12

Course Code: 20MCA103

Course Name: DATABASE MANAGEMENT SYSTEM

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Understand the basic concepts of the database and data models.	1	1, 2, 3, 12
CO 2	Design a database using ER diagrams and map ER into Relations and normalize the relations. 3. Acquire the knowledge of query evaluation to monitor the performance of the DBMS.	1	1, 2, 3, 4, 5, 12
CO 3	Ability to execute various SQL Commands.	1	1, 2, 3, 4, 5, 12
CO 4	Develop a simple database applications using normalization.	1	1, 2, 5, 12
CO 5	Acquire the knowledge about different special purpose databases and to critique how they differ from traditional database systems.	1	1, 2, 3, 4, 12

Course Code: 20MCA104

Course Name: OPERATING SYSTEMS

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Able to understand the operating system components and its services	2	1, 12
CO 2	Able to Implement the algorithms in process management and solving the issues of IPC	2	1, 2, 12
CO 3	Able to demonstrate the mapping between the physical memory and virtual memory	2	1 ,2, 12
CO 4	Able to understand file handling concepts in OS perspective	2	1, 2, 12
CO 5	Able to understand the protection of system.	2	1, 2, 12
CO 6	Able to understand the operating system components and services with the recent OS	2	1 ,2, 12

Course Code: 20MCA105

Course Name: DISCRETE MATHEMATICAL STRUCTURES

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Display his efficiency in handling with discrete structures.	1	1 ,2
CO 2	Apply set theory and handling formal of notations of size, matching, ordering, and planarity. ¾ Solve concrete combinational problems.	1	1 ,2
CO 3	Deal with notations of mapping and via that notation ability to tackle various notations of infinity like countable, uncountable etc.	1	1 ,2
CO 4	Use graphs as unifying theme of various combinational problems.	1	1 ,2
CO 5	Apply combinational institutions in network theory, data structure and various other fields of science	1	1 ,2

Course Code: 20MCA106

Course Name: PROBABILITY & STATISTICS

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Use basic concepts in probability theory and statistical analysis.	1	1 ,2
CO 2	Learn the fundamental theory of distribution of random variables, the basic theory and techniques of parameter estimation and tests of hypotheses.	1	1 ,2
CO 3	Derive Small Sample Tests and applications of t, F distribution with life examples. Large sample test, critical values, Bi variety data, Concept of correlation & Regression. To fit linear regression lines, multiple correlation coefficient.	1	1 ,2

Course Code: 20MCA107P

Course Name: Programming and Problem Solving using Python Lab

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Understand the concept of data structures, python and apply algorithm for solving problems like Sorting, searching, insertion and deletion of data.	1	1, 2, 3, 5, 12
CO 2	Implement linear and non-linear data structures for processing of ordered or unordered data.	1	1, 2, 3, 5, 12
CO 3	Analyze various algorithms based on their time and space complexity.	1	1, 2, 3, 5, 12
CO 4	Implement various control structures and numerous native data types.	1	1, 2, 3, 5, 12
CO 5	Design user defined functions, modules, and packages and exception handling Methods.	1	1, 2, 3, 5, 12

Course Code: 20MCA108P

Course Name: DATABASE MANAGEMENT SYSTEM LAB

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Able to master the basic concepts and understand the applications of database systems.	3	1, 2, 12
CO 2	Able to construct an Entity-Relationship (E-R) model and Relational Algebra.	3	1, 2, 3, 12
CO 3	Understand and apply database normalization principles.	3	1, 2, 3, 12
CO 4	Able to construct SQL queries to perform CRUD operations on database. (Create, Retrieve, Update, and Delete).	3	1, 2, 3, 12
CO 5	Understand the usage of triggers.	3	1, 2, 3, 12
CO 6	Able to execute the PL/SQL programmes	3	1, 2, 12

Course Code: 20MCA201

Course Name: DATA STRUCTURES

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Learn how to use data structure concepts for realistic problems.	1	1, 12
CO 2	Ability to identify appropriate data structure for solving computing problems in C language.	1	1, 2, 3, 4, 12
CO 3	Ability to solve problems independently and think critically.	1	1, 2, 3, 4, 12
CO 4	Able to search and sort the elements in graphs and trees.	1	1, 2, 3, 4, 12
CO 5	Ability to solve linked list problems.	1	1, 12
CO 6	Ability to solve queues and hash tables.	1	1, 12

Course Code: 20MCA202

Course Name: Cryptography & Network Security

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Identify the security issues in the network and resolve it.	1, 2	1, 2
CO 2	Analyse the vulnerabilities in any computing system and hence be able to design a security solution.	1, 2	1, 2, 4, 12
CO 3	Evaluate security mechanisms using rigorous approaches by key ciphers and Hash functions.	1, 2	1, 2, 3, 12
CO 4	Demonstrate various network security applications, IPsec, Firewall, IDS, Web Security, Email Security and Malicious software etc.,	1, 2	1, 2, 12
CO 5	Identify the security issues in the network and resolve it.	1	1, 2, 6, 12
CO 6	Analyse the vulnerabilities in any computing system and hence be able to design a security solution.	1	1, 2, 6, 12

Course Code: 20MCA203

Course Name: Computer Networks

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Understand and explore the basics of Computer Networks and Various Protocols	3	1, 2, 12
CO 2	Administrate a network and schedule flow of information	3	1, 2, 12
CO 3	Examine the network security issues in Mobile and ad hoc networks.	3	1, 2, 12
CO 4	Demonstrate the TCP/IP and OSI fashions with merits and demerits.	3	1, 2, 12
CO 5	Evaluate the shortest path by using Routing algorithms	3	1, 2, 12
CO 6	Understand and explore the basics of Computer Networks and Various Protocols	3	1, 2, 12

Course Code: 20MCA204

Course Name: WEB TECHNOLOGIES

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Students are able to develop a dynamic webpage by the use of java script and DHTML.	1	1, 3, 12
CO 2	Students will be able to write a server side java application called Servlet to catch form data sent from client, process it and store it on database.	3	1, 2, 12
CO 3	Students will be able to write a server side java application called JSP to catch form data sent from client and store it on database.	3	1, 2, 12

Course Code: 20MCA205

Course Name: Cloud Computing

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Define cloud computing and related concepts	3	1, 2, 12
CO 2	Understand the key dimensions of the challenges and benefits of Cloud Computing	3	1, 2, 12
CO 3	Understand the hardware necessary for cloud computing and how components fit together.	3	1, 2, 12
CO 4	Determine the suitability of in-house v/s hosted solutions	3	1, 2, 12
CO 5	Understanding the systems, protocols and mechanisms to support cloud computing and develop applications for cloud computing.	3	1, 2, 12
CO 6	Determine numerous opportunities exist for practitioners seeking to create solutions for cloud computing.	3	1, 2, 12

Course Code: 20MCA206

Course Name: MANAGEMENT PROCESS AND ORGANIZATION BEHAVIOUR

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Understand Fundamental concepts, functions, principles of management, challenges and trends.	1	1, 2, 6
CO 2	Describe Planning, process of planning, types of organizations and staffing.	1	1, 2, 6
CO 3	Explain Motivation, leadership and control systems and techniques.	1	1, 2, 6
CO 4	Identify Concept of Organizational behaviour and theories determinants of individual behaviour.	1	1, 2, 6
CO 5	Analyse Group dynamics, organizational culture, diagnosis and group performance.	1	1, 2, 6
CO 6	Understand Fundamental concepts, functions, principles of management, challenges and trends.	1	1, 2, 6

Course Code: 20MCA207P

Course Name: DATA STRUCTURES LAB USING JAVA LAB

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Upon successful completion of this course student is able to:	1	1, 12
CO 2	Implement Object Oriented programming concept for developing skills of logic building activity	1	1, 2, 3, 4, 12
CO 3	Prove how to achieve reusability using inheritance, interfaces and packages.	1	1, 2, 3, 4, 12
CO 4	Demonstrate and use of different exception handling mechanisms and concept of multithreading	1	1, 2, 3, 4, 12
CO 5	Upon successful completion of this course student is able to:	1	1, 12
CO 6	Implement Object Oriented programming concept for developing skills of logic building activity	1	1, 12

Course Code: 20MCA208p

Course Name: WEB TECHNOLOGIES LAB

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Implement dynamic web pages with validation using JavaScript objects by applying different event handling mechanism	1	1, 3, 12
CO 2	Build well-formed XML Document and implement Web Service using Java. ¾ Use AJAX Programming Technique to develop RIA.	3	1, 2, 12
CO 3	Develop simple web application using server side PHP programing and Database Connectivity using MySQL.	3	1, 2, 12
CO 4	Implement dynamic web pages with validation using JavaScript objects by applying different event handling mechanism	1	1, 3, 12
CO 5	Build well-formed XML Document and implement Web Service using Java. ¾ Use AJAX Programming Technique to develop RIA.	3	1, 2, 12
CO 6	Develop simple web application using server side PHP programing and Database Connectivity using MySQL.	3	1, 2, 12

Course Code: 20MCA301

Course Name: DESIGN AND ANALYSIS OF ALGORITHM

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Able to Argue the correctness of algorithms using inductive proofs and Analyse worst-case running times of algorithms using asymptotic analysis.	1, 2	1, 2, 3, 4, 5, 12
CO 2	Able to explain important algorithmic design paradigms (divide-and-conquer, greedy method, dynamic-programming and Backtracking) and apply when an algorithmic design situation calls for it.	1, 2	1, 2, 3, 4, 5, 12
CO 3	Able to Explain the major graph algorithms and Employ graphs to model engineering problems, when appropriate.	1, 2	1, 2, 3, 4, 5, 12
CO 4	Able to analyse String matching algorithms	1, 2	1, 2, 3, 4, 5, 12
CO 5	Able to Argue the correctness of algorithms using inductive proofs and Analyse worst-case running times of algorithms using asymptotic analysis.	1, 2	1, 2, 3, 4, 5, 12
CO 6	Able to explain important algorithmic design paradigms (divide-and-conquer, greedy method, dynamic-programming and Backtracking) and apply when an algorithmic design situation calls for it.	1, 2	1, 2, 3, 4, 5, 12

Course Code: 20MCA302

Course Name: OBJECT ORIENTED SOFTWARE ENGINEERING

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Analyse of a formally specified problem statement with Modelling Concepts.	1,	1, 2, 12
CO 2	Examine Project Organization, Communication and analysis Concepts.	1,	1, 2, 3, 12
CO 3	Produce appropriate System Design, object design of reusable Activities	1,	1, 2, 12
CO 4	Apply skills relevant for Mapping Models to Code, Configuration and project Management	1,	1, 2, 12
CO 5	Organize Maturity to Software Life Cycle Models and Methodologies	1,	1, 2, 12
CO 6	Analyse of a formally specified problem statement with Modelling Concepts.	1,	1, 2, 3, 12

Course Code: 20MCA303

Course Name: BIG DATA ANALYTICS

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Understand Big Data and its analytics in the real world	1,	1, 4, 12
CO 2	Analyse the Big Data framework like Hadoop and NOSQL to efficiently store and process Big Data to generate analytics	1,	1, 3, 4, 12
CO 3	Design of Algorithms to solve Data Intensive Problems using Map Reduce Paradigm	1,	1, 3, 4, 12
CO 4	Design and Implementation of Big Data Analytics using pig and spark to solve data intensive problems and to generate analytics	1,	1, 3, 4, 12
CO 5	Implement Big Data Activities using Hive	1,	1, 3, 4, 12
CO 6	Understand Big Data and its analytics in the real world	1,	1, 3, 4, 12

Course Code: 20MCA304

Course Name: ARTIFICIAL INTELLIGENCE

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Student should have a knowledge and understanding of the basic concepts of AI including Search.	1,	1, 2, 12
CO 2	Student can able to solve optimization problems.	1,	1, 2, 12
CO 3	Student can solve the Game Playing problems.	1,	1, 2, 12
CO 4	Student can able to use to planning and learning techniques	1,	1, 2, 12
CO 5	Student should be able to use this knowledge and	1,	1, 2,

Course Code: 20MCA304.2

Course Name: MACHINE LEARNING

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Explain the definition and usage of the term 'the internet of things' in different contexts.	1,	1, 2, 3, 12
CO 2	Demonstrate on various network protocols used in IoT.	1,	1, 2, 3, 12
CO 3	Analyze on various key wireless technologies used in IoT systems, such as Wi-Fi, 6LoWPAN, Bluetooth and ZigBee.	1,	1, 2, 3, 12
CO 4	Illustrate on the role of big data, cloud computing and data analytics in IoT system.	1,	1, 2, 3, 12
CO 5	Design a simple IoT system made up of sensors, wireless network connection, data analytics and display/actuators, and write the necessary control software.	1,	1, 2, 3, 12

Course Code: 20MCA304.3

Course Name: INTERNET OF THINGS

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Grasp the idea behind Internet of Things (IoT).	1,	1,
CO 2	Understand various business models relevant to IoT.	1,	2, 3, 4
CO 3	Understand designs for web connectivity.	1,	2, 3,
CO 4	Identify sources of data acquisition related to IoT, integrate to enterprise systems.	1,	1, 2, 3
CO 5	Understand IoT with Cloud technologies	1,	1, 2, 3
CO 6	Grasp the idea behind Internet of Things (IoT).	1,	3

Course Code: 20MCA304.4

Course Name: Distributed Computing

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Gain advanced knowledge in, IPC mechanisms and Event Synchronization, Distributed Computing Paradigms, SOCKET API, Group Communication, Distributed Objects, Remote Method Invocation (RMI) and Internet Applications	1, 2	1, 3, 4
CO 2	Analyse message passing, client- server and peer -to-peer models to understand distributed computing paradigms.	1, 2	1, 3, 4
CO 3	Design and Implement application programs on distributed computing systems.	1, 2	1, 3, 4
CO 4	Apply appropriate techniques and tools to design distributed computing systems and deploying in Internet applications	1, 2	1, 2, 3, 4
CO 5	Gain advanced knowledge in, IPC mechanisms and Event Synchronization, Distributed Computing Paradigms, SOCKET API, Group Communication, Distributed Objects, Remote Method Invocation (RMI) and Internet Applications	1, 2	1, 3, 4
CO 6	Analyse message passing, client- server and peer -to-peer models to understand distributed computing paradigms.	1, 2	1, 3, 4

Course Code: 20MCA305.1

Course Name: Software Testing

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Familiar about the processes involved in various testing methodologies.	1,	1, 2, 12
CO 2	Analyse the techniques in both structure and behaviour of the software.	1,	1, 2, 3, 12
CO 3	Specify the design and analysis of steps in Software management.	1,	1, 2, 12
CO 4	Collection of metrics on various types of Environments.	1,	1, 2, 11, 12
CO 5	Articulate how the Methods of Regression Test tools.	1,	1, 2, 12
CO 6	Various Test Processes and continuous Quality improvement.	1,	1, 2, 12

Course Code: 20MCA305.2

Course Name: COMPILER DESIGN

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Identify the basics of compiler design and apply for real time applications. ¾ Comparison of different translation languages.	2,	1, 12
CO 2	Predict the importance of code optimization.	2,	1, 12
CO 3	Define compiler generation tools and techniques.	2,	1, 2, 12

Course Code: 20MCA305.3

Course Name: EMBEDDED SYSTEMS

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Explain different challenges in designing an embedded system.	3,	1, 12
CO 2	Design custom single, optimizing and general purpose processors.	3,	1, 12
CO 3	Describe Universal Asynchronous Receiver/ Transmitter.	3,	1, 12
CO 4	Explain microprocessor interfacing, arbitration methods, interrupts and semaphores.	3,	1, 12
CO 5	Develop hardware software co-design aspects in embedded systems.	3,	1, 5, 12
CO 6	Explain different challenges in designing an embedded system.	3,	1, 12

Course Code: 20MCA305.4

Course Name: Block Chain technologies

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Understand basic concepts of block chain technology and its platforms	1,	1, 2, 12
CO 2	To develop various types of environments in block chain technology	1,	1, 2, 12
CO 3	To provide security prospects in an organization	1,	1, 2,12

Course Code: 20MCA306

Course Name: ENTREPRENEURSHIP DEVELOPMENT

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Define concepts of Entrepreneurship, women entrepreneurs and specific management skills.	1,	1,
CO 2	Apply idea generation and opportunity recognitions of various sources and process.	1,	2, 3, 4
CO 3	Create awareness on project report and project appraisal.	1,	2, 3,
CO 4	Review small business enterprises of various central and state level.	1,	1, 2, 3
CO 5	Interpret government policy and Taxation benefits.	1,	1, 2, 3

Course Code: 20MCA307P

Course Name: Object Oriented Software Engineering Lab

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Demonstrate knowledge in a. Data Types, Variables, Expressions b. Control statements, Strings and Text files. c. Lists, Dictionaries and Functions. d. Objects and Design with classes e. Exception Handling and GUI	1,	1, 2, 12
CO 2	Analyze complex computational problems.	1,	1, 2, 3, 12
CO 3	Design solutions for real life computational problems	1,	1, 2, 12
CO 4	Solve complex problems us	1,	1, 2, 12

Course Code: 20MCA308P

Course Name: Big Data Analytics Lab

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Understand Big Data and its analytics in the real world	1,	1, 4, 12
CO 2	Analyze the Big Data framework like Hadoop and NOSQL to efficiently store and process Big Data to generate analytics	1,	1, 3, 4, 12
CO 3	Design of Algorithms to solve Data Intensive Problems using Map Reduce Paradigm	1,	1, 3, 4, 12
CO 4	Design and Implementation of Big Data Analytics using pig and spark to solve data intensive problems and to generate analytics	1,	1, 3, 4, 12
CO 5	Implement Big Data Activities using Hive	1,	1, 3, 4, 12
CO 6	Understand Big Data and its analytics in the real world	1,	1, 3, 4, 12

Course Code: 20MCA401

Course Name: * MOOCS

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Explain critical R programming concepts	3,	1, 12
CO 2	Demonstrate how to install and configure RStudio	3,	1, 12
CO 3	Apply OOP concepts in R programming	3,	1, 12
CO 4	Explain the use of data structure and loop functions	3,	1, 12
CO 5	Analyse data and generate reports based on the data	3,	1, 5, 12
CO 6	Apply various concepts to write programs in R	3,	1, 12

Course Code: 20MCA402

Course Name: Mobile computing

Upon completion of this course, the student will be able to		PSO	PO
CO 1	To make students understand the concept of mobile computing paradigm, its novel applications and limitations.	3	1, 2, 12
CO 2	To provide the typical mobile networking infrastructure knowledge through a popular GSM architecture	3	1, 2, 12
CO 3	To furnish the knowledge of various layers of mobile networks, namely MAC layer, Network Layer & Transport Layer	3	1, 2, 12
CO 4	To Provide the concepts of platforms and protocols used in broadcasting and synchronization in the mobile environment	3	1, 2, 12

Course Code: 20MCA403

Course Name: INTERNET OF THINGS

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Grasp the idea behind Internet of Things (IoT).	1,	1,
CO 2	Understand various business models relevant to IoT.	1,	2, 3, 4
CO 3	Understand designs for web connectivity.	1,	2, 3,
CO 4	Identify sources of data acquisition related to IoT, integrate to enterprise systems.	1,	1, 2, 3
CO 5	Understand IoT with Cloud technologies	1,	1, 2, 3

Course Code: 20MCA404

Course Name: <u>MACHINE LEARNING</u>

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Explain the definition and usage of the term 'the internet of things' in different contexts.	1,	1, 2, 3, 12
CO 2	Demonstrate on various network protocols used in IoT.	1,	1, 2, 3, 12
CO 3	Analyze on various key wireless technologies used in IoT systems, such as WiFi, 6LoWPAN, Bluetooth and ZigBee.	1,	1, 2, 3, 12
CO 4	Illustrate on the role of big data, cloud computing and data analytics in IoT system.	1,	1, 2, 3, 12
CO 5	Design a simple IoT system made up of sensors, wireless network connection, data analytics and display/actuators, and write the necessary control software.	1,	1, 2, 3, 12

Course Code: 20MCA405

Course Name: <u>PROJECT WORK</u>

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Analyze, design and implement a software project using SDLC model.	3	1, 2, 12
CO 2	Work as a team and to focus on getting a working project done with in a stipulated time.	3	1, 2, 12

Course Code: 22MCA101

Course Name: PROGRAMMING AND PROBLEM SOLVING USING PHYTON

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Provide details of his knowledge of C language.	1	1, 2, 3, 5, 12
CO 2	Develop logics which will help them to create programs, applications in C.	1	1, 2, 3, 5, 12
CO 3	Easily switch over to any other language in future.	1	1, 2, 3, 5, 12
CO 4	Identify tasks in which the numerical techniques learned are applicable and apply them to write programs, and hence use computers effectively to solve the task.	1	1, 2, 3, 5, 12

Course Code: 22MCA102

Course Name: DATABASE MANAGEMENT SYSTEM

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Understand the basic concepts of the database and data models.	1	1, 2, 3, 12
CO 2	Design a database using ER diagrams and map ER into Relations and normalize the relations. 3. Acquire the knowledge of query evaluation to monitor the performance of the DBMS.	1	1, 2, 3, 4, 5, 12
CO 3	Ability to execute various SQL Commands.	1	1, 2, 3, 4, 5, 12
CO 4	Develop a simple database applications using normalization.	1	1, 2, 5, 12
CO 5	Acquire the knowledge about different special purpose databases and to critique how they differ from traditional database systems.	1	1, 2, 3, 4, 12

Course Code: 22MCA103

Course Name: OPERATING SYSTEMS

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Able to understand the operating system components and its services	2	1, 12
CO 2	Able to Implement the algorithms in process management and solving the issues of IPC	2	1, 2, 12
CO 3	Able to demonstrate the mapping between the physical memory and virtual memory	2	1 ,2, 12
CO 4	Able to understand file handling concepts in OS perspective	2	1, 2, 12
CO 5	Able to understand the protection of system.	2	1, 2, 12
CO 6	Able to understand the operating system components and services with the recent OS	2	1 ,2, 12

Course Code: 22MCA104

Course Name: MATHEMATICAL AND STATISTICAL FOUNDATIONS

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Understand Mathematical Foundations and Recursion.	1	1 ,2
CO 2	Learn and apply Advanced Counting Techniques.	1	1 ,2
CO 3	Understand the Relations and Applications of Graphs.	1	1 ,2
CO 4	Learn and apply Probability Laws and Discrete Distributions.	1	1 ,2

Course Code: 22MCA105P

Course Name: Programming and Problem Solving using Python Lab

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Understand the concept of data structures, python and apply algorithm for solving problems like Sorting, searching, insertion and deletion of data.	1	1, 2, 3, 5, 12
CO 2	Implement linear and non-linear data structures for processing of ordered or unordered data.	1	1, 2, 3, 5, 12
CO 3	Analyze various algorithms based on their time and space complexity.	1	1, 2, 3, 5, 12
CO 4	Implement various control structures and numerous native data types.	1	1, 2, 3, 5, 12
CO 5	Design user defined functions, modules, and packages and exception handling Methods.	1	1, 2, 3, 5, 12

Course Code: 22MCA106P

Course Name: DATABASE MANAGEMENT SYSTEM LAB

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Able to master the basic concepts and understand the applications of database systems.	3	1, 2, 12
CO 2	Able to construct an Entity-Relationship (E-R) model and Relational Algebra.	3	1, 2, 3, 12
CO 3	Understand and apply database normalization principles.	3	1, 2, 3, 12
CO 4	Able to construct SQL queries to perform CRUD operations on database. (Create, Retrieve, Update, and Delete).	3	1, 2, 3, 12
CO 5	Understand the usage of triggers.	3	1, 2, 3, 12
CO 6	Able to execute the PL/SQL programmes	3	1, 2, 12

Course Code: 22MCA201

Course Name: Computer Networks

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Understand and explore the basics of Computer Networks and Various Protocols	3	1, 2, 12
CO 2	Administrate a network and schedule flow of information	3	1, 2, 12
CO 3	Examine the network security issues in Mobile and ad hoc networks.	3	1, 2, 12
CO 4	Demonstrate the TCP/IP and OSI fashions with merits and demerits.	3	1, 2, 12
CO 5	Evaluate the shortest path by using Routing algorithms	3	1, 2, 12
CO 6	Understand and explore the basics of Computer Networks and Various Protocols	3	1, 2, 12

Course Code: 22MCA202

Course Name: DATA STRUCTURES

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Learn how to use data structure concepts for realistic problems.	1	1, 12
CO 2	Ability to identify appropriate data structure for solving computing problems in C language.	1	1, 2, 3, 4, 12
CO 3	Ability to solve problems independently and think critically.	1	1, 2, 3, 4, 12
CO 4	Able to search and sort the elements in graphs and trees.	1	1, 2, 3, 4, 12
CO 5	Ability to solve linked list problems.	1	1, 12
CO 6	Ability to solve queues and hash tables.	1	1, 12

Course Code: 22MCA203

Course Name: WEB TECHNOLOGIES

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Students are able to develop a dynamic webpage by the use of java script and DHTML.	1	1, 3, 12
CO 2	Students will be able to write a server side java application called Servlet to catch form data sent from client, process it and store it on database.	3	1, 2, 12
CO 3	Students will be able to write a server side java application called JSP to catch form data sent from client and store it on database.	3	1, 2, 12

Course Code: 22MCA204.1

Course Name: Cloud Computing

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Define cloud computing and related concepts	3	1, 2, 12
CO 2	Understand the key dimensions of the challenges and benefits of Cloud Computing	3	1, 2, 12
CO 3	Understand the hardware necessary for cloud computing and how components fit together.	3	1, 2, 12
CO 4	Determine the suitability of in-house v/s hosted solutions	3	1, 2, 12
CO 5	Understanding the systems, protocols and mechanisms to support cloud computing and develop applications for cloud computing.	3	1, 2, 12
CO 6	Determine numerous opportunities exist for practitioners seeking to create solutions for cloud computing.	3	1, 2, 12

Course Code: 20MCA204.2

Course Name: DATA MINING TECHNIQUES

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Distinguish the basics of data warehouse and Data Mining concepts, functionalities and Patterns.	1	1, 3, 12
CO 2	Construct the data warehouse, its techniques and concepts.	3	1, 2, 12
CO 3	Classify the data by implementing various algorithms.	3	1, 2, 12

Course Code: 22MCA204.3

Course Name: UNIX PROGRAMMNG

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Understand the basic concepts of UNIX Architecture, File system and basic	3	1, 2, 12
CO 2	Understand the basic file system commands, concepts of Shell programming.	3	1, 2, 12
CO 3	Understand the concepts UNIX API's and process control.	3	1, 2, 12
CO 4	Understand the concepts of process accounting, User identification and	3	1, 2, 12
CO 5	Understand signal handling mechanism, daemon characteristics, coding rules and error logging.	3	1, 2, 12
CO 6	Understand the basic concepts of UNIX Architecture, File system and basic	3	1, 2, 12

Course Code: 22MCA205P

Course Name: DATA STRUCTURES LAB USING JAVA LAB

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Upon successful completion of this course student is able to:	1	1, 12
CO 2	Implement Object Oriented programming concept for developing skills of logic building activity	1	1, 2, 3, 4, 12
CO 3	Prove how to achieve reusability using inheritance, interfaces and packages.	1	1, 2, 3, 4, 12
CO 4	Demonstrate and use of different exception handling mechanisms and concept of multithreading	1	1, 2, 3, 4, 12
CO 5	Upon successful completion of this course student is able to:	1	1, 12
CO 6	Implement Object Oriented programming concept for developing skills of logic building activity	1	1, 12

Course Code: 22MCA206P

Course Name: WEB TECHNOLOGIES LAB

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Implement dynamic web pages with validation using JavaScript objects by applying different event handling mechanism	1	1, 3, 12
CO 2	Build well-formed XML Document and implement Web Service using Java. ¾ Use AJAX Programming Technique to develop RIA.	3	1, 2, 12
CO 3	Develop simple web application using server side PHP programing and Database Connectivity using MySQL.	3	1, 2, 12
CO 4	Implement dynamic web pages with validation using JavaScript objects by applying different event handling mechanism	1	1, 3, 12
CO 5	Build well-formed XML Document and implement Web Service using Java. ¾ Use AJAX Programming Technique to develop RIA.	3	1, 2, 12
CO 6	Develop simple web application using server side PHP programing and Database Connectivity using MySQL.	3	1, 2, 12

ATTAINMENT OF COURSE OUTCOMES

PG Computer Science

COs, PSOs and POs Mapping

The Master of Computer Science (M.Sc.(Computers)) programme was started in   with a view to produce high quality information system professionals. Computer science is the study of computers and computational systems. It is a broad field which includes everything from the algorithms that make up software to how software interacts with hardware to how well software is developed and designed. Computer scientists use various mathematical algorithms, coding procedures, and their expert programming skills to study computer processes and develop new software and systems.

Computing is part of everything we do. Computing drives innovation in engineering, business, entertainment, education, and the sciences—and it provides solutions to complex, challenging problems of all kinds.

Computer science focuses on the development and testing of software and software systems. It involves working with mathematical models, data analysis and security, algorithms, and computational theory. Computer scientists define the computational principles that are the basis of all software.

Information technology (IT) focuses on the development, implementation, support, and management of computers and information systems. IT involves working both with hardware (CPUs, RAM, hard disks) and software (operating systems, web browsers, mobile applications). IT professionals make sure that computers, networks, and systems work well for all users.

Principal areas of study and careers within computer science include artificial intelligence, computer systems and networks, security, database systems, human-computer interaction, vision and graphics, numerical analysis, programming languages, software engineering, bioinformatics, and theory of computing.

1. **Qualification descriptors for the graduates**

    Knowledge & Understanding

    1. Graduates develop an in-depth knowledge in the fundamentals of Computer Science and its applications.
    2. Graduates develop the ability and confidence to analyse problem and design solution in complex computing environment using state of the art techniques, tools and resources.
    3. Graduates acquire expert awareness and competency to supervise and moderate the computer science applications in various domains.

2. **Skills & Techniques**

    1. Graduates develop skill set for using knowledge in computer science to create the ability to configure and operate complex software systems, packages, tools, and applications for sustainability in various domains.
    2. Graduates have the right communication skills required for success in their profession.
    3. Graduates equip themselves with techniques of design of experiments, analysis and interpretation of data and synthesis of information to provide a valid conclusion.

3. Competence

    1. Graduates develop the competency to adapt to the changing trends of computer applications.
    2. Graduates are ready to work individually as well as in teams, in industry, academia, research, and entrepreneurship.
    3. Graduates are ready for pursuing lifelong learning to enhance the adaptability to the changing trends and career opportunities in computer applications.

4. **Graduates Attributes**

1. Graduate will have an in-depth technical knowledge in the field of computer application.

2. Graduate will have various computing skills like the analysis, design, and

   development ofinnovative software products to meet the industry needs

3. Graduate will pursue lifelong learning and to do research as computing professionals and scientists.
4. Graduate will communicate and function effectively in teams in multidisciplinary fields within the global, societal and environmental context.
5. Graduate will develop competency, creativity, and innovativeness in the field, with the ability to adapt to the changing trends and career opportunities in computer application.

