NIZAM COLLEGE
Autonomous
Re-accredited by NAAC with B++
A Constituent College of Osmania University

PROGRAM OUTCOMES AND COURSE OUTCOMES

Department of Arabic

Department of Arabic offers Arabic as a second language at graduate level and following are the Course Outcomes

PROGRAM OUTCOMES

PO1: The Arabic course designed to help the students in getting job in various fields as we know the Arabic is the 5th most frequently spoken native diction in the world. It is majorly used by Muslims worldwide, with over 200 million people in various Arab countries, and well recognized in different regions of Africa as well.

PO2: It was included as the 6th official form of speech in the United Nations because of its widespread usage all over the globe. Besides, it is also the representative tongue in the Arab League, the Organization of Islamic Conference (OIC), and the African Union.

PO3: Due to high emergence of Western attention towards Middle East, whether it is for resolving peace issues between some countries or the wild spread of Multinational companies in such states, the basic understanding of Arabic are the very first thing to do so as to interact with locals productively.

PO4: As, the West is facing acute scarcity of people who are proficient in Arabic, be it in Journalism, Foreign Affairs, and other businesses etc. there is a great opportunity for people to learn this lingo and make their careers count in various fields.

PO5: Many Multinational organizations have recently moved to Middle East, like in United Arab Emirates and Saudi Arabia. They regularly search for foreign competent workers who could contribute to their business operations.

PO6: There is also a dearth of professionals among the locals of such countries, which is why they look for people from other countries. So, it is opens great prospects for those interested in moving to Arab world for living to speak, write, read and understand Arabic language.

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Department of Business Management

PROGRAM OUTCOMES

MBA- Master of Business Administration

To create a pool of managers and management professionals with world class competence by importing exemplary education and training to add value to the society by

1) providing professional development and training opportunities, and continuing education programs for students

2) Awarding and recognizing excellence of students.

3)Facilitating the establishment of networking and knowledge sharing.

4) foster good business ethics and social responsibility in the students community

5) Undertaking and pursuing all such other similar, related or compatible objects as may

from time to time be considered appropriate by the Department and the college.

6)Enhance student's career growth opportunity and to prepare them to meet the global

Challenges.

7) Effective teaching & learning in corporate culture in judicious manner.

8)To build up confidence & to encourage their managerial and entrepreneurial skill.

9) To implement innovative and best practices.

COURSE PROGRAM:

Course: MBA (Regular) Year: I/ Semester: I

MB101 -Management and Organisational Behaviour

Course Objective:

This course is designed to introduce the concepts and theories of management and organizational behavior. The course aims at offering insights into human behavior at contemporary situations in organizational settings.

Course Outcomes:

CO1: By the end of the course, the students would have a comprehensive understanding of managing the organizational functions in various organizational settings through gaining insights into individual, inter-personal and group situations

MB102 -Accounting for Management

Course Objectives:

To gain knowledge of the process, principles and conventions of accounting

1. To develop the skill of preparation of final accounts

2. To understand the methods of analysis of financial statements

3. To gain knowledge of breakeven analysis and its use to management

Course Outcomes:

At the end of semester, the student will be able to understand and present the following:

CO 1. Journal, Ledger, Trial Balance and Final Accounts

CO2. Analyze performance of companies using Ratio Analysis

CO3. Analyze Cash Flow position of companies

CO4. Make calculation relating to Cost Volume Profit Analysis

MB103- MARKETING MANAGEMENT

Course Objectives:

To impart the basic tools of marketing and selling

1. To analyze factors affecting business environment

2. To asses buyer perceptions

3. To analyze market and competition structure

4. To know value of culture in marketing of good and services

5. To make the students imbibe the global changes in the area of marketing

Course Outcomes:

CO 1. Students can equip with marketing and selling tools.

CO2. Students can learn about the competition levels in the market.

CO3. Buyer behavior and perceptions are key of any business; that can be thoroughly learnt.

CO4. Various market position skills can be obtained for competitive advantage.

CO5. Group Dynamics and Channel Dynamics involved in marketing can be assessed.

CO6. Better control of key resources and optimum utilization of resources can be attained

MB104- Statistics for Management

Course Objectives:

1. To introduce basic statistics to management students like measures of central-tendency, measures of dispersion, skewness and kurtosis and concepts of probability.

2. To provide an understanding of probability distributions.

3. Understanding sampling and sampling distributions and hypothesis testing framework with small samples and large samples.

4. Introduce concepts related to Correlation, Regression and their relationship, applications of time series data.

Course Outcomes:

CO1. Basic Statistics helps in descriptive analytics.

CO2. Knowledge of Probability and distributions are play an important role across the various areas of management like finance, Marketing, HRM, supply chains etc.

CO3. Hypothesis testing is useful in estimation for analysis and decision making.

CO4. Correlation, regression techniques are an integral part of planning and controlling.

MB105- Economics for Managers

Course Objectives:

1. To make students familiarize with Economic behavior of a person

2. To let managers know the market behavior

3. To understand the environment of Business firms.

4. To know the demand conditions of various products

5. To know the contemporary economic policies

Course Outcomes:

CO1. Students can learn micro factors of Economic behavior of a consumer.

CO2. Would be Managers needs market dynamics and the same is imparted.

CO3. Students can assess opportunities and threats of business.

CO4. Students can better understand nature of the products and demand conditions.

CO5. It is also provided through this paper the decision making tools and investment avenues.

MB105-Economics for Managers

Course Objectives:

1. To acquaint the students' with the micro-level competency with regard to contemporary Information Technology Tools in organizations.

2. To provide real-time insights into the fundamentals of computers as business tools

3. To Create Awareness in upcoming managers, of different types of Information Technology, Management Systems so as to enable the use of IT resources efficiently

4. To study the role and Value addition of IT in business

5. To enable students to develop proficiency in using certain components of the package includes MS Excel, MS Access

Course Outcomes:

CO1. Students can work in IT field to make positive contribution to the organization.

CO2. Students can take professional responsibilities and make informed judgments in the organizations. 3. Students can get streamline work processes and improve communication within the organization.

MB107 - Financial Markets and Services

Course Objectives:

1. To learn about the financial markets.

2. To understand the various fund based services like leasing and hire purchase.

3. To learn about fee based services like Merchant Banking, Factoring etc.

Course Outcomes:

CO 1. To learn about the participants, products, players in primary and secondary markets

CO2. Identify the new financial innovations taking place in India.

CO3. To identify Merchant Bankers in India and know about their activities

CO4. To learn about the players in the leasing and hire purchase business in India.

CO5. To learn about the insurance companies and the products offered by them.

CO6. To trace the regulation in financial markets.

MB107 Managerial Communication

Course Objectives:

Upon the successful completion of this course the student will be able to

1. Learn the fundamentals of communication.

2. Apply business communication theory to solve workplace communication issues.

3. Demonstrate the communication skills required in the workplace

4. Understand complex ideas in written and spoken formats.

5. Express complex ideas accurately in written and spoken formats.

Course Outcomes:

At the end of this course students will be able

CO1. To acquire the requisite knowledge about the fundamentals of communication skills.

CO2. To study how to write business letters, reports and other business correspondence.

CO3. To learn various aspects of oral communications viz presentation skills, group discussions and negotiation.

CO4. To acquire knowledge about various types of interviews.

CO5. To learn media management and social etiquette in order to handle day to day managerial responsibilities.

Year: I / Semester: II

MB201- Human Resource Management

Course Objectives

The Objective of the course is to develop an understanding on various issues, approaches and practices of Human Resource Management and ability to identify potential employees, evaluate competences, design workforces & build HR driven corporate strategies.

Course Outcomes:

CO1. Transform Human beings into Human Resources

CO2. Build Global Level HR Managers

CO3. Create Agile Workforce

CO4. Innovate Winning Organizations

MB202-Financial Management

Course Objectives:

1. To learn about the scope and goal of financial management.

2. To familiarize the student with the concepts of long term and short-term investment decisions.

3. To understand the dividend decisions of firms.

Course Outcomes:

CO1. Apply project appraisal methods to cash flows.

CO2. To understand the corporate practices of dividend payment.

CO3. To learn about corporate events like mergers

CO4. To learn about inventory management of manufacturing companies

MB203- Operations Research

Course Objectives:

The objective of the course is to give an overview of different Optimization Techniques useful for problem solving and decision making.

1. To introduce OR techniques such as Linear Programming Problem.

2. To analyse special cases of LPP such as Transportation Problem, Assignment Problem.

3. To Study network Concepts and techniques like PERT and CPM.

4. To study quantitative competitive strategy models such as game theory, simulation and queuing theory.

Course Outcomes:

CO1. Helps in formulating real life situations in organizations in Quantitative form.

CO2. Helps in formulating strategies for optimal use of various resources within the organizations.

CO3. Application of optimization tools for decision-making

MB204 - Entrepreneurship and Development

Course Objectives:

1. To make the students learn the importance of Entrepreneurship

2. To motivate the students towards Entrepreneurship

3. To make them learn about entrepreneurial environment

4. To provide information about financial resources

5. To impart training to raise and establish enterprises

Course Outcomes:

CO1. A student learns the cues and motives of Entrepreneurship

CO2. Students can learn more about types of Enterprises and growth

CO3. Knowledge of entrepreneurship prepares the entrepreneurial bent of mind

CO4. Problems and perspectives of the entrepreneurship can be understood

CO5. It is also possible to students understand and comprehend on venture capital funds

MB205- Business Research Methods

Course Objectives:

1. Enable students to learn the importance of Research

2. To involve students in activities related to Research

3. To train them on Data collection and data processing methods

4. To impart Report writing skills to Management graduates

5. To help learners gain overall insights into the finer aspects of research Methodology

Course Outcomes:

CO1. To gain understanding of various kinds of research design

CO2. To enable learners to be able to formulate the research problem

CO3. To acquire basic knowledge on qualitative and quantitative research

CO4. To have knowledge on descriptive and inferential data tools

CO5. To be able to write and develop independent and critical analysis for report writing

MB206- Business Law and Ethics

Course Objectives:

1. This course is designed to introduce the legal aspects of business from the national and transnational perspective.

2. The course also intends to offer insights into the ethical considerations in Business entities and their responsibility towards society.