PROGRAMME OUTCOMES (POS)

On successful completion of Graduate Program, Graduating Students/ Graduateswill be able to

PO 1	Apply knowledge of computing fundamentals, computing specialization, mathematics, and domain knowledge appropriate for the computing specialization to the abstraction and conceptualization of computing models from defined problems and requirements.
PO 2	Identify, formulate, research literature, and solve complex Computing problems reaching substantiated conclusions using fundamental principles of Mathematics, Computing sciences, and relevant domain disciplines.
PO 3	Design and evaluate solutions for complex computing problems, and design and evaluate systems, components, or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.
PO 4	Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions.
PO 5	Create, select, adapt and apply appropriate techniques, resources, and modern computing tools to complex computing activities, with an understanding of the limitations.
PO 6	Understand and commit to professional ethics and cyber regulations, responsibilities, and norms of professional computing practice.
PO 7	Recognize the need, and have the ability, to engage in independent learning for continual development as a Computing professional.
PO 8	Demonstrate knowledge and understanding of computing and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO 9	Communicate effectively with the computing community, and with society at large, about complex computing activities by being able to comprehend and write effective reports, design documentation, make effective presentations, and give and understand clear instructions.
PO 10	Understand and assess societal, environmental, health, safety, legal, and cultural issues within local and global contexts, and the consequential responsibilities relevant to professional computing practice
PO 11	Function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary environments.
PO 12	Identify a timely opportunity and using innovation to pursue that opportunity to create value and wealth for the betterment of the individual and society at large.

PROGRAMME SPECIFIC OUTCOMES (PSOs)

The Department of Computer Science, Two Year (comprising 4 semesters) Postgraduate Program in Computer Science with objective of empowering students to acquire all-inclusive understanding of Computer Knowledge both theoretical and practical as an academic discipline. Upon completion of Computer Science Post graduation Program successfully, the students shall acquire the following skills and competencies.

PSO 1	Develop an ability to apply knowledge in the computing discipline.
PSO 2	Develop ability to design and conduct experiments, as well as interpret data
PSO 3	Develop ability to demonstrate team work with the ability of leadership, analytical reasoning for solving time critical problems and strong human values for responsible professional.
PSO 4	Develop ability to use current technologies, skills and models for computing practice.

COURSE OUTCOMES (COs)

Course Code: 18MCS101

Course Name: OBJECT ORIENTED PROGRAMMING SYSTEMS

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Understand the concept and underlying principles of Object-Oriented Programming.	1	1, 12
CO 2 Understand how object-oriented concepts are incorporated into the Java programming language.	1	1, 2, 3, 4, 12
CO 3 Knowledge of the structure and model of the Java programming Language	1	1, 2, 3, 4, 12
CO 4 Develop efficient Java applets and applications using OOP concept	1	1, 2, 3, 4, 12

Course Code: 18MCS102

Course Name: COMPUTER ORGANIZATION

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Identify, understand and apply different number systems and codes.	3	1, 2, 12
CO 2 Understand the digital representation of data in a computer system.	3	1, 2, 3, 12
CO 3 Understand the general concepts in digital logic design, including logic elements, and their use in combinational and sequential logic circuit design.	3	1, 2, 3, 12
CO 4 Understand computer arithmetic formulate and solve problems, understand the performance requirements of systems	3	1, 2, 3, 12
CO 5 Identify, understand and apply different number systems and codes.	3	1, 2, 3, 12

Course Code: 18MCS103

Course Name: DISCRETE MATHEMATICAL STRUCTURES

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Efficiency in handling with discrete structures	1	1 ,2
CO 2 Efficiency in set theory and handling formal of notations of size, matching, ordering, planarity.	1	1 ,2
CO 3 Efficiency in solving concrete combinational problems.	1	1 ,2
CO 4 Ability to deal with notations of mapping and via that notation ability to tackle various notations of infinity like countable, uncountable etc.	1	1 ,2
CO 5 Apply to use graphs as unifying theme of various combinational problems.	1	1 ,2

Course Code: 18MCS104

Course Name: DATABASE MANAGEMENT SYSTEMS

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Describe the fundamental elements of relational database management systems.	1	1, 2, 3, 12
CO 2 Design ER-models to represent simple database application scenarios.	1	1, 2, 3, 4, 5, 12
CO 3 Convert the ER-model to relational tables, populate relational database and formulate SQL queries on data.	1	1, 2, 3, 4, 5, 12
CO 4 Improve the database design by normalization.	1	1, 2, 5, 12
CO 5 Understands the properties of transaction management and recovery management.	1	1, 2, 3, 4, 12

Course Code: 18MCS105

Course Name: <u>DATA STRUCTURES</u>

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Implement mathematical functions and analyze algorithms and algorithm correctness.	1	1, 12
CO 2 Implement stings and Arrays.	1	1, 2, 3, 4, 12
CO 3 Describe stack, queue and linked list operations, tree concepts.	1	1, 2, 3, 4, 12
CO 4 Have knowledge of Graphs and Sorting and Searching Techniques.	1	1, 2, 3, 4, 12

Course Code: 18MCS106P

Course Name: <u>DATA STRUCTURES LAB USING JAVA</u>

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Implement Object Oriented programming concept for developing skills of logic building activity.	1	1, 12
CO 2 Demonstrates how to achieve reusability using inheritance, interfaces and packages.	1	1, 2, 3, 4, 12
CO 3 Demonstrate and use of different exception handling mechanisms and concept of multithreading.	1	1, 2, 3, 4, 12

Course Code:

18MCS107P Course

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Construct problem definition statements for real life applications and implement a database for the same.	3	1, 2, 12
CO 2 Write queries in SQL to retrieve any type of information from a data base.	3	1, 2, 3, 12
CO 3 Create and populate a RDBMS, using SQ	3	1, 2, 3, 12

Course Code: 18MCS108P

Course Name: OBJECT ORIENTED PROGRAMMING LAB

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Develop simple applications in the Java programming language.	1	1 ,2
CO 2 Implement appropriate program design using good programming style.	1	1 ,2
CO 3 Develop efficient Java applets and applications using OOP concept.	1	1 ,2

Course Code: 18MCS201

Course Name: COMPUTER NETWORKS

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Understand and explore the basics of Computer Networks and Various Protocols	3	1, 2, 12
CO 2 Administrate a network and schedule flow of information	3	1, 2, 12
CO 3 Examine the network security issues in Mobile and ad hoc networks.	3	1, 2, 12
CO 4 Demonstrate the TCP/IP and OSI fashions with merits and demerits.	3	1, 2, 12
CO 5 Evaluate the shortest path by using Routing algorithms	3	1, 2, 12

Course Code: 18MCS202

Course Name: OPERATIONS RESEARCH

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Use quantitative methods and techniques for effective decisions– making.	1	1 ,2
CO 2 Apply model formulation and applications that are used in solving business decision problems.	1	1 ,2

Course Code: 18MCS203

Course Name: THEORY OF COMPUTATION

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Explain different types of machine structure for regular languages.	3	1, 2, 12
CO 2 Understand the laws and properties of Regular expressions and Regular languages.	3	1, 2, 12
CO 3 Describe the Grammars and PDA's.	3	1, 2, 12
CO 4 Interpret the knowledge of CFL and Turing machine Un-decidable problems.	3	1, 2, 12

Course Code: 18MCS204

Course Name: OBJECT ORIENTED SOFTWARE ENGINEERING

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Plan a software engineering process life cycle.	1,	1, 2, 12
CO 2 Able to elicit, analyze and specify, design and develop the code.	1,	1, 2, 3, 12
CO 3 Develop the code from the design and effectively apply relevant standards and perform testing, and quality management and practice.	1,	1, 2, 12
CO 4 Use modern engineering tools necessary for software project management, time management and software reuse.	1,	1, 2, 12
CO 5 Plan a software engineering process life cycle.	1,	1, 2, 12

Course Code: 18MCS205

Course Name: OPERATING SYSTEMS

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Define the basic concepts of operating system, its functions and services.	2	1, 12
CO 2 Express various views and management policies adopted by operating system as pertaining with Processes, Deadlock, memory, File and I/O operations.	2	1, 2, 12
CO 3 Compare the various algorithms and comment about performance of various algorithms used for Processes, Deadlock, memory, File and I/O operations.	2	1 ,2, 12
CO 4 Knowledge of basic concepts towards Process Synchronization and related issues.	2	1, 2, 12
CO 5 Better understanding on Protection & Security.	2	1, 2, 12

Course Code: 18MCS206P

Course Name: OBJECT ORIENTED SOFTWARE ENGINEERING LAB

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Sketch a Modelling with UML for project development.	2	1, 12
CO 2 Apply different modelling techniques for project.	2	1, 2, 12

Course Code: 18MCS207P

Course Name: OPERATING SYSTEM & NETWORKS LAB

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Demonstrate the knowledge of Systems Programming and Operating Systems.	1	1, 2, 3, 5, 12
CO 2 Compare and analyze the different implementation approach of system programming and operating system abstractions.	1	1, 2, 3, 5, 12
CO 3 Implementing operating systems scheduling algorithms.	1	1, 2, 3, 5, 12
CO 4 Implement network Programming to obtain IP address, Machine Name and communications etc..	1	1, 2, 3, 5, 12
CO 5 Demonstrate the knowledge of Systems Programming and Operating Systems.	1	1, 2, 3, 5, 12

Course Code: 18MCS208

Course Name: TECHNICAL REPORT WRITING

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Study research papers for understanding of a new field, in the absence of a textbook, to summarize and review them.	3	1, 2, 12
CO 2 Impart skills in preparing detailed report describing the project and results.	3	1, 2, 12
CO 3 Effectively communicate by making an oral presentation before an evaluation committee.	3	1, 2, 12

Course Code: 18MCS301

Course Name: CRYPTOGRAPHY & NETWORK SECURITY

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Identify information security goals, classical encryption techniques and decryption techniques to solve problems related to confidentiality and authentication	1, 2	1, 2
CO 2 Apply different digital signature algorithms to achieve authentication and create secure applications.	1, 2	1, 2, 4, 12
CO 3 Apply network security basics, analyze different attacks on networks and evaluate the performance of firewalls and security protocols like SSL, IPsec, and PGP.	1, 2	1, 2, 3, 12
CO 4 Apply the knowledge of cryptographic utilities and authentication mechanisms to design secure applications.	1, 2	1, 2, 12
CO 5 Identify information security goals, classical encryption techniques and decryption techniques to solve problems related to confidentiality and authentication	1	1, 2, 6, 12

Course Code: 18MCS302

Course Name: DESIGN & ANALYSIS OF ALGORITHMS

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Analyze the asymptotic performance of algorithms.	1, 2	1, 2, 3, 4, 5, 12
CO 2 Demonstrate a familiarity with major algorithms and data structures.	1, 2	1, 2, 3, 4, 5, 12
CO 3 Apply important algorithmic design paradigms and methods of analysis.	1, 2	1, 2, 3, 4, 5, 12
CO 4 Develop algorithms for sorting, searching, insertion and matching.	1, 2	1, 2, 3, 4, 5, 12
CO 5 Acquire knowledge in NP Hard and complete problem.	1, 2	1, 2, 3, 4, 5, 12

Course Code: 18MCS303

Course Name: DATA WAREHOUSING & DATA MINING

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Understand the basics of data warehouse and Data Mining concepts, functionalities and Patterns.	1	1, 3, 12
CO 2 Aware of constructing the data warehouse, its techniques and concepts.	3	1, 2, 12
CO 3 Classify the data by implementing various algorithms.	3	1, 2, 12

Course Code: 18MCS304

Course Name: WEB TECHNOLOGIES

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Students are able to develop a dynamic webpage by the use of java script and DHTML.	1	1, 3, 12
CO 2 Students will be able to write a server side java application called Servlet to catch form data sent from client, process it and store it on database.	3	1, 2, 12
CO 3 Students will be able to write a server side java application called JSP to catch form data sent from client and store it on database.	3	1, 2, 12

Course Code: 18MCS305.1

Course Name: ADVANCED DATABASE MANAGEMENT SYSTEMS

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Track the algorithms for query processing and optimization.	1	1, 2, 3, 12
CO 2 Learn the concepts of database system architecture and system catalogue.	1	1, 2, 3, 4, 5, 12
CO 3 Follow distributed database concepts and advanced concepts of design.	1	1, 2, 3, 4, 5, 12
CO 4 Know OODBMS standards & emerging database technologies & applications.	1	1, 2, 5, 12

Course Code: 18MCS305.2

Course Name: TCP/IP

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Understand the TCP/IP and OSI models and it importance.	3	1, 2, 12
CO 2 Explain DNS, HTTP, E-mail, Telnet and FTP protocols in detail.	3	1, 2, 12
CO 3 Understand Internet protocol with routing algorithms and IPV4 and IPV6.	3	1, 2, 12
CO 4 Explain the role of TCP protocol and various congestion avoidance techniques.	3	1, 2, 12
CO 5 Define basic CISCO router functionality and Precautions while, selecting the router accessories and simple configuration.	3	1, 2, 12

Course Code: 18MCS305.3

Course Name: SOFTWARE TESTING

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Investigate the reason for bugs and analyze the principles in software testing to prevent and remove bugs.	1	1, 3, 12
CO 2	Generate test cases and apply software testing techniques.	3	1, 2, 12
CO 3	Identify the inputs and deliverables of the testing.	3	1, 2, 12

Course Code: 18MCS305.4

Course Name: COMPILER DESIGN

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Identify the basics of compiler design and apply for real time applications.	2,	1, 12
CO 2	Comparison of different translation languages.	2,	1, 12
CO 3	Predict the importance of code optimization.	2,	1, 2, 12
CO 4	Define compiler generation tools and techniques.	2,	1, 12

Course Code: 18MCS306P

Course Name: WEB TECHNOLOGIES LAB

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Implement dynamic web pages with validation using JavaScript objects by applying different event handling mechanism.	1	1, 3, 12
CO 2	Build well-formed XML Document and implement Web Service using Java.	3	1, 2, 12
CO 3	Use AJAX Programming Technique to develop RIA.	3	1, 2, 12
CO 4	Develop simple web application using server side PHP programing and Database Connectivity using MySQL.	1	1, 3, 12

Course Code: 18MCS307P

Course Name: DATA MINING LAB

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Apply mining techniques for realistic data.	1	1, 3, 12
CO 2 Implement the classification and clustering techniques on various types of data set.	3	1, 2, 12
CO 3 Understand how to import and export CSV files.	3	1, 2, 12
CO 4 To develop and visualization of data mining algorithms.	1	1, 3, 12

Course Code: 18MCS308P

Course Name: TESTING TOOLS LAB

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Design test planning.	1	1, 3, 12
CO 2 Apply the software testing techniques in commercial environment.	3	1, 2, 12
CO 3 Use practical knowledge of a variety of ways to test software.	3	1, 2, 12

Course Code: 18MCS401

Course Name: DOT NET PROGRAMMING

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Explain the concepts of different languages such as VB,C#,ASP.NET and ADO.NET	1,	1, 4, 12
CO 2 Develop different types of applications.	1,	1, 3, 4, 12
CO 3 Design Web applications that can access data from data base.	1,	1, 3, 4, 12

Course Code: 18MCS402

Course Name: MOBILE COMPUTING

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Define the basic concepts of worldwide networks, wireless transmission and generations of Mobile systems.	3	1, 2, 12
CO 2 Perceive the architecture and common technologies for mobile communication.	3	1, 2, 12
CO 3 Grasp the IP network protocols and methods used in IP routing of packets.	3	1, 2, 12
CO 4 Apprehend the working of Mobile IP.	3	1, 2, 12
CO 5 Describe NGNs, operating systems, application development using WML, XML in Mobiles.	3	1, 2, 12

Course Code: 18MCS403.1

Course Name: CLOUD COMPUTING

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Articulate the main concepts, key technologies, strengths, limitations and issues of virtualization.	3	1, 2, 12
CO 2 Understand the open source architectures and services of cloud computing.	3	1, 2, 12
CO 3 Develop and deploy cloud applications using popular cloud platforms.	3	1, 2, 12
CO 4 Explore the risks, consequences and costs of cloud computing and understand the implementations of AAA model in the cloud.	3	1, 2, 12

Course Code: 18MCS403.2

Course Name: ARTIFICIAL INTELLIGENCE

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Demonstrate knowledge of the building blocks of AI as presented in terms of intelligent agents	1,	1, 2, 3, 12
CO 2 Analyze and formalize the problem as a state space, graph, design heuristics and select amongst different search or game based techniques to solve them.	1,	1, 2, 3, 12
CO 3 Formulate and solve problems with uncertain information using Bayesian approaches.	1,	1, 2, 3, 12
CO 4 Apply concept Natural Language processing to problems leading to understanding of cognitive computing.	1,	1, 2, 3, 12

Course Code: 18MCS404P

Course Name: DOT NET PROGRAMMING LAB

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Develop different types of applications.	1,	1, 4, 12
CO 2 Design Web applications that can access data from data base	1,	1, 3, 4, 12

Course Code: 18MCS405

Course Name: PROJECT WORK

Upon completion of this course, the student will be able to	PSO	PO
CO 1 Analyze, design and implement a software project using SDLC model.	3	1, 2, 12
CO 2 Work as a team and to focus on getting a working project done with in a stipulated time.	3	1, 2, 12

Course Code: 22MCS101

Course Name: PROGRAMMING AND PROBLEM SOLVING USING PHYTON

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Provide details of his knowledge of C language.	1	1, 2, 3, 5, 12
CO 2	Develop logics which will help them to create programs, applications in C.	1	1, 2, 3, 5, 12
CO 3	Easily switch over to any other language in future.	1	1, 2, 3, 5, 12
CO 4	Identify tasks in which the numerical techniques learned are applicable and apply them to write programs, and hence use Computers effectively to solve the task.	1	1, 2, 3, 5, 12

Course Code: 22MCS102

Course Name: DATABASE MANAGEMENT SYSTEM

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Understand the basic concepts of the database and data models.	1	1, 2, 3, 12
CO 2	Design a database using ER diagrams and map ER into Relations and normalize the relations. 3. Acquire the knowledge of query evaluation to monitor the performance of the DBMS.	1	1, 2, 3, 4, 5, 12
CO 3	Ability to execute various SQL Commands.	1	1, 2, 3, 4, 5, 12
CO 4	Develop a simple database applications using normalization.	1	1, 2, 5, 12
CO 5	Acquire the knowledge about different special purpose databases and to critique how they differ from traditional database systems.	1	1, 2, 3, 4, 12

Course Code: 22MCS103

Course Name: OPERATING SYSTEMS

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Able to understand the operating system components and its services	2	1, 12
CO 2	Able to Implement the algorithms in process management and solving the issues of IPC	2	1, 2, 12
CO 3	Able to demonstrate the mapping between the physical memory and virtual memory	2	1 ,2, 12
CO 4	Able to understand file handling concepts in OS perspective	2	1, 2, 12
CO 5	Able to understand the protection of system.	2	1, 2, 12
CO 6	Able to understand the operating system components and services with the recent OS	2	1 ,2, 12

Course Code: 22MCS104

Course Name: FORMAL LANGUAGES AND AUTOMATA THEORY

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Identify, analyse, formulate and solve Computer Science and Engineering problems both independently and in a team environment by using the appropriate modern tools.	1	1, 2, 5, 12
CO 2	Manage software projects with significant technical, legal, ethical, social, environmental and economic considerations.	1	1, 2, 3, 4, 12
CO 3	Demonstrate commitment and progress in lifelong learning, professional development, leadership and Communicate effectively with professional clients and the public.	1	1, 2, 5, 12

Course Code: 22MCS105P

Course Name: Programming and Problem Solving using Python Lab

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Understand the concept of data structures, python and apply algorithm for solving problems like Sorting, searching, insertion and deletion of data.	1	1, 2, 3, 5, 12
CO 2	Implement linear and non-linear data structures for processing of ordered or unordered data.	1	1, 2, 3, 5, 12
CO 3	Analyze various algorithms based on their time and space complexity.	1	1, 2, 3, 5, 12
CO 4	Implement various control structures and numerous native data types.	1	1, 2, 3, 5, 12
CO 5	Design user defined functions, modules, and packages and exception handling Methods.	1	1, 2, 3, 5, 12

Course Code: 22MCS106P

Course Name: DATABASE MANAGEMENT SYSTEM LAB

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Able to master the basic concepts and understand the applications of database systems.	3	1, 2, 12
CO 2	Able to construct an Entity-Relationship (E-R) model and Relational Algebra.	3	1, 2, 3, 12
CO 3	Understand and apply database normalization principles.	3	1, 2, 3, 12
CO 4	Able to construct SQL queries to perform CRUD operations on database. (Create, Retrieve, Update, and Delete).	3	1, 2, 3, 12
CO 5	Understand the usage of triggers.	3	1, 2, 3, 12
CO 6	Able to execute the PL/SQL programs	3	1, 2, 12

Course Code: 22MCS201

Course Name: Computer Networks

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Understand and explore the basics of Computer Networks and Various Protocols	3	1, 2, 12
CO 2	Administrate a network and schedule flow of information	3	1, 2, 12
CO 3	Examine the network security issues in Mobile and ad hoc networks.	3	1, 2, 12
CO 4	Demonstrate the TCP/IP and OSI fashions with merits and demerits.	3	1, 2, 12
CO 5	Evaluate the shortest path by using Routing algorithms	3	1, 2, 12
CO 6	Understand and explore the basics of Computer Networks and Various Protocols	3	1, 2, 12

Course Code: 22MCS202

Course Name: DATA STRUCTURES

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Learn how to use data structure concepts for realistic problems.	1	1, 12
CO 2	Ability to identify appropriate data structure for solving computing problems in C language.	1	1, 2, 3, 4, 12
CO 3	Ability to solve problems independently and think critically.	1	1, 2, 3, 4, 12
CO 4	Able to search and sort the elements in graphs and trees.	1	1, 2, 3, 4, 12
CO 5	Ability to solve linked list problems.	1	1, 12
CO 6	Ability to solve queues and hash tables.	1	1, 12

Course Code: 22MCA203

Course Name: WEB TECHNOLOGIES

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Students are able to develop a dynamic webpage by the use of java script and DHTML.	1	1, 3, 12
CO 2	Students will be able to write a server side java application called Servlet to catch form data sent from client, process it and store it on database.	3	1, 2, 12
CO 3	Students will be able to write a server side java application called JSP to catch form data sent from client and store it on database.	3	1, 2, 12

Course Code: 22MCS204.1

Course Name: Cloud Computing

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Define cloud computing and related concepts	3	1, 2, 12
CO 2	Understand the key dimensions of the challenges and benefits of Cloud Computing	3	1, 2, 12
CO 3	Understand the hardware necessary for cloud computing and how components fit together.	3	1, 2, 12
CO 4	Determine the suitability of in-house v/s hosted solutions	3	1, 2, 12
CO 5	Understanding the systems, protocols and mechanisms to support cloud computing and develop applications for cloud computing.	3	1, 2, 12
CO 6	Determine numerous opportunities exist for practitioners seeking to create solutions for cloud computing.	3	1, 2, 12

Course Code: 22MCS204.2

Course Name: DATA MINING TECHNIQUES

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Distinguish the basics of data warehouse and Data Mining concepts, functionalities and Patterns.	1	1, 3, 12
CO 2	Construct the data warehouse, its techniques and concepts.	3	1, 2, 12
CO 3	Classify the data by implementing various algorithms.	3	1, 2, 12

Course Code: 22MCS204.3

Course Name: UNIX PROGRAMMNG

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Understand the basic concepts of UNIX Architecture, File system and basic	3	1, 2, 12
CO 2	Understand the basic file system commands, concepts of Shell programming.	3	1, 2, 12
CO 3	Understand the concepts UNIX API's and process control.	3	1, 2, 12
CO 4	Understand the concepts of process accounting, User identification and	3	1, 2, 12
CO 5	Understand signal handling mechanism, daemon characteristics, coding rules and error logging.	3	1, 2, 12
CO 6	Understand the basic concepts of UNIX Architecture, File system and basic	3	1, 2, 12

Course Code: 22MCS205P

Course Name: DATA STRUCTURES LAB USING JAVA LAB

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Upon successful completion of this course student is able to:	1	1, 12
CO 2	Implement Object Oriented programming concept for developing skills of logic building activity	1	1, 2, 3, 4, 12
CO 3	Prove how to achieve reusability using inheritance, interfaces and packages.	1	1, 2, 3, 4, 12
CO 4	Demonstrate and use of different exception handling mechanisms and concept of multithreading	1	1, 2, 3, 4, 12
CO 5	Upon successful completion of this course student is able to:	1	1, 12
CO 6	Implement Object Oriented programming concept for developing skills of logic building activity	1	1, 12

Course Code: 22MCS206P

Course Name: WEB TECHNOLOGIES LAB

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Implement dynamic web pages with validation using JavaScript objects by applying different event handling mechanism	1	1, 3, 12
CO 2	Build well-formed XML Document and implement Web Service using Java. ¾ Use AJAX Programming Technique to develop RIA.	3	1, 2, 12
CO 3	Develop simple web application using server side PHP programing and Database Connectivity using MySQL.	3	1, 2, 12
CO 4	Implement dynamic web pages with validation using JavaScript objects by applying different event handling mechanism	1	1, 3, 12
CO 5	Build well-formed XML Document and implement Web Service using Java. ¾ Use AJAX Programming Technique to develop RIA.	3	1, 2, 12
CO 6	Develop simple web application using server side PHP programing and Database Connectivity using MySQL.	3	1, 2, 12

Course Code: 20MCS101

Course Name: PROGRAMMING AND PROBLEM SOLVING USING PHYTON

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Provide details of his knowledge of C language.	1	1, 2, 3, 5, 12
CO 2	Develop logics which will help them to create programs, applications in C.	1	1, 2, 3, 5, 12
CO 3	Easily switch over to any other language in future.	1	1, 2, 3, 5, 12
CO 4	Identify tasks in which the numerical techniques learned are applicable and apply them to write programs, and hence use Computers effectively to solve the task.	1	1, 2, 3, 5, 12

Course Code: 20MCS102

Course Name: COMPUTER ORGANIZATION

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Able to design digital circuits by simplifying the Boolean functions	3	1, 2, 12
CO 2	Able to understand the organization and working principle of computer hardware components	3	1, 2, 3, 12
CO 3	Able to understand mapping between virtual and physical memory	3	1, 2, 3, 12
CO 4	Acquire knowledge about multiprocessor organization and parallel processing	3	1, 2, 3, 12
CO 5	Able to understand the importance of the hardware-software interface.	3	1, 2, 3, 12
CO 6	Able to trace the execution sequence of an instruction through the processor.	3	1, 2, 12

Course Code: 20MCS103

Course Name: DATABASE MANAGEMENT SYSTEM

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Understand the basic concepts of the database and data models.	1	1, 2, 3, 12
CO 2	Design a database using ER diagrams and map ER into Relations and normalize the relations. 3. Acquire the knowledge of query evaluation to monitor the performance of the DBMS.	1	1, 2, 3, 4, 5, 12
CO 3	Ability to execute various SQL Commands.	1	1, 2, 3, 4, 5, 12
CO 4	Develop a simple database applications using normalization.	1	1, 2, 5, 12
CO 5	Acquire the knowledge about different special purpose databases and to critique how they differ from traditional database systems.	1	1, 2, 3, 4, 12

Course Code: 20MCS104

Course Name: OPERATING SYSTEMS

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Able to understand the operating system components and its services	2	1, 12
CO 2	Able to Implement the algorithms in process management and solving the issues of IPC	2	1, 2, 12
CO 3	Able to demonstrate the mapping between the physical memory and virtual memory	2	1 ,2, 12
CO 4	Able to understand file handling concepts in OS perspective	2	1, 2, 12
CO 5	Able to understand the protection of system.	2	1, 2, 12
CO 6	Able to understand the operating system components and services with the recent OS	2	1 ,2, 12

Course Code: 20MCS105

Course Name: Formal Languages and Automata Theory

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Identify, analyse, formulate and solve Computer Science and Engineering problems both independently and in a team environment by using the appropriate modern tools.	1	1, 2, 5, 12
CO 2	Manage software projects with significant technical, legal, ethical, social, environmental and economic considerations.	1	1, 2, 3, 4, 12
CO 3	Demonstrate commitment and progress in lifelong learning, professional development, leadership and Communicate effectively with professional clients and the public.	1	1, 2, 5, 12

Course Code: 20MCS106P

Course Name: Programming and Problem Solving using Python Lab

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Understand the concept of data structures, python and apply algorithm for solving problems like Sorting, searching, insertion and deletion of data.	1	1, 2, 3, 5, 12
CO 2	Implement linear and non-linear data structures for processing of ordered or unordered data.	1	1, 2, 3, 5, 12
CO 3	Analyze various algorithms based on their time and space complexity.	1	1, 2, 3, 5, 12
CO 4	Implement various control structures and numerous native data types.	1	1, 2, 3, 5, 12
CO 5	Design user defined functions, modules, and packages and exception handling Methods.	1	1, 2, 3, 5, 12

Course Code: 20MCS107P

Course Name: DATABASE MANAGEMENT SYSTEM LAB

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Able to master the basic concepts and understand the applications of database systems.	3	1, 2, 12
CO 2	Able to construct an Entity-Relationship (E-R) model and Relational Algebra.	3	1, 2, 3, 12
CO 3	Understand and apply database normalization principles.	3	1, 2, 3, 12
CO 4	Able to construct SQL queries to perform CRUD operations on database. (Create, Retrieve, Update, and Delete).	3	1, 2, 3, 12
CO 5	Understand the usage of triggers.	3	1, 2, 3, 12
CO 6	Able to execute the PL/SQL programmes	3	1, 2, 12

Course Code: 20MCS201

Course Name: DATA STRUCTURES

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Learn how to use data structure concepts for realistic problems.	1	1, 12
CO 2	Ability to identify appropriate data structure for solving computing problems in C language.	1	1, 2, 3, 4, 12
CO 3	Ability to solve problems independently and think critically.	1	1, 2, 3, 4, 12
CO 4	Able to search and sort the elements in graphs and trees.	1	1, 2, 3, 4, 12
CO 5	Ability to solve linked list problems.	1	1, 12
CO 6	Ability to solve queues and hash tables.	1	1, 12

Course Code: 20MCS202

Course Name: Cryptography & Network Security

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Identify the security issues in the network and resolve it.	1, 2	1, 2
CO 2	Analyse the vulnerabilities in any computing system and hence be able to design a security solution.	1, 2	1, 2, 4, 12
CO 3	Evaluate security mechanisms using rigorous approaches by key ciphers and Hash functions.	1, 2	1, 2, 3, 12
CO 4	Demonstrate various network security applications, IPSec, Firewall, IDS, Web Security, Email Security and Malicious software etc.,	1, 2	1, 2, 12
CO 5	Identify the security issues in the network and resolve it.	1	1, 2, 6, 12
CO 6	Analyse the vulnerabilities in any computing system and hence be able to design a security solution.	1	1, 2, 6, 12

Course Code: 20MCS203

Course Name: Computer Networks

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Understand and explore the basics of Computer Networks and Various Protocols	3	1, 2, 12
CO 2	Administrate a network and schedule flow of information	3	1, 2, 12
CO 3	Examine the network security issues in Mobile and ad hoc networks.	3	1, 2, 12
CO 4	Demonstrate the TCP/IP and OSI fashions with merits and demerits.	3	1, 2, 12
CO 5	Evaluate the shortest path by using Routing algorithms	3	1, 2, 12
CO 6	Understand and explore the basics of Computer Networks and Various Protocols	3	1, 2, 12

Course Code: 20MCS204

Course Name: <u>DATA MINING TECHNIQUES</u>

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Distinguish the basics of data warehouse and Data Mining concepts, functionalities and Patterns.	1	1, 3, 12
CO 2	Construct the data warehouse, its techniques and concepts.	3	1, 2, 12
CO 3	Classify the data by implementing various algorithms.	3	1, 2, 12

Course Code: 20MCS205

Course Name: <u>MANAGEMENT PROCESS AND ORGANIZATION BEHAVIOUR</u>

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Understand Fundamental concepts, functions, principles of management, challenges and trends.	1	1, 2, 6
CO 2	Describe Planning, process of planning, types of organizations and staffing.	1	1, 2, 6
CO 3	Explain Motivation, leadership and control systems and techniques.	1	1, 2, 6
CO 4	Identify Concept of Organizational behaviour and theories determinants of individual behaviour.	1	1, 2, 6
CO 5	Analyse Group dynamics, organizational culture, diagnosis and group performance.	1	1, 2, 6
CO 6	Understand Fundamental concepts, functions, principles of management, challenges and trends.	1	1, 2, 6

Course Code: 20MCS206P

Course Name: DATA STRUCTURES LAB USING JAVA LAB

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Upon successful completion of this course student is able to:	1	1, 12
CO 2	Implement Object Oriented programming concept for developing skills of logic building activity	1	1, 2, 3, 4, 12
CO 3	Prove how to achieve reusability using inheritance, interfaces and packages.	1	1, 2, 3, 4, 12
CO 4	Demonstrate and use of different exception handling mechanisms and concept of multithreading	1	1, 2, 3, 4, 12
CO 5	Upon successful completion of this course student is able to:	1	1, 12
CO 6	Implement Object Oriented programming concept for developing skills of logic building activity	1	1, 12

Course Code: 20MCS207P

Course Name: DATA MINING LAB

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Apply mining techniques for realistic data.	1	1, 3, 12
CO 2	Implement the classification and clustering techniques on various types of data set.	3	1, 2, 12
CO 3	Distinguish how to import and export CSV files.	3	1, 2, 12
CO 4	To develop and visualization of data mining algorithms.	1	1, 3, 12

Course Code: 20MCS301

Course Name: <u>DESIGN AND ANALYSIS OF ALGORITHM</u>

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Able to Argue the correctness of algorithms using inductive proofs and Analyse worst-case running times of algorithms using asymptotic analysis.	1, 2	1, 2, 3, 4, 5, 12
CO 2	Able to explain important algorithmic design paradigms (divide-and-conquer, greedy method, dynamic-programming and Backtracking) and apply when an algorithmic design situation calls for it.	1, 2	1, 2, 3, 4, 5, 12
CO 3	Able to Explain the major graph algorithms and Employ graphs to model engineering problems, when appropriate.	1, 2	1, 2, 3, 4, 5, 12
CO 4	Able to analyse String matching algorithms	1, 2	1, 2, 3, 4, 5, 12
CO 5	Able to Argue the correctness of algorithms using inductive proofs and Analyse worst-case running times of algorithms using asymptotic analysis.	1, 2	1, 2, 3, 4, 5, 12
CO 6	Able to explain important algorithmic design paradigms (divide-and-conquer, greedy method, dynamic-programming and Backtracking) and apply when an algorithmic design situation calls for it.	1, 2	1, 2, 3, 4, 5, 12

Course Code: 20MCS302

Course Name: OBJECT ORIENTED SOFTWARE ENGINEERING

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Analyse of a formally specified problem statement with Modelling Concepts.	1,	1, 2, 12
CO 2	Examine Project Organization, Communication and analysis Concepts.	1,	1, 2, 3, 12
CO 3	Produce appropriate System Design, object design of reusable Activities	1,	1, 2, 12
CO 4	Apply skills relevant for Mapping Models to Code, Configuration and project Management	1,	1, 2, 12
CO 5	Organize Maturity to Software Life Cycle Models and Methodologies	1,	1, 2, 12
CO 6	Analyse of a formally specified problem statement with Modelling Concepts.	1,	1, 2, 3, 12

Course Code: 20MCS303

Course Name: DOT NET PROGRAMMING

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Explain the concepts of different languages such as VB,C#,ASP.NET and ADO.NET	1,	1, 4, 12
CO 2	Develop different types of applications.	1,	1, 3, 4, 12
CO 3	Design Web applications that can access data from data base.	1,	1, 3, 4, 12

Course Code: 20MCS304.1

Course Name: ARTIFICIAL INTELLIGENCE

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Student should have a knowledge and understanding of the basic concepts of AI including Search.	1,	1, 2, 3, 12
CO 2	Student can able to solve optimization problems.	1,	1, 2, 3, 12
CO 3	Student can solve the Game Playing problems.	1,	1, 2, 3, 12
CO 4	Student can able to use to planning and learning techniques	1,	1, 2, 3, 12
CO 5	Student should be able to use this knowledge and understanding of appropriate principles and guidelines to synthesize solutions to tasks in AI and to critically evaluate alternatives.	1,	1, 2, 3, 12
CO 6	Student can have ability to use the expert system	1,	1, 2, 3, 12

Course Code: 20MCS304.2

Course Name: MACHINE LEARNING

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Explain the definition and usage of the term 'the internet of things' in different contexts.	1,	1, 2, 3, 12
CO 2	Demonstrate on various network protocols used in IoT.	1,	1, 2, 3, 12
CO 3	Analyze on various key wireless technologies used in IoT systems, such as Wi-Fi, 6LoWPAN, Bluetooth and ZigBee.	1,	1, 2, 3, 12
CO 4	Illustrate on the role of big data, cloud computing and data analytics in IoT system.	1,	1, 2, 3, 12
CO 5	Design a simple IoT system made up of sensors, wireless network connection, data analytics and display/actuators, and write the necessary control software.	1,	1, 2, 3, 12

Course Code: 20MCS304.3

Course Name: INTERNET OF THINGS

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Grasp the idea behind Internet of Things (IoT).	1,	1,
CO 2	Understand various business models relevant to IoT.	1,	2, 3, 4
CO 3	Understand designs for web connectivity.	1,	2, 3,
CO 4	Identify sources of data acquisition related to IoT, integrate to enterprise systems.	1,	1, 2, 3
CO 5	Understand IoT with Cloud technologies	1,	1, 2, 3
CO 6	Grasp the idea behind Internet of Things (IoT).	1,	3

Course Code: 20MCS304.4

Course Name: Distributed Computing

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Gain advanced knowledge in, IPC mechanisms and Event Synchronization, Distributed Computing Paradigms, SOCKET API, Group Communication, Distributed Objects, Remote Method Invocation (RMI) and Internet Applications	1, 2	1, 3, 4
CO 2	Analyse message passing, client- server and peer -to-peer models to understand distributed computing paradigms.	1, 2	1, 3, 4
CO 3	Design and Implement application programs on distributed computing systems.	1, 2	1, 3, 4
CO 4	Apply appropriate techniques and tools to design distributed computing systems and deploying in Internet applications	1, 2	1, 2, 3, 4
CO 5	Gain advanced knowledge in, IPC mechanisms and Event Synchronization, Distributed Computing Paradigms, SOCKET API, Group Communication, Distributed Objects, Remote Method Invocation (RMI) and Internet Applications	1, 2	1, 3, 4
CO 6	Analyse message passing, client- server and peer -to-peer models to understand distributed computing paradigms.	1, 2	1, 3, 4

Course Code: 20MCS305

Course Name: ENTREPRENEURSHIP DEVELOPMENT

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Define concepts of Entrepreneurship, women entrepreneurs and specific management skills.	1,	1,
CO 2	Apply idea generation and opportunity recognitions of various sources and process.	1,	2, 3, 4
CO 3	Create awareness on project report and project appraisal.	1,	2, 3,
CO 4	Review small business enterprises of various central and state level.	1,	1, 2, 3
CO 5	Interpret government policy and Taxation benefits.	1,	1, 2, 3

Course Code: 20MCS306P

Course Name: Object Oriented Software Engineering Lab

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Demonstrate knowledge in a. Data Types, Variables, Expressions b. Control statements, Strings and Text files. c. Lists, Dictionaries and Functions. d. Objects and Design with classes e. Exception Handling and GUI	1,	1, 2, 12
CO 2	Analyze complex computational problems.	1,	1, 2, 3, 12
CO 3	Design solutions for real life computational problems	1,	1, 2, 12
CO 4	Solve complex problems us	1,	1, 2, 12

Course Code: 20MCS307P

Course Name: Big Data Analytics Lab

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Understand Big Data and its analytics in the real world	1,	1, 4, 12
CO 2	Analyze the Big Data framework like Hadoop and NOSQL to efficiently store and process Big Data to generate analytics	1,	1, 3, 4, 12
CO 3	Design of Algorithms to solve Data Intensive Problems using Map Reduce Paradigm	1,	1, 3, 4, 12
CO 4	Design and Implementation of Big Data Analytics using pig and spark to solve data intensive problems and to generate analytics	1,	1, 3, 4, 12
CO 5	Implement Big Data Activities using Hive	1,	1, 3, 4, 12
CO 6	Understand Big Data and its analytics in the real world	1,	1, 3, 4, 12

Course Code: 20MCS401

Course Name: * MOOCS

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Explain critical R programming concepts	3,	1, 12
CO 2	Demonstrate how to install and configure RStudio	3,	1, 12
CO 3	Apply OOP concepts in R programming	3,	1, 12
CO 4	Explain the use of data structure and loop functions	3,	1, 12
CO 5	Analyse data and generate reports based on the data	3,	1, 5, 12
CO 6	Apply various concepts to write programs in R	3,	1, 12

Course Code: 20MCS402

Course Name: Mobile computing

Upon completion of this course, the student will be able to		PSO	PO
CO 1	To make students understand the concept of mobile computing paradigm, its novel applications and limitations.	3	1, 2, 12
CO 2	To provide the typical mobile networking infrastructure knowledge through a popular GSM architecture	3	1, 2, 12
CO 3	To furnish the knowledge of various layers of mobile networks, namely MAC layer, Network Layer & Transport Layer	3	1, 2, 12
CO 4	To Provide the concepts of platforms and protocols used in broadcasting and synchronization in the mobile environment	3	1, 2, 12

Course Code: 20MCS403

Course Name: R PROGRAMMING LANGUAGE

Upon completion of this course, the student will be able to		PSO	PO
CO 1	xplain critical R programming concepts	1,	1,
CO 2	emonstrate how to install and configure RStudio	1,	2, 3, 4
CO 3	pply OOP concepts in R programming	1,	2, 3,
CO 4	xplain the use of data structure and loop functions	1,	1, 2, 3
CO 5	nalyse data and generate reports based on the data	1,	1, 2, 3

Course Code: 20MCS304.1

Course Name: Block Chain technologies

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Understand basic concepts of block chain technology and its platforms	1,	1, 2, 12
CO 2	To develop various types of environments in block chain technology	1,	1, 2, 12
CO 3	To provide security prospects in an organization	1,	1, 2, 12

Course Code: 20MCS404.2

Course Name: MACHINE LEARNING

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Explain the definition and usage of the term 'the internet of things' in different contexts.	1,	1, 2, 3, 12
CO 2	Demonstrate on various network protocols used in IoT.	1,	1, 2, 3, 12
CO 3	Analyze on various key wireless technologies used in IoT systems, such as Wi-Fi, 6LoWPAN, Bluetooth and ZigBee.	1,	1, 2, 3, 12
CO 4	Illustrate on the role of big data, cloud computing and data analytics in IoT system.	1,	1, 2, 3, 12
CO 5	Design a simple IoT system made up of sensors, wireless network connection, data analytics and display/actuators, and write the necessary control software.	1,	1, 2, 3, 12

Course Code: 20MCA404.3

Course Name: COMPILER DESIGN

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Identify the basics of compiler design and apply for real time applications. ¾ Comparison of different translation languages.	2,	1, 12
CO 2	Predict the importance of code optimization.	2,	1, 12
CO 3	Define compiler generation tools and techniques.	2,	1, 2, 12

Course Code: 20MCS405

Course Name: PROJECT WORK

Upon completion of this course, the student will be able to		PSO	PO
CO 1	Analyze, design and implement a software project using SDLC model.	3	1, 2, 12
CO 2	Work as a team and to focus on getting a working project done with in a stipulated time.	3	1, 2, 12

PG Department of Chemistry

M.Sc. (Organic Chemistry) at Akkineni Nageswa Rao College is designed to produce graduates with higher-order critical, analytical, problem-solving and research skills; ability to think rigorously and independently to meet expectations of industries, research organization and academic institutions. The programme focuses on theoretical and practical aspects of physical, analytical, organic and inorganic chemistry aspects with opportunities for project work in the subject area. Organic chemistry specialization encompasses the topics of catalysis, organometallic chemistry, the chemistry of polyenes, chemo-, regio- and enantioselective synthesis, heterocyclic chemistry, fluoro containing compounds and NMR and other spectroscopic and chromatographic techniques. Furthermore, this course deals with life and life processes associated with nearly every aspect of our existence. All the key molecules of life, such as DNA, proteins, lipids, and carbohydrates are organic compounds.

This degree course gives a strong foundation for higher degree programs like Ph.D.

M.Sc. chemistry degree holders can land positions in different territories, for example, Pharmaceutical, Health and Medical Organizations, Utility and Energy, Research, Paints, Food and Drinks Industry.

Programme Educational Objectives

PEO 1: Chemistry graduates will be well prepared for successful careers in the profession or in research & innovation at an industry and/or in government in one or more of discipline of chemistry and /or sub disciplines of Chemistry.

PEO 2: Chemistry graduates will be academically prepared to provide feasible and sustainable solutions for real-life problems and become licensed professional chemists in due course and will contribute effectively in serving the society.

PEO 3: Chemistry graduates will be successful leaders with quality to handle all kind of diverse circumstances through nurturing them in interdisciplinary and multidisciplinary learning environment.

PEO 4: Chemistry graduates will be successful in higher education in Chemistry and in management, if perused.

Programme Specific Outcomes

PSO1: Acquire skills to be placed in R&D, pharmaceutical Industry and allied divisions.

PSO2: Equipped with ample knowledge to clear discipline specific competitive exams conducted by service commission and other organizations like CSIR – NET, GATE, SLET etc.,

PSO3: Insight of the theoretical concepts of the instruments that are commonly used in most chemistry fields as well as interpret and use data in instrumental chemical analysis.

PROGRAM OUTCOMES

PO1: Critical Thinking: Demonstrate sound knowledge, think critically and analyze problems to Inorganic, Organic, Physical and Analytical Chemistry.

PO2: Effective Communication: Understand the need for scientific communication in both written and oral forms. This will enable the student to opt for teaching job, if he / she desires.

PO3: Leadership & Team Work: Function individually and as a member or leader in team with the fundamental and advanced knowledge gained in the field of chemistry and other allied fields.

PO4: Global Exposure and Effective Citizenship: Apply conceptual knowledge gained in the field of chemistry to assess social, health, safety, legal and cultural issues and the relevant consequences of it.

PO5: Social Responsiveness & Ethics: Record and analyze the experimental results by maintaining professional ethics, responsibilities and norms of the scientific practices and also to understand & resolve the issues of environmental pollution and sustainable development.

PO6: Knowledge Application: Relate the knowledge gained in the field of inorganic, organic, physical and analytical chemistry in the chosen career goals and development.

PO7: Self directed& lifelong learning: Engage in independent and lifelong learning of the concepts relating to chemistry in broadest context of socio-technological changes.

Course: Advanced Inorganic chemistry (code 22OCH201)		
S.No	**COURSE OUTCOMES**	**PO`S**
	The graduate will be able to	
1	Memorize the fundamental concepts of Metallic &nonmetallic clusters, Inorganic reaction mechanisms, organo metallic chemistry, electronic spectra& magnetic properties of complexes and bioinorganic chemistry.	2,7
2	Comprehend the basic and advanced concepts of metallic &non metallic clusters, Inorganic reaction mechanisms, organo metallic chemistry, electronic& magnetic properties of complexes and bioinorganic chemistry.	1,2,6
3	Apply the conceptual knowledge gained in the areas of metallic &nonmetallic clusters, inorganic reaction mechanisms, organo metallic chemistry, electronic & magnetic properties of complexes and bio inorganic chemistry in other fields of chemistry as well as in research.	1,2,7
4	Analyze the role of metallic &non metallic clusters / cages, inorganic Reaction mechanisms, organo metallic chemistry, electronic & magnetic properties of complexes and bio inorganic chemistry in understanding the similarities and differences among the concepts of chemistry.	1,3,2

Course: Advanced Organic chemistry (code 22OCH202)		
S.No	**COURSE OUTCOMES**	**PO`S**
	The student will be able to	
1	Understand the basic and advanced concepts of stereo chemistry, conformational analysis, green chemistry, nano chemistry and named reactions.	2,7
2	Apply the concepts related to stereochemistry, conformational analysis, green and nano chemistry in establishing the mechanism of the reaction.	1,2,3
3	Assess that how far the knowledge gained in stereochemistry, green chemistry and nano chemistry is useful in understanding the nature of product.	1,5,6
4	Evaluate the role of stereochemistry, green principles and nano chemistry in establishing the mechanism of a reaction as well as in other areas of chemistry.	1,4,7

Course: Advanced Physical chemistry (code 22OCH203)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Remember the concepts of thermodynamics, polymer chemistry, electro chemistry, chemical kinetics, photo chemistry and Radio chemistry.	1,2,7
2	Understand the concepts of thermodynamics, polymer chemistry, electro chemistry, chemical kinetics, photo chemistry and Radio chemistry.	1,2,7
3	Apply the concepts of thermodynamics, polymer chemistry, electro chemistry, chemical kinetics, photo chemistry and Radio chemistryin research and other allied fields.	1,2,4
4	Analyze the role and significance of concepts of thermodynamics, polymer chemistry, electro chemistry, chemical kinetics, photo chemistry and Radio chemistry.	1,2,7
5	Evaluate the role of concepts of thermodynamics, polymer chemistry, electro chemistry, chemical kinetics, photo chemistry and Radio chemistry in understanding the named concepts in chemistry.	1,2,7

Course: Molecular Spectroscopy (code 22CHE1)

S.No	COURSE OUTCOMES	PO`S
	The graduate will be able to	
1	Memorize the basic principles and theory involved in molecular absorption spectroscopy.	2,7
2	Comprehend the advanced concepts of molecular absorption spectroscopy.	1,2,5
3	Apply the knowledge of spectroscopy in calculating the bond length, identifying the functional group present in molecules.	1,5,6
4	Identify the role UV – visible spectroscopy in the determination of absorption maximum and ESR spectroscopy in studying the properties of paramagnetic substances.	1,3,4

Course: Instrumental Methods of Analysis (code 22CH2E2)

S.No	COURSE OUTCOMES	PO`S
	The graduate will be able to	
1	Memorize the basic principles of the modern methods of analysis.	2,7
2	Understand the basic and advanced concepts of modern methods (i.e. Instrumental methods) of analysis.	1,2,7
3	Apply the instrumental methods of analysis in any chosen job role.	1,4,5
4	Interpret the role of these instrumental methods in the quantitative determination of constituents.	1,3,6

Course: Analysis Of Drugs, Foods, Dairy Products &Bio chemical Analysis (code 22OCHE3)

S.No	COURSE OUTCOMES	PO`S
	The graduate will be able to	
1	Memorize the basic principles of analysis drugs. Food, dairy products and biological analysis.	2,7
2	Understand the basic and advanced concepts of drugs. Food, dairy products and biological analysis.	1,4,7
3	Apply the analysis of drugs, foods, dairy products and biological analysis in any chosen job role.	1,4,6
4	Interpret the role of the analysis of drugs, foods and biological analysis, quantitatively.	1,3,5

Course: ORGANIC CHEISTRY Code 22CHE204P

S.No	COURSE OUTCOMES	PO`S
	After completion of the course, the student will be able to :	
1	To understand the importance of organic compound synthesis and identify various functional groups in the given organic compound by using systematic procedures.	1,5,7
2	To get familiarized with the procedures of different steps involved in the compound synthesis and solubility nature of organic substances of different functional groups.	1,4,6
3	To understand mechanism for synthesis and formation of derivatives of functional groups.	1,3,6
4	To apply the procedure of recrystallisation of organic compounds and preparation of functional group derivatives as and when required.	1,6,3

Course: Physical chemistry (code 22OCH205P)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Develop skills in problem solving, critical thinking and analytical reasoning in finding the CST of phenol water system and partition coefficient of benzoic acid between benzene and water, potentio metric titrations of Fe (II) with $K_2Cr_2O_7$.	1,2,5
2	Determine the rate constants of first and second order reactions, P^H and conductance of strong &weak acids and bases.	1,2,5
3	Understand the practical knowledge on Beer's law	3,5
4	Communicate the results of analysis with ethics and responsibility	1,2,4

Course: General Chemistry (Code 22OCH101)

S.No	COURSE OUTCOMES	PO`S
	After completion of the course, the student will be able to	
1	Recollect the concepts of titrimetric analysis, statistical rules, visible spectro photometry and group theory in chemistry	2
2	Identify the role of titrimetric analysis, statistical rules, visible spectro photometry and group theory in chemistry.	1,7
3	Demonstrate knowledge of titrimetric analysis, statistical data analysis, visible spectro photometry and group theory in chosen job role.	1,4
4	Test the conceptual knowledge gained in titrimetric analysis, statistical rules / principles, Visible spectro photometry and group theory in chemistry.	1,6

Course: In Organic Chemistry (Code 22OCH102)

S.No	COURSE OUTCOMES	PO`S
	After completion of the course, the student will be able to	
1	Memorize the basic concepts of quantum chemistry, co-ordination chemistry and chemical Bonding.	2
2	Comprehend the role of basic and advanced concepts of quantum chemistry, co-ordination chemistry and chemical bonding.	1,7
3	Execute the conceptual knowledge gained in the concepts of quantum chemistry, co- ordination chemistry and chemical bonding in chosen job role.	1,4
4	Investigate the role and importance of concepts of quantum chemistry, co-ordination chemistry and chemical bonding in various allied fields of chemistry.	1,7

Course: Organic Chemistry (Code 22OCH103)

S.No	COURSE OUTCOMES	PO`S
	After completion of the course, the student will be able to	
1	Recollect the basic concepts of aromaticity, reactive intermediates, addition, elimination and Substitution reactions.	2
2	Explain the basic and advanced concepts of aromaticity, reactive intermediates, addition, elimination and substitution reactions.	2,7
3	Solve high level concepts in organic chemistry with conceptual knowledge gained in aromaticity, reactive intermediates, addition, elimination and substitution reactions.	1,7
4	Exercise the knowledge about aromaticity, reactive intermediates, addition, elimination and substitution reactions in understanding the properties of organic compounds.	1,5

Course: Physical Chemistry (Code 22OCH104)

S.No	COURSE OUTCOMES	PO`S
	After the completion of the course, Students will be able to	
1	Recall the basic concepts of thermodynamics, surface chemistry, electrochemistry, chemical Kinetics and potentiometry in detail.	2
2	Apply the spontaneous and non spontaneous reaction and derive various thermodynamic and Chemical kinetic derivations.	1,7
3	Describe the physical significance of thermodynamics, chemical kinetics and electro chemistry in Explaining the chemical properties and reactivity of molecules.	1,6
4	Analyze the important techniques of surfaces with the help of ESCA, Auger electron spectroscopy and potentiometric techniques of complexometric, neutralization, oxidation and reduction Titrations.	1,7

Course: In Organic Chemistry (Code 22OCH106P)

S.No	COURSE OUTCOMES	PO`S
	After completion of the course, the student will be able to :	
1	Memorize the basic principles involved in quantitative and qualitative inorganic analysis.	1,7
2	Understand the importance of inorganic qualitative and quantitative analysis and their use in research and industry.	2,6
3	Apply the procedures of quantitative analysis and tests for identification of cations and anions in chosen field.	1,5
4	Evaluate how far these methods are accurate in quantitative determination.	1,4

Course: Organic Chemistry (Code 22OCH105P)

S.No	COURSE OUTCOMES	PO`S
	After completion of the course, the student will be able to :	
1	Understand the importance of organic compound synthesis and separation and their research and industry.	2,5,6
2	Understand the mechanisms for the synthesis of organic compounds in different steps.	1,7
3	Apply the procedure of synthesis and separation of organic compounds in required field.	1,5,7
4	Interpret the role of separation of organic compounds and synthesis in the core areas of research.	1,5,6

Course: MOOCS – ORGANIC CHEMISTRY – I		
S.No	**COURSE OUTCOMES**	**PO`S**
	The student will be able to	
1	Recollect the concepts of stereochemistry, conformational analysis, CD & ORD, nature of bonding, aromaticity, chemical kinetics and reactive intermediates.	2,7
2	dentify the role of stereochemistry, conformational analysis, CD& ORD, nature of bonding, aromaticity, chemical kinetics and reactive intermediates.	1,2,3
3	Demonstrate the knowledge of stereochemistry, conformational analysis, CD & ORD, nature of bonding, aromaticity, chemical kinetics and reactive intermediates in chosen fields..	1,6,7
4	Analyse the conceptual knowledge in stereochemistry, conformational analysis, CD & ORD, nature of bonding, aromaticity, chemical kinetics and reactive intermediates in the reactions.	1,5,6

20CHE402A: HETERO CYCLIC CHEMISTRY

Course: HETERO CYCLIC CHEMISTRY		
S.No	**COURSE OUTCOMES**	**PO`S**
	The student will be able to	
1	Memorize the synthetic routes and reactions related to three, four, five, six membered and fused heterocyclic compounds.	2,7
2	Understand the concepts of synthesis and reactions of three, four, five, six membered and fused heterocyclic compounds.	1,7
3	Apply the conceptual knowledge gained in the synthesis and reactions of organic synthesis three, four, five, six membered and fused heterocyclic compounds as and when required.	1,6,4
4	Analyse and categorize the various reactions involved in the synthesis of three, four, five, six membered and fused heterocyclic compounds	1,5,7

Course: GREEN CHEMISTRY		
S.No	**COURSE OUTCOMES**	**PO`S**
	The student will be able to	
1	Memorize the principles of green chemistry and concepts related to green organic synthesis.	2,7
2	Understand the role and significance of green organic synthesis.	1,5,7
3	Exercise the basic and advanced knowledge gained on green organic synthesis in chosen job role.	1,4,6
4	Analyse how far green methods are environmentally benign over conventional methods of synthesis.	1,3

20CHE403B: CHROMATOGRAPHIC TECHNIQUES FOR MODERN

INDUSTRIAL APPLICATIONS

COURSE:CHROMATOGRAPHIC TECHNIQUES FOR MODERN INDUSTRIALAPPLICATIONS		
S.No	**COURSE OUTCOMES:**	**PO`S**
	The student will be able to	
1	Comprehend the concepts of purification methods and chromatographic methods.	2,7
2	Exercise the knowledge gained in purification and chromatographic techniques in their chosen job role.	1,4,6
3	Exercise that how far the purification and chromatographic techniques are useful in assessing the purity of the compound.	1,3,7
4	Evaluate that how far a compound is purified / separated using purification and chromatographic techniques.	1,5,7

20CHE403A: NANO CHEMISTRY

Course: NANO CHEMISTRY		
S.No	**COURSE OUTCOMES**	**PO`S**
	The student will be able to	
1	Will be able to memorize the basic concepts of Nano chemistry and Nano materials.	2,7
2	Understand the basic and advanced concepts of Nano chemistry and Nano materials	1,5,7
3	Apply the knowledge gained in the field of Nano chemistry as and when required.	1,3,6
4	Analyse the role of Nano chemistry in various interdisciplinary sciences.	1,5

20CH404: ORGANO METALLIC REAGENTS

Course: ORGANO METALLIC REAGENTS		
S.No	**COURSE OUTCOMES**	**PO`S**
	The student will be able to	
1	Memorize the synthetic roots and applications of organo metallic reagents.	2,7
2	Appreciate the methods of synthesis and reactivity of various organo metallic reagents	1,3,7
3	Investigate the conceptual knowledge in various organo metallic reagents in organic synthesis	1,6,3
4	Assess the role of specific organic reaction reagents in the synthesis	1,6,5

Course: ORGANIC ESTIMATIONS (20CHE405(P))		
S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Memorize the basic principles involved in organic quantitative analysis.	1,3,5
2	Understand the importance of organic quantitative analysis and their use on research and industry.	
3	Exercise the procedure of quantitative analysis in chosen job roles.	
4	Evaluate how far these methods are accurate in quantitative determinations.	

Project: PROJECT WORK (code 20CHE406(p))		
S.No.	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Acquire required skills to implement theoretical knowledge gained.	1,3,4,7
2	Assimilate the required knowledge for future research through practical knowledge gained in the project work.	1,2,7
3	Gain the required ability to start up own industry.	1,4,5,6
4	Comprehend the ability to draft and communicate the practical work.	1,2,7

Course: Advanced Organic Spectroscopy (code 20CHE301)		
S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Sumarize the principle, theory and advanced aspects of ^{1}HNMR, ^{13}C NMR, 2D NMR, ORD & CD spectroscopic techniques.	1,2,7
2	Display the knowledge gained in the areas of ^{1}HNMR, ^{13}C NMR, 2D NMR, ORD & CD spectroscopic techniques in chosen job role.	1,6,7
3	Interpret the spectral data of ^{1}HNMR, ^{13}C NMR, 2D NMR, ORD & CD in elucidating the structure of the molecule.	1,5,7
4	Assess that how far the spectral data of ^{1}HNMR, ^{13}C NMR, 2D NMR, ORD &CD are useful in establishing the structure of the molecule.	1,4,7

Course: Organic Reactions, Mechanisms & Photo Chemistry (code 20CHE302)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Acquire sound knowledge of oxidations, reductions, molecular rearrangements, pericyclic reactions and photo chemistry.	2
2	Understand the concepts involved in oxidations, reductions, molecular rearrangements, pericyclic reactions and photo chemistry.	1,7
3	Apply the conceptual knowledge gained in oxidations, reductions, molecular rearrangements, pericyclic reactions and photo chemistry in chosen fields.	1,5,6
4	Analyse and categorise the various types oxidations, reductions, molecular rearrangements, pericyclic reactions and photo chemistry in a given reactions.	1,7,4

Course: Organic Synthesis (code 20CHE303)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Memorize the concepts, principles and theories related to formation of C – C single bond, C – C double bond, Diel's Alder related reactions. Protecting groups and disconnection approach in organic synthesis.	2
2	Understand the role and significance of formation of C – C single bond, C – C double bond, Diel's Alder related reactions. Protecting groups and disconnection approach in organic synthesis.	1,7
3	Apply the conceptual knowledge gained in formation of C – C single bond, C – C double bond, Diel's Alder related reactions. Protecting groups and disconnection approach in organic synthesis as and when required.	1,6,4
4	Analyze the role of various reagents in carrying out the organic reactions like formation of C – C single bond, C – C double bond, Diel's Alder related reactions. Protecting groups and disconnection approach in organic synthesis.	1,3,5

Course: ASYMMETRIC SYNTHESIS, PHOSPHORUS & SULPHUR REAGENTS,SYNTHETIC POLYMERS, BIOMOLECULES & BIO ORGANIC CHEMISTRY (code 20CHE303B)		
S.No	**COURSE OUTCOMES**	**PO`S**
	The student will be able to	
1	Memorize the concepts of asymmetric synthesis, formation of carbon double bond, synthetic polymers, biomolecules and bio inorganic chemistry.	1,2,4,7
2	Comprehend various organic synthesis.	1,2,4,7
3	Apply the conceptual knowledge gained in determining the mechanism involved in asymmetric synthesis, as well as reactions involving various reagents.	1,2,7
4	Analyse as to how far various reagents are useful in carrying out asymmetric synthesis and other organic reactions.	1,3,4
5	Evaluate the role of various reagents in asymmetric synthesis and other organic reactions.	1,2,6,7

Course: ENVIRONMENTAL CHEMISTRY AND ANALYSIS(code 20CHE304A)		
S.No	**COURSE OUTCOMES**	**PO`S**
	The student will be able to	
1	Memorize the concepts of environment and its analysis.	
2	Understand the basic significance of segments of environment and soil erosion, soil fertility as well as soil analysis	
3	Apply the knowledge of environmental chemistry in addressing the present environmental conditions.	
4	Analyze different problems related to environmental issues.	
5	Evaluate that how far the existing solutions related to environmental issues can be useful to overcome the novel problems of environment.	