Course Outcomes:

CO1: By the end of the course, the students would have a comprehensive understanding of the legal and ethical considerations in business organizations through gaining knowledge of provincial and international outlook.

MB207 Innovation Management

Course Objectives:

1. Provides an overview of concepts relating to R & D and Innovation Management.

2. Provides an understanding of concepts like R & D Investment, Evaluation of R & D.

3. Brings out the differences between innovation and Invention.

4. Provides an understanding of Innovation management in an organization.

Course Outcomes:

CO1. Helps in formulating R&D policy and strategy for an organization.

CO2. Helps in making budget allocations for R & D projects in organization.

CO3. Helps in managing Innovation in Organization.

MB207- Customer Relationship Management

Course Objectives:

1. This course is focused on the holistic understanding of customer relationship management. It is important that such a course gives students a real world understanding of CRM.

2. To acquaint the students' understand and describe a customer relationship management application.

3. To provide real-time insights into the successfully implemented CRM in various organizations and it also helps to ensure a successful implementation

4. To Create Awareness in implementation of CRM by understanding the end users and importance of implementing such a system in an organization to retain their customers for long run success.

5. To study how CRM allowed for decision making, evolved relationships to a higher level of understanding and more meaningful interactions with their target market users.

Course Outcomes:

CO1. Students can work in CRM tools to make positive contribution to the organization.

CO2. Students can take professional responsibilities and make informed judgments in the organizations towards their target market.

CO3. Students can get streamline work processes and improve CRM within the organization.

MB208 - Seminar Presentation

Course Objectives:

1. To develop student skills of interaction in exploring in exploring the facts

2. To develop skills integrative skills of Discussion in arriving at a conclusion

3. To develop skills of critical evaluation of given topic/situation

4. To develop skills of exploring knowledge base and frame the text

Course Outcomes:

(A student can be assessed based on the following outcomes)

1. Presentation skills : Student is expected to present with clear aims and out comes

2. Argumentative and critical thinking Critical thinking: It is closely related to how student is able to relate critical thinking, thought process and reasoning.

3. Inter Disciplinary Approach : Relating knowledge more than one branch

4. Presentation of the text: The sequence of text presentation in order to provide logical clarity

Year: II / Semester: III

MB301 - Operations Management

Course Objective: The objective of this course is to provide the student with adequate knowledge regarding the basic manufacturing facilities & how service activities have attained significance and need managerial skills to address the problems. Further a thorough understanding of quality in materials management, manufacturing and services is emphasized

Course Outcomes:

CO1. Understand Importance /Planning organizing and controlling aspects of Operations Management.

CO 2. Re-enforce the concepts of production Management .

CO3. Help students understand different operational issues under manufacture and services

MB302 -E-Business

Course Objectives:

I. To acquaint the students' with the micro-level competency with regard to contemporary E Business Tools in organizations.

2. To provide real-time insights into the fundamentals of online mode business as business tools

3. To Create Awareness in upcoming managers, of different types of online business Technology, Management Systems so as to enable the use of IT resources efficiently

4. To study the role and Value addition of IT in E Business

5. To enable students to develop proficiency in using certain business applications in the car of E Business

Course Outcomes:

COI. Students can work in latest trends in business field to make positive contribution to the organization.

CO2. Students can take professional responsibilities and make informed judgments in the organizations for E Business.

CO3. Students can get streamline work processes and improve communication within the organization to meet their objectives by involving with E Business Models.

MB303 -Total Quality Management

Course objectives:

This course is aimed at;

I. This course is aimed at orienting the students towards the importance of quality as a management tool

2. Towards understanding the principles and practices of total quality management

3. Introducing the various tools and techniques used in the measurement of quality

4. Understanding the importance of six sigma as a quality tool 5. Sensitizing the participants to the importance of quality in services sector

Course outcomes:

After going through this course one should be able to;

COI. Understand the basic terminologies and metrics that are used to govern quality management

CO2. Get a better perspective on quality standards like ISO

CO3. Be able to identify the various metrics that govern quality

CO4. Elucidate the role and importance of six sigma as a quality measurement tool

CO5. Identify the various means and techniques for establishing quality in services sector

MB304- Global Business Strategies

Course Objectives:

1. To impart global marketing skills to the learners

2. To make the student learns about global business environment

3. To expose the student towards various practical approaches of global business

4. To provide international market analysis to the learners

Course Outcomes:

CO1. The students develops higher level skills in global business

CO2. The student outlook changes towards global business environment

CO3. They are exposed to practical problems of global marketing

CO4. The students attains the knowledge about international industry and Markets

MB305-F-I Investment Management

Course Objectives:

To explain the basic concepts of risk and return

1) To explain the various methods of investment analysis

2) To understand the features and valuation of debt and equity instruments

3) To explain the concept of portfolio and the various portfolio theories

4) To describe portfolio evaluation methods

Course Outcomes:

After studying this course the student will be able to

CO1) Differentiate various avenues of investment on the basis of risk and return

CO2) Gain basic knowledge of analyzing stocks

CO3) Make valuation of equity, debt and portfolio instruments

CO4) Gain an understanding of mutual funds, their performance evaluation and regulation.

MB305- F-II - International Finance

Course Objectives:

I. To provide an analysis of the evolution of International Financial System

2. To learn about international banking

3. To study about the Foreign exchange markets

4. To learn the financial management of MM.'s.

5. To understand the international tax environment.

Course Outcomes:

Alter studying this course, the student will be able to

COI. Differentiate between fixed and floating rates

CO2. Make calculations relating to foreign exchange rates based on parity theories

CO3. Understand the financial instruments in international markets

CO4. Make decisions relating to capital budgeting decisions in an international environment

MB305-M-I - Marketing Engineering

Course objectives:

The objectives of this course are;

I. Acquainting the readers with modeling of market variables using a wide variety of models

2. Use of market segmentation and perceptual maps to provide an insight into marketing strategy analysis

3. Usc of forecasting models to measure demand and market response modelling

4. To gain an insight into quantitative and qualitative response models and their role in strategic analysis

5. To help understand how modeling can be used in advertising decision making and pricing analysis

Course Outcomes:

After reading this course one should be able to;

CO1. Understand the relevance of modeling in marketing for logical judgment

CO2. Appreciate the business and economic lifetime value of marketing engineering

CO3. Be well versed with the various models, both qualitative and quantitative in marketing engineering

CO4. Understand the relevance of using modeling in marketing as a decision making tool

CO5. Learn the importance of marketing engineering as a strategic marketing analysis tool.

MB305-M-II -Advertising and Retail Management

Course Objectives:

The objectives of this course are;

I. To sensitize students on various dimensions of the promotion mix

2. To help gain an understanding of the role of advertising in marketing

3. To explore the various elements relating to an effective advertising strategy

4. To introduce the concept of organized retailing

5. To help understand the various functions & roles of retailing in India

Course Outcomes:

After reading this course you should be able to;

COI. Understand the importance of advertising in the marketing mix

CO2. Establish the importance of creativity in an ad campaign

CO3. Determine the comparative importance of organized retailing sector vis-a- vis unorganized sector

CO4. Compare the functions and performance of organized retail sector to others

CO5. Determine the role of other functional areas of marketing as key drivers to the retail sector

MB305-HR-I Industrial Relations and Labour Laws

Course Objective:

To create awareness among Management students.

I. To impact industrial relations

2. To know ILO standards

3. To know managerial perspectives

Course Outcomes:

CO1. Comprehensive understanding of industrial relations problems, labour laws.

CO2. Framework for analysis of Problems.

CO3. To generate alternate decision making of such problems and would be able.

MB305-HR-II- Organisational Development

Course Objectives:

1. To lay Conceptual foundation in students to lead and manage planned change in organization

2. To help Organization Development process and Programmes.

3. To familiarize with various interventions and techniques of Organization Development

Course Outcomes:

COI. The students would gain the conceptual clarity of OD and its process.

CO2. The students would be familiarized with the major OD interventions.

MB305-S-I -Database Management Systems

Course Objectives:

1. The objective of the course is to present an introduction to database management systems, with an emphasis on how to organize, maintain and retrieve - efficiently, and effectively - information from a DBMS.

2. To explain basic database concepts, applications, data models, schemes and instances.

3. Describe the basics of SQL and construct queries using SQL.

4. Use the basics of SQL and construct queries using SQL in database creation and interaction.

5. Analyze and Select storage and recovery techniques of database system.

Course Outcomes:

COI. Students can apply the basic concepts of Database Systems and Applications

CO2. Design a commercial relational database system (Oracle, MySQL) by writing SQL using the system.

CO 3. Students can get to facilitate students in Database design and also to familiarize issues of concurrency control and transaction management in DBMS

MB305-S-II - Business Analytics

Course Objectives:

I. The objective is to provide knowledge of data science

2. To provide basic statistical tools

3. State the importance of data in current business scenario

4. To develop contingent business models for better analysis

Course Outcomes:

COI. Students can use data as tool for business analysis

CO2. The basic statistics provides a road map to learners

CO3. Micro metrics makes the students to identify data gaps

CO4. The business models may help in better decision making

MB306 Project Work Synopsis

Course Objectives: The objective of this course is a pre-preparation for the main project. Student is expected to write 3-4 pages of the project synopsis and take approval of the supervisor allotted before proceeding to work on main project. .

Course Outcomes:

CO1:Student synopsis can be assessed in terms of his originality in thinking, pedagogical aspects, clarity in their proposal. sequence and so on.