Course: CHEMISTRY OF NATURAL PRODUCTS (code 20CHE304B)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Memorize the concepts related to Alkaloids, Terpenoids, Steroids, Flavonoids and Iso flavonoids and Pigments.	2
2	Understand the chemical role of Alkaloids, Terpenoids, Steroids, Flavonoids and Iso flavonoids and Pigments.	1,7
3	Execute the conceptual knowledge gained in the areas of Alkaloids, Terpenoids, Steroids, Flavonoids and Iso flavonoids and Pigments.	1,6
4	Analyze the role of methods involved in structure elucidation of Alkaloids, Terpenoids, Steroids, Flavonoids and Iso flavonoids and Pigments.	1,7

Course: POLYMER CHEMISTRY(code 20OECHE - 2)

S.No	COURSE OUTCOMES	PO`S
	The graduate will be able to	
1	Memorize the concepts related to polymer chemistry	2,7
2	Understand the concepts of polymer chemistry	1,7
3	Apply the knowledge gained in polymer chemistry in chosen job role.	1,6,7

Course: Organic Spectroscopy (code 20CHE201)

S.No	COURSE OUTCOMES	PO`S
	The graduate will be able to	
1	Memorize the basic principles and theory involved in molecular absorption spectroscopy.	2,7
2	Comprehend the advanced concepts of molecular absorption spectroscopy.	1,2,5
3	Apply the knowledge of spectroscopy in establishing the structure of organic molecules.	1,5,7
4	Analyze the spectral data to ascertain the structure of unknown molecules.	1,4,2

Course: Inorganic chemistry (code 20CHE202)

S.No	COURSE OUTCOMES	PO`S
	The graduate will be able to	
1	Memorize the fundamental concepts of Metallic &non metallic clusters, Inorganic reaction mechanisms, organo metallic chemistry, electronic spectra & magnetic properties of complexes and bioinorganic chemistry.	2,7
2	Comprehend the basic and advanced concepts of metallic &non metallic clusters, Inorganic reaction mechanisms, organo metallic chemistry, electronic & magnetic properties of complexes and bioinorganic chemistry.	1,2,6
3	Apply the conceptual knowledge gained in the concepts of metallic & nonmetallic clusters, inorganic reaction mechanisms, organ metallic chemistry, electronic & magnetic properties of complexes and bio inorganic chemistry in other fields of chemistry as well as in research.	1,2,7
4	Analyze the role of metallic &non metallic clusters / cages, inorganic reaction mechanisms, organo metallic chemistry, electronic & magnetic properties of complexes and bio inorganic chemistry in understanding the similarities and differences among the concepts of chemistry.	1,3,2
5	Assess that how far the concepts of metallic &non metallic clusters, Inorganic reaction mechanisms, organo metallic chemistry, electronic & magnetic properties of complexes and bioinorganic chemistry are useful in rendering theoretical explanations for the concepts in chemistry.	1,7,2

Course: Organic chemistry (code 20CHE203)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Understand the basic and advanced concepts of stereochemistry, conformational analysis, green chemistry, Nano chemistry and named reactions.	2,7
2	Apply the concepts related to stereochemistry, conformational analysis, green and nano chemistry in establishing the mechanism of the reaction.	1,2,3
3	Assess that how far the knowledge gained in stereochemistry, green chemistry and Nano chemistry is useful in understanding the nature of product.	1,5,6
4	Evaluate the role of stereochemistry, green principles and nano chemistry in establishing the mechanism of a reaction as well as in other areas of chemistry.	1,4,7

Course: Physical chemistry (code 20CHE204)

S.No	COURSE OUTCOMES	PO`S
	The student will be able to	
1	Remember the concepts of thermodynamics, polymer chemistry, electro chemistry, chemical kinetics, photo chemistry and Radio chemistry.	1,2,7
2	Understand the concepts of thermodynamics, polymer chemistry, electro chemistry, chemical kinetics, photo chemistry and Radio chemistry.	1,2,7
3	Apply the concepts of thermodynamics, polymer chemistry, electro chemistry, chemical kinetics, photo chemistry and Radio chemistry in research and other allied fields.	1,2,4
4	Analyze the role and significance of concepts of thermodynamics, polymer chemistry, electro chemistry, chemical kinetics, photo chemistry and Radio chemistry.	1,2,7
5	Evaluate the role of concepts of thermodynamics, polymer chemistry, electro chemistry, chemical kinetics, photo chemistry and Radio chemistry in understanding the named concepts in chemistry.	1,2,7

Course: General Chemistry (Code 20CHE101)

S.No	COURSE OUTCOMES	PO`S	PSO's
	The student will be able to		
1	Understand the significance of statistical rules and principles in quantitative analysis.	1,2,5	2,3
2	Apply the knowledge of Spectroscopy in establishing the structure of molecules, qualitative and quantitative analysis.	1,2,6	3
3	The scope of scattering and electron transition in acquiring the knowledge of structure and bonding of molecules	1,2,7	1
4	. The importance of symmetry elements, symmetry operations and application to various molecules	1,2,7	3
5	Construction of Character tables and assessing the physical, chemical and spectral properties of molecules	1,2,7	3

Course: Organic Chemistry (Code 20CHE102)

S.No	COURSE OUTCOMES	PO`S	PSO's
	The post graduate will be able to		
1	Interpret the concept of aromaticity and the main properties of benzenoid and non- benzenoid aromatic compounds and distinguish between aromatic, non-aromatic and anti aromatic compounds by their structures and chemical consequence of aromaticity.	1,7,2	2,3
2	Know the various types of organic reactions, their mechanisms and intermediates involved, and their applications in synthesis.	1,4,7	1
3	Have a clear conceptual understanding of the nature of carbon-carbon multiple bond, various types of additions, with various reagents, mechanism, orientation and stereochemistry and also acknowledge some important synthetic reactions of CO and CN and crams rule	1,2,4	2
4	Understand the definition types of elimination reactions and differentiate between the various mechanisms, orientation rules and perceives factors favoring elimination over substitution.	1,7,2	1
5	Have knowledge and understanding of various types of aliphatic and aromatic nucleophilic substitution reactions, their mechanisms, stereochemistry and various factors affecting nucleophilic substitution reactions.	1,7,6	2

Course: Inorganic Chemistry (Code 20CHE103)

S.No	COURSE OUTCOMES	PO`S	PSO's
	The post graduate will be able to		
1	Understand the postulates, basic theory and advanced theory of Quantum chemistry.	1,2	1
2	Take up the knowledge of preparation, structure, bonding aspects and chemical properties of metal pi complexes, compounds of non – transitional elements and also spectral properties, magnetic properties and applications of Lanthanides and actinide complexes.	1,2,4	3
3	Assimilate the knowledge of non-valence cohesive forces, VSEPR theory, MO theory, MO diagrams and implications of MO theory.	1,2,7	3
4	Comprehend the bonding, structural aspects, properties and applications of complexes basing on CFT & MO theory and evidences in support of M-L bond.	1,2,3	1,3
5	Identify the significance of the thermodynamic stability of complexes, factors effecting, theories to explain stability and methods of determining the stability constant of complexes.	1,2,5	3

S.No	COURSE OUTCOMES	PO`S	PSO's
Course: Physical Chemistry (Code 20CHE104)			
	The student will be able to		
1	Understand the core areas of physical chemistry based around the theme of systems, states and process covered on thermodynamics.	1,2,7	1
2	Understand the important aspects of surface phenomenon and the physical chemistry involved in it.	1,2,5	2
3	Understand the basic concepts of electrochemical cells, concentration cells in producing electricity from chemicals.	1,2,7	2
4	Understand the theories of reaction rates, mechanisms of Collision theory, primary and secondary salt effects.	1,3,7	1,3
5	Assimilate the knowledge of various kinds of reactions, titrations and their applications.	1,2,6	3

COURSE STRUCTURE

AKKINENI NAGESWARA RAO COLLEGE (AUTONOMOUS)
CURRICULUM FRAMEWORK – 2022-2023

ANNEXURE - II CBCS CURRICULAR FRAMEWORK (2020 – 2021 ONWARDS) – BACHELOR OF SCIENCES

Subjects		SEM I		SEM II		SEM III		SEM IV		SEM V		SEM VI			
		Hrs/W	Credits	Hrs/W	Credits	Hrs/W	Credits	Hrs/W	Credits	Hrs/W	Credits	Hrs/W	Credits		
Languages															
English		4	3	4	3	4	3								
Language (H/T/S)		4	3	4	3	4	3								
Life Skill Courses		2	2	2	2	2+2	2+2								
Skill Development Courses		2	2	2+2	2+2	2	2								
Major 1	Core 1,2,3,& 4	4+2	4+1	4+2	4+1	4+2	4+1	4+2	4+1						
Major 2	Core 1,2,3,& 4	4+2	4+1	4+2	4+1	4+2	4+1	4+2	4+1						
Major 3	Core 1,2,3,& 4	4+2	4+1	4+2	4+1	4+2	4+1	4+2	4+1					FIRST and SECOND PHASES (2 spells) of APPRENTICESHIP between 1st and 2nd year and between 2nd and 3rd year (two summer vacations)
Core	Core 5							4+2	4+1						
Major 2	Core -5							4+2	4+1						
Major 3	Core -5							4+2	4+1						
Major 1	Skill Enhancement Courses (6 & 7)									4+2	4+1	THIRD PHASE of APPRENTICESHIP Entire 5th / 6th Semester			
										4+2	4+1				
Major 2	Skill Enhancement Courses (6 & 7)									4+2	4+1				
										4+2	4+1				
Major 3	Skill Enhancement Courses (6 & 7)									4+2	4+1				
										4+2	4+1				
Hrs/W (Academic Credits)		30	25	32	27	32	27	36	30	36	30		12	4	4
Project Work															
Extension Activities (Non Academic Credits)															
NCC/NSS/Sports/Extra Curricular									2						
Yoga						1		1							
Extra Credits															
Hrs/W (Total Credits)		30	25	32	27	32	28	36	33	36	30		12	4	4
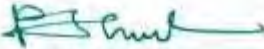
PRINCIPAL
A.N.R. College, Gudivada

ANNEXURE III CBCS CURRICULAR FRAMEWORK (2020 2021 ONWARDS) B.Com.

Subjects	SEM I		SEM II		SEM III		SEM IV		SEM V		SEM VI	
	Hrs/W	Credits	Hrs/W	Credits	Hrs/W	Credits	Hrs/W	Credits	Hrs/W	Credits	Hrs/W	Credits
Languages												
English	4	3	4	3	4	3						
Language (H/T/S)	4	3	4	3	4	3						
Life Skill Courses	2	2	2	2	2+2	2+2						
Skill Development Courses	2	2	2+2	2+2	2	2						
Core Courses												
Core	5	4	5	4	5	4	5	4				
Core	5	4	5	4	5	4	5	4				
Core	5	4	5	4	5	4	5	4				
Core							5	4				
Core							5	4				
Core							5	4				
(Domain Related) Skill Enhancement Courses (SECs)									5	4		
									5	4		
									5	4		
									5	4		
									5	4		
									5	4		
Hrs/W (Academic Credits)	27	22	29	24	29	24	30	24	30	24	0	11	4	4
Project Work												
Extension Activities (Non Academic Credits)												
NCC/NSS/Sports/Extra Curricular								2				
Yoga						1		1				
Extra Credits												
Hrs/W (Total Credits)	27	22	29	24	29	25	30	27	30	24	0	12	4	4

THIRD PHASE of APPRENTICESHIP Entire 5th / 6th Semester (SEM V)

FIRST and SECOND PHASES (2 spells) of APPRENTICESHIP between 1st and 2nd year and between 2nd and 3rd year (two summer vacations). (SEM VI)

ANNEXURE – I CBCS CURRICULAR FRAMEWORK (2020 - 2021 ONWARDS) - BACHELOR OF ARTS

Subjects		SEM I Hrs/W	SEM I Credits	SEM II Hrs/W	SEM II Credits	SEM III Hrs/W	SEM III Credits	SEM IV Hrs/W	SEM IV Credits	SEM V Hrs/W	SEM V Credits	SEM VI Hrs/W	SEM VI Credits		
Languages															
English		4	3	4	3	4	3								
Language (H/T/S)		4	3	4	3	4	3								
Life Skill Courses		2	2	2	2	2+2	2+2								
Skill Development Courses		2	2	2+2	2+2	2	2								
Core Papers															
Major 1	Core 1,2,3,& 4	5	4	5	4	5	4	5	4						
Major 2	Core 1,2,3,& 4	5	4	5	4	5	4	5	4						
Major 3	Core 1,2,3,& 4	5	4	5	4	5	4	5	4						
Core	Core-5							5	4						
Major 2	Core-5							5	4						
Major 3	Core-5							5	4						
Major 1	Skill Enhancement Core Courses 6 & 7									5	4	THIRD PHASE of APPRENTICESHIP Entire 5th / 6th Semester		FIRST and SECOND PHASES (2 spells) of APPRENTICESHIP between 1st and 2nd year and between 2nd and 3rd year [two summer vacations].	
										5	4				
Major 2	Skill Enhancement Core Courses 6 & 7									5	4				
										5	4				
Major 3	Skill Enhancement Core Courses 6 & 7									5	4				
Hrs/W [Academic Credits]		27	22	29	24	29	24	30	24	30	24	0	12	4	4
Project Work															
Extension Activities (Non Academic Credits)															
NCC/NSS/Sports/Extra Curricular									2						
Yoga							1		1						
Extra Credits															
Hrs/W [Total Credits]		27	22	29	24	29	25	30	27	30	24	0	12	4	4
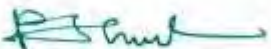
PRINCIPAL

PRINCIPAL

A.N.R. College, Gudivada

Life Skill and Skill Development Courses offered by the college:

S. No.	Name of the Course	Offered Programmes
1	Solar Energy(20SEY2)	I B.Sc. MPC
		I B.Sc. MPCS
		I B.Sc. MSCS
2.	Environmental Education(20EE3)	II B.Sc. MPC
		II B.Sc. MPCS
		II B.Sc. MSCS
		II B.Com. (GEN)
		II B.Com. (COMPUTERS)
		II B.A.
3.	ENVIRONMENT AUDIT (20ENA3)	II B.Sc. MPC
		II B.Sc. MPCS
		II B.Sc. MSCS
4.	FOOD ADULTERATION (20FAN2)	I B.Sc. MPC
		I B.Sc. MPCS
		I B.Sc. MSCS
5.	TOURISM GUIDANCE (20TSG1)	I B.A.
6.	JOURNALISTIC REPORTING (20JLR2)	I B.A.
7.	PERFORMING ARTS (20PEA2)	I B.A.
8.	FINANCIAL MARKETS (20FMS3)	II B.A.
9.	INSURANCE PROMOTION (20IPN1)	I B.Com. (GEN)
		I B.Com. (COMPUTERS)
7.	BUSINESS COMMUNICATION (20BCN2)	I B.Com. (GEN)
		I B.Com. (COMPUTERS)

11.	ADVERTISING (20ADV2)	I B.Com. (GEN)
		I B.Com. (COMPUTERS)
12.	ONLINE BUSINESS (20OBS3)	II B.Com. (GEN)
		II B.Com. (COMPUTERS)
13.	INFORMATION AND COMMUNICATION TECHNOLOGY (20ICT2)	I B.A.
		I B.Com. (GEN)
		I B.Sc. MPC
14.	INDIAN CULTURE AND SCIENCE (20ICS2)	I B.Com. (COMPUTERS)
		I B.Sc. MPCS
		I B.Sc. MSCS
15.	ANALYTICAL SKILLS (20ASK3)	II B.Sc. MPC
		II B.Sc. MPCS
		II B.Sc. MSCS
		II B.Com. (GEN)
		II B.Com. (COMPUTERS)
		II B.A.
16.	ELECTRICAL APPLIANCES (20EAS1)	I B.Sc. MPC
		I B.Sc. MPCS
		I B.Sc. MSCS

BOS Meetings Scanned copies – 2022-23 A.Y.

[3 Departments (For Reference)]

AKKINENI NAGESWARA RAO COLLEGE (AUTONOMOUS)
GUDIVADA-521301
Re-Accredited by NAAC with 'A' Grade
(Affiliated to Krishna University, Machilipatnam)

Ph.No.'s : 08674-2d:14

08674 - 241440

P.G. Department of Commerce & Business Administration

Minutes of the Meeting of Board of Studies

27-08-2023

AKKINENI NAGESWARA RAO COLLEGE (AUTONOMOUS):
GUDIVADA

P.G.Department of Commerce & Business Administration, B.O.S. Meeting- 10

The meeting of the Board of Studies in Commerce & Business Administration is held on 27-08-2023 at in Virtual Mode.

Members Present:

1. Dr.C.Lakshmi Nath, HOD, Dept. of Commerce & Business Administration, ANR College, Chairman.

2. Dr. Ch. Jayasankara Prasad, Dept. of Commerce &Business Management, KRU, University Nominee.

3. Prof.A.Narasimha Rao, Dept of Commerce & Management Studies, AU, Vizag, Subject Expert.

4. Prof. Suja S. Nair, Dept. of Business Management, VSU, Nellore, Subject Expert.

5. Dr.M.B.Suvarchala, Dept. of Commerce & Business Administration, ANR College, Member.

6. Sri. K.Hima Giridhara Rao, Dept. of Commerce & Business Administration, ANR College, Member.

7. Sri.Md.Saleem, Dept. of Commerce & Business Administration, ANR College, Member.

8. Sri.V.PavanChalapathi Rao, Dept. of Commerce & Business Administration, ANR College, Member.

9. Sri.V.Nagendra Kumar, Dept. of Commerce & Business Administration, ANR College, Member.

10. Smt. Naziya Sultana, Dept. of Commerce & Business Administration, ANR College, Member.

11. Mr.M.Bharat Kumar, Dept. of Commerce & Business Administration, ANR College, Member.

12. Smt.M.Kalyani, Dept. of Commerce & Business Administration, ANR College, Member.

13. Smt.S.Kavitha, Dept.of Commerce & Business Administration, ANR College, Member.

14. Sri.K.Srinivas, Dept.of Commerce & Business Administration, ANR College, Member.

15. Smt.P.Sirisha, Dept.of Commerce & Business Administration, ANR College, Member.

16. Smt.P.Sreedevi, Dept. of Commerce & Business Administration, ANR College, Member.

17. Miss.Sk.Rahimunnisa Begum, Dept. of Commerce & Business Administration, ANR College, Member.

18. Sri.D.Madhusudhana Rao, Industrialist, Member

19. Ms.P.Bindu Madhavi, MBA, Meritorious Student, Alumni, Member

Agenda:

1. To Approve the syllabus of MBA II Semester(R22) and IV Semester (R20) of MBA & M.Com and Model Question Paper Format (for Both Internal and External) from the Academic Year 2022- 2023.

2. To suggest a Panel of names to the Academic Council for appointment of External Examiners for Question Paper Setting, Valuation and Viva – Voce Examinations.

3. Any other item with the permission of the Chair.

RESOLUTIONS:

1) Considered the item No.1, that there are no modifications, alterations, additions, deletions and changes required in II (R22) & IV(R20) Semesters Syllabus and Question Papers format of MBA and M.Com from the Academic Year 2022-2023.(The Syllabus and Model Question Paper Format is Appended.)

2) Considered the Item No.2 and resolved to have the following list of Paper Setters and Examiners:-

PAPER SETTERS LIST:

1. Prof. D.Surya Chandra Rao, Krishna University, Machilipatnam.
2. Dr.Ch. Jayasankara Prasad, Krishna University, Machilipatnam.
3. Dr.R.Padmaja, Krishna University, Machilipatnam.
4. Dr.M.Sravani, Krishna University, Machilipatnam.
5. Prof. G. Satyanarayana, Andhra University-Visakhapatnam
6. Prof. G. Sudarsana Rao, Andhra University-Visakhapatnam
7. Prof D.M.Sheaba Rani, Andhra University-Visakhapatnam
8. Prof P. Veni, Andhra University-Visakhapatnam
9. Prof K.Sambasiva Rao, Andhra University-Visakhapatnam
10. Prof V. Krishna Mohan, Andhra University-Visakhapatnam
11. Prof N. Sambasiva Rao, Andhra University-Visakhapatnam
12. Prof P. Viswanadham, Andhra University-Visakhapatnam
13. Prof. R. Madhusudana Raju, Andhra University-Visakhapatnam
14. Prof A. Narasimha Rao, Andhra University-Visakhapatnam
15. Prof. M. Sandhya Sree Devi, Andhra University-Visakhapatnam
16. Prof. B. Mohan Venkata Ram, Andhra University-Visakhapatnam
17. Prof. J. Ravi, Andhra University-Visakhapatnam
18. Prof. N. Kishore Babu, Andhra University-Visakhapatnam
19. Prof. R. Siva Ram Prasad, ANU, Guntur
20. Dr. N.Ratna Kishore, ANU, Guntur
21. Dr. N. Prasanna Kumar, ANU, Guntur
22. Dr.Kanaka Durga, ANU, Guntur
23. Dr. G. Naga Raju, ANU, Guntur
24. Dr. Abdul Mazharunnisa, KL University, Vijayawada

25. Dr.R.Immaneul, St.Anns College of Engineering & Technology, Chirala

30. Prof. Rajesh C Jampala, Dean (Academics), P.B. Siddhartha College, Vijayawada

31. Dr.Jaya Prakash, P.B.Siddhartha College, Vijayawada

32. Dr.R.Srinivasa Rao, P.B.Siddhartha College, Vijayawada

33. Dr.B.Rajendra Prasad, P.B.Siddhartha College, Vijayawada

34. Dr.Sk.Raheman, P.B.Siddhartha College, Vijayawada

35. Prof.P.Adi Lakshmi, PVP Siddhartha Institute of Technology

36. Dr.N.Ramanuja, PVP Siddhartha Institute of Technology

37. Dr.O.A.R.Kishore, PVP Siddhartha Institute of Technology

38. Dr.D.Sinivasa rao, PVP Siddhartha Institute of Technology

39. Dr.K.Anusha, PVP Siddhartha Institute of Technology

40. Dr.P.Krishna Priya, KL University

41. Dr.Lt.M.Dhadurya Naik, PVP Siddhartha Institute of Technology

42. Dr.R.Srinivasa Rao, Sir.C.R.Reddy P.G.College.

43. Dr.C.Rajesh, Sir.C.R.Reddy P.G.College.

44. Dr.P.Giribabu, Sir.C.R.Reddy P.G.College.

45. Dr.J.V.Jagapathi Rao, Sir.C.Reddy P.G.College

46. Prof.A.Adisesha Reddy, L.B.R.C.E. Mylavaram

47. Dr.L.Srinivas, L.B.R.C.E. Mylavaram

48. Dr. Naga Sundari, Maris Stella College, Vijayawada

49. Dr. P.Subbaiah Choudary, Vijaya Institute of Engg. and Technology, Vijayawada

50. Dr. B.K. Surya Prakasha Rao, RVR &JC College of Engg, Chodavaram, Guntur

51. Dr. T. Sree Krishna, RVR &JC College of Engineering, Chodavaram, Guntur

52. Dr. K. Suryanarayana, RVR &JC College of Engineering, Chodavaram, Guntur

53. Dr. N. V. Srinivasa Rao, RVR &JC College of Engineering, Chodavaram, Guntur

54. Dr.Sk. Mabunni, RVR &JC College of Engineering, Chodavaram, Guntur

55. Sri P. Lalshmi Srinivasa Rao, PRSM National College.

EXTERNAL EXAMINERS LIST

1. Prof. D.Surya Chandra Rao, Krishna University, Machilipatnam.

2. Dr.Ch. Jayasankara Prasad, Krishna University, Machilipatnam.

3. Dr.R.Padmaja, Krishna University, Machilipatnam.

4. Dr.M.Sravani, Krishna University, Machilipatnam.

5. Prof. R. Siva Ram Prasad, ANU, Guntur

6. Prof. R. Siva Ram Prasad, ANU, Guntur

7. Dr.N.Ratna Kishore, ANU, Guntur

8. Dr.N. Prasanna Kumar, ANU, Guntur

9. Dr. Kanaka Durga, ANU, Guntur

10. Dr. G. Naga Raju, ANU, Guntur

11. Dr.Abdul Mazharunnisa, P.G.Center, KL University, Vijayawada

12. Prof.Rajesh C Jampala, Dean (Academics), P.B.Siddhartha Vijayawada

13. Dr.Jaya Prakash, P.B.Siddhartha Vijayawada

14. Dr.R.Srinivasa Rao, P.B.Siddhartha Vijayawada

15. Dr.B.Rajendra Prasad, P.B.Siddhartha Vijayawada

16. Dr.Sk.Raheman, P.B.Siddhartha Vijayawada

17. Prof.P.Adi Lakshmi, PVPSiddhartha Institute of Technology, Kanuru, Vijayawada

18. Dr.N.Ramanuja, PVP Siddhartha Institute of Technology, Kanuru, Vijayawada

19. Dr.O.A.R.Kishore, PVP Siddhartha Institute of Technology, Kanuru, Vijayawada

20. Dr.D.Sinivasa rao, PVP Siddhartha Institute of Technology, Kanuru, Vijayawada

21. . Dr.K.Anusha, PVP Siddhartha Institute of Technology, Kanuru, Vijayawada

22. Dr. P. Krishna Priya, KL University, Vijayawada

23. Dr.Lt.M.DhaduryaNaik, PVPiddharthaInstitute of Technology, Kanuru, Vijayawada

24. Dr.R.Srinivasa Rao, Sir.C.R.Reddy P.G.College, Eluru

25. Dr.R.Jagapathi Rao, Sir.C.R.Reddy P.G.College, Eluru

26. Prof.A.Adisesha Reddy, L.B.R.C.E. Mylavaram

27. Dr. L.Srinivas, L.B.R.C.E. Mylavaram

28. Dr. Naga Sundari, Maris Stella College, Vijayawada

29. Dr. P.Subbaiah Choudary, Vijaya Institute of Engg. and Technology, Vijayawada

30. Dr. B.K. Surya Prakasha Rao, RVR &JC College of Engg, Chodavaram, Guntur

31. Dr. T. Sree Krishna, RVR &JC College of Engineering, Chodavaram, Guntur

32. Dr. K. Suryanarayana, RVR &JC College of Engineering, Chodavaram, Guntur

33. Dr. N. V. Srinivasa Rao, RVR &JC College of Engineering, Chodavaram, Guntur

34. Dr.Sk. Mabunni, RVR &JC College of Engineering, Chodavaram, Guntur

35. Sri P. Lalshmi Srinivasa Rao, PRSM National College.

Dr. Ch. Jayasankara Prasad   Prof. A. Narasimha Rao   Prof. Suja S. Nair   Dr. C. Lakshmi Nath

DEPARTMENT OF UG PHYSICS

BOARD OF STUDIES MEETING

ACADEMIC YEAR – 2022-23

AKKINENI NAGESWARA RAO COLLEGE (AUTONOMOUS)
GUDIVADA-521301

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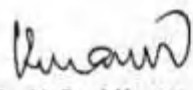
Ph.: 08674-242145
Cell : 98669 84764
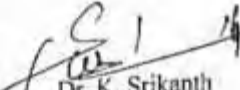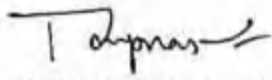
Department of UG Physics
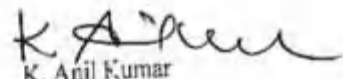
Minutes of the meeting of Board of Studies

24-06-2023

Dr. V. Ravi Kumar
University Nominee

Dr. K. Srikanth
Subject Expert

T. Bala Narendra Prasad
Subject Expert

K. Anil Kumar
Chairman & HOD

AKKINENI NAGESWARA RAO COLLEGE(A):: GUDIVADA

Autonomous College under the jurisdiction of Krishna University, Machilipatnam

MINUTES OF THE BOARD OF STUDIES MEETING

Department of Physics, BOS Meeting~10

The meeting of the board of studies in the Department of Physics will held on **24-06-2023** at 10.00 am in the Department of Physics in **Person OFFLINE**.

Agenda

1. To frame the syllabus for II, IV and VI-Semester of Physics (both theory and Practical) in B.Sc. course w.e.f. 2022-23, 2021-22, 2020-21 admitted batch of students.

2. To prepare blue print for II, IV and VI-Semester of Physics in B.Sc. course w.e.f. 2022-23, 2021-22, 2020-21 admitted batch of students.

3. To frame model question paper for II, IV and VI-Semester of Physics in B.Sc. course w.e.f. 2022-23, 2021-22, 2020-21 admitted batch of students.

4. To suggest methodologies for innovative methods of teaching.

5. To recommend methods for coordinating research, teaching, extension and other academic activities in the department

6. Any other matter.

Members Present:

S.No	NAME		Signature
1	K. Anil Kumar, M.Sc., M.Phil. Head, Dept. of Physics, A.N.R. College, Gudivada.	Chairman	
2	Dr. V. Ravi Kumar, M.Sc., Ph.D. Dept. of Physics, Acharya Nagarjuna University, Guntur.	University Nominee	
3	Dr. K.Srikanth M.Sc., M.Phil., Ph.D. Head, Department of Physics, P.B.N. College, Nidubrolu (Post), Ponnur Mandal, Gunur district.	Subject Expert	
4	T. Bala Narendra Prasad M.Sc., M.Phil. Lecturer, Department of Physics, J.K.C.College, Choudaripet(P.O.), Guntur.	Subject Expert	
5	Dr. R.N.A. Prasad M.Sc., M.Phil., Ph.D. Department of Physics, A.N.R. College, Gudivada.	Member	
6	kum. K. Roopa M.Sc. Department of Physics, A.N.R. College, Gudivada	Member	
7	kum. B. Sridevi M.Sc. Department of Physics, A.N.R. College, Gudivada	Member	
8	kum. B. Divya M.Sc., B.Ed. Department of Physics, A.N.R. College, Gudivada	Member	
9	kum. K. Sukanya, MCA Lecturer, Department of Computer Science, A.N.R.College, Gudivada	Member of other department	
10	P. Hrushikesh, M.Sc. Lecturer, Department of Physics, A.P.R.J.C., Nimmakuru	Alumni	
11	Dr. M.V.V. Nagi Reddy, M.Sc., M.Phil., Ph.D. Managing Director, Vijaya Polimers, Veleru.	Industrialist	

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MINUTES OF THE BOARD OF STUDIES MEETING

Department of Physics, BOS Meeting

The meeting of the board of studies in the Department of Physics was held on **24-06-2023** at 10.00 am in the Department of Physics in Person OFFLINE MODE and made the following resolutions

Resolutions
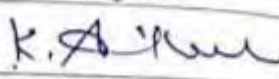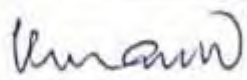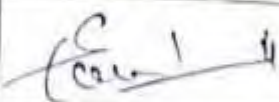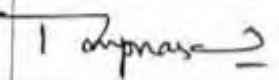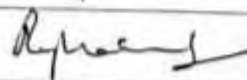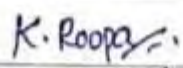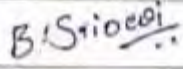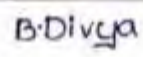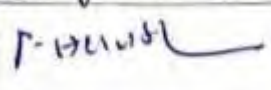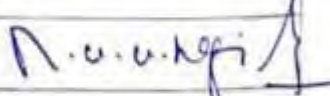
1. Considered the item No.1, 2 and 3 regarding syllabus, blue print, model question paper for **II-Semester Paper-II** of Physics and **Skill development Course-"Solar Energy"** in B.Sc. course w.e.f. 2022-23 admitted batch of students and it is **Resolved** that no changes are required in syllabus, blue print and model question paper that was approved for 2020-21 batch in the BOS meeting held on 30-06-2021 and same is **approved**

2. Considered the item No.1, 2 and 3 regarding syllabus, blue print, model question paper for **IV-Semester Paper-4A & 4B** of Physics in B.Sc. course w.e.f. 2021-22 admitted batch of students and it is **Resolved** that no changes are required in syllabus, blue print and model question paper that was approved for 2020-21 batch in the BOS meeting held on 04-03-2022 and same is **approved**

3. Considered the item No.1,2,3 and resolved to have the syllabus (as per APSCHE) for **VI-Semester Paper-6C** and **Paper-7C** of Physics in B.Sc. course w.e.f. 2020-21 admitted batch of students and it is **Resolved** that no changes are required in syllabus, blue print and model question paper that was approved for 2020-21 batch in the V-Semester BOS meeting held on 15-12-2022 and same is **approved**

4. Considered the item No.5&6 regarding innovative methods of teaching, research, teaching extension and other academic activities in the department and it is suggested to conduct seminars, group discussions and give assignments using a topic from any of the Units in the syllabus, use ICT based tools extensively. Also suggested to take the students to the field trips that enhances their interest towards science curriculum.