CO2:Each student to prepare project synopsis as per given outline by supervisor assigned and proceed to work on next stages of main project report preparation.

Year: II / Semester: IV

MB401 Business Policy and Strategy

Course Objectives:

I. To impart key strategic business skills to the learners

2. To make the student learns about business environment

3. To expose the student towards various practical approaches of strategy formulation

4. To provide Industry analysis to the learners

Course Outcomes:

COI. The students develop higher level skills in strategic business areas

CO2. The student outlook changes towards business environment

CO3. They are exposed to practical problems of strategy formulation

CO4. The students attains the knowledge about Industry and Market

MB 402- Business Intelligence

Course Objectives: To provide an understanding of concepts of Business Intelligence and relate topics such as Data Warehousing, Data Mining, Business Performance Management, Business Analytics and Data Visualization.

Course Outcomes:

COI. Emphasizes the Practical need for good decision support system as Bi in an Organization.

CO2. Helps in connecting statics for implementing Data ware houses, Business performance Measurements tools and helps in realizing the potential of Business Analysis in decision support.

MB 403- Supply Chain Management

Course objectives:

The objectives of this course are:

1. To understand the fundamental operations of supply chain and logistics management

2. To apply the knowledge and principles of management of cross functional areas for effective supply chain management

3. To use modeling to predict and analyze various supply chain parameters

4. Optimization of supply chain and network design issues

5. Understand the strategic issues and multi-level linkages in logistics management

Course Outcomes: After reading this course one should be able to;

COI. Gain a holistic understanding of supply chain management and the role of logistics management in it

CO2. Understand the basic drivers that lead to the performance of SCM in effective manner

CO3. Identify the role of value chain and its integration in the supply chain

CO4. Sensitize themselves to the role of global sourcing in making supply chain cost effective

CO5. Gain an insight into the role of Information Technology in making supply chain agile

MB 404-F-I- Financial Risk Management

Course Objectives:

I) To understand the concept and types of risk that financial institutions are exposed to.

2) To learn about the measurement and management of risk.

3) To learn about the techniques of risk management — financial and non-Financial

4) To develop knowledge about the various instruments of hedging.

Course Outcomes: After studying this course, the student will be able to

COI) Make calculation to find out CaR and Var

CO2) Differentiate between forwards and futures

CO3) Understand the valuation of swaps and hedging mechanism

CO4) Find the intrinsic value of Options using BOPM and BSOPM

MB 404-F-II- Banking and Insurance

Course Objectives:

I) To provide an overview of the structure of banking and insurance business in India.

2) To describe the products and services in Banking and Insurance

3) To highlight the regulatory changes and innovations in the Banking and Insurance sectors.

4) To prepare students for career opportunities in banking and insurance

Course Outcomes: After studying this course the student will be able to

COI) Learn about the performance of banks in India

CO2) Learn about the sources and uses of bank funds

CO3) Understand the role and importance or insurance, its types. principles, and regulation

CO4) Understand the latest innovations in banking system

MB 404-M-I - Buyer Behaviour

Course Objectives:

1. The main objective of this course is an introduction to the world of buyer behavior.

2. The discipline borrows from several social sciences including psychology, sociology, and anthropology to explain behavior in the marketplace.

3. This course will explore how perceptions, learning, memory, personality, and attitudes influence consumption behavior.

4. It establishes the relevance of buyer behavior theories and concepts to marketing decisions.

Course Outcomes:

CO1. Students can examine and identify the major influences in buyer behavior

CO2. Students can develop an understanding between different consumer behavior influences and their relationships.

CO3. To enable students in designing and evaluating the marketing strategies based on fundamentals of consumer buying behavior.

MB 404-M-II - Services and Digital Marketing

Course Objectives:

1. The main objective of this course is to supplement basic marketing and marketing strategy courses by focusing on problems and strategies specific to marketing of services on global marketing.

2. Identify the major elements needed to improve the marketing of services.

3. Develop an understanding of the roles of relationship marketing and customer service in adding value to the customer's perception of a service

4. Appraise the nature and development of a global marketing strategy.

Course Outcomes:

COI. Students can examine the nature of services, and distinguish between products and services

CO2. Students can develop an understanding of the roles of relationship marketing and customer service in adding value to the customer's perception of a service.

CO3. Students can get Appraise the nature and development of a services marketing strategy.

MB 404-HR-I Leadership and Change Management

Course Objectives:

To by conceptual foundation to read change in Organizations

Course Outcomes:

CO1:The student will gain knowledge and understanding of different leadership styles and models. The student will be familiarized with the drivers, methods and model of change.

MB 404-HR-II Performance Management

Course Objectives:

I. The Main objective of the course in to offer an understanding of various approaches to measure performance and facilitates studying different methods of performance appraisal.

2. The course also provide knowledge of the processes performance bench — making and frameworks of Competencies

3. The Course gives understanding of various performance metrics and models.

Course Outcomes:

CO1. To produce Competent Executives

CO2. To transform Performance Appraisals, Performance Management

CO3. To build pivotal performance

CO4. To establish leading Human Capital

MB 404-S-4 Data Visualization

Course Objectives:

1. To enable students to understand the concepts related to data visualization.

2. To understand the tools and techniques of Data Visualization, Dashboards.

3. A practical understanding of Visualization with Power BI.

Course Outcomes:

COI. Enables students to understand importance of Data —Visualization for Decision-Making.

CO2. Helps students to get practical experience of Data Visualization on Microsoft Power HI

MB 404-S-II Data Mining for Business

Course Objectives:

To familiarize a management student with concepts related to data mining, data mining tasks and applications of data mining.

Course Outcomes:

CO1:Enables students to understand the role of data mining in business and decision- making process.

BBA- Bachelor of Business Administration.

PROGRAMM OUTCOMES:

BBA is a stepping stone to the high value postgraduate course, MBA. It helps the students to gain essential knowledge about the corporate world and also the fundamentals of administration.

1) After completing three years for Bachelors in Business Administration (BBA) program, students will be enhanced with knowledge and skills in the field of management, accounting, marketing and human relations.

2)The students are equipped with entrepreneurial and managerial skills for effective and business management.

3) Graduates gain expertise in the area of leadership, interpersonal skills, entrepreneurship, and marketing.

4) Graduate will competent the global competitive world more professionally.

5) Graduate are empowered to be a responsible citizen and lead the business with moral and ethical value through business ethics courses.

COURSE PROGRAM:

Year: I / Semester: I

DSC 101-Principles of Management

CO1. To understand the nature and purpose of different types of organization.
CO2. To describe the different ways in which organization may be structured.
CO3. To understand basic concept of sources of business finance.
CO4. Explain the various forms of business organization.
CO5. To describe the functions of management.

DSC 102- Basics of Marketing

CO1. Demonstrate understanding of the strategic marketing environment.
CO2. Successfully identify viable segmentation and targeting approaches for markets.
CO3. Demonstrate understanding of the role of market intermediaries in introducing products to markets.
CO4. Develop framework for the product life cycle and pricing decision.

CO5. Demonstrate understanding the role of marketing intermediaries in introducing products to market.

DSC 103- Business Economics

CO1. To facilitate the students to learn the concepts of economics and apply them in real situations.

CO2. To understand the concepts of demand and various types of demand and concepts of supply.

CO3. To make the student to understand the theory of production function.

CO4. To understand the different type of cost concepts and economic scope.

CO5. To understand the market structure and pricing.

Year: I / Semester: II

DSC 201- Organisational Behaiour

CO 1. Analyze individual and group behaviour and understand the implications of organizational behaviour on the process of management.

CO2. Identify different motivational theories and evaluate motivational strategies used in variety of organizational setting.

CO3. Evaluate the appropriateness of various leadership styles and conflict management strategies used in organizations.

CO4. Describe and access the basic design elements of organizational structure of evaluate their impact in employee.

CO5. Explain how organizational change and culture affect working relationship within organizations.

DSC 202 -Business Statistics

CO1. Explain probability theory and probability distributions in relation to general statistics analysis.

CO2. Analysis and contrast techniques and basic of quantitative methods within the context they are to be applied.

CO3. Evaluate sampling methodologies and their associated analysis.

CO4. Design, evaluate and apply regressions analysis.

CO5.Critically evaluate statistical results.

DSC 203 -Financial Accounting

CO1. Explain the book keeping and accounting and purposes and functions of accounting.
CO2. Explain the difference between management and financial accounting.
CO3. Describe the main elements of financial accounting information.
CO 4. Identify the main financial statement and their purposes.
CO5. Demonstrate an understanding on IAS and IFRS.

Year: II / Semester: III

DSC 301- Human Resources Management

CO1. To provide the students with analytical skills to utilize human resources metrics and technological application to enhance the effectiveness of recruitment training development and relation of human resource.
CO2. Formulate human resource policies and practices that help promote the organizations strategic goals.
CO 3. Develop an understanding of the challenges of human resources management and successfully manage and resolve conflict.
CO4. Remonstrate as commitment to lifelong learning by participation in profession development activities.
CO5. Evaluate legal and ethical issues as they apply to human resource management locally and globally

DSC 302- Information Technology for Business

CO1. Be able to use current technique, skills and tools necessary for computing practice.
CO2. Demonstrate proficiency in Microsoft Office and windows file management.
CO3. Integrate HTML, CSS, Visual Basic.net and Java Script into stand alone and design web pages.
CO4. Understand best practices and standard and their applications.
CO5. Use current computing techniques, skills or technologies.

DSC 302 (Practical) - Information Technology -Lab

CO1:The aim of this course is to give a management students practical experience on working in typical office software like MS-Office

DSC 303- Financial Management

CO1. Demonstrate an understanding of the overall Role and importance of the finance function.

CO2. Demonstrate understanding of the goals of the finance manager.

CO3. Identify finding source, instruments and markets.

CO 4. Demonstrate knowledge of the value of money over time and its uses.

CO5. Prepare and evaluate operating as well as capital budgets.

Year: II / / Semester: IV

DSC 401- Business Law & Ethics

CO1:It helps the students to understand importance of contracts act and ethics.

CO2:It focuses on legal aspects of contracts

DSC 402- Marketing Research

CO1. To enhance the students understanding of the marketing research industry.

CO2. To develop skills required by the researcher and understand different applications of marketing research.

CO3. To explore different approaches of marketing research.

CO4. To be able to expat marketing research data for management decision making.

CO5. To analysis and interpret both qualitative and quantitative data.

DSC 403- Management Science

CO 1. To understand the cote concept of management science and operations management.

CO2. To use mathematical tools and techniques to aid decision making and planning.

CO3. To use different inventory control models, forecasting techniques and queuing models in business.

CO 4. To enhance the level of critical thinking.

CO5. To use spread sheets to formulate and use simple models.

Year: III / Semester: V

DSC 501- Financial Markets and services (F)

CO1. To understand the characteristics of different financial assets.
CO2. To understand the benefit of diversification of holding a portfolio of assets.
CO3. How to apply different valuation model to evaluate fixed income securities stock.
CO4. Explain how to use different derivative securities to manage their investment risk.
CO 5. To understand the advantage and disadvantages of mutual funds.

DSC 501 (b) -Brand Management (M)

CO1:To Provide an understanding of different types of Brand Awareness, Equity.

DSC 501 (C) - Organisation Development (HR)

CO1 :This course offers an exploration of the field of OD through its human and social process and address new management and OD paradigms in rapidly changing context of globalisation and Organisational Change

DSC 502 (a) - Analysis of Investment in Financial Assets (F)

CO1 -The objective of the course is to provide the students with a basic view of valuation and investment in financial assets

CO2: To explain the basic concepts of risk and return and various methods of analysis

CO3: To explain the concept portfolio and the various portfolio theories and evaluation methods

DSC 502 (b)- Retail Management (M)

CO1: This course introduces the role of retailing and various formats and theories
CO2 It focuses on distribution management

DSC 502 (c) -Performance Appraisal and Counselling (HR)

CO1 : This course offers an understanding of employee performance and measures to improve through HRD

DSC 503 (a) - Insurance (F)

CO1:The course helps the students to know about insurance

CO2: It focuses on latest trends in insurance

DSC 503 (b) - Customer Relationship Management(M)

CO1: To know the importance of customer involvement and relations with corporations making the student know and build beneficial relations

DSC 503 (C) - Compensation Management (HR)

CO1: To impart techniques and methods for competing employer-employee negotiations for arriving at optimal compensation system

Year: III/ Semester: VI

DSC 601 (F) - Banking (F)

CO1: The course helps the students to know about banking and its regulations

CO2: It focuses on latest trends in banking

DSC 601 (b)- Buyer Behaviour (M)

CO1: To understand the depth concept & theories of Consumer buying Behaviour

CO2: To focus on Learning theories

CO2: To know the impact of culture on Buyer Behaviour

DSC 601 (C) - Leadership and Change Management (HR)

CO1: This course focuses an understanding into Leadership activities and its influence on the Management of change in the organisations

DSC 602 (a) - Risk Analysis and Management (F)

CO1: This course enables the students to understand the risk associated with financial institutions and helps to manage risk effectively

DSC 602 (b) - Advertising and Sales promotion (M)

CO1: It helps the students to understand the importance of advertisements for promotion of products

CO2: It focuses on media planning, personal selling and sales promotion

DSC 602 (C) - Talent and Knowledge Management (HR)

CO1: The main objective of the course is to offer knowledge on various approaches to talent and knowledge management in business organisations.

CO2: The course also facilitate discussion on a variety of institutional strategies and models for dealing with talent and knowledge management

DSC 603 (a) -International Finance (F)

CO1: The objective of this course to provide inputs on globalisation, exchange Risk Management, financing of International Trade etc.

DSC 603 (b) - Rural Marketing (M)

CO1: The objective is to introduce rural market dynamics to the students so that they can learn about rural behaviour and factor that differs from urban market

DSC 603 (C) - Employee Relations (HR)

CO1: Apply the principles of employee relations in an organizational contact.
CO:2. Determines appropriate advice relating to rights, duties and obligations of the employment relationship.
CO 3. Evaluate the broader impact of negative and positive employee relationships.

DSC 604- Project Report and Viva-Voce

Course Objective:

Student should choose a topic based on his elective chosen in the final year and make a study and prepare a report which will be evaluated through a viva-voce

Course Outcomes:

After completing three years for Bachelors in Business Administration (BBA) program, students will be enhanced with knowledge and skills in the field of management, accounting, marketing and human relations.

CO1:The students are equipped with entrepreneurial and managerial skills for effective and business management

CO2: Graduates gain expertise in the area of leadership, interpersonal skills, entrepreneurship, and marketing.

CO3:Graduate will competent the global competitive world more professionally.

CO4:Graduate are empowered to be a responsible citizen and lead the business with moral and ethical value through business ethics courses.

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Department of Bio-Technology

The Department offers Biotechnology as an optional for B.Sc. Degree course. The course started in 2002 with an intake of 60 students and the combinations were Biotechnology, Botany

& Chemistry and Biotechnology, Zoology & Chemistry. The program has a six semester pattern. In the first two semesters, the fundamentals are taught; in the next two semesters, Molecular biology and r-DNA technology, Bioinformatics and Biostatistics is dealt and in the last two semesters, Application part of the program is taught. The course is designed in such away so that it can help the student in understanding the subject there by increasing their interest in learning the practical applicability of the course. The syllabus is designed keeping in view the common core syllabus. The course offered is in the CBCS pattern where80% is the common core syllabus and 20%is the updated under the autonomy. The practical learning is beneficial to the students not only for aspiring the higher studies but also making them eligible entrepreneurship and skill development. The programme also provides employability in large number of firms related to research and development in the field of applied biological science.

PROGRAM OUTCOMES

PO1: Students develop the global competencies in the area of basic and applied biological sciences.

PO2: To enrich student's knowledge and train them in various branches of Biotechnology such as Genetics, Molecular Biology, Biochemistry, Bioinformatics, Animal Biotechnology, plant Biotechnology, Environmental Biotechnology.

PO3: Students will be able to elaborate the concepts of biochemistry, molecular biology, r-DNA technology with ease to run the experiments.

PO4: Develop the skills to use modern equipments, analyze and solve problems in various branches of biotechnology

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PO5: To inculcate scientific attitude in students.

COURSE OUTCOMES:

Paper I: Cell biology and Genetics

Content: Laws of Mendel, epitasis, multiple alleles, pedigree analysis, maternal inheritance, linkage, crossing over and recombination, mechanism of sex determination in Drosophila, sex linked inheritance, basics of Cell division and cell cycle, cell structure and its functions.

CO1- Understand the concept of inheritance.

CO2- Understand the concept of Epistasis.

CO3- Understand the concept of Recombination, cell structure and its functions, behavior of different cells

Paper:II (Biological Chemistry and Microbiology)

Content: Carbohydrates, amino acids and proteins, lipids, vitamins and coenzymes. Classification of enzymes, kinetics and mechanism of enzyme action, regulation of enzyme activity, enzyme inhibitions, bioenergetics and metabolic pathways, lipid metabolism, protein metabolism, catabolism of amino acids, sterilization techniques, culture characteristics and identification of microorganisms.

CO1- Helps the students have a thorough understanding of the microbiology, including the prevention and control of infections and diseases.

CO2- Students have a good opportunity in quality control in pharma industry for checking the signs of contamination and it also provides a better scope for the students as a technicians in different medical and government organizations for the screening and analyzing the biological samples from different sources.

CO3- The student would be able to comprehend the structure of the major classes of macromolecules.

Paper:III (Molecular biology and r-DNA Technology)

Content: Genome organization and DNA replication, Gene Expression in prokaryotes and Eukaryotes, Gene regulation in prokaryotes and Eukaryotes, Recombinant DNA technology.

CO1- Understand the molecular aspects of inheritance in prokaryotes and Eukaryotes.

CO2- Understand the molecular biology aspects of genes and their expression and regulation patterns in both prokaryotes and in Eukaryotes.

CO3- students will be able to gain the knowledge in different Gene manipulation techniques.

CO4- Students also gain knowledge in applications of biotechnology in different fields.

Paper IV (BIOINFORMATICS AND BIOSTATISTICS)

Content: basics of bioinformatics its scope, applications in life sciences. Different types of databases, Alignment tools- BLAST and FASTA, phylogenetic analysis. Basics of biostatistics like measures of central tendency, probability, probability distributions and applications of biostatistics.

CO1- Understand the basics of Bioinformatics and Biostatistics.

CO2- Students will be able to learn different types of Databases, Sequence Alignment tools.

C03- Biostatistics helps the students to learn the different statistical methods like concepts of probability, hypothesis testing.

CO4- Biostatistics helps the students to learn the probability distributions and Applications of Biostatistics.

Paper V (MOLECULAR BIOLOGY)

Content: Prokaryotic ,viral, eukaryotic, organellar genomes, chemical composition of DNA, reassociation kinetics of DNA, kinetic classes of DNA, molecular organization of chromosomes, euchromatin and heterochromatin, gene and gene numbers, gene families and clusters ,specialized chromosomes, exons, introns, promoters, terminators, transcription in prokaryotes and eukaryotes, post transcriptional modifications , translation in prokaryotes and eukaryotes, regulation of gene expression in prokaryotes and eukaryotes.

CO1- Understand the basic concepts of molecular biology.

CO2- Understand the molecular biology aspects of genes and their expression and regulation patterns in both prokaryotes and in Eukaryotes.