Also suggested to encourage the students for Industrial visit that enhances their interest towards science curriculum.

***

Members Present:

S.No	NAME		Signature
1	K. Anil Kumar, M.Sc., M.Phil. Head, Dept. of Physics, A.N.R. College, Gudivada.	Chairman	
2	Dr. V. Ravi Kumar, M.Sc., Ph.D. Dept. of Physics, Acharya Nagarjuna University, Guntur.	University Nominee	
3	Dr. K.Srikanth M.Sc., M.Phil., Ph.D. Head, Department of Physics, P.B.N. College, Nidubrolu (Post). Ponnur Mandal, Gunur district.	Subject Expert	
4	T. Bala Narendra Prasad M.Sc., M.Phil. Lecturer, Department of Physics, J.K.C.College, Choudaripet(P.O.), Guntur.	Subject Expert	
5	Dr. R.N.A. Prasad M.Sc., M.Phil., Ph.D. Department of Physics, A.N.R. College, Gudivada.	Member	
6	kum. K. Roopa M.Sc. Department of Physics, A.N.R. College, Gudivada	Member	
7	kum. B. Sridevi M.Sc. Department of Physics, A.N.R. College, Gudivada	Member	
8	kum. B. Divya M.Sc., B.Ed. Department of Physics, A.N.R. College, Gudivada	Member	
9	kum. K. Sukanya, MCA Lecturer, Department of Computer Science, A.N.R.College, Gudivada	Member of other department	
10	P. Hrushikesh, M.Sc. Lecturer, Department of Physics, A.P.R.J.C., Nimmakuru	Alumni	
11	Dr. M.V.V. Nagi Reddy, M.Sc., M.Phil., Ph.D. Managing Director, Vijaya Polimers, Veleru.	Industrialist	

AKKINENI NAGESWARA RAO COLLEGE (AUTONOMOUS)
GUDIVADA-521301

Aided by the Government of A.P, Re-Accredited by NAAC with 'A' Grade
Affiliated to Krishna University Machilipatnam

Ph.: 08674-242145
Cell : 98669 84764

Department of UG Physics

Minutes of the meeting of Board of Studies

15-12-2022

Dr. V. Ravi Kumar	Dr. K. Srikanth	T. Bala Narendra Prasad	K. Anil Kumar
University Nominee	Subject Expert	Subject Expert	Chairman & HOD

AKKINENI NAGESWARA RAO COLLEGE(A):: GUDIVADA

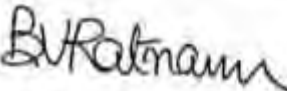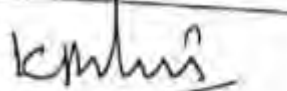Autonomous College under the jurisdiction of Krishna University, Machilipatnam

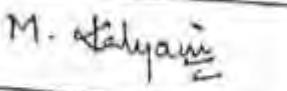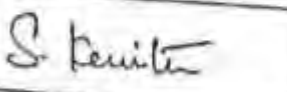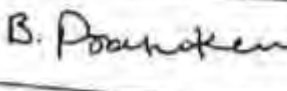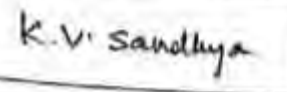## MINUTES OF THE BOARD OF STUDIES MEETING

Department of Physics, BOS Meeting –9

The meeting of the board of studies in the Department of Physics will held on **15-12-2022** at 10.00 am in the Department of Physics by **OFFLINE mode**

Agenda

1. To frame the syllabus for I, III, and V-Semester of Physics (both theory and Practical)in B.Sc. course w.e.f. 2022-23, 2021-22, 2020-21 admitted batch of students.

2. To prepare blue print for I, III, and V-Semester of Physics in B.Sc. course w.e.f. 2022-23, 2021-22, 2020-21 admitted batch of students.

3. To frame model question paper for I, III, and V-Semester of Physics in B.Sc. course w.e.f. 2022-23, 2021-22, 2020-21 admitted batch of students.

4. To suggest methodologies for innovative methods of teaching.

5. To recommend methods for coordinating research, teaching, extension and other academic activities in the department

6. Any other matter.

Members Present:

S.No	NAME	Designation	Signature
1	K. Anil Kumar, M.Sc., M.Phil Head, Dept. of Physics A.N.R. College, Gudivada.	Chairman	
2	Dr. V. Ravi Kumar, M.Sc., Ph.D. Dept. of Physics, Acharya Nagarjuna University, Guntur.	University Nominee	
3	Dr. K.Srikanth M.Sc.,M.Phil. Ph.D Head, Department of Physics, P.B.N. College, Nidubrolu(Post), Ponnur Mandal, Gunur district.	Subject Expert	
4	T. Bala Narendra Prasad M.Sc., M.Phil. Lecturer, Department of Physics, J.K.C.College, Choudaripet(P.O.), Guntur.	Subject Expert	
5	Dr. R.N.A. Prasad M.Sc., M.Phil. Ph.D. Department of Physics, A.N.R. College, Gudivada.	Member	
6	kum. K. Roopa M.Sc. Department of Physics, A.N.R. College, Gudivada	Member	K. Roopa
7	kum. B. Sridevi M.Sc., Department of Physics, A.N.R. College, Gudivada	Member	B.Sridevi.
8	kum. B. Divya M.Sc. Department of Physics, A.N.R. College, Gudivada	Member	B.Divya
9	kum. K. Sukanya, MCA Lecturer, Department of Computer Science, A.N.R.College, Gudivada	Member of other department	
10	P. Hrushikesh, M.Sc. Lecturer, Department of Physics, A.P.R.J.C., Nimmakuru.	Alumni	P. Hrush
11	Dr. M.V.V. Nagi Reddy, M.Sc.,M.Phil. Ph.D Managing Director, VijayaPolimers, Veleru.	Industrialist	

AKKINENI NAGESWARA RAO COLLEGE(A):: GUDIVADA

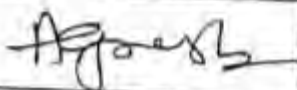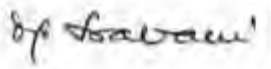Autonomous College under the jurisdiction of Krishna University, Machilipatnam

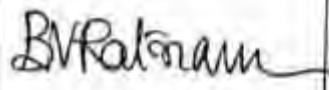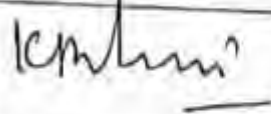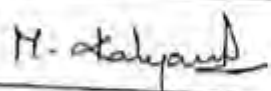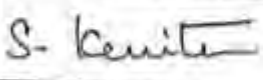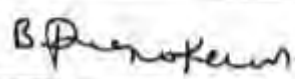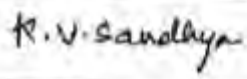## MINUTES OF THE BOARD OF STUDIES MEETING

Department of Physics, BOS Meeting

The meeting of the board of studies in the Department of Physics was held on **15-12-2022** at 10.00 am in the Department of Physics by **OFFLINE** mode and made the following resolutions
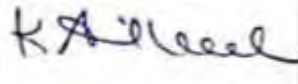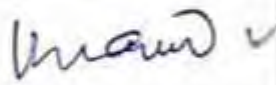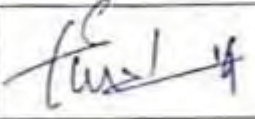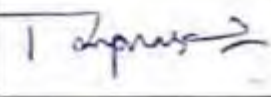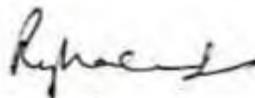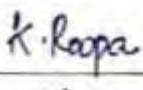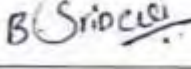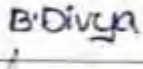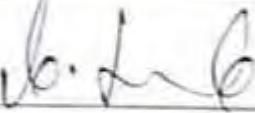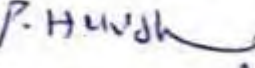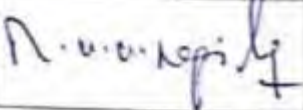
Resolutions

1. Considered the item No.1, 2 and 3 regarding syllabus, blue print, model question paper for **I-Semester** Paper-I of Physics and Skill development Course in B.Sc. course w.e.f. 2022-23 admitted batch of students and it is **Resolved** that no changes are required in syllabus, blue print and model question paper that was approved for 2020-21 batch in the BOS meeting held on 19-12-2020 and same is **approved**

2. Considered the item No.1, 2 and 3 regarding syllabus, blue print, model question paper for **III-Semester** Paper-III of Physics in B.Sc. course w.e.f. 2021-22 admitted batch of students and it is **Resolved** that no changes are required in syllabus, blue print and model question paper that was approved for 2020-21 batch in the BOS meeting held on 17-12-2021 and same is **approved**

3. Considered the item No.1 and resolved to have the syllabus (as per APSCHE) for **V-Semester** Paper-6A, Paper-6B, Paper-6C and Paper-7A, Paper-7B, Paper-7C of Physics in B.Sc. course w.e.f. 2020-21 admitted batch of students as appended in Annexure-I. The **syllabus is approved** as shown in Annexure-I.

4. Considered the item No.2 and resolved to have the following **blue print** of question papers for **V-Semester** Paper-6A, Paper-6B, Paper-6C and Paper-7A, Paper-7B, Paper-7C of Physics in B.Sc. course w.e.f. 2020-21 admitted batch of students as appended in Annexure-II. The **blue print is approved** as shown in Annexure-II.

5. Considered the item No. 3 and resolved to have the **model question paper** for **V-Semester** Paper-6A, Paper-6B, Paper-6C and Paper-7A, Paper-7B, Paper-7C of Physics in B.Sc. course w.e.f. 2020-21 admitted batch of students as appended in Annexure-III. The **question paper is approved** as shown in Annexure-III.

6. Considered the item No.5&6 regarding innovative methods of teaching, research, teaching extension and other academic activities in the department and it is suggested to conduct seminars, group discussions and give assignments using a topic from any of the Units in the syllabus, use ICT based tools extensively. Also suggested to take the students to the field trips that enhances their interest towards science curriculum.

Also suggested to encourage the students for Industrial visit that enhances their interest towards science curriculum.

***

Members Present:

S.No	NAME	Designation	Signature
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5	Dr. R.N.A. Prasad M.Sc., M.Phil, Ph.D. Department of Physics, A.N.R. College, Gudivada.	Member	
6	kum. K. Roopa M.Sc. Department of Physics, A.N.R. College, Gudivada	Member	K.Roopa
7	kum. B. Sridevi M.Sc., Department of Physics, A.N.R. College, Gudivada	Member	B.Sridevi
8	kum. B. Divya M.Sc. Department of Physics, A.N.R. College, Gudivada	Member	B.Divya
9	kum. K. Sukanya, MCA Lecturer, Department of Computer Science, A.N.R.College, Gudivada	Member of other department	
10	P. Hrushikesh, M.Sc, Lecturer, Department of Physics, A.P.R.J.C., Nimmakuru.	Alumni	P.Hrush
11	Dr. M.V.V. Nagi Reddy, M.Sc.,M.Phil, Ph.D Managing Director, VijayaPolimers, Veleru.	Industrialist	

DEPARTMENT OF UG COMMERCE

BOARD OF STUDIES MEETING

ACADEMIC YEAR – 2022-23

Department of Commerce

Minutes of the meeting of Board of Studies

09-12-2022

1ST - SEM

AKKINENI NAGESWARA RAO COLLEGE :: GUDIVADA

Autonomous College under the jurisdiction of Krishna University, Machilipatnam
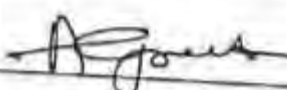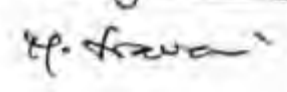
MINUTES OF THE BOARD OF STUDIES MEETING

Department of COMMERCE, BOS Meeting

1. The meeting of the Board of Studies in the Department of Commerce is held on 09-12-2022 at 11.00 am.-1p.m. in the Department of Commerce

2. Agenda:

1. To discuss the implementation and modifications in I & III semester Commerce syllabus (English Medium only I & III semester) for the batch of students admitted from 2020-2021.

2. To approve the syllabus, blue print and model question papers for V/VI Semester Commerce subject for the batch of students admitted from 2020-2021.

3. To finalize the list of examiners and paper setters in Commerce.

4. Any other matter.

S.No	NAME		Signature
1	A.Greeshma Dept. of Commerce A.N.R. College, Gudivada.	Chairman	
2	Dr. M.Sravani Krishna University, Machilipatnam 9966361117.9182386487	University Nominee	
3	Dr.B.vekata Ratnam Vice Principal Department of Commerce SRI YN College, Narasapuram 9704628727 , 7013433978	Subject Expert	B.V.Ratnam
4	Dr.K.Raju .Principal VKC Government Degree College, Kothapeta East Godawari	Subject Expert	
5.	M. Kalayani Dept. of Commerce A.N.R. College, Gudivada	Member	M. Kalyani
6	S. Kavitha Dept. of Commerce A.N.R. College, Gudivada	Member	S. Kavitha
7	B.Prasanna Kumar Dept. of Commerce A.N.R. College, Gudivada.	Member	B. Prasannakumar
8	K. Vennela Sandhya Dept. of Commerce A.N.R. College, Gudivada	Member	K.V. sandhya

AKKINENI NAGESWARA RAO COLLEGE :: GUDIVADA

Autonomous College under the jurisdiction of Krishna University, Machilipatnam

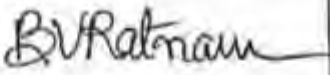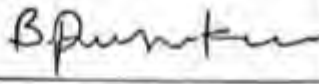## MINUTES OF THE BOARD OF STUDIES MEETING

Department of Commerce, BOS Meeting

1. The meeting of the board of studies in the Department of Commerce is held on 09-12-2022 at 11.00 am.-1p.m. in the Department of Commerce

RESOLUTIONS:

1. Reviewed the COMMERCE syllabus of I & III semesters and no modifications are suggested (Annexure – I)

2. Considered the Item No.2 and resolved to approve syllabus, blue print and model papers for V/VI semester Commerce in B.com, for the batch of students admitted from 2020-2021. (Annexure – II)

3. Considered the Item No.3 and approved the list of examiners and paper setters for commerce subject. (Annexure – III)

S.No	NAME		Signature
1	A.Greeshma Dept. of Commerce A.N.R. College, Gudivada.,	Chairman	
2	Dr. M.Sravani Krishna University, Machilipatnam 9966361117,9182386487	University Nominee	
3	Dr.B.vekata Ratnam Vice Principal Department of Commerce SRI YN College, Narasapuram 9704628727 , 7013433978	Subject Expert	BVRatnam
4	Dr.K.Raju .Principal VKC Government Degree College, Kothapetu East Godavari	Subject Expert	
5.	M. Kalayani Dept. of Commerce A.N.R. College, Gudivada	Member	M. Kalyani
6	S. Kavitha Dept. of Commerce A.N.R. College, Gudivada	Member	S. Kavitha
7	B.Prasanna Kumar Dept. of Commerce A.N.R. College, Gudivada.	Member	B.Prasannakumar
8	K. Vennela Sandhya Dept. of Commerce A.N.R. College, Gudivada	Member	K.V.Sandhya

Department of Commerce

Minutes of the meeting of Board of Studies

08-09-2023

2nd - SEM
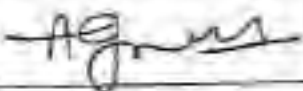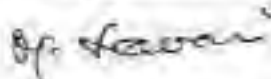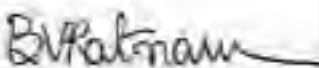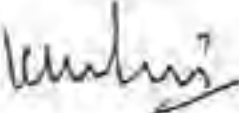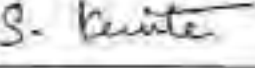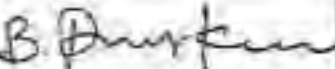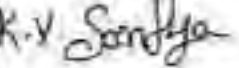
AKKINENI NAGESWARA RAO COLLEGE (AUTONOMOUS)
GUDIVADA-521301
Department of Commerce B.O.S Meeting (2022-23)
Minutes of The Meeting of Bos Commerce For B.com Degree Course of Anr College Gudivada Held At 11 A.M. On 08-09-2023

A.Greeshma Presiding

The Meeting of the board of Studies in U.G. Commerce held on 08-09-2023 at 11.00 a.m. in the Department of U.G. Commerce

Members Present: A.Greeshma

S.No	NAME		Signature
1	A.Greeshma Incharge of UG-Commerce Dept A.N.R. College, Gudivada.	Chairman	
2	Dr. M.Sravani Krishna University, Machilipatnam 9966361117,9182386487	University Nominee	
3	DR.D.vekata Ratnam, Vice Principal Department of Commerce SRI YN College, Narasapuram 7013433978 9704628727 ,	Subject Expert	BVRatnam
4	DR.K.Raju .Principal VKC Government Degree College, Kothapeta East Godavari	Subject Expert	
6.	M. Kalayani Dept. of Commerce A.N.R. College, Gudivada	Member	
7	S. Kavitha Dept. of Commerce A.N.R. College, Gudivada	Member	
8	B.Prasanna Kumar Dept. of Commerce A.N.R. College, Gudivada.	Member	
9	K. Vennela Sandhya Dept. of Commerce A.N.R. College, Gudivada	Member	K.V Sandhya

AKKINENI NAGESWARA RAO COLLEGE :: GUDIVADA

Autonomous College under the jurisdiction of Krishna University, Machilipatnam

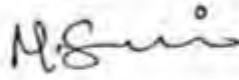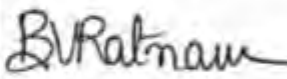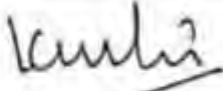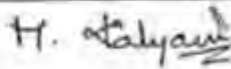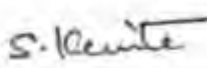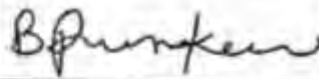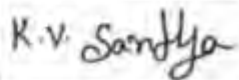## MINUTES OF THE BOARD OF STUDIES MEETING

Department of UG Commerce, BOS Meeting

1. The meeting of the board of studies in the Department of Commerce is held on 08-09-2023 at 11.00 am.-1p.m. in the Department of Commerce

2. Agenda:

1. To discuss implementation and modifications, if any IV, II, semester Commerce syllabus (English Medium only)

2. To prepare the blue print for II & IVSemester of Commerce in B.com course w.e.f.(2021- 2024) (2022-2025) Batch of students

3. To frame model question papers for II & IVSemester of Commerce in B.com course w.e.f(2021– 2024) (2022-2025) Batch of students

4. To finalize the list of examiners and paper setters in Commerce

5. Any other matter.

S.No	NAME		Signature
1	A.Greeshma Incharge of UG Commerce Dept A.N.R. College, Gudivada.	Chairman	
2	Dr. M.Sravani Krishna University, Machilipatnam 9966361117,9182386487	University Nominee	
3	DR.B.vekata Ratnam Vice Principal Department of Commerce SRI YN College, Narasapuram 9704628727 , 7013433978	Subject Expert	
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6	S. Kavitha Dept. of Commerce A.N.R. College, Gudivada	Member	
7	B.Prasanna Kumar Dept. of Commerce A.N.R. College, Gudivada.	Member	
8	K. Vennela Sandhya Dept. of Commerce A.N.R. College, Gudivada	Member	

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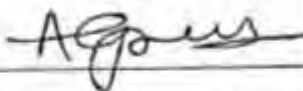
MINUTES OF THE BOARD OF STUDIES MEETING

Department of Commerce, BOS Meeting

1. The meeting of the board of studies in the Department of Commerce is held on 08-09-2023 at 11.00 am.-1p.m. in the Department of Commerce

RESOLUTIONS:

1. Reviewed the commerce syllabus II & IV Semester and recommended that no changes are required for syllabus. model question paper before ratified. (Annexure – I)

2. Considered the Item No.2 and resolved to approve syllabus,blue print and model papers for II & IV semester of Commerce in B.com, .(2021- 2024) (2022-2025) Batch of students. (Annexure – II)

3. Considered the Item No.3 and approved the list of Examiners and paper setters for commerce subject (Annexure – III)

S.No	NAME		Signature
1	A.Greeshma Incharge of UG Commerce Dept A.N.R. College, Gudivada..	Chairman	
2	Dr. M.Sravani Krishna University, Machilipatnam 9966361117,9182386487	University Nominee	
3	DR.B.vekata Ratnam Vice Principal Department of Commerce SRI YN College, Narasapuram 9704628727 , 7013433978	Subject Expert	
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7	B.Prasanna Kumar Dept. of Commerce A.N.R. College, Gudivada.	Member	
8	K. Vennela Sandhya Dept. of Commerce A.N.R. College, Gudivada	Member	

STUDENT INDUCTION PROGRAMMES

AKKINENI NAGESWARA RAO COLLEGE

GUDIWADA -521 301

Department of Chemistry

Organizes

Induction Programme for M.Sc. Chemistry First Year Students

On

14th December 2022

About the College:

AKKINENI NAGESWARA RAO COLLEGE

Vision & Mission

Vision:

The vision of the college is to contribute to the advancement ofknowledge throughteaching, research, publications and dissemination of information.

To this end the College strives:

- To train students to acquire good communication skills and leadership qualities and to mould them to be global citizens.
- To offer relevant / need based courses from time to time.
- To promote interaction with industry.
- To develop critical thinking among students.
- To make students conscious of their duty to the society and fellow human beings.
- To inculcate values of equality, unity and justice.

Mission:

Akkineni Nageswara Rao College was started, as The GudivadaCollege in 1950, with the mission of providing education to theyouth from agrarian background and to cater to the societal needsby shaping them to be leaders in their chosen fields.

As a pioneer in the rural setting, the college wishes to providequality education to students in their chosen discipline.

The college wishes to equip students with problem solving skills;leadership qualities, good communication, interpersonal skills,collaboration and research temper.

The students leaving this college should be able to cultivateinnovative approaches to engage with others outside the traditionalborders of the college campus and try to influence the societyregionally, nationally, and globally.

The main objectives of Induction Programme:

New students enter an institution with diverse thoughts, backgrounds and preparations. It is important to help them adjust to the new environment and inculcate in them the ethos of the institution with a sense of larger purpose.

The Induction Program is designed to make the newly joined students feel comfortable, sensitize them towards exploring their academic interests and activities, reducing competition and making them work for excellence, promote bonding within them, build relations between teachers and students, give a broader view of life, and building of character.

Its purpose is to make the students feel comfortable in their new environment, open them up, set a healthy daily routine, create bonding in the batch as well as between faculty and students, develop awareness, sensitivity and understanding of the self, people around them, society at large, and nature. Transition from school to university/college life is one of the most challenging events in student's life. Therefore, it should be taken seriously, and as something more than the mere orientation program.

Preface:

Induction Programme for M.Sc. first-year chemistry students was organized on 14th December to 21nd December 2022 at PG Department of Chemistry. College Secretary and Correspondent Sri K. S. Apparao present as Chief Guest.Dr.P.J.S. Kumar, Principal Dr M. Sivanadh Vice- Principal, Smt. K. SUbhashini, Head of the Department and other faculty members of the department, PG first-year students werepresent.

Akkineni Nageswara Rao College welcome poster for Student Induction Programme – 2022-23, 14 December, 2022

Overview of the Induction Program:

Day 1: Inaugural session

Head Smt. K. Subhashini welcome M.Sc first-year students. She introduced student about the chemistry department and all departmental colleagues, their research areas, research publication, teaching experience etc. She also explained in detail on the various infrastructure, laboratories, department library, student associations, curricular and extracurricular activities, clubs, their importance in a student's life, publications and various achievements of the department. The achievements and the publications of the faculty at national and international levels were the key highlights.

Day 2: Introduction to Curriculum

A well-crafted curriculum serves as a reference to ensure that students are on the right track. Its components are designed to develop concepts, from a basic level to increasingly complex topics or skills.

Dr.M.Sivanadh, Associate Professor, started the session on Curriculum by Welcoming all the students for their wonderful journey that is yet to begin in ANRC. He assured them that this journey will turn up into a glorious chapter in their lives. Introducing the students to the field of Organic Chemistry, educated the students about the Importance of Organic Chemistry field in present Society and the wonders being created by the latest technologies in different fields of Pharama, Research, Agriculture, Health.

The two years curriculum was explained to them in detail. Highlighted the importance of each subject. Enlighted the students that they can choose subject with interest of their own to become masters in a particular area. The students listened the session very eagerly and interestingly.

Day 3: Out Come based Education-OBE

Smt. D. Vimala Kumari, Lecturer, Department of PG Chemistry energized the session by introducing the students with the concept of Outcome-Based Education (OBE). OBE is a student-centric teaching and learning methodology in which the course delivery, assessment

are planned to achieve stated objectives and outcomes. It focuses on measuring student performance i.e. outcomes at different levels.

OBE makes students more employable by equipping them with knowledge and skills as required by the employers. This framework helps in building learner competencies and makes students life-long learners. The session commenced with the explanation of the Department Vision and Mission Program Educational Objectives (PEOs), Program specific outcomes

(PSOs) and Program Outcomes (POs) were elaborated. The alignment of various PEOs and Mission was discussed. The session focused on the various learning methods and how the

PG department of Chemustry has adopted some of the most effective and modern methods of effective learning. With the clear definition of various course and their respective outcomes, students were taken through in detail what are the key expectations from them and expected to achieve at the end of every course and subject. The process of framing Course outcomes (each unit is mapped to one course outcome), CO-PO mapping was also described with examples.

Day 4:Student Projects, Online Courses & E-Resourses

Smt. K. Subhashini, PG Department of Chemistry, information has been given about projects like mini projects, Internship projects, Main projects. the way of allocating project guides, duration of the project, viva-voce, selecting best project are explained in detail to the students.

She has been given something informative and valuable sources for e-learning platforms like Swayam-NPTEL and shared them with students.

Day 5: Career Opportunities In Private/Public Sectors, Higher Education Avenues &Entrepreneurship

Smt. G. Geeta Sri lecturer, PG Department of Chemistry energized the session with various career opportunities available for the students after completion of their Programmee were discussed extensively. The students were appraised on various jobs profiles such as a Chemist in R&D, Analytical R&D, QC, QA in Pharmaceutical Industry and what it takes to be a successful professional and alternative options like, taking up CSIR-NET, SLET,GATE,GRE examination and pursuing higher studies.

Day6:Evaluation Systems and Grading Systems

Dr Sivanadh Musunuri Controller of Examinations, ANRC have addressed the 1st Year Students on the occasion of the Induction Programme regarding Evaluation System and Grading System in ANRC integrated assessment of students performance through examinations.

The featured points discussed are as follows:

- ➢ Marks distribution -theory and lab
- ➢ Internal exam
- ➢ External exam
- ➢ Evaluation procedure for theory courses
- ➢ Award of grades

- Award of class

- Declaration of results

- Malpractice

- Re-valuation and personal verification

- Supplementary examination

- Documents- marks sheet, CMM, PC and OD

- Exam portal

Day7: **A tour to get familiarize the common amenities of the college like Library, laboratories of the department, central facilities**

Smt. D. Vimala Kumari lecturer, PG Department of Chemistry started session with warm welcome and discussed about the common amenities of the college like Central library, laboratories, sports room and gymnasium, cafeteria, playground and department laboratories.

AKKINENI NAGESWARA RAO COLLEGE

GUDIWADA -521 301

P.G. Department of Commerce & Business Administration

Organizes

Induction Programme for
M.B.A. First Year Students

During

23st November 2022 to 30st November 2022

About the College:

AKKINENI NAGESWARA RAO COLLEGE

<u>Vision & Mission</u>

Vision:

The vision of the college is to contribute to the advancement of knowledge through teaching, research, publications and dissemination of information.

To this end the College strives:

- To train students to acquire good communication skills and leadership qualities and to mould them to be global citizens.
- To offer relevant / need based courses from time to time.
- To promote interaction with industry.
- To develop critical thinking among students.
- To make students conscious of their duty to the society and fellow human beings.
- To inculcate values of equality, unity and justice.

Mission:

Akkineni Nageswara Rao College was started, as *The Gudivada College* in 1950, with the mission of providing education to the youth from agrarian background and to cater to the societal needs by shaping them to be leaders in their chosen fields. As a pioneer in the rural setting, the college wishes to provide quality education to students in their chosen discipline.

The college wishes to equip students with problem solving skills; leadership qualities, good communication, interpersonal skills, collaboration and research temper.

The students leaving this college should be able to cultivate innovative approaches to engage with others outside the traditional borders of the college campus and try to influence the society regionally, nationally, and globally.

The main objectives of Induction Programme:

New students enter an institution with diverse thoughts, backgrounds and preparations. It is important to help them adjust to the new environment and inculcate in them the ethos of the institution with a sense of larger purpose.

The objective of this program was to acclimatize the students to the new environment and get them acquainted with the institution culture. The induction program comprised of interesting activities like management games, talent hunt, team building activities, corporate guest lectures, campus orientation and social sensitization sessions. The rationale for induction was to ensure a smooth transition for the students into the university system. The Induction Program is designed to make the newly joined students feel comfortable, sensitize them towards exploring their academic interests and activities, reducing competition and making them work for excellence, promote bonding within them, build relations between teachers and students, give a broader view of life, and building of character.

Its purpose is to make the students feel comfortable in their new environment, open them up, set a healthy daily routine, create bonding in the batch as well as between faculty and students, develop awareness, sensitivity and understanding of the self, people around them, society at large, and nature. Transition from school to university/college life is one of the most challenging events in student's life. Therefore, it should be taken seriously, and as something more than the mere orientation program.