CO3- Students understand the chemical and molecular processes that occur in and between the cells.

C04- students will gain the knowledge in structural organization of genes and organization of Genomes.

Paper VIA (MEDICAL BIOTECHNOLOGY) ELECTIVE-1

Content: Classification of chromosomes, numerical and structural chromosomal disorders, gain of function, loss of function mutations, dynamic mutations, mitochondrial diseases, immune pathology, hepatitis, HIV, autoimmune disorders, clinical management and metabolic manipulation, gene therapy, vectors used in gene therapy, stem cells, prenatal diagnosis, microarray technology, gene products in medicine and DNA based vaccines.

CO1- Students will learn the basics of Karyotyping.

CO2- Understands the basics of different prenatal diagnostic methods.

CO3- Students will be able to learn the role of vaccines for treating different diseases.

CO4- Understands the concept of different inherited diseases.

Paper VIB (BIOPROCESS TECHNOLOGY) ELECTIVE-2

Content: Introduction to fermentation, historical perspectives of fermentation technology and its applications, design of fermenter, an overview of upstream and downstream processing, types of bioreactors, media composition and formulation, bioprocess control and instrumentation. Downstream processing and its steps like foam separation, cell disruption, product isolation, purification techniques and product polishing.

CO1- Understands the basics of Bioprocess technology.

CO2- students will be aware of various methodologies for biomass production.

CO3- Understands the concept of fermentation, Fermentation technology, design of fermenter.

CO4- Understands product isolation using various Analytical methods.

Paper VII (GENETIC ENGINEERING AND IMMUNOLOGY)

Content: Enzymes used in gene cloning, properties of cloning vectors, plasmid vectors, phage vectors, cosmids, shuttle vectors, construction of genomic and c DNA libraries, selection of recombinant clones, principles and applications of PCR technology, DNA finger printing technique and its applications, applications of genetic engineering, innate and acquired immunity, introduction to immune system, antigens, structure and function of different immunoglobulins, antigen-antibody reactions, the MHC complex, hypersensitivity, autoimmune diseases.

CO1- Understand the cloning principles and strategies.

CO2- Understands the Analysis of clones.

CO3- Understands the principles of immunology

CO4- Learn the structure and function of immunoglobulin's, Antigen antibody reactions and autoimmune diseases.

Paper VIIIA (ANIMAL AND INDUSTRIAL BIOTECHNOLOGY) ELECTIVE-3

Content: Introduction and scope of animal biotechnology, animal cell culture ,primary cell culture techniques, establishment and preservation of cell lines, methods of gene transfer in animal in animal cells, production of transgenic animals and molecular pharming, transgenic models for studying diseases, introduction and scope of industrial biotechnology, primary and secondary metabolic products of microorganisms, screening, types of fermentation, methods of immobilization and application of immobilized cells, production of alcoholic beverages, chemicals, therapeutic proteins and enzymes.

CO1- students will be able to comprehend the basic concepts of establishing animal cell cultures.

CO2- Understands the principles and applications of molecular pharming.

CO3- Understands the role of industrial important microorganisms in the production of different proteins and Enzymes.

Paper: VIIIB (PLANT AND ENVIRONMENTAL BIOTECHNOLOGY) ELECTIVE-4

Content:

Composition, preparation and sterilisation of media, role of micronutrients and plant growth regulators in differentiation, induction of callus, meristem culture and production of virus free plants, clonal propagation plants on a commercial scale, mass cultivation of cell cultures and process engineering, production of useful compounds by plant cell cultures, bioreactors, application of recombinant DNA technology in agriculture, renewable and non renewable energy resources, conventional and non conventional energy sources and their impact on environment, microbiological quality of milk, food and water, microbial treatment of municipal and industrial effluents, biopestcides, biofertilisers and bioremediation.

CO1- learn the basic concepts of plant tissue culture techniques.

CO2- Undestand the role and application of Recombinant DNA technology in production of Novel compounds.

CO3- Understand the basic concept of Environmental pollution, types of pollutants and related hazards.

CO4- Acquire knowledge of bioremediation and its application in environmental cleanup.

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Department of Botany

In B.Sc. Botany Program Syllabus is designed and practiced for more benefits of students More laboratory practical is designed in the syllabus for individual student execution of practical is practiced.

PROGRAM OUTCOMES

PO1: Can peruse master in Botany and allied subjects.

PO2: Can work in diagnostic pharmaceutical labs and industry.

PO3: Can write competitive exams.

PO4: Can know about economic important of plant in daily life.

PO5: To know about medicinal uses of plants and cure many diseasesno side effects future.

PO6: plant uses in Ayurveda and Unani

COURSE OUTCOMES:

TITLE: MICROBIAL DIVERSITY OF LOWER PLANTS

CO1:To acquire information regarding microbial variety.

CO2:To get knowledge structure and transmission of plants diseases caused by bacteria and viruses.

CO3:To know different plant diseases and their control measures.

CO4:To comprehend life patterns of various algal and fungal species.

CO5: To know the nutritional value of algae.

CO6: Economic importance of lichens.

CO7: To gain knowledge about life cycles and systematic position of Bryophytes and Pteridophytes.

CO8: practical Gram staining of bacteria.

CO9: Demonstrate practical skills in fundamental microbiological techniques.

CO10: To learn about Mushroom cultivation technique.

CO11: Through section cutting to observe morphology (vegetative and reproductivestructure) Bryophytes and pteridophytes,

TITLE: GYMNOSPERMS, TAXONOMY OF ANGIOSPERMS AND ECOLOGY

PROGRAM OUTCOMES

PO1: To get the phylogeny of Gymnosperms.

PO2: To acquire information about existence patterns of gymnosperm plants

PO3**:** General record of construction and propagation of gymnosperms.

PO4**:**Terminologyand order of gymnosperms. Demonstrative highlights of certain families.

PO5:Order Plant systematics and perceive the significance of herbarium and Virtual herbarium

PO6**:**Assess the Important herbaria and botanical gardens.

COURSE OUTCOMES:

CO1: Demonstrate proficiency in preparing double stained permanent mounts of section cuttings.

CO2: Apply techniques of conservation and propagation of medicinal plants.

CO3: Interpret the process of harvesting, drying and storage of medicinal herbs (Herbarium preparation)

CO4: Sketch the anatomical characters of Hydrophytes and Xerophyte

SECOND YEAR, III-SEMESTER

TITLE: Plant Anatomy, Embryology

PROGRAM OUTCOMES:

PO1**:** Foster a comprehension of ideas and essentials of plant life structures

Inspect the interior life structures of plant frameworks and organs

PO2: Gives the data of typical stem and root life structures.

PO3: Gives the information on essential bizarre design of stem.

PO4: Information on unusual conduct of cambium.

COURSE OUTCOMES:

CO1: Meristems, Leaf ontogeny diversity of internal structure.

CO2: General account of adaptation in xerophytes and hydrophytes

CO3: Anomalous secondary growth of stem, Wood structures study of local timbers

CO4: Demonstrate pollen viability test

CO5: Study of ovule, endosperm types and types of embryosac

CO6: Demonstrate the practical skill knowledge of Temporary and Permanent double stain mounting of various stem Anatomy

Co7: Stomatal types using epidermal peels.

CO8: Developmental stages of dicot and monocot.

SKILL ENHANCEMET COURSES

NURSERY AND GARDENING- (SEC - 1)

PROGRAM OUTCOMES:

PO1: Identify and research career opportunities in the horticulture industry as well as emerging trends

PO2: Identify and practice safe use of tools, equipment and supplies used in nursery and garden management.

PO3: Show a comprehension of the synthesis, ripeness and science of soil and how they connect with great plant development.

PO4: Show a comprehension of utilitarian business information in the nursery and nursery the executives business..

COURSE OUTCOMES:

CO1: Nursery scope and building up of infrastructure nursery planning and seasonal activities.

CO2: Seed production technology seed testing and certification.

CO3: To study the different vegetative propagation methods and greenhouse maintenance.

CO4: Gardening landscape and home design parks and gardening operations.

CO5: To study about some famous gardens of India. Cultivation of important cut flowers like Aster, Chrysanthemum, Dahlia, Gerbera, Marigold and Rose.

BIOFERTILIZERS AND ORGANIC FARMING- (SEC- 2)

PROGRAM OUTCOMES:

PO1: Biofertilizers supplement the prerequisites of manures.

PO2: The utilization of biofertilizers is being underscored along with synthetic composts and natural.

PO3: Biofertilizers are live items (or inert cells of microorganisms) and require care away, transport, application and keeping up with field conditions.

PO4: Capacity to recognize the kinds of biofertilizers..

COURSE OUTCOMES:

CO1: Students can clarify the ideas of natural cultivating.

CO2: Utilization of different natural contributions for crop creation.

CO3: Fungal Biofertilizers, colonization of VAM

CO4: Organic Farming, Recycling of bio-degradable municipal agriculture and industrial waste.

CO5: To know how to making bio compost, methods of vermicomposting.

TITLE: Cell Biology, Genetics and Plant physiology

PROGRAM OUTCOMES:

PO1: Gives the information on cells activities, Ultra construction of cell organelles.

PO2: Deals with principles of inheritance, gene interactions and multiple factor hypothesis.

PO3: Information on linkage, recombination and hereditary, Gene mutations

PO4: To get knowledge about types and functions of DNA and RNA

Po5: To Know plant and water relationship

COURSE OUTCOMES:

CO1: To know about chromosome morphology and special types of chromosomes, euchromatin and heterochromatin, Karyotype.

CO2: How linkage and crossing over takes place and recombination frequency.

CO3: Demonstrate the practical skill knowledge of identifying Mitotic cell division stages in onion/Garlic root tips.

CO4: Solve the genetic problems based on Mendelian inheritance

CO5: Demonstrate plant physiological experiments like plasmolysis, catalase activity, paper chromatography, protein estimation.

CO6: Study of mineral deficiency symptoms of micro and macro nutrients.

SKILL ENHANCEMET COURSES

GREEN HOUSE TECHNOLOGY (SEC – 3)

PROGRAM OUTCOMES:

PO1: Find and access composing and resources pertinent to nursery improvement and the chiefs.

PO2: To study different kinds of nurseries and decide specific locale/environment.

PO3: Clarify ecological controls and plant social techniques used in nurseries.

PO4: Application of Greenhouse technology, Micropropagation and tissue culture transplants.

COURSE OUTCOMES:

CO1: To maintain irrigation system in greenhouses water quality and water sanitation.

CO2: Net -poly houses low-cost green houses.

CO3: Utilises of organic and inorganic fertilizers.

Co4: Management of pest and diseases.

MUSHROOM CULTURE TECHNOLOGY (SEC – 4)

PROGRAM OUTCOMES:

PO1:Distinguish consumable sorts of mushroom

PO2: Acquire the information on development of various kinds of consumable mushrooms and bring forth creation.

PO3: Deal with the sicknesses and vermin of mushrooms.

PO4: Mushroom bed preparations.

PO5: Nutritional values of mushrooms.

COURSE OUTCOMES:

CO1: Cultivation of different types of mushrooms like edible and poisonous mushrooms in India.

CO2. To known the preparation of spawn using paddy straw, sugarcane trash and maize straw.

CO3. Types of food preparation from mushroom.

CO4. To get knowledge of research centres National and Reginal level.

CO5. Marketing in India and abroad, Export value.

TITLE: BIODIVERSITY AND CONSERVATION (IA)

PROGRAM OUTCOMES

PO1: To get what is inferred by biodiversity and its worth

PO2: To get current threats to biodiversity

P03: To review the fundamental ideas of conservation practices

PO4: Aware of the relevant legislation and recent initiatives in EU and world wide

PO5: To understand the role and principles of operation of different types of protected areas.

COURSE OUTCOMES:

CO1: Study of plant diversity and its scope local biodiversity

CO2: Loss of Agro biodiversity and Projected scenario for biodiversity loss.

CO3: Biodiversity information management and communication.

CO4: Conservation of Biodiversity Genetic, species and ecosystem diversity.

CO5: Principles of conservation In-situ and Ex-situ conservation.

CO6: Role of plants in relation to Human Welfare, importance of forestry their utilization and commercial aspects.

TITLE: SEED TECHNOLOGY (IB)

PROGRAM OUTCOMES:

PO1**:**Seed development in cultivated plants, seed quality, importance of genetic purity of seed.

PO2: Hybrid seed production and heterocyst.

Po3: Analyze the different strategies for seed processing in different Plants

PO4: Examine the various methods for Seed production

PO5: Explain cross pollination and variety seed creation

PO6: Research the seed testimony strategy and importance.

COURSE OUTCOMES:

CO1: Collection and storage of pollen for artificial pollination.

CO2: Seed dormancy types causes and methods of breaking dormancy.

CO3: Physiological processes during seed germination, seed respiration.

CO4: To maintain seed banks -National and International level.

CO5: Specific seed certification standard maintained by issuing certificate

TISSUE CULTURE AND BIOTECHNOLGY (DSE-1)

PROGRAM OUTCOMES:

PO1: Sterilization procedures.

PO2: Portray the different parts of plant tissue culture media, Nutrient and hormone requirements

PO3: Recognize the different methods to taken to lay out specific plant groups

PO4: Arrange the different phases of micro - propagation, including morphogenesis Separate Callus, Rooting, Shooting and Hardening

PO5: Delineate the centre ideas and basics of plant biotechnology and hereditary designing

COURSE OUTCOMES:

CO1: Application of tissue culture used in production of pathogen free somonoclonal and synthetic seed.

CO2: To get knowledge about Organogenesis, embryogenesis.

CO3: To know the methods of gene transfer microinjection and electroporation

ANALYTICAL TECHNIQUES IN PLANT SCIENCES (DSE-2)

PROGRAM OUTCOMES:

PO1:To provide scientific understanding of the principle and applications of various instruments.

PO2: To impart the theoretical knowledge about various analytical techniques used in biotechnology.

PO3: Know the details of Microscopy- Principles of light microscopy, electron microscopy (TEM and SEM).

PO4: Comprehend and perform Chromatography and social procedures in Botany.

COURSE OUTCOMES:

CO1: Study of different microscope techniques Light, fluorescent and TEM, SEM

CO2: Study of blotting techniques southern, northern western DNA finger printing, DNA sequencing.

CO3: Demonstration of ELISA.

CO4: Isolation of chloroplast by differential centrifugation.

CO5: Multicultural competence Understanding of various analytical techniques of plant sciences.

CO6: Biostatistics -data, population and parameters Arithmetic mean,Chi-square test.

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Department of Chemistry

The Chemistry program is the most important course for life science students and physicals science students as it has multi disciplinary impact. The program imparts knowledge about basic chemical concept, analytical techniques, physical chemistry. Students understand the concepts of organic chemistry and drug synthesis. The course also covers emerging trends and environmental issues.

BSc Chemistry\FYIC

PROGRAM OUTCOMES:

PO1: To learn basic concepts of Chemistry with special emphasis on chemical properties, reaction mechanisms and analysis.

PO2: Program imparts knowledge of extraction of metals , Synthesis of drugs and Organic compounds, physic-chemical concepts and analytical data evaluation.

PO3: Students learn about Coordination Compounds, Organo Metallic Compounds, including Bioinorganic chemistry. Course imparts knowledge about environmental sustainability with green synthesis.

COURSE OUTCOMES:

CO1: Basic concepts of periodic elements, Structure and reaction mechanism of Organic compounds, Laws governing physical state of matter (gas and solid state), Quantitative analysis.

CO2: Zero group and d-block elements study, reactivity of aromatic compounds and halogens. Student will learn laws related to solutions and colloids, concept of chemical bonding and Qualitative analysis and Non- aqueous solvents.

CO3: Concepts of Metallurgy and f-block elements. Study of Hydroxy, Carbonyl compounds and their derivatives, phase rule, colligative properties, Knowledge of synthesis of drugs, usage of pesticides.

CO4 : Student learns about Analytical techniques like TLC, CC,GC,HPLC. Knowledge about Nitrogen compound and Carboxylic acid derivatives,Electrochemistry and spectral methods of characterization are learnt.

CO5: Concepts of Coordination compounds, details about amino acids, proteins and heterocyclic compounds, basic concepts of chemical kinetics and photochemistry.

CO6: (E1) Organo metallic chemistry, Bioinorganic Chemistry importance in daily life, Enviromental sustainability with respected to conventional energy resources and Non-conventional resources.

CO7: (E2) Concepts and applications of Green chemistry for environmental protection.

CO8: Concepts of symmetry, reactivity of metal complexes, concepts of thermodynamics, carbohydrates and stereochemistry of carbon compounds

CO9: (E1) Metal carbonyls, synthetic strategies including pericyclic reaction including asymmetric synthesis, material science and catalysis.

CO10 :(E2) polymers and polymeric compounds-preparation, properties and applications.

MSc Chemistry/ FYIC

PROGRAM OUTCOMES:

PO 1: Can pursue higher studies such as PhD in the subject.

PO2: Write all competitive exams.

PO3: Can work as Professional teachers.

PO 4: Can work as Research Associates in Pharma companies or in industries.

PO 5: Students are made to do projects which help them to do research in future.

COURSE OUTCOMES:

CO 1: Paper I (Inorganic Chemistry)

Students are made to know the concepts of symmetry of molecules, theories of bonding in metal complexes, ligational aspects of diatomicmolecules, Coordination equilibria, Bioinorganic chemistry, metal clusters and reaction mechanism of coordinate complexes.

CO 2: Paper II (Organic Chemistry)

The students will have the basic foundation in organic chemistry dealing with stereochemistry, conformational analysis, reaction mechanisms for different kinds of substitution reactions, learn about natural products and heterocyclic compounds. The photochemistry and pericyclic reactions which have wide applications in drug synthesis are being taught

CO3: Paper III (Physical Chemistry)

Study on photochemistry, quantum mechanics, chemical kinetics of the reactions and thermodynamic properties along with electrochemistry are made.

CO 4: Paper IV (Analytical techniques and spectroscopy)

All the analytical techniques used in industries and pharma sectors are dealt in this paper.

Separationtechniques such as chromatographic methods like Gas Chromatography and High Performance Liquid Chromatography and their applications in various fields.

Spectroscopic techniques like Photoelectron and ESR, Nuclear magnetic Resonance, Rotational, Vibrational, Raman and ElectronicSpectroscopy were dealt in detail to understand the nature and behavior of themolecules under different radiations.

Mass spectrometer and electroanalytical techniques used for quantification of samples are studied.

pH metry, potentiometry, conductometry, DTA and TGA studies are all studied which are widely used in industries for characterization of the samples

Skill enhancement course for FYIC 3rd year on computational chemistry and drug designing also studied.