Preface:

Induction Programme for M.B.A. first-year students was organized on 23rd Nov. 2022 to 30th Nov. 2022 at PG Seminar College Secretary and Correspondent Sri K. S. Appa rao present as Chief Guest, Dr. P.J.S. Kumar, Principal, Dr. M.Sivanath, Vice Principal and Dr. C. Lakshmi Nath, Head, P.G. Department Commerce & Business Administration and other faculty members of the department, PG first-year students were present.

The programme started with a warm welcoming session by the Director of the Institute Dr. P.J.S. Kumar welcoming the students and explaining his strategies to have good academic year so students can get holistic development while adhering to social distancing norms. A total of 74 students participated in this program which was conducted from 23rd Nov. 2022 to 30th Nov. 2022. All the

students were divided into two batch Group A and B to facilitate the programme with social distancing guidelines.

Dr. C. Lakshmi Nath, Head, P.G. Department of Commerce & Business Administration led the Induction Program along with his team Dr. M.B.Suvarchala, Associate Professor, Mr. K. Hima Giridhara Rao, Associate Professor, Mr. Md. Saleem, Associate Professor, Mr. V. Nagendra Kumar, Assistant Professor, Mr. M.Bharat Kumar and other faculty members of the Department along with student volunteers of second year programs who worked extensively to ensure that the induction was well organized. The following report includes the schedule and brief notes on the various events conducted as part of the induction program.

Date	Time	Activity/ Event	Name of the Resource Person/ Faculty
23-11-2022 (WED)	10 a.m. to 1 p.m.	• Commencement of I year MBA for the academic year 2022-23 • Inaugural speeches and interaction with the students and parents.	Sri. K.S. Appa Rao, Secretary & Correspondent, Dr. P.J.S.Kumar Principal, Dr. M.Sivanadh, Vice Principal, Dr. C.Lakshmi Nath, Head, PG Dept. of Commerce & Business Administration Dr. S. Sankar, Advisor
24-11-2022 (THU)	10 a.m. to 1 p.m.	M.B.A. Curriculum	Dr. M.B.Suvarchala, Associate Professor
25-11-2022 (FRI)	10 a.m. to 1 p.m.	Outcome-Based Education (OBE).	Mr. K. Hima Giridhara Rao,Assoicate Professor
26-11-2022 (SAT)	10 a.m. to 1 p.m.	Student Projects, Industrial Study Visits, Online Courses & E-Resources	Mr. Md. Saleem Associate Professor
28-11-2022 (MON)	10 a.m. to 1 p.m.	Career Opportunities	Mr. V. Nagendra Kumar , Assistant Professor
29-11-2022 (TUE)	10 a.m. to 1 p.m.	Evaluation Systems and Grading Systems	Dr. M.Sivanadh, Controller of Examinations
30-11-2022 (WED)	10 a.m. to 1 p.m.	Campus Tour	Mr. M.Bharth kumar Assistant Professor

P G DEPARTMENT OF BUSINESS ADMINISTRATION

Welcome

First year Students of

M.B.A. 2022-2024 Batch

For

Student Induction Programme—

23st November 2022 to 30st November 2022

Overview of the Induction Program:

Day 1: Inaugural session

Dr. C. Lakshmi Nath, Head, P.G. Department of Commerce & Business Administration welcomes the MBA first-year students. He introduced students about the Department and the particulars of all Faculty Members, their qualifications, areas of research, research publications, teaching experiences etc. He also explained in detail on the various infrastructure, laboratories, department library, student associations, Industrial Study Visits, curricular and

extracurricular activities, clubs, their importance in a student's life, publications and various achievements of the department. The achievements and the publications of the faculty at national and international levels were the key highlights.

Principal, Dr.P.J.S.Kumar, and Vice Principal Dr.M.Sivanadh addressed the students and introduced students about various bodies of the College like entrepreneurial cell, extracurricular/ co-curricular activities, eco clubs, women development centre, placement cell and their utilization for the all-round development of student's life. The students listened the session very eagerly and interestingly.

Sri. K.S.Appa Rao garu, Secretary & Correspondent and Dr. S. Sankar, Advisor of the college greeted and blessed the students for their interest in choosing this programme in their prestigious institute and wished them all the best in utilizing the services offered by the college and shape themselves as great citizens of the nation by bringing name and fame to their family, the college and the nation.

Day 2: Introduction to Curriculum

Dr. M.B.Suvarchala, Associate Professor, started the session on Curriculum by Welcoming all the students for their wonderful journey that is yet to begin in ANRC. She assured them that this journey will turn up into a glorious chapter in their lives. A well-crafted curriculum serves as a reference to ensure that students are on the right track. Its components are designed to develop concepts, from a basic level to increasingly complex topics or skills.   Introducing the students to the field of Management and Business Administration, educated the students about the Importance of Managing Life and Career in present Society and the wonders being created by the latest technologies in different fields of Education, Research, Pharma, Tourism, Agriculture, Health and so on. The two years curriculum was explained to them in detail. She highlighted the importance of each course in the MBA Programme in detail. She also enlightens the students that they can choose specialization courses of their own interest to become masters in a particular area. The students listened the session very eagerly and interestingly.

Day 3: Outcome based Education-OBE

Mr. K. Hima Giridhara Rao, Associate Professor, PG Dept. of Business Administration energized the session by introducing the students with the concept of Outcome-Based Education (OBE). OBE is a student-centric teaching and learning methodology in which the course delivery, assessment are planned to achieve stated objectives and outcomes. It focuses on measuring student performance i.e. outcomes at different levels. OBE makes students more

employable by equipping them with knowledge and skills as required by the employers. This framework helps in building learner competencies and makes students life-long learners. The session commenced with the explanation of the Department Vision and Mission Program Educational Objectives (PEOs), Program Specific Outcomes (PSOs) and Program Outcomes (POs) were elaborated. The alignment of various PEOs and Mission was discussed. The session focused on the various learning methods and how the PG department of has adopted some of the most effective and modern methods of effective learning. With the clear definition of various course and their respective outcomes, students were taken through in detail what are the key expectations from them and expected to achieve at the end of every course and subject. The process of framing Course outcomes (each unit is mapped to one course outcome), CO-PO mapping was also described with examples.

Day 4: Student Projects, Industrial Study Visits, Online Courses & E-Resources

Mr. Md. Saleem, Associate Professor, PG Department of Commerce & Business Administration, gave information about projects like mini projects, Internship projects, Main projects and the way of allocating project guides, duration of the project, viva-voce, selecting best project are explained in detail to the students. He overviewed on the Industrial Study Tours as well as the Industrial Study Visits for the MBA Students particularly. He also gave more informative and valuable sources for e-learning platforms like Swayam-NPTEL for doing Massive Open Online Courses (MOOCs) and other digital platforms available for students to improve their knowledge.

Day 5: Career Opportunities in Public and Private Sectors, Higher Education Avenues & other options like Entrepreneurship

Mr. V. Nagendra Kumar, Assistant Professor, PG Department of Commerce & Business Administration energized the session with various career opportunities available for the students after completion of their Programme were discussed extensively. The students were appraised on various jobs profiles such as a Finance Manager, Marketing Manager, Production Manager, Stock Analyst, R&D, Opportunities in Software, Tourism, Health, Pharmaceutical Industry and so on. He also highlighted that it takes to be a successful professional and alternative options like, taking up CSIR-NET, SLET, GATE, GRE examination and pursuing higher studies.

Day6: Evaluation Systems and Grading Systems

Dr. M. Sivanadh Controller of Examinations, ANRC, addressed the MBA First Year Students on the occasion of the Induction Programme regarding *Evaluation System and Grading*

System in ANRC integrated assessment of students' performance through examinations.

The featured points discussed are as follows:

- ➤ Marks distribution -theory and lab
- ➤ Internal exam
- ➤ External exam
- ➤ Evaluation procedure for theory courses
- ➤ Award of grades
- ➤ Award of class
- ➤ Declaration of results
- ➤ Malpractice
- ➤ Revaluation and personal verification
- ➤ Supplementary examination
- ➤ Documents- marks sheet, CMM, PC and OD
- ➤ Exam portal

Day7: **A tour to get familiarize the common amenities of the college like Library, laboratories of the department, central facilities**

Mr. M.Bharth kumar, Assistant Professor, Assistant Professor, PG Department of Commerce & Business Administration, started session with warm welcome and discussed about the common amenities of the college like Central library, R.O water plants, laboratories, sports room and gymnasium, cafeteria, playground, dining halls for boys and girls, and department library. He demonstrated the use of Internet Lab, Computer Lab for both the M.B.A. Students' as per their curriculum and also using the computer laboratories for doing their project work reports, industrial study visit reports. He intimated the students about how to use the Library hours for reviewing the new editions of textbooks, journals, magzines, newspapers for the business related matters, research articles and updated topics in subjects. He showed the placement room, Research Cell of the college for getting help in clarifying their career related doubts and building their resumes.   Also, he elaborated on the use of gymnasium, sports room and playground for the interested students. He informed the students on the basic amenities i.e. about the availability of refreshments from the college canteen, dining halls for boys and girl students and also shown the special waiting rooms for girl students

AKKINENI NAGESWARA RAO COLLEGE

GUDIWADA -521 301

Department of Computer Science

Organizes

Induction Programme for First Year Students

MCA and M.Sc Computer Science

From

12th to 19th December 2022

About the College:

AKKINENI NAGESWARA RAO COLLEGE

Vision & Mission

Vision:

The vision of the college is to contribute to the advancement of knowledge through teaching, research, publications and dissemination of information.

To this end the College strives:

- To train students to acquire good communication skills and leadership qualities and to mould them to be global citizens.
- To offer relevant / need based courses from time to time.
- To promote interaction with industry.
- To develop critical thinking among students.
- To make students conscious of their duty to the society and fellow human beings.
- To inculcate values of equality, unity and justice.

Mission:

Akkineni Nageswara Rao College was started, as The Gudivada College in 1950, with the mission of providing education to the youth from agrarian background and to cater to the societal needs by shaping them to be leaders in their chosen fields.

As a pioneer in the rural setting, the college wishes to provide equality education to students in their chosen discipline.

The college wishes to equip students with problem solving skills; leadership qualities, good communication, interpersonal skills, collaboration and research temper.

The students leaving this college should be able to cultivate innovative approaches to engage with others outside the traditional borders of the college campus and try to influence the society regionally, nationally, and globally.

The main objectives of Induction Programme:

New students enter an institution with diverse thoughts, backgrounds and preparations. It is important to help them adjust to the new environment and inculcate in them the ethos of the institution with a sense of larger purpose.

The Induction Program is designed to make the newly joined students feel comfortable, sensitize them towards exploring their academic interests and activities, reducing competition and making them work for excellence, promote bonding within them, build relations between teachers and students, give a broader view of life, and building of character.

Its purpose is to make the students feel comfortable in their new environment, open them up, set a healthy daily routine, create bonding in the batch as well as between faculty and students, develop awareness, sensitivity and understanding of the self, people around them, society at large, and nature. Transition from school to university/college life is one of the most challenging events in student's life. Therefore, it should be taken seriously, and as something more than the mere orientation program.

Preface:

InductionProgrammeforfirst year students of MCA and M.Sc. (CS)was organized on 12th December to 19th December 2022 in the PG Seminar Hall. Dr. P.J.S. Kumar, Director presided the programme. Secretary and Correspondent of the College Sri K. S. Apparao attended as Chief Guest. Sri U. Surya Kumar, Principal, Dr.M.Krishna Mohan ,Vice- Principal, faculty members of the department and PG Computer Science first-year students were present.

AKKINENI NAGESWARA RAO COLLEGE:: GUDIVADA
(An Autonomous college under the jurisdiction of Krishna University, Machilipatnam)

Re-Accredited by NAAC at " A" Grade

An ISO 9001: 2015 Certified Organization

DEPARTMENT OF COMPUTER SCIENCES

Welcome

All Students of first year

MCA, M.Sc (Computer Science)

For

Student Induction Programme—2022-23

12- 19th December 2022

Overview of the Induction Program:

Day 1: Inaugural session

Director Dr.P.J.S.Kumar welcome MCA and M.sc(COMPUTERS SCIENCE) first-year students. He introduced student about the PG department and all departmental colleagues, their research areas, research publication, teaching experience etc. He also explained in detail on the various infrastructure, laboratories, department library, student associations, curricular and extracurricular activities, clubs, their importance in a student's life, publications and various achievements of the department. The achievements and the publications of the faculty at national and international levels were the key highlights.

Day 2: Introduction to Curriculum

A well-crafted curriculum serves as a reference to ensure that students are on the right track. Its components are designed to develop concepts, from a basic level to increasingly complex topics or skills.

Sri M. Jesu Babu, Department of Computer Science, started the session on Curriculum by Welcoming all the students for their wonderful journey that is yet to begin in ANRC. He assured them that this journey will turn up into a glorious chapter in their lives. Introducing the students to the field of Sciences, educated the students about the Importance of Science Groups in present Society and the wonders being created by the latest technologies in different fields of Information Technology, Research and in other fields.

The two years curriculum was explained to them in detail. Highlighted the importance of each subject. Enlighted the students that they can choose subject with interest of their own to become masters in a particular area. The students listened the session very eagerly and interestingly.

Day 3: Out Come based Education-OBE

Sri M. Ravi Sundar, Assosiate Professor, Department of Computer Science energized the session by introducing the students with the concept of Outcome-Based Education (OBE). OBE is a student-centric teaching and learning methodology in which the course delivery, assessments are planned to achieve stated objectives and outcomes. It focuses on measuring student performance i.e. outcomes at different levels.

OBE makes students more employable by equipping them with knowledge and skills

as required by the employers. This framework helps in building learner competencies and makes students life-long learners. The session commenced with the explanation of the Department Vision and Mission Program Educational Objectives (PEOs), Program specific outcomes (PSOs) and Program Outcomes (POs) were elaborated. The alignment of various PEOs and Mission was discussed. The session focused on the various learning methods and how the

PG department of Sciences has adopted some of the most effective and modern methods of effective learning. With the clear definition of various course and their respective outcomes, students were taken through in detail what are the key expectations from them and expected to achieve at the end of every course and subject. The process of framing Course outcomes (each unit is mapped to one course outcome), CO-PO mapping was also described with examples.

Day 4: Student Projects, Online Courses & E-Resourses

Smt A.Durga Bhavani, Assistant Professor, Department of Computer Science, has been given information about projects like mini projects, Internship projects, Main projects. The way of allocating project guides, duration of the project, viva-voce, selecting best project are explained in detail to the students.

He has been given something informative and valuable sources for e-learning platforms like Swayam-NPTEL and shared them with students.

Day 5: Career Opportunities In Private/Public Sectors, Higher Education Avenues &Entrepreneurship

Smt T.Veena, Assistant Professor, Department of Computer Science energized the session with various career opportunities available for the students after completion of their Programmee were discussed extensively. The students were appraised on various jobs profiles such as Software Engineer,Network Engineer, Systems analyst, Computer scientist, Computer hardware engineer,

Database Administrator, System Administrator, Front-end web development, Technical Support,

Mobile app development Analyst in IT Industry , Banking Sector and Government Sector jobs and what it takes to be a successful professional and alternative options like, taking up RSET, APPGSET,GATE and pursuing higher studies.

Day6:Evaluation Systems and Grading Systems

Dr M.Sivanadh Controller of Examinations, ANRC have addressed the 1st Year Students on the occasion of the Induction Programme regarding Evaluation System and Grading System in ANRC integrated assessment of students performance through examinations.

The featured points discussed are as follows:

- ➤ Marks distribution -theory and lab
- ➤ Internal exam
- ➤ External exam
- ➤ Evaluation procedure for theory courses
- ➤ Award of grades
- ➤ Award of class
- ➤ Declaration of results
- ➤ Malpractice
- ➤ Re-valuation and personal verification
- ➤ Supplementary examination
- ➤ Documents- marks sheet, CMM, PC and OD
- ➤ Exam portal

Day7: **A tour to get familiarize the common amenities of the college like Library, laboratories of the department, central facilities**

Smt. B.Tarmila Devi, Assistant Professor, Department of Computer Science started session with warm welcome and discussed about the common amenities of the college like Central library, laboratories, sports room and gymnasium, cafeteria, playground and department laboratories.

NATIONAL LEVEL WORKSHOP ON OUTCOME BASED EDUCATION

**National Level Workshop on Outcome Based Education (OBE) –
Possibilities and Challenges**

**22nd November 2019
Organized by: Internal Quality Assurance Cell**

A National Level Workshop was organized by Internal Quality Assurance Cell on 'Outcome Based Education (OBE) – Possibilities and Challenges (Under the assistance of UGC Autonomous Grant) on 22nd November 2019.

Objectives:

- Outcomes Based Education (OBE) helps the students know in clear terms what programmeme and course learning outcomes are expected to be demonstrated by the holder of a degree / qualification.

- OBE would also enable students, parents, employers and others to understand the nature and level of learning outcomes.

- The ultimate aim of this exercise is to make students capable of demonstrating the outcomes for each course on the one hand and prepare them for further study, employment, and citizenship roles.

https://www.anrcollege.edu/images/pdf/outcomes.pdf

ANDHRA PRADESH STATE COUNCIL OF HIGHER EDUCATION

Prof. K. Hemachandra Reddy
Chairman

Message

I am happy to know that Akkineni Nageswara Rao College, Gudivada is organising a National level Workshop on Outcome Based Education- Possibilities and Challenges on 22nd November 2019. The Education system in India is designed, from ages, keeping in mind the outcomes of the education at different levels. However, they are not explicitly and clearly defined and described and communicated. All the stakeholders of the education system had their own assumptions on the outcomes which are often not in consistence and many times became conflicting to each other. The absence of clearly defined learning outcomes created confusions in the system and as a result the gap between expectations of the industry and the competencies of the students coming out of the education institutions is widening.

The University Grants Commission has rightly identified the gap and working on developing Learning Outcome Based Curriculum Framework for all the higher education programmes. This approach makes the system more focussed with absolute clarity on what kind of education is imparted and why and how it is being given to the students. I am happy to inform that APSCHE has already taken the initiative of designing Outcome Based Curriculum in all under graduate programmes and a Committee is working hard to introduce the new curriculum from the academic year 2020-21.

The theme chosen for the workshop is timely and relevant. I congratulate the organizers and extend my warm greetings. I wish the workshop will generate valuable outcomes.

Professor K. Hemachandra Reddy

Chairman

Andhra Pradesh State Council of Higher Education

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ANDHRA PRADESH
STATE COUNCIL OF HIGHER EDUCATION
(A Statutory Body of the Govt. of A.P.)

Prof. K. Rama Mohana Rao
Vice Chairman

Dt: 26.12.2019

Message

I am extremely happy to know that ANR College, Gudiwada is organizing a National workshop on Outcome Based Education. The higher education system in India has not adapted to the modern systems of learning and in a way lost its focus. Majority of the graduates are unable to rise to the expectations of the business, industry and other sectors of the economy due to the reason that there is a mismatch between what is expected by the industry and what is learned at the education institutions. It is the time to realize the gaps and find the ways to fill them with an objective of developing global level competencies among students. Outcome based education is a wonderful strategy to train the human resource in such a way that can make them face challenges in future. It helps in eliminating irrelevant and helps in focusing on relevant areas of learning.

I congratulate the Management and the organizers of the workshop for choosing the right theme. I wish the workshop a grand success.

Best wishes

(K. RAMA MOHANA RAO)

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KRISHNA UNIVERSITY

Prof. Y.K. Sundara Krishna
Vice-Chancellor (I/c)

MESSAGE

I am elated to learn that Akkineni Nageswara Rao College (Autonomous), Gudivada is organising a National Level Workshop on **Outcome Based Education (OBE) – Possibilities and Challenges** (Under Assistance of UGC Autonomous Grant) on 22nd November 2019. Krishna University, right from its inception has a good working relation with A.N.R. College. I also recall how A.N.R. College successfully organized a Workshop on **Standardizing Question Paper Setting under CBCS Pattern** in August 2015 in association with RUSA and Krishna University.

Though the college is functioning in a rural setting it has been providing relevant programs in tune with the changing needs of our state. UGC said *"A high priority task in the context of future education development agenda in India is fostering quality higher education."* Along with APSCHE, Krishna University has been taking initiatives in our state to see that the directions of the UGC are taken up by Colleges in Andhra Pradesh.

I believe that such workshops like this will bring academics together and serve the cause of education. I congratulate the organizers of this workshop and extend my warm wishes. I am sure that Akkineni Nageswara Rao College will continue to maintain its excellence and character with great distinction.

Prof. Y. K. Sundara Krishna
Vice-Chancellor
Krishna University

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Message

KONIJETI RAMA KRISHNA
Dean Quality & Professor of Mechanical Engineering,
Koneru Lakshmaiah Education Foundation
Green Fields, Vaddeswaram, Guntur-522502
Andhra Pradesh, India
Email: drkrk@kluniversity.in - Tel: +91-994-813-1461
ORCID: 0000-0002-6566-7530
https://www.kluniversity.in/IQAC.aspx

I am glad to know that Akkineni Nageswara Rao College, Gudivada is conducting a National Level Workshop on *Outcome Based Education (OBE) Possibilities and Challenges* under the assistance of UGC Autonomous Grant. This is a pioneering workshop which comes under the ambit of UGC's LOCF. We at K.L. University organised such an event mainly for faculty and students of Engineering Colleges. It is heartening to say that A.N.R. College, though situated mainly in a rural locale, has taken up this task of organising a workshop on OBE. I hope that there will be elaborate discussions on Course Outcomes, Program Outcomes and Program Specific Outcomes. The theme chosen for the workshop is of a topical nature and since I am invited to be Chief Guest for the Valedictory Session, I wish to see first-hand the participants and their experiences. I wish the organisers the very best in this endeavour.

KONIJETI RAMA KRISHNA

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Obe photos

Krishna 521263
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India
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SEMESTER END EXAMINATION RESULTS

(FOR REFERENCE)

LIST OF STUDENTS ENROLLED, APPEARED & PASSED IN THE FINAL SEMESTER EXAMINATIONS (A.Y. 2022-23)

2022-2023

Programme	Appeared	Passed	Percentage
B.A	22	22	100.00
B.Com (General)	46	46	100.00
B.Com (Comp App)	43	43	100.00
B.Sc (MPC)	40	21	52.50
B.Sc (MPCS)	63	52	82.54
B.Sc (MSCS)	58	44	75.86
MBA	82	79	96.34
MCA	64	63	98.44
M.Com	13	13	100.00
M.Sc (Mathematics)	9	9	100.00
M.Sc (Computer Science)	12	12	100.00
M.Sc (Organic Chemistry)	33	33	100.00

2022-2023 Result Analysis

Course	Appeared	Passed	Percentage
B.A	22	22	100.00
B.Com (General)	46	46	100.00
B.Com (Comp App)	43	43	100.00
B.Sc (MPC)	40	21	52.50
B.Sc (MPCS)	63	52	82.54
B.Sc (MSCS)	58	44	75.86
MBA	82	79	96.34
MCA	64	63	98.44
M.Com	13	13	100.00
M.Sc (Mathematics)	9	9	100.00
M.Sc (Computer Science)	12	12	100.00
M.Sc (Organic Chemistry)	33	33	100.00

■ Appeared ■ Passed ■ Percentage
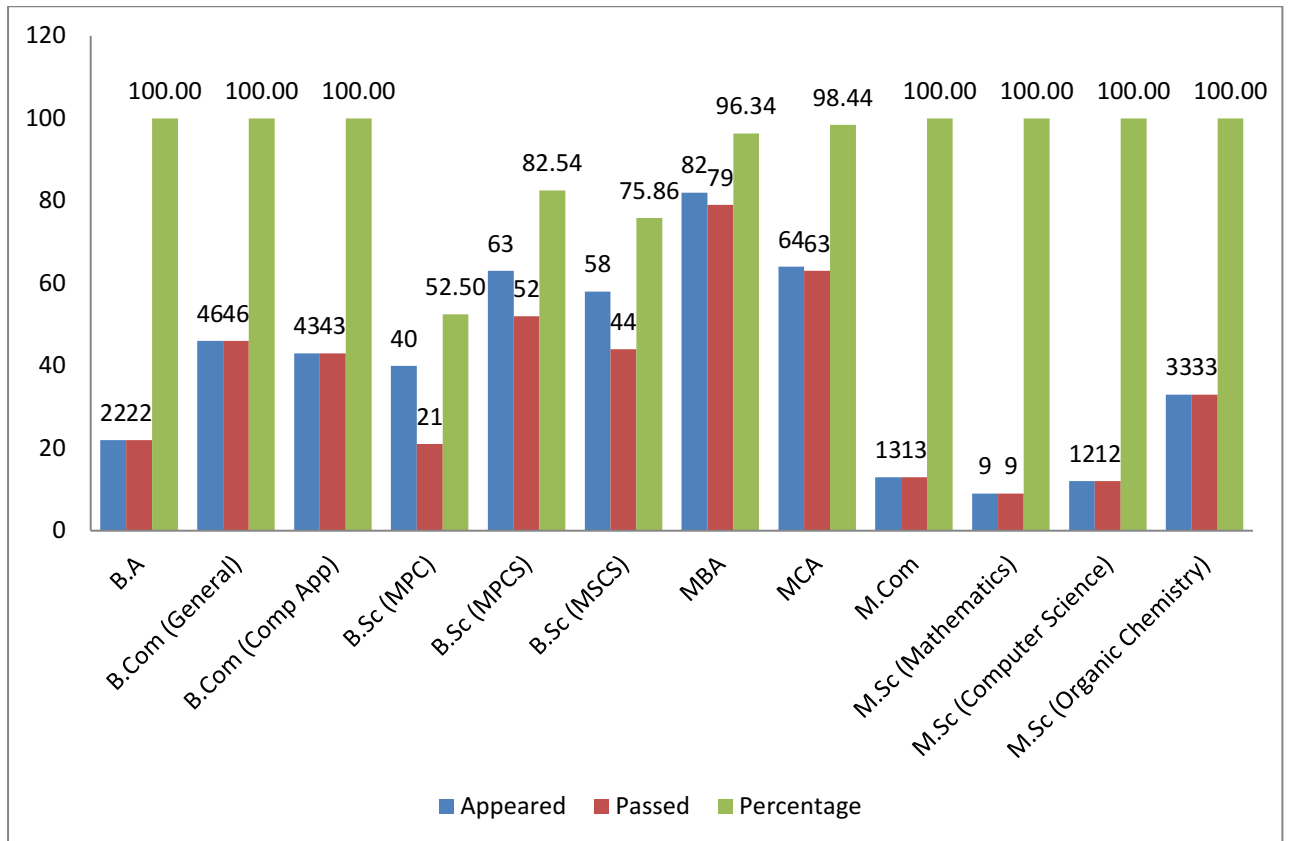
LIST OF STUDENTS APPEARED & PASSED IN THE FINAL SEMESTER EXAMINATIONS (A.Y. 2021-2022)

2021-2022

Programme	Appeared	Passed	Percentage
B.A	26	22	84.62
B.Com (General)	55	50	90.91
B.Com (Comp App)	42	42	100.00
B.Sc (MPC)	40	38	95.00
B.Sc (MPCS)	61	54	88.52
B.Sc (MSCS)	56	52	92.86
MBA	82	81	98.78
MCA	31	31	100.00
M.Com	18	18	100.00
M.Sc (Mathematics)	7	7	100.00
M.Sc (Computer Science)	6	6	100.00
M.Sc (Organic Chemistry)	25	25	100.00
M.Sc (Physics)	3	3	100.00

2021-2022 Result Analysis

Program	Appeared	Passed	Percentage
B.A	26	22	84.62
B.Com (General)	55	50	90.91
B.Com (Comp App)	42	42	100
B.Sc (MPC)	40	38	95
B.Sc (MPCS)	61	54	88.52
B.Sc (MSCS)	56	52	92.86
MBA	82	81	98.78
MCA	31	31	100
M.Com	18	18	100
M.Sc (Mathematics)	7	7	100
M.Sc (Computer Science)	6	6	100
M.Sc (Organic Chemistry)	25	25	100
M.Sc (Physics)	3	3	100

Legend: Appeared, Passed, Percentage

LIST OF STUDENTS APPEARED & PASSED IN THE FINAL SEMESTER EXAMINATIONS (A.Y. 2020-2021)

2020-2021

Programme	Appeared	Passed	Percentage
B.A	36	32	88.89
B.Com (General)	47	44	93.62
B.Com (Comp App)	45	38	84.44
B.Sc (MPC)	56	52	92.86
B.Sc (MPCS)	61	50	81.97
B.Sc (MSCS)	62	58	93.55
MBA	60	60	100.00
MCA	27	27	100.00
M.Com	24	24	100.00
M.Sc (Mathematics)	28	27	96.43
M.Sc (Computer Science)	16	16	100.00
M.Sc (Organic Chemistry)	26	24	92.31
M.Sc (Physics)	19	18	94.74