MSc FYIC 4th year(semester VII and VIII)

CO 5: Paper I(701) Inorganic Chemistry-III and Paper I(801) Inorganic Chemistry-IV

Study on group theory, molecular orbital theory applied to different geometries, electronic, IR and Raman spectroscopy.Metal ion interactions with nucleic acids and their constituents , Transport of electrons and metal ions, metalloenzymes of iron zinc and Nickel, cobalt, manganese and molybdenum

CO 6:Paper II(702)Organic chemistry-III and Paper II(802) Organic chemistry-IV

Synthetic reagents, confirmational analysis ORD AND Carbohydrates, asymmetric synthesis new concepts in organic synthesis

CO 7: Paper III(703)Physical chemistry-III and Paper III(803)Physical chemistry-IV

Quantum mechanics, advanced concepts of chemical kinetics, electrochemistry, statistical thermodynamics, angular momentum and appropriate methods and polymerisation

CO 8 :Paper IV(704**)Analytical Techniques and Spectroscopy-III and Paper IV(**704**)Analytical Techniques and Spectroscopy-III**

Diffraction methods, Thermal methods, advance mass spectrometry, green chemistry, NMR multinuclear technique, Mossbauer and NQR Spectroscopy, AAS, AES, ICP-AES

CO 9: Paper V(705)Skill enhancement course(SECIII)

Knowledge on Intellectual property rights and chemistry of Drugs and Pharmaceuticals

CO 10: Paper V(805)Skill enhancement course(SEC IV)

Students learn about introduction to IPR and how to do patent search and IP report generation

Practical knowledge on organic synthesis and identification by TLC and column chromatographic method, spectroscopic methods of analysis using spectrophotometry. Colorimetry, Fluorimetry, and Flame photometry, chemical kinetics.

MSc FYIC 5thyear(Semester XI and X)

CO 11: Paper I(901) Inorganic Chemistry-V

To inculcate the research activity in modern era students are exposed to the area of OMCs with concepts of structural and chemical properties of transition metals, and different

applications are also explained in the area of catalysis.

CO 12:Paper II(902) Organic chemistry-V

Introduction to Bioorganic chemistry where role of enzymes, coenzymes are studied along with proteins, carbohydrates and lipids, nuclei acids and detailed study on Heterocyclic compounds

CO 13: Paper III(903)Physical chemistry-V

Nano materials and non linear optical methods, laser in chemistry, phase transfer catalysis and corrosion and its control

CO 14: Paper IV(904)Analytical Techniques and Supramolecular Chemistry

Analytical techniques like surface analysis methods, advance separation methods Data Handling and Supramolecular chemistry

CO 15: Paper V(805)Skill enhancement course(SEC VII)

course on Research methodology where how to find the journal sources and types of databases are studied

Practical knowledge on electroanalytical techniques such as Ph- metry, Potentiometry and conductometry

Project work taken up by the students in various industries and companies for semester X .

SPECIALISATION-(INORGANICCHEMISTRY)

Semester-III

CO16: CHIC-301T: paper-I; Bonding, Group theory and its applications
Students gain knowledge of elaborative symmetry concepts and its wide applications in terms of spectral characterization like – electronic, IR and Raman. In addition to this the applications of group theory applied to explain MOT of coordination compounds.

CO17:CHIC-302T: paper-II; OMC of transition metal complexes
This paper makes the students learn the research activities by understanding organometallic compounds which are used as catalysts and as synthetic reagents for synthesis of organic compounds with concepts of structural and chemical properties of OMCs.

CO18:CHIC-303T:paper-IIIa;Analyticaltechniques-I

This paper gives the knowledge of stastics, which has a crucial role in interpreting the obtained data as well as helps in validating the results. It also deals with the basic principles, instrumentation and application of AAS, XRD and Mass spectrometry which has applications researchfield.

CO19:CHIC-304T:paper-IVa:Analyticaltechniques-II

This course is designed to make students learn about various advanced and sophiscated Analytical techniques which has a key role in research field . This paper gives the knowledge of basic principles and Instrumentation of Thermal Methods, Surface Analysis Methods, Advanced Separation Techniques and Optical Methods. It demonstrates the importance of chemistry in understanding the physicochemical properties of various compounds.

CO20:CHIC-401T:paper-I:Molecular spectroscopy of inorganic compounds:

Students will gain knowledge in structural elucidation of metal complexes by using the theoretical principles of NMR, ESR, Mossbauer and NQR spectroscopy. This will give an exclusive idea of spectral analysis which can be applied further in research.

CO21:CHIC-402T: paper-II: Bioinorganic chemistry:

This course explain the role of metal ions in biological systems, metal interactions with DNA, RNA, metallo enzymes, electron transport proteins and its functions. This information provides a wide spectrum of biologically important proteins and the chemistry behind life to further explore the research idea.

CO22:CHIC-403T: paper-IIIa: Medicinal chemistry Spectroscopic Analysis of Drug/Metal Complexes and Applications of Nanomaterials:

The course is taught to bright up the knowledge of medicinal chemistry - chelation therapy, different metal complexes as anti cancer drugs, Analysis of drug DNA binding through spectral methods and applications of nano materials in biological systems.

CO23:CHIC-404T: paper-IVa: Interdisciplinary course (Environmental and Applied Analysis)

This paper bounces the basic theoretical principles and applications of classical, Instrumental and various separation methods employed in the routine assay of various pharmaceuticals. It enlightens the role of chemistry in clinical, food, agricultural and environmental analysis.

SPECIALISATION (ORGANIC CHEMISTRY)

Semester-III

CO24:Paper-1CH(OC)301T: Synthetic Reagents, Advanced NMR, Conformational Analysis

and ORD

The students will know about broad range of chemicals which are useful in chemical synthesis and transferring from one functional group to another. NMR technique help in resolving structural problems and also in designing new drugs which help students in research work. Conformational analysis used to study activity of the drug in different conformations.

CO25:Paper II– CH (OC) 302T: Modern Organic Synthesis

The students are introduced to New techniques, methods, reactions and also strategies' so that they can use in medicinal chemistry for designing new drugs.

CO26:Elective-3A Paper-III CH (OC)303T (CB1): Bioorganic Chemistry

The students are introduced to the basics of biochemistry so that it will be helpful for studying mechanism of drug actions and metabolic processes in IV-Semester.

CO27:Elective-4A Paper-IV CH (OC) 304T (CB3): Green chemistry and Organic materials

By this course students are educated about importance of saving and protecting the environment.

SEMESTER - IV

CO28:Paper-1 CH (OC) 401T: Drug Design and Drug Discovery

The students are introduced to the basic of drugs, drug discovery, SAR, QSAR, Advanced technics like CADD and Combinatorial synthesis.

CO 29:Paper-II CH (OC) 402T: Drug synthesis and mechanism of action

The students study about the indepth mechanism of action of important drugs like Drugs acting on immune system, metabolic processes, ion channels, chiral drugs.

CO 30:Elective-3A Paper-III CH (OC)-403T (CB1): Advanced Heterocyclic Chemistry

The students study about various heterocycles from 5 membered heterocycles to higher heterocycles helpful for their future programmes.

CO31:Elective-4A Paper-IV CH (OC) 404(CB3)T: Advanced Natural Products

The course introduces the students to natural products, its synthesis and stereochemistry of natural products and also about the stereoselective synthesis if natural products.

Semester-III

CO32:Paper-1CH(PC)301T: Quantum chemistry and Group Theory

Students study about determination of vibrational and translational modes and term symbols, symmetry elements, point group and matrix properties. Nature of the molecule and its bonding properties are learnt.

CO33:Paper-IICH(PC)302T:Spectroscopy and Lasers

The light properties and interaction of molecules with light are studied whereby molecular structure can be determined which students can use for their research purpose.

CO34: Paper-IIIA CH(PC)303T(CB1):Applied chemistry, material science and radiation effects

Application of electrochemistry, kinetics and NLOs material in daily life . Clinical analysis can be learnt .

CO35:Paper-IVA CH(PC)304T(CB3): Polymer chemistry

Wide applications of polymer chemistry in Industries so that students can work in Industrie. Moulding plastics are being learnt

Practical knowledge of chemical kinetics and instrumentational method of analysis

Semester-IV

CO36:Paper-1CH(PC)401T(CB1):Thermodynamics, chemical kinetics and electrochemistry

Knowledge on enthalpy, rates of reaction, entropy of a reaction and determination of conductance, potential of the reactants

CO37:Paper-2CH(PC)402T: Supramolecular Chemistry , Photochemistry and Computational chemistry

Photosynthetic studies and flash energies of the reactions, DFT calculations and binding energies are determined very useful for research and designing new drugs

CO38:Paper-3 CH(PC)403T(CB1): Catalysis

Catalytic reactions are studied, phase transfer reactions are studied which are important in designing the mechanism of reactions

CO39:Paper-4 CH(PC)404T(CB4): Engineering Chemistry

Corrosion studies, energy sources and waste water treatments are studied where industrially applications are dealt

Practical knowledge of chemical kinetics determining the rates of reactions.

Instrumental methods such as pH-Metry ,poetetiometry and conductometry and their applications are studied

SPECIALISATION (PHARMACOINFORMATICS)

CO40:CH(CPI)301 T : Database Management, Sources and Scripting Languages

Knowledge about information sources and searching strategies. Ability to develop scripts to maintain database objects. Understand the methodology of Data mining and have the knowledge of machine learning techniques.

CO41:CH(CPI)302T:Computational Chemistry, Molecular Modeling& Its Applications.

Learning CADD methods to develop new chemical entities. Knowledge about the QM/MM calculations. Knowledge of different methods (Ligand based /Structure based) used in computer aided drug designing.

CH(CPI)303

CO 42: T: ELECTIVE 3A: Synthetic Reagents, Advanced NMR, Conformational Analysis and ORD

The students will have hold on reagents and conformational analysis useful for solving organic problems in synthesis of chemical entities of designed.

CO 43:CH(CPI)304 T:ELECTIVE 4A: Modern Organic Synthesis

Understandiing new techniques, methods, reactions and also strategiesso that they can use in medicinal chemistry for designing new drugs.

Semester IV

CO 44:CH(CPI) 401 T: Pharmacokinetics

Knowledge about the importance of ADMET properties in drug designing and discovery. Ability to design the drugs which are synthetically feasible to avoid failures in clinical phase trials.

CO 46 CH(CPI) 402T : Principles of Drug Discovery, Drug Targets and chemistry of Pharmacology

Students will get the knowledge of principles of pharmacology and different drugs acting on different drug targets.