2020-2021 Result Analysis

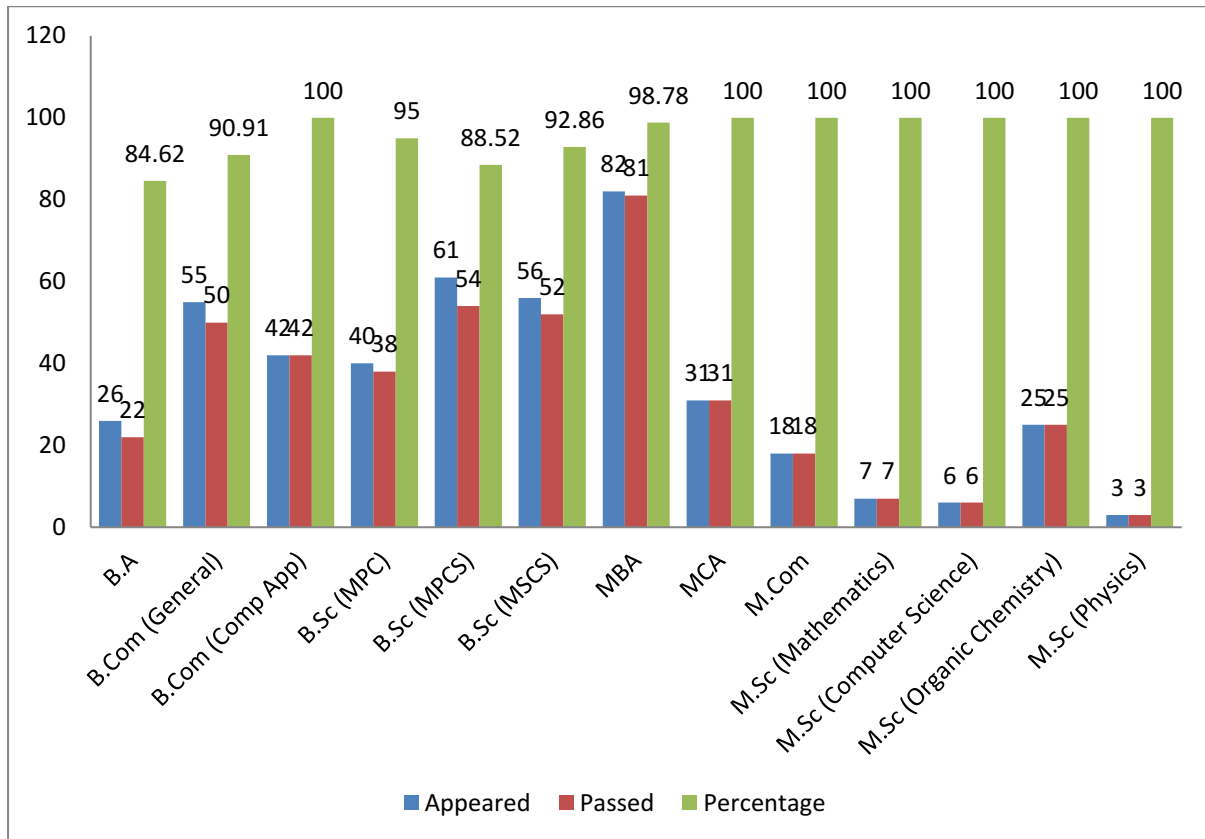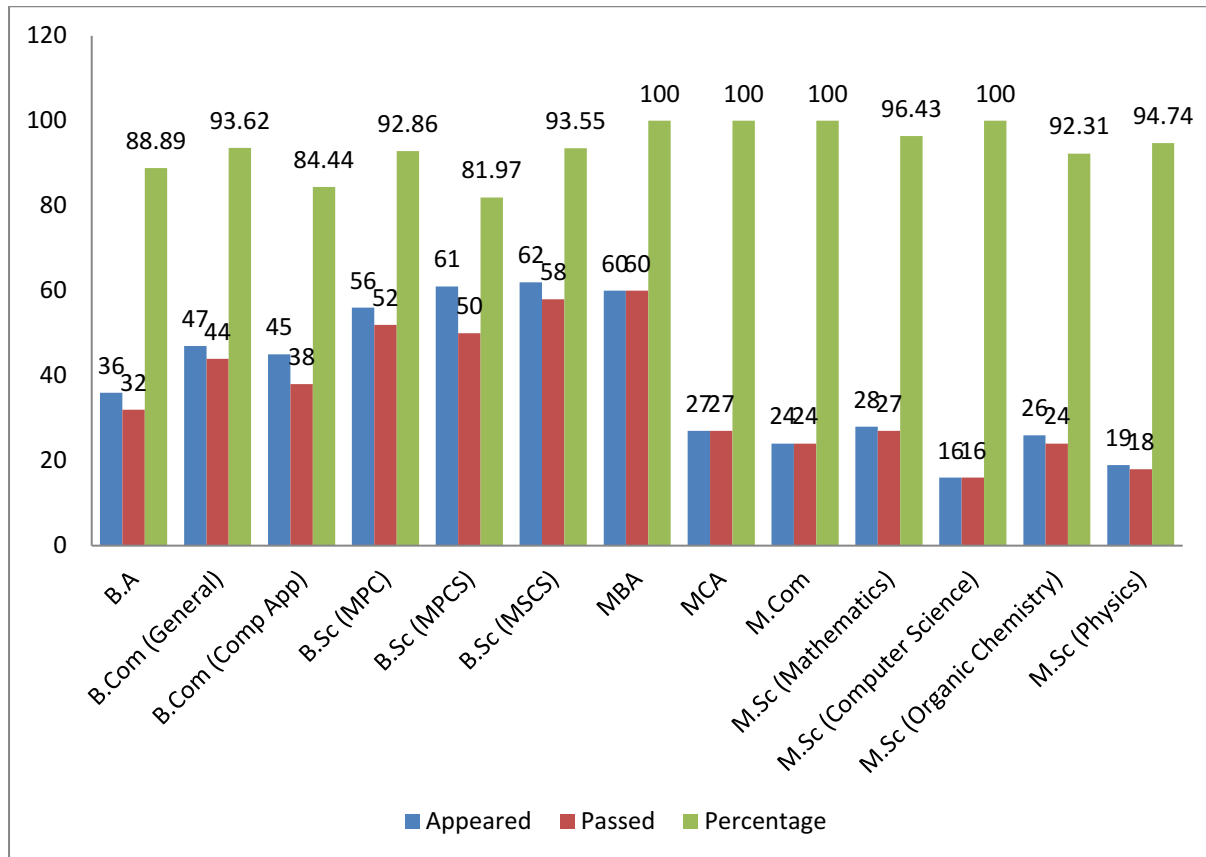| Course	Appeared	Passed	Percentage
B.A	36	32	88.89
B.Com (General)	47	44	93.62
B.Com (Comp App)	45	38	84.44
B.Sc (MPC)	56	52	92.86
B.Sc (MPCS)	61	50	81.97
B.Sc (MSCS)	62	58	93.55
MBA	60	60	100
MCA	27	27	100
M.Com	24	24	100
M.Sc (Mathematics)	28	27	96.43
M.Sc (Computer Science)	16	16	100
M.Sc (Organic Chemistry)	26	24	92.31
M.Sc (Physics)	19	18	94.74

LIST OF STUDENTS APPEARED & PASSED IN THE FINAL SEMESTER EXAMINATIONS (A.Y. 2019-2020)

2019-2020

Programme	Appeared	Passed	Percentage
MBA	57	57	100.00
M.Com	8	8	100.00
M.Sc (Mathematics)	19	18	94.74
M.Sc (Computer Science)	10	10	100.00
M.Sc (Organic Chemistry)	28	26	92.86
M.Sc (Physics)	14	14	100.00
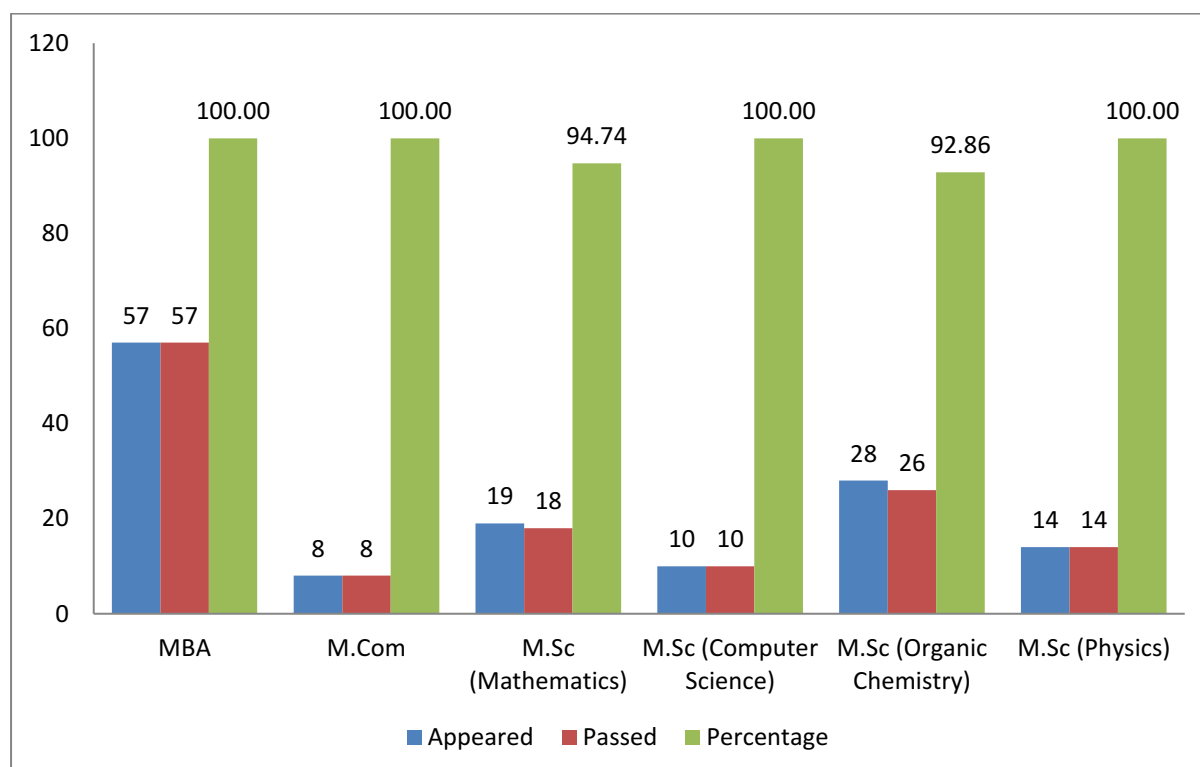
STUDENT PARTICIPATION IN ACADEMIC ACTIVITIES WITHIN THE
CLASSROOM

ACADEMIC YEAR 2018-2019

S.no	Nature of the Programme	Date	Title/Topic	Resource Person	No: Persons Presented
	WORKSHOP	27-08-2018 to 1-09- 2018	Personality Development	Sri.D.Madhusudhana Rao	80
2.	Extension Lecture	10-09-2018	Goal Setting	Prof.k.SambaSiva Rao	85
3.	Guest Lecture	06-10-2018	Communication Skills	Sri. K.Hari Prasad of RUSA	79
4.	Guest Lecture	30-01-2019	Application of Accounting & Financial Packages for Managers	Sri.G.Vijay kumar, Director of Murali Technology	84
5.	Guest Lecture	06-03-2019	Resume Building&Interview Tecniques	Sri.N.Harsha Vardhan Reddy,JCI, Gudivada	78
6.	Extension Lecture	07-03-2019	Management Education- A Sourceto Career Opportunities	Prof. Abdul Noor Basha of ANU, Guntur	75
7.	WORKSHOP	20-03-2019	Save Democracy and Change Society	Sri. N.Nitish Chandra of NGO,vijayawada	76

Prof.K.Samba Siva Rao

Sri.K.Hari Prasad RUSA

Sri. G.Vijay Kumar Murali Technologies

Sri.Harsha Vardhan JCI

Sri. Prof. Abdul Noor Basha of ANU, Guntur

Sri.N.Nitish Chandra NGO Vijayawada

AKKINENI NAGESWARA RAO COLLEGE (AUTONOMUS) GUDIVADA

P.G DEPARTMENT OF BUSINESS ADMINISTRATION

Academic year 2019-2020

S.no	Nature of the Programme	Date	Title/Topic	Resource Person	No: Persons Presented
1.	Orientation	10-07-2019	Women Empowerment in Society	Social Welfare Department Govt OF A.P	75
2.	Guest Lecture	21-08-2019	Online Marketing and Direct Selling	Sri.J.Ramesh & G.Anuradha of Online Business Solutions ,Hyd	76
3.	WORKSHOP	31-08-2019	Youth &their Mental Health	Dr.G.Sankar Rao & his Team	82
4.	Guest Lecture	11-09-2019	Management Education –Trends	Prof.G.Vidyanath	85
5.	Extension Lecture	20-09-2019	Personality Development, A Tool for Sucess	Sri.M.L Aditya	87
6.	WORKSHOP	22-11-2019	OBE	Prof .J.Rajesh Choudary of PBS College,Vja	75
7.	Guest Lecture	02-03-2020	Impact of Social Media on Business	Prof .D.Surya Chandra Rao	72
8.	WORKSHOP	16-03-2020	Enterpreneurship Development	Dr.V.Manoharan of NSIC	86

Sri. J.Ramesh Online Business Solutions HYD

Dr.G.Sankhar Rao

Dr. G.Vidyanath Osmaniya University

Sri.M.L. Aditya Personality Development Traineer

Sri.Prof.J.Rajesh Chowdary PBS.VJA

Prof.D.Surya Chandra Rao KRU

Dr.V.Manoharan NSIC

AkkINENI NAGESWARA RAO COLLEGE (AUTONOMUS) GUDIVADA

P.G DEPARTMENT OF BUSINESS ADMINISTRATION

Academic year 2020-2021

S.no	Nature of the Programme	Date	Title/Topic	Resource Person	No: Persons Presented
1.	Webinar (online)	09-09-2020	Strategy for Managing personal Finance including Mutual Funds During & After Covid-19	Sri.Nitin Joshi,Sri.Surya Kant Sharma,Sri.Ankur Mital	80
2.	Orientation	19-05-2021	CPBFI in Zoom	Sri.B.RajaSekhar Reddy of Bajaj Financial Services	80
3.	Guest Lecture	21-05-2021	Enterprenuership Development	Sri.D.MadhusudhanaRao	75

Sri.Nitin Joshi,Sri.Surya Kant Sharma,Sri.Ankur Mital

AkkINENI NAGESWARA RAO COLLEGE (AUTONOMUS) GUDIVADA
P.G DEPARTMENT OF BUSINESS ADMINISTRATION
Academic Year 2021-2022

S.no	Nature of the Programme	Date	Title/Topic	Resource Person	No: Persons Presented
1.	workshop	16-02-2022	Effective Public Speaking	Juniour Chamber International(JCI)	80
2.	workshop	26-03-2022	How to Groom Entrepreneurs	Dr.B.Geetha Reddy of APSCHE	90

Juniour Chamber International(JCI)

Juniour Chamber International(JCI)

Dr.B.Geetha Reddy of APSCHE

AkkINENI NAGESWARA RAO COLLEGE (AUTONOMUS) GUDIVADA

P.G DEPARTMENT OF BUSINESS ADMINISTRATION

Academic Year 2022-2023

S.no	Nature of the Programme	Date	Title/Topic	Resource Person	No: Persons Presented
1.	Extension Lecture	30-01-2023	India @75 – Retrospect and Prospect	Prof.K.V.Rao	90
2.	Guest Lecture	13-3-2023	Future Opportunities in Abroad Education	Sri.Pottluri.V.Prasad	85
3.	Guest Lecture	16-08-2023	Career Opportunities in Insurance Sector	Sri.K.Srinadh of National Insurance Company Ltd,	90
4.	Guest Lecture	16-12-20023	Market dynamics in business	Dr.S.Ramesh Babu	70
5.	Guest Lecture	16-12-20023	Career Opportunities in Busines	Sri T.Rama Krishna	70
6.	Guest Lecture	30-12-2023	Career Opportunities In market	Sri .k.v chowdary garu I.R.S Former central vigilance commissioner	75

Prof.K.V.Rao Former V.C ANU

Sri.Pottluri.V.Prasad

Sri.K.Srinadh of National Insurance Company Ltd,

Dr.S.Ramesh Babu KLU

Sri .T. Rama Krishna H.R Manager Quality FEEDS

Sri .k.v chowdary garu I.R.S Former central vigilance commissioner

PLACEMENT DATA

Placement drive by DIVIS LABORATORIES HYDERABAD@ ANR College,

On 18 -05-2023 **DIVIS LABORATORIES HYDERABAD** Conducted Walk-In Interviews And Campus Drive In Akkineni Nageswarao College Gudivada. This Drive Was Inaugurated By ANR College Managing Committee Members Sri L.R.K. Prasad President , Sri K.S. Apparao Secretary And Correspondent, Dr.P.J.S.Kumar Principal. Dr.M.Sivanath Vice-Principal Of The College And **DIVIS LABORATORIES HR** Members. In This Drive Nearly 150 Plus Students Participated From Various Districts Of Andhra Pradesh And Msc Chemistry Students From ANR College.

ఎన్ఆర్ కళాశాలలో జాబ్ మేళా

గుడివాడ,మే 16 (వార్తాప్రభ) : స్థానిక అక్కినేని నాగేశ్వరరావు కళాశాల, గుడివాడలో దివిస్ లేబ రేటర్స్ హైదరాబాదు వారు ఈ నెల 18వ తారీఖు (గురువారం) న జాబ్ మేళా నిర్వహిస్తున్నట్లు ప్రిన్సిపాల్ డా।। పి.జె.ఎస్. కుమార్ మంగళ వారం ఒక ప్రకటనలో తెలియజేశారు. ఈ జాబ్ మేళాలకు హాజరగు విద్యార్థినీ, విద్యార్థులు డిగ్రీలో బి.ఎస్.సి. కెమిస్ట్రీ, బి.ఫార్మసీ, బి.టెక్. కెమికల్ ఇంజనీరింగ్, ఎమ్.ఎస్.సి. ఆర్గానిక్ కెమిస్ట్రీ, యమ్. ఫార్మసీ అర్హత కలిగియుండాలని తెలియజేయడమైనది. ఈ జాబ్ మేళాలకు హాజరగు విద్యార్థినీ, విద్యార్థులు తీసుకురావలసిన డాక్యుమెంట్స్ (1) రెస్యూమ్, (2) ఎస్.ఎస్.సి. మార్క్స్ మెమో, ఇంటర్ మార్కు మెమో, డిగ్రీ లేదా పి.జి. ప్రస్తుతం చదువుచున్న సెమిస్టర్ జిరాక్స్ కాపీలు, ఆధార్ జిరాక్స్ కాపీలు తీసుకొని ఎ.ఎన్.ఆర్. కాలేజీ పి.జి. సెమినార్ హాల్లో ఇంటర్యూకు హాజరుకావాలని ప్రిన్సిపాల్ తెలిపారు.

PLACEMENT DRIVE BY DIVIS LABORATORIES HYDERABAD @ ANR COLLEGE (AUTONOMOUS) GUDIVADA ON 18-05-2023.

S.NO	NAME OF THE CANDIDATE	QUALIFICATION	EMAIL-ID	CONTACT NUMBER
1.	G. Manasa	M. pharm	Hmasagub M@gmail	7032822126
2	L. Kavya	B. Pharm	Loyikavya@gmail.com	9618016229
3	Arini V N	B.Sc (chemistry)	arini.n959@gmail.com	6304624543
4.	J. Prameela	B.Sc (Chemistry)	prameelajeomu@gmail.com	8500158033
5	M. poojitha	B. Pharmacy	mathapoojithaitt@gmail.com	9000043653
6.	M. Reshma	B.Sc (Chemistry)	9999reshma@gmail.com	9000043653
7	K. Sneha	B.Sc (Chemistry)	snehakonjeti999@gmail.com	9848505209
8.	B. Sunitha	M.Sc (chemistry)	sunitha.bachas762@gmail	8340070600
9.	B. Ranjith	B pharmacy	ranjith ranjith@gmail	9100722148
10	Ch. saravani sai	B.Sc (chemistry)	saravanisai999@gmail.com	9381398389
11.	K. Lakshmi Durga Rao	B.Sc (chemistry)	lakshmidurga rao2169@gmail.com	7793557182
12	J. Siva subramanyam	B.Sc (chemistry)	sivaJaJula451@gmail.com	6304071868
13	B. Venu	B.Sc (computer)	venu bommasani8@gmail.com	7794478495
14	B. yuva sathya sai	B.Sc (chemistry)	Saibellamkondai12@gmail.com	7702081174
15	N. sai krishna	B.sc (chemistry)	nadakudidi krishna4160@gmail.com	8688538191
16	Saini. Hari krishna	B.Sc (chemistry)	saunihari krishna9@gmail.com	9573352713
17	M. suresh	B.Sc (chemistry)	sureshmedikondu sk@gmail.com	8897355693
18	Y. Pungala swamy	M.Sc (inorganic chemistry)	Kumar swamy12489@gmail.com	9389956109
19	Sudham. Kalyan	B.Sc (chemistry)	sudham kalyan@gmail.com	8008338217
20	Ch. Bibi uvitha	B. Pharmacy	chamidikondaravi78@gmail.com	9493706867
21	S. Suneel babu	B. pharmacy	SSuneelbabu15527@gmail.com	9590894436
22	D.V. Sai Ganesh	B. Pharmacy	nani2576@gmail.com	8939880117
23	K. Anil	B.Tech (MECH)	anilkolarti@gmail.com	9347365683
24.	A. Manikanta	B.Sc (chemistry)	ankamma Kanta@gmail.com	8332885799
25	Ch. Suneel	B.A	Chayanpati suneel@gmail.com	7995114140
26	Kanugula Rajesh	B.Tech mechanical	kanugularajesh776@gmail.com	7779011309
27	V. venkata Dinesh	B. pharmacy	dineshvenkatras@gmail.com	9381387918
28.	D. Ramesh	B.Tech mechanical	bavnavaresh36@gmail.com	8247204057
29	B. Lokesh	B.Sc (MPC)	lokesh nude@gmail.com	8972702597
30.	K. Eswar Sai	B.Tech (Mechanical)	eswarsai nadu9477@gmail.com	6302180051
31.	S. venkatrao Rao	B.Tech (Electrical)	venky sanjana vie@gmail.com	8328583832
32	P. Gopi thinadh	B.Tech (mech)	gopi9162a@gmail.com	8919306683
33	Ch. Vijay kumar	B.Tech (mech)	vijaykumarchoit@gmail.com	9440584721
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37	M.D. Shahina	B.Sc. Chemistry	Shahhamohammad11@gmail.com	9032002459
38	P. manasa	M.Sc chemistry	nandnambnasgoui.com	6303380265
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40.	P. Naga Sudha Rathi	M.Sc chemistry	P.sirisudha1236@gmail.com	9553965979
41	M. venkata Madhuri	M.Sc chemistry	ggi munpa@gmail.com	8179456140

18/05/23

No.	Name	Qualification / Email / Phone
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45	Ch. Baby Sravani	M.Sc chemistry sravanichenu@gmail.com 9182236738
46	B. Tejasri	M.Sc chemistry tejasrivilletula@gmail.com 9391049848
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48	A. lokeswari	M.Sc (chemistry) arjalokeswari2000@gmail.com 8555005886
49	Ch. Sravani	M.Sc chemistry ch.sravani5736@gmail.com 9228663982
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57	Ch. Chandu	M.Sc chemistry chandu.chinala16@gmail.com 6301918002
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59	k. Rakesh	M.Sc chemistry rakesh.kolluri6@gmail.com 7569451864
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61	k. Venkata Siva Kumar	M.Sc chemistry KSIVA3412@gmail.com 9573721169
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67	B. lakshmi Durga	M.Sc organic chemistry lakshmi.durga@gmail.com 9493940049
68	B.G.L. Srinivasa Rao	M.Sc organic chemistry srinuchinna.baddupalli@gmail.com 9440633755
69	B. Hemanth Naga Raju	M.Sc organic Hemanthnaidicali@gmail.com 9366489829
70	D. John Wesley	M.Sc (Organic) johnwesleyozo6@gmail.com 9701998993
71	k. Bhargav	M.Sc (organic) bhargav.korch991@gmail.com 9849551399
72	Ch. paul Kiran	M.Sc (Organic) kiranchebbayma2011@gmail.com 8897691596
73	k. Dinesh kuma	B.Tech (EEE) dineshkumar.kssv@gmail.com 9618550579
74	B. Raai	MBA (HR) divinaasi13@gmail.com 8688499475
75	A. Mzali ganesh	ITI (Fitter) ganesh.pralag264@gmail.com 6304886398
76	T. Mani Kanta	I-TI SSC monikumar.tKITA135@gmail.com 7897845358
27	R. RIYAZ KHAN	SSC Prince.diya26678@gmail.com 9014919187902
78	P. pattabhya vasanth	ITI (Fitter) vasanth.pitchuka@gmail.com 7893823699
79	R. Bhavani prasad	SCC prasad.bhavani745@gmail.com 7386429399
80	R. ganesh	ITI ganeshreddi9955@gmail.com 9550344418
81	M SURYA KIRAN	InterB suryakiran00449@gmail.com 7993899287
82	R. Ramunaidu	S.SC. Ramunaidupedda@gmail.com 9328642286
83	m. sini Babu	SSC sinibabu'e@gmail.com 7671625986
84	D. DEEKSHA	Inter baludeeksh@gmail.com 9142053541
85	k. Eswarao	ITI kodaeswaru@gmail.com 9201003246
86	k. Kusuma	MBA (HR) kusumakusuma064@gmail.com 8688144876

18/05/23

❖ **Placement drive by SRI CHAITANYA TECHNO Schools@ ANR College,**

On 20-02-2023 **SRI CHAITANYA TECHNO Schools** Conducted On Campus Drive In Akkineni Nageswarao College Gudivada. This Drive Was Inaugurated By ANR College Managing Committee Members Sri L.R.K. Prasad President, Sri K.S. Apparao Secretary And Correspondent, Dr.P.J.S.Kumar Principal. Dr.M.Sivanath Vice-Principal Of The College And **SRI CHAITANYA ZONAL** Members. In This Drive Especially 40 Students From M.sc Chemistry and M.com Are Participated And 15 Students Are Selected.

AKKINENI NAGESWARA RAO COLLEGE (AUTONOMOUS), GUDIVADA
(With Post -Graduate Courses)

Dr.P.J.S. KUMAR,
Principal

Post Box No.20,
GUDIVADA-521 301
Krishna District, A.P.
(o): 08674-242145, faX: 091-8674-242825
E-mail: anrcollegegdv@gmail.com
anrcollege@rediffmail.com
website : www.anrcollege.edu

తేది : 23.05.2023

ఎ.ఎన్.ఆర్. కళాశాలలో ప్రాంగణ ఎంపికలు (క్యాంపస్ డ్రైవ్)

స్థానిక అక్కినేని నాగేశ్వరరావు కళాశాలలో శ్రీ చైతన్య ఈ-టెక్నో స్కూల్స్ వారు నిర్వ హించిన ప్రాంగణ (క్యాంపస్ డ్రైవ్) ఎంపికలలో సుమారు 50 మంది ఎం.ఎస్.సి. కెమిస్ట్రీ ఎం.ఎస్.సి. మాథమెటిక్స్ మరియు ఎం.కాం. విద్యార్థిని, విద్యార్థులు పాల్గొన్నారు. వారిలో 19 మందిని శ్రీ చైతన్య ఈ-టెక్నో స్కూల్స్ వారు ఎంపిక చేసారని అక్కినేని నాగేశ్వరరావు కళాశాల ప్రిన్సిపాల్ డా. పి.జె.ఎస్. కుమార్ తెలియజేశారు. ఈ సందర్భముగా కాలేజి యాజమాన్యం ప్రెసిడెంట్ శ్రీ లింగం రామకృష్ణ ప్రసాద్, కళాశాల సెక్రటరీ అండ్ కరస్పాండెంట్ శ్రీ కె.ఎస్. అప్పారావు, కళాశాల గౌరవ సలహాదారు డా.ఎస్. శంకర్, వైస్ ప్రిన్సిపాల్ డా.యమ్.శివనాథ్, ఎమ్.బి.ఎ. డిపార్ట్మెంట్ హెడ్.ఓ.డి డా.సి.లక్ష్మీనాథ్, పి.జి లైబ్రేరియన్ బి.ఎస్.ఎస్.పద్మ, అధ్యాపకులు శ్రీమ.నాగేంద్రకుమార్ మరియు శ్రీ చైతన్య ఈ-టెక్నో స్కూల్స్ ప్రతినిధులు శ్రీ ఎమ్.అశోక్ కుమార్, శ్రీ బి.ఎల్. ప్రసాద్ జోనల్ ఆఫీసర్స్, విద్యార్థిని, విద్యార్థులకు అభినందనలు తెలియజేశారు.

ప్రిన్సిపాల్

Sri Chaitanya School - India

Campus Recruitments 2023-24

S.No	Name of The College	Town/City	Name of the Faculty	Father Name	Contact No	Subject	Suitable For Ass/MS/HS	Body Language	Result	REMARKS
1	ASS M COLLEGE	GUDIVADA	ARAV NAGULLA	N SRINIVASA RAO	9591364606	MATHS	MID-SCHOOL	AVERAGE	QUALIFIED	SUITABLE FOR MID-SCHOOL, CAN HANDLE VI,VII CLASSES
2	ANR PG COLLEGE	GUDIVADA	GARAPATHI RANI	GARAPATHI RAJU	7791383428	MATHS	MID-SCHOOL	AVERAGE	QUALIFIED	SUITABLE FOR MID-SCHOOL, CAN HANDLE VI,VII CLASSES
3	ANR PG COLLEGE	GUDIVADA	BOMMASANI VEENA	BOMMASANI ANANDA RAO	6303161039	MATHS	MID-SCHOOL	AVERAGE	QUALIFIED	SUITABLE FOR MID-SCHOOL, CAN HANDLE VI,VII CLASSES
4	ANR PG COLLEGE	GUDIVADA	GURRALA PRANITHA	GURRALA CHITTI BABU	9390249938	MATHS	MID-SCHOOL	AVERAGE	QUALIFIED	SUITABLE FOR MID-SCHOOL, CAN HANDLE VI,VII CLASSES
5	ANR PG COLLEGE	GUDIVADA	KORASIKHA VEERA NAGAMANI	KORASIKHA SITHARAMAIAH	9515327706	CHEMISTRY	MID-SCHOOL	AVERAGE	QUALIFIED	SUITABLE FOR MID-SCHOOL
6	ANR PG COLLEGE	GUDIVADA	MANIKONDA MAHESWARI	MANIKONDA DURGA PRASAD	7396560899	CHEMISTRY	MID-SCHOOL	GOOD	QUALIFIED	SUITABLE FOR MID-SCHOOL, CAN HANDLE VI,VII CLASSES
7	ANR PG COLLEGE	GUDIVADA	MAHESWARAM BINDU NAGA SAI	MAHESWARAM NAGENDRA BABU	8341803785	CHEMISTRY	MID-SCHOOL	AVERAGE	QUALIFIED	SUITABLE FOR MID-SCHOOL
8	ANR PG COLLEGE	GUDIVADA	ELAPARTHI LURDHU MARY	ELAPARTHI AGASTIN RAJU	7707516171	CHEMISTRY	MID-SCHOOL	GOOD	QUALIFIED	SUITABLE FOR MID-SCHOOL
9	ANR PG COLLEGE	GUDIVADA	MITTAPALLI DIVYA SREE SAI	MITTAPALLI RAMA RAO	7288440867	CHEMISTRY	MID-SCHOOL	AVERAGE	QUALIFIED	SUITABLE FOR MID-SCHOOL, CAN HANDLE VI,VII CLASSES
10	ANR PG COLLEGE	GUDIVADA	JAMPANA PADMINI	JAMPANA VENKATA JAGANNADHAM	9347148771	CHEMISTRY	MID-SCHOOL	GOOD	QUALIFIED	SUITABLE FOR MID-SCHOOL
11	ANR PG COLLEGE	GUDIVADA	PAGOLU SIVA GAYATHRI	P SIVA VENKATA GANGADHARA RAO	1000100	CHEMISTRY	MID-SCHOOL	GOOD	QUALIFIED	SUITABLE FOR MID-SCHOOL, CAN HANDLE VI,VII CLASSES
12	ANR PG COLLEGE	GUDIVADA	CHENU BABY SRAVANI	CHENU RAMU	9562291783	CHEMISTRY	MID-SCHOOL	AVERAGE	QUALIFIED	SUITABLE FOR MID-SCHOOL, CAN HANDLE VI,VII CLASSES
13	ANR PG COLLEGE	GUDIVADA	PUTHUMLAU VENKATA PHANI	PUTHUMLAU SRINIVASA RAO	8802140	CHEMISTRY	MID-SCHOOL	AVERAGE	QUALIFIED	SUITABLE FOR MID-SCHOOL, CAN HANDLE VI,VII CLASSES

Sri Chaitanya School
Techno Curriculum

The right mentor for IIT (JEE), Medical, Olympiad & all other Competitive exams

TEMPORARY APPOINTMENT ORDER

Name of the Applicant : BOMMASANI VEENA

S/o D/o W/o : B. ANANDARAO

Qualification : M.Sc

Department / Designation : MATHS

Date of Birth : 20.02.2000

Date of Interview : 25.05.2023

With reference to your Application dated **25.05.2023** and the subsequent interview held at **ASHOK NAGAR MPC Workshop**. The Management is pleased to offer you the post of at **MATHS Faculty at MTM/GOSALA Branch** on a consolidated pay of Rs. **13000/-** Per month in word **Rupees Thirteen Thousand** . For a period of one year on probhition

Note :: The finalization of Branch will be done at the teacher's workshop. The Teacher's choice and preference will be considered for the finalization of Branch, which will be within the zone preferred by the candidate

➢ **You are advised to report to the workshop on : 25.05.2023**

23/05

Appointment Authority

CERTIFICATE OF ACCEPTANCE

Having understood the terms and conditions, I acknowledge to abide by them in the interest of the institution. I promise that I shall strive hard to come up to the expectations of the management in all my endeavors.

I hereby promise to join the workshop on : 25.05.2023

Place:

Date:

Signature of the applicant

❖ **Placement drive by ICICI bank through NIIT@ ANR College,**

On 17-07-2023 ICICI Bank through NIIT Conducted on campus drive In Akkineni Nageswarao College Gudivada. This Drive Was Inaugurated By ANR College Managing Committee Members Sri L.R.K. Prasad President , Sri K.S. Apparao Secretary And Correspondent, Dr.P.J.S.Kumar Principal. Dr.M.Sivanath Vice-Principal Of The College And NIIT Institution Members. In This Drive Nearly 70 Students Participated From MBA & MCA.

FEEDBACK FROM ALUMNI AND EMPLOYERS

2022-2023 ACADEMIC YEAR - ALUMNI FEEDBACK ON CURRICULUM

ALUMNI FEEDBACK

Legend: Strongly Agree, Agree, No Opinion, Disagree, Strongly Disagree
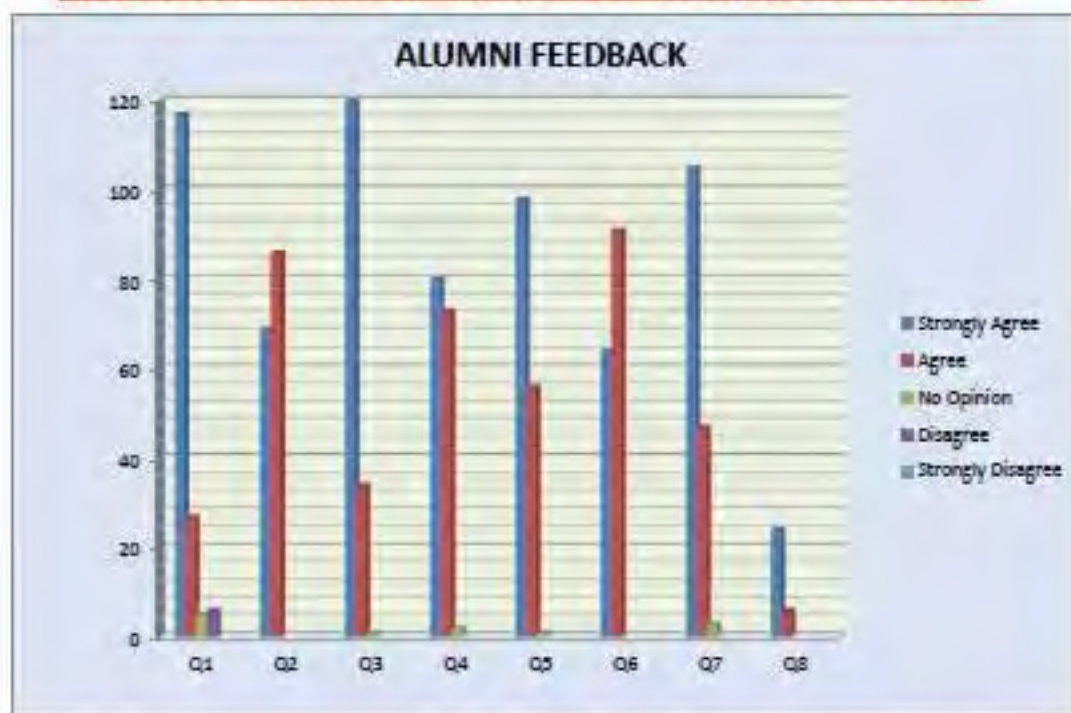
The feedback was collected from 155 Alumni and the observations are noted as follows

OBSERVATIONS:

- ✓ College alumni have conveyed their contentment with the library amenities and placement opportunities provided by the college.
- ✓ The alumni felt that more number of students and faculty should be motivated towards research work.
- ✓ Enhancing activity-based learning programs was suggested by the alumni.

ACTION TAKEN:

- ✓ The Principal, IQAC Coordinator and Vice-Principal convene with all Heads of Departments to propose actions aimed at stimulating students and faculty interest in research.

PRINCIPAL
A.N.R. College, Gudivada

2022-2023 ACADEMIC YEAR – EMPLOYERS FEEDBACK ON CURRICULUM

EMPLOYERS FEEDBACK

■ Strongly Agree ■ Agree ■ No Opinion ■ Disagree ■ Strongly Disagree
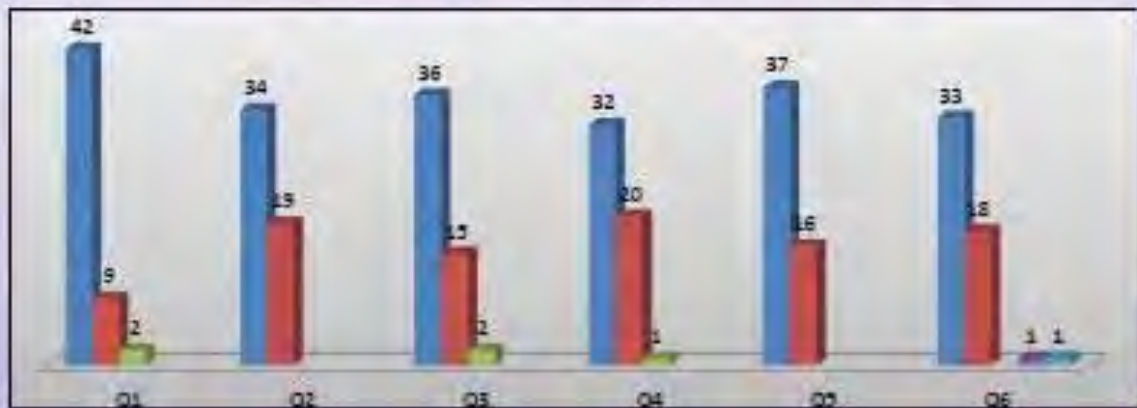
The feedback was collected from 53 employers and the observations are noted as follows
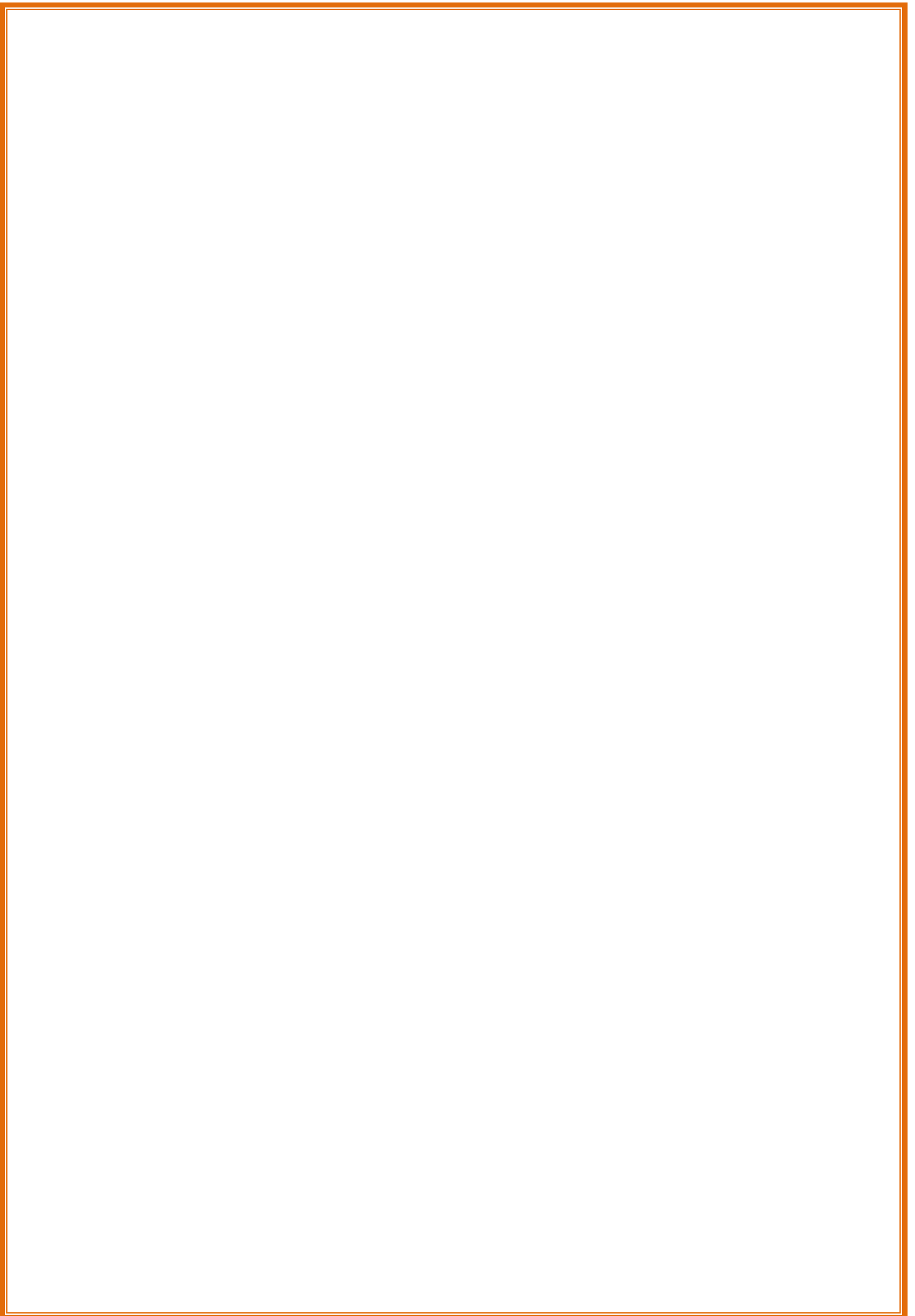
OBSERVATIONS:

✓ Employers are happy that the college instills moral and ethical principles in students, helping them grow into responsible members of society.

✓ It is recommended that more students be encouraged to apply for off-campus placements and competitive exams.

ACTION TAKEN:

✓ The principal gave the placement officer and heads of department's instructions to put policies in place that would encourage more students to be placed off campus and competitive examinations.

PRINCIPAL
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2021-2022 ACADEMIC YEAR - ALUMNI FEEDBACK ON CURRICULUM
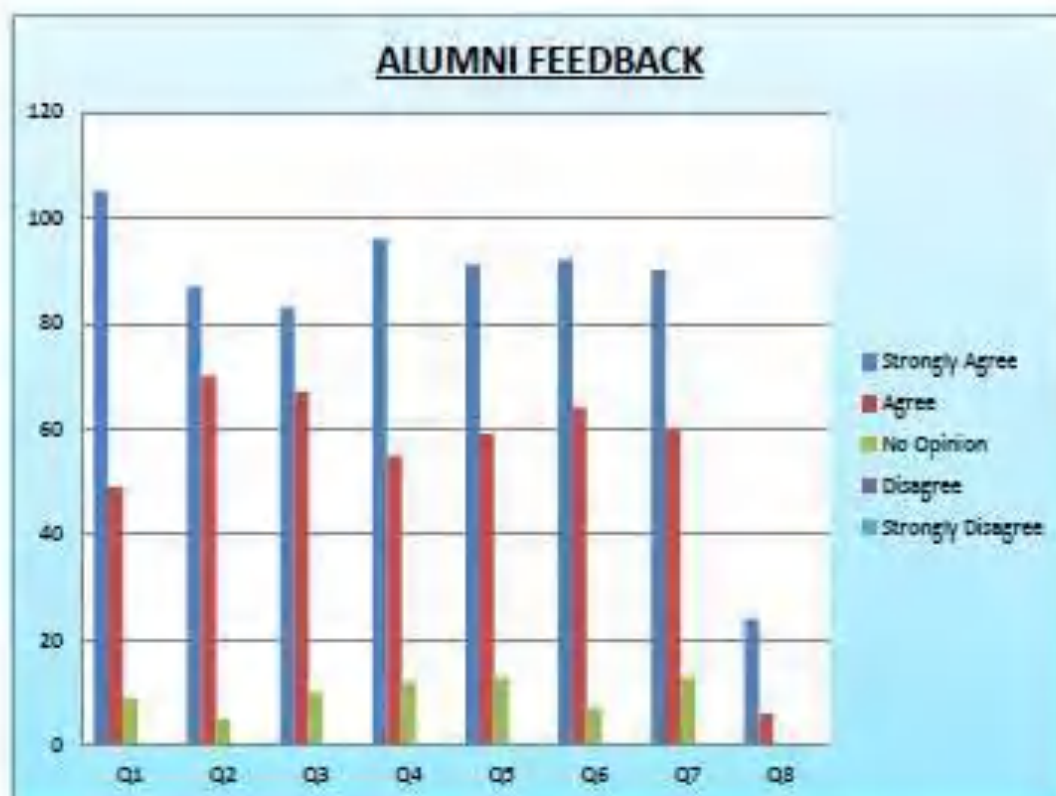
ALUMNI FEEDBACK

Feedback was collected from 163 Alumni and the observations are noted as follows:

Analysis:

✓ Some alumni recommended setting up interactive sessions with notable alumni to support current students' academic development.
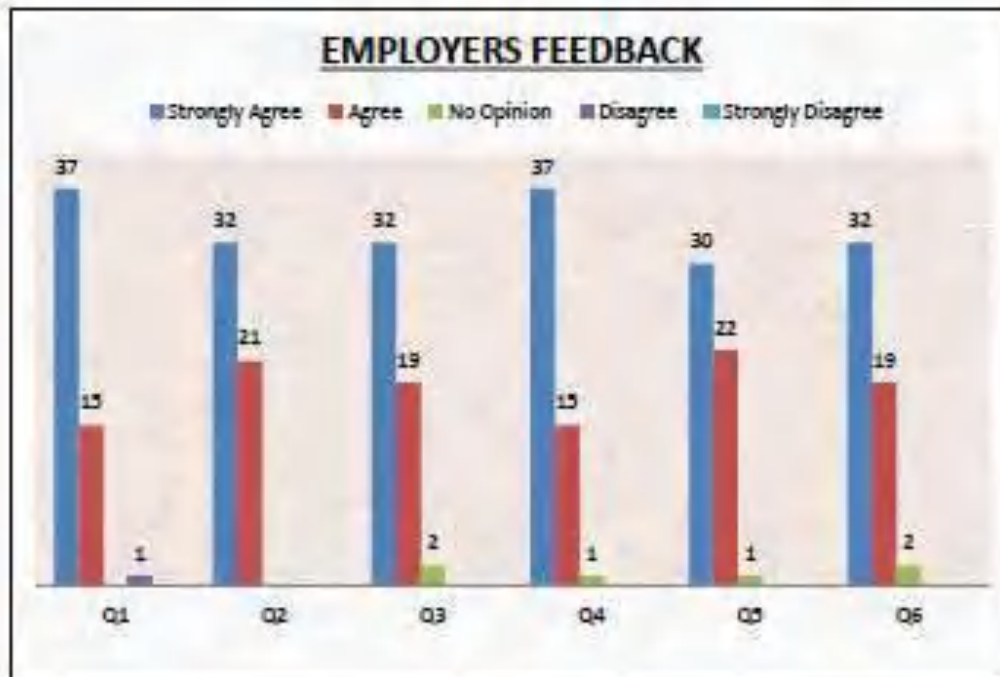
Action Taken:

✓ All heads of department have scheduled interactive sessions or guest lectures with the relevant alumni.

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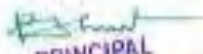# 2021-2022 ACADEMIC YEAR – EMPLOYERS FEEDBACK ON CURRICULUM

EMPLOYERS FEEDBACK

■ Strongly Agree   ■ Agree   ■ No Opinion   ■ Disagree   ■ Strongly Disagree

	Q1	Q2	Q3	Q4	Q5	Q6
Strongly Agree	37	32	32	37	30	32
Agree	15	21	19	15	22	19
No Opinion / Disagree	1		2	1	1	2

FEEDBACK is collected from 53 Employers through offline and analysed observations are noted as follows:

Analysis:

✓ Employers believe that more programs for employability and skill development should be made available to students.
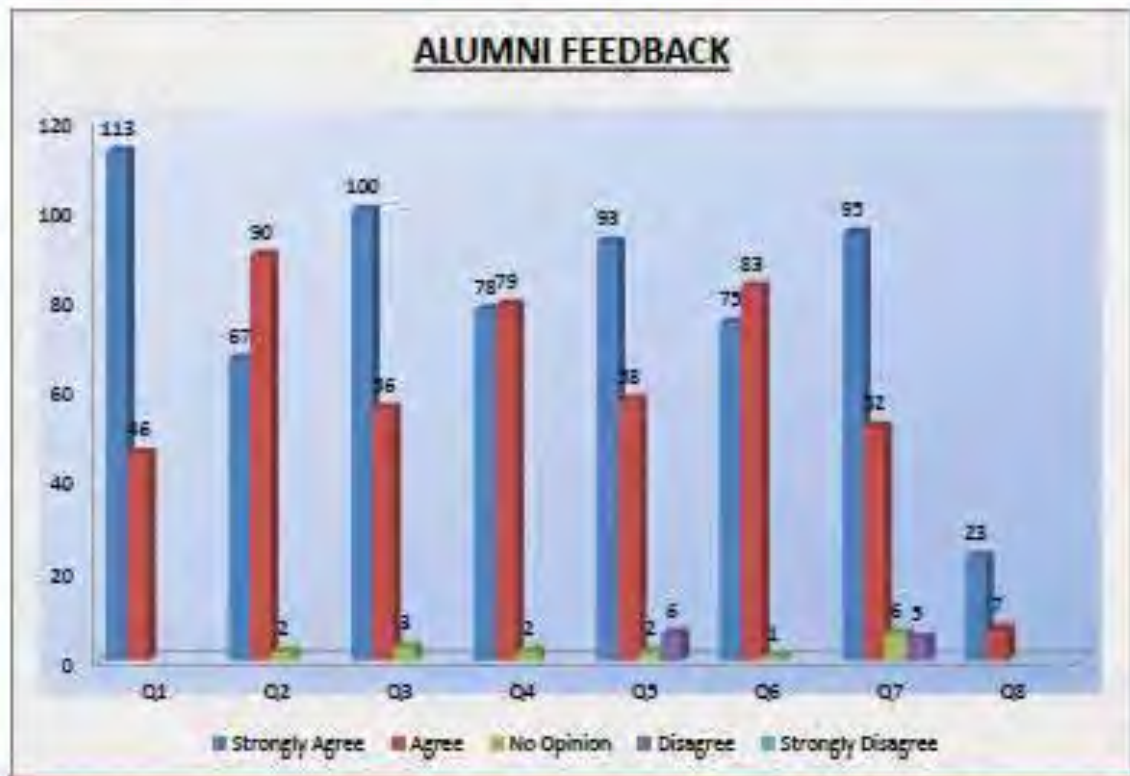
Action Taken:

✓ The placement and guidance cell officer was given instructions by the principal to arrange employability and skill development programs in collaboration with skill development centers such as APSSDC.

PRINCIPAL
A.N.R. College, Gudivada

2020-2021 ACADEMIC YEAR - ALUMNI FEEDBACK ON CURRICULUM

ALUMNI FEEDBACK

The feedback was collected from 159 Alumni and the observations are noted as follows:

Analysis:

✓ The analysis of Alumni FEEDBACK reveals that they feel 'Good' for the college admission procedure, fee structure, environment, Relevance of course content to meet the industry standards, Effectiveness of the programme in developing skills, Teacher Quality and Expertise, Evaluation System, Infrastructure and lab facilities, Learning resources and Canteen facilities.

Action Taken:

✓ To encourage the students to do research, the college allotted seed money for research activities.

✓ The college has decided to increase funding to purchase more equipment to serve sports.

PRINCIPAL
A.N.R. College, Gudivada

2020-2021 ACADEMIC YEAR – EMPLOYERS FEEDBACK ON CURRICULUM

EMPLOYERS FEEDBACK

The feedback is collected from 51 Employers through Online and analysed observations are noted as follows:

Analysis:

✓ More number of employers feel 'strongly agree' with the curriculum designed by the college. Few employers suggested to introduce integrated programmes and skill oriented programmes.
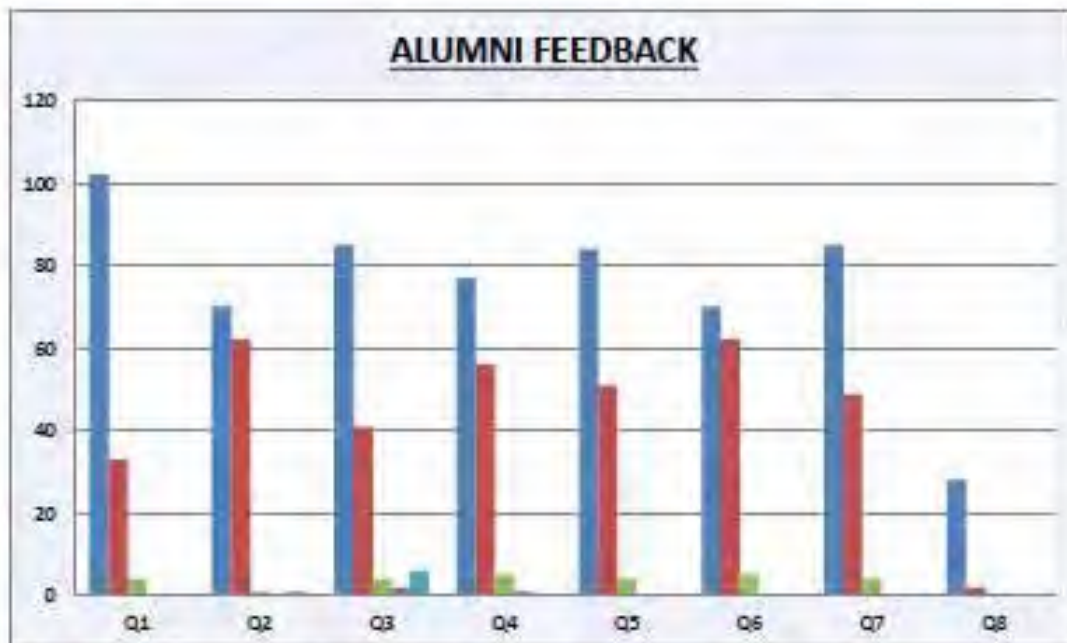
Action Taken:

✓ The management has decided to carry on with the skill-oriented programs that were initiated in the 2020–21 academic year.

✓ As per the National Education Policy, the college intends to launch integrated courses in Management, Commerce and Computer Science.

PRINCIPAL
A.N.R. College, Gudivada

ALUMNI FEEDBACK

The feedback was collected from 139 Alumni and the observations are noted as follows:

Analysis:

- ✓ Most alumni believed that there should be more placement assistance.
- ✓ It is believed that the greatest attention should be taken when evaluating examination results.
- ✓ It is important to inspire students to play more sports.
- ✓ There should be more classes offered in soft skills and communication.

Action Taken:

- ✓ Training and Placement sessions are held on a regular basis. Exam evaluation has been updated with the benefit of the students in mind. College intramural sports are played.
- ✓ Renowned personalities are invited to teach personality development classes.

PRINCIPAL
A.M.B College, Gudivada

2019-2020 ACADEMIC YEAR – EMPLOYERS FEEDBACK ON CURRICULUM

EMPLOYERS FEEDBACK

Legend: Strongly Agree, Agree, No Opinion, Disagree, Strongly Disagree

The feedback was collected from 54 Employers and the observations are noted as follows:

Analysis:

- ✓ Few students are found to be falling behind in their competency skills.

- ✓ Some employers opined that though the students are able to enter the company
  through their technical skills, they are failing to raise to the top positions.

- ✓ The majority of employers valued the person's honesty and diligence.
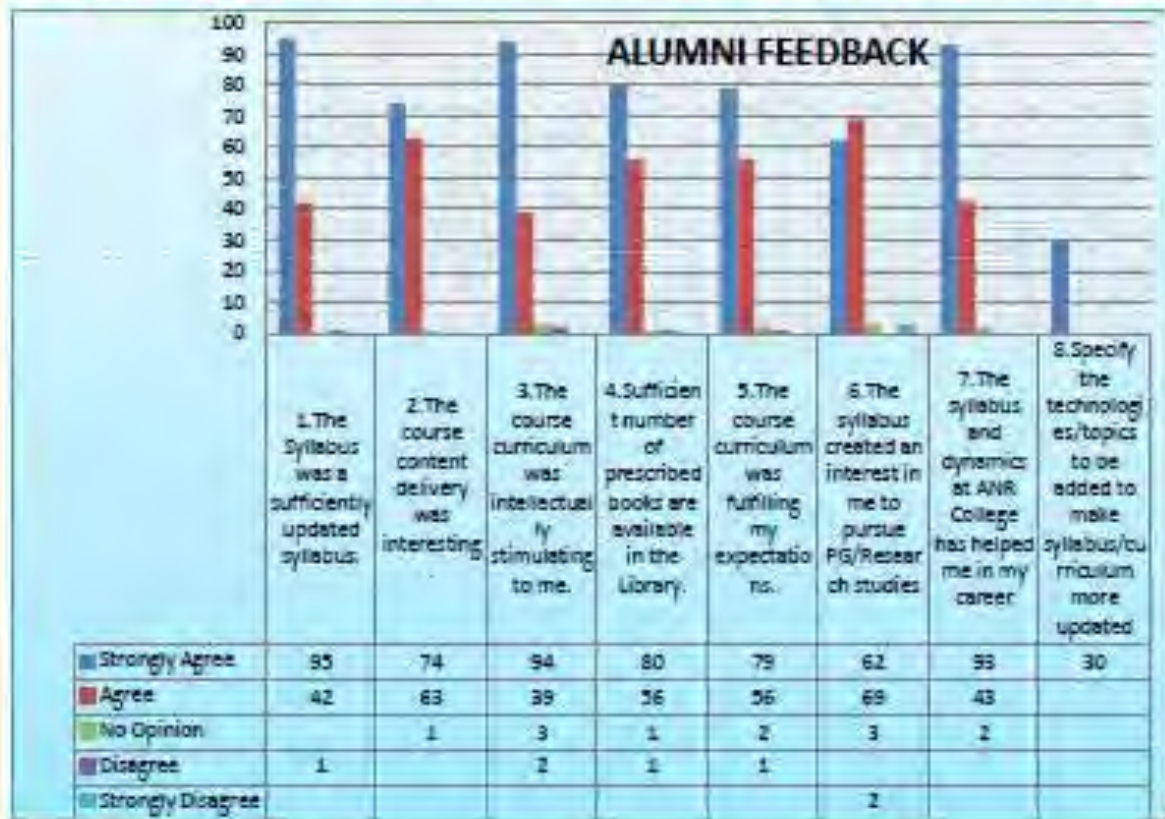
Action Taken:

- ✓ It has been decided to engage students in extra activities to raise their competency levels.
- ✓ Motivational training is provided to students in order to help them reach greater professional heights.
- ✓ To sustain the good qualities in the student, value added courses are given highest priority.

PRINCIPAL
A.N.R. College, Gudivada

2018-2019 ACADEMIC YEAR - ALUMNI FEEDBACK ON CURRICULUM

ALUMNI FEEDBACK

	1. The Syllabus was a sufficiently updated syllabus	2. The course content delivery was interesting	3. The course curriculum was intellectually stimulating to me.	4. Sufficient number of prescribed books are available in the Library.	5. The course curriculum was fulfilling my expectations.	6. The syllabus created an interest in me to pursue PG/Research studies	7. The syllabus and dynamics at ANR College has helped me in my career	8. Specify the technologies/topics to be added to make syllabus/curriculum more updated
Strongly Agree	95	74	94	80	79	62	93	30
Agree	42	63	39	56	56	69	43	
No Opinion		1	3	1	2	3	2	
Disagree	1		2	1	1			
Strongly Disagree						2		

The feedback was collected from 138 alumni and the observations are noted as follows

Analysis:

✓ It is noted that the admission procedure is excellent.

✓ There is a need to enhance the canteen facilities.

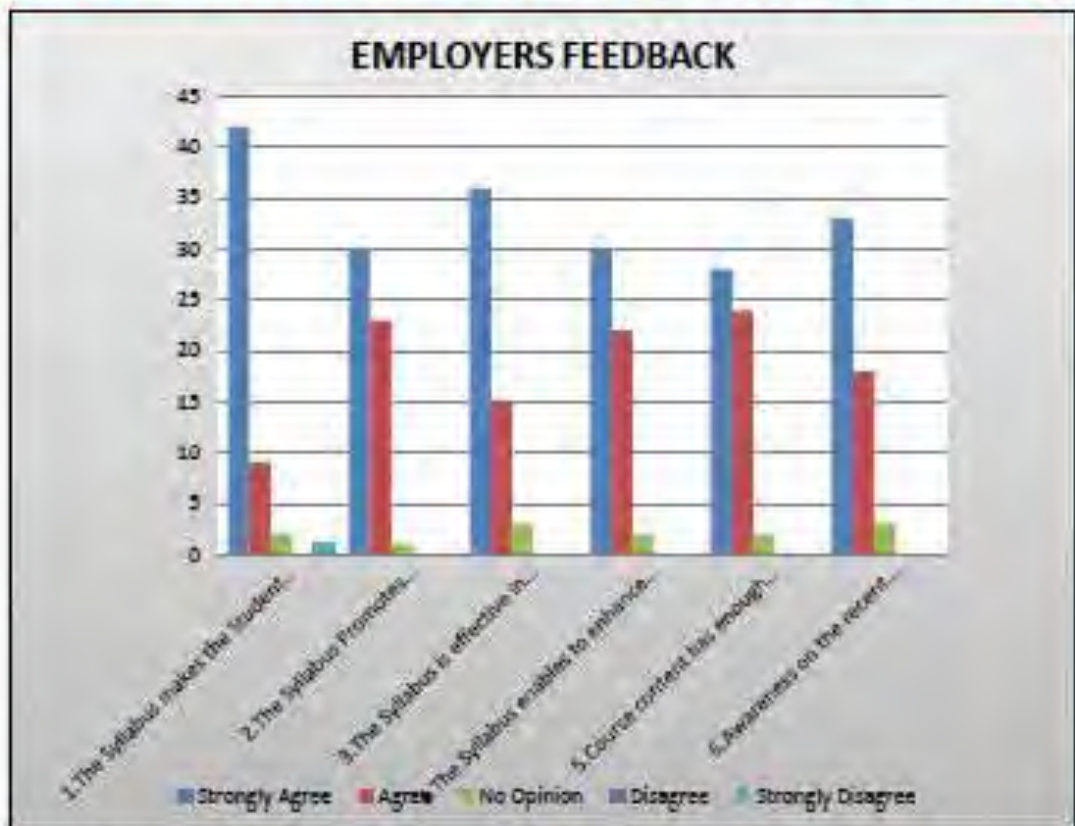✓ Facilities for placement and training need to be improved.

Action Taken:

✓ More varieties and hygiene conditions are properly taken care of.

✓ CRT classes are expanded to reach the expectations of the recruitment procedure.

PRINCIPAL
A N R College, Gudivada

EMPLOYERS FEEDBACK

The feedback was collected from 54 Employers and the observations are noted as follows:

Analysis:

✓ More number of employes felt that curriculum is relevant for employability

✓ Few people believed that the curriculum introduces students to novel concepts and methods.

ActionTaken:

✓ New courses were introduced.
✓ Their undergraduate and postgraduate programs' entrepreneurial development initiatives were enhanced.
✓ Student-led activities aimed at enhancing their leadership skills and advancing the organization's objectives will be undertaken.

PRINCIPAL
A.N.B College, Graduate