CO47:CH(CPI) 403T: ELECTIVE 3A: Pharmaceutical Analysis

This paper deals with Assay of various pharmaceuticals and their applications.It deals with the basic theoreticalprinciples of classical methods (acid-base titration, redox titration) and also the basic theoretical knowledge of separation techniques and instrumental methods employed in analysis of Drugs. It demonstrates the importance of chemistry in development as well as understanding the physicochemical properties of drugs .

CO48:CH(CPI) 403T: ELECTIVE 3B: Bio organic Chemistry

The students are introduced to the basics of biochemistry so that it will be helpful for studying mechanism of drug actions and metabolic processes.

CO49:CH(CPI) 404T: ELECTIVE 4A: Advanced Heterocyclic Chemistry

Learning about different types of heterocycles will help in drug designing programmes.

CO 50:CH(CPI) 404T: ELECTIVE 4B: Green chemistry and Organic materials

By this course students are educated about importance of saving and protecting the environment.

Department of Computer Hardware

In B.Sc Electronics program syllabus is planned and practiced for more benefit of students. Necessary practical experiments are designed in the syllabus; connections of the circuit diagram on the electronic board are individually performed by the student in the practicals session. Experiments of practical with circuit diagrams and applications are practiced. Individual projects are done by the students at the end of programme. This is helping to the students for participation in the conferences, seminars, industries and filing patents. With the above practices students are becoming more subject and practical oriented which will help them in their future carrier

PROGRAM OUTCOMES

PO1: Can peruse masters in Electronics and allied subjects.

PO2: Can work in electronic labs and electronic industries.

PO3: Can write competitive exams.

PO4: Can take up teaching.

COURSE OUTCOMES

Paper-I : Analog circuits

Basic components of electronics, Basic definitions and units, Network theorems, AC brides, Fundamentals of AC and DC, Phasor, RC and RL circuits, Frequency response of RC and RL circuits, RLC series and parallel resonance circuits and Cathode Ray Oscilloscope(CRO)

CO1: Students will get basics and importance of electronics.

CO2: Theory & practical's of Network Theorems.

CO3: Theory & practical's of AC bridges.

CO4: Theory & practical's of RC and RL circuits.

CO5: Block diagram of CRO and its applications.

Paper-II : Electronic devices

Formation of PN junction, Depletion region, Junction capacitance, Diodes, PNP and NPN transistors, BJT static characteristics (Input and Output), Early effect, CB, CC, CE configurations of transistor h–parameter model and its equivalent circuit, Field Effect Transistor (FET), Uni Junction Transistor (UJT), Silicon Controlled Rectifier (SCR), Photo electronic Devices.

CO1: Students will get basics of semiconductors and importance of electronic devices.

CO2: Theory & practical's of Diodes.

CO3: Theory & practical's of Transistors.

CO4: Theory & practical's of FET, UJT and SCR.

CO5: Photo electronic devices and its applications.

Paper-III : Power supply and Analog circuits

Rectifiers and filters, Regulated Power Supplies, Transistor amplifier, Feedback in amplifiers, Oscillators and Multi-vibrators.

CO1: Students will get basics of power supply and importance of amplifiers.

CO2: Theory & practical's of Regulators.

CO3: Theory & practical's of Transistors amplifier.

CO4: Theory & practical's of Feedback amplifier and oscillators.

CO5: Applications of Rectifiers, Amplifiers and oscillators.

Paper-IV : Operational Amplifiers and Communication

Operational Amplifiers, Applications of Op-Amps, Modulation, Amplitude modulation, Frequency modulation.

CO1: Students will get basics of operational amplifiers and their importance.

CO2: Theory & practical's of Operational amplifiers.

CO3: Theory & practical's of Amplitude modulation.

CO4: Theory & practical's of Frequency modulation.

CO5: Applications of Operational amplifiers, Amplitude modulation and Frequency modulation.

Paper-V : Digital Electronics (Elective-I)

CO1:Number system and Logic gates, Logic gates, Boolean algebra and Combinational logic circuits, Sequential logic circuits, Counters and Semiconductor memories, Introduction to 8085 Microprocessor & its architecture, Instruction set of 8085 microprocessor.

PROGRAM OUTCOMES

At the end of the B.Com Programme, graduates will be able to

PO1:Critical Thinking: Apply knowledge of accounting to identify, analyze problems and to provide effective solution in the area of Administration.

PO2:Analytical skill: Ability to design, develop financial statements and the annual reports of the companies

PO3:Employability Skills: Inculcate skills to excel in the fields of Chartered Accountant, Company Secretary, Auditor, Accountant and its Enabled services, Government and Private sectors, Teaching and Research. And also in all fields of financial transactions that will be tracked by the Finance Officer (for approvals), the Development Officer (for transactions) and the Accounts Officer (for Cross Verification and accounting)

COURSE OUTCOMES:

CO1: DSC I A Financial Accounting –I

1. Prepare financial statements in accordance with Generally Accepted Accounting Principles

2. Apply cost accounting methods to evaluate and project business performance.

3. The student will experience real-world learning and application of skills via their internship

4. Apply appropriate judgment derived from knowledge of accounting theory, to financial analysis and decision making.

5. Describe the main elements of financial accounting information – assets, liabilities, revenue and expenses

CO2:DSC II A Business Economics –I

1 To facilitate the students to learn the concepts of economics and apply them in real life situations, differentiate between micro and macro economics.

2 To facilitate the student to know the importance of money, economic and non economic concepts.

3 To make the student understand and differentiate between the revenues and costs.

4 To make the student understand production, supply and different market structures and market equilibrium.

5 To facilitate the student to understand the macroeconomic concepts of the country by understanding national income, etc.

CO3: DSC III A Business Organization and Management –I

1 Develop knowledge, skills, attitudes, and values necessary for success in management and leadership positions in a variety of business, governmental education, and nonprofit settings.

2 Acquire knowledge through the application of principles of sound research designs to critical evaluation of academic literature related to organizational management

3 Demonstrate personal and professional ethical responsibility in all managerial and organizational decision making.

CO4: DSC I VA Fundamental Information Technology-I Program Learning Objectives (PLOs):

1. To prepare students to apply their knowledge and multifaceted skills to be employed and excel in IT Professional careers and/or to continue their education in IT and/or related post graduate programmes.

Program Objective

1. To provide students with Core Competence in mathematical, scientific and basic engineering fundamentals necessary to formulate, analyze and solve hardware/software

College: Nizam College (Autonomous) Department: Commerce

engineering problems and/or also to pursue advanced study or research.

Learning Outcomes:

a. An ability to apply knowledge of mathematics, including discrete mathematics, probability, statistics, science, computer science and engineering, electronic engineering and electrical engineering as it applies to computer hardware and software.

b. An ability to design and conduct experiments, as well as to organize, analyze and interpret data to produce meaningful conclusions and recommendations.

c. An ability to design hardware and software systems, components, or processes to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.

d. An ability to work individually or as a member with responsibility to function on multi-disciplinary teams

e. To develop understanding of managerial aspects so as to use Information technology effectively and efficiently.

f. To develop capacity to initiate/lead an e-business venture/ business segment

College: Nizam College (Autonomous) Department: Commerce

Course : B.Com(Regular) Year : I Semester: II

CO5: DSC- I B Financial Accounting –II

1. Recognize and understand ethical issues related to the accounting profession

2. Apply cost accounting methods to evaluate and project business performance

3. Define bookkeeping and accounting

4. Explain the general purposes and functions of accounting

5. Describe the main elements of financial accounting information – assets, liabilities, revenue and expenses

CO6: DSC- II B Mangerial Economics

a. To explore the students the relevance of various trade theories/models

b. To explore the students to understand deep current issues in International Trade

c. To enable students to use economic tools to analyze diversity of issues in the international economy

CO7: DSC- III B Principles of Management

1 Equip with professional, inter personal and entrepreneurial skills.

2 Gear up with updated knowledge in implementing business practices

3 Prepare for post graduate studies and to achieve success in their professional careers

4 Assess managerial practices and choices relative to ethical principles and standards.

5 Specify how the managerial tasks of planning, organizing, and controlling can be executed in a variety of circumstances.

6 Determine the most effective action to take in specific situations.

7 Evaluate approaches to addressing issues of diversity

CO8: DSC- IV B Fundamental Information Technology-II Program Learning Objectives (PLOs):

1. To prepare students to apply their knowledge and multifaceted skills to be employed and excel in IT Professional careers and/or to continue their education in IT and/or related post graduate programmes.

Program Objective

1 To train students with good breadth of knowledge in core areas of Information Technology and related engineering so as to comprehend engineering trade-offs, analyze, design, and synthesize data and technical concepts to create novel products and solutions for the real life problems.

2 To impart basic knowledge about DOS Commands, Ms-Office packages and to provide students hands on experience on MS Word Utilities.

College: Nizam College (Autonomous) Department: Commerce

Learning Outcomes:

a. Ability to learn DOS Commands

b. Ability to learn Ms-Word and familiarize with mail-merge concepts, print settings and documentation.

c. An ability to identify, formulate, and solve hardware and software computing problems, accounting for the interaction between hardware and software.

d. Ability to learn and prepare powerpoint presentation by creating slides.

College: Nizam College (Autonomous) Department: Commerce

Course : B.Com(e-Commerce) Year : I Semester : I

CO9: DSC I A Financial Accounting –I

1 Prepare financial statements in accordance with Generally Accepted Accounting Principles

2 Apply cost accounting methods to evaluate and project business performance.

3 The student will experience real-world learning and application of skills via their internship

4 Apply appropriate judgment derived from knowledge of accounting theory, to financial analysis and decision making.

5 Describe the main elements of financial accounting information – assets, liabilities, revenue and expenses

CO10 :DSC II A Business Economics –I

1 To facilitate the students to learn the concepts of economics and apply them in real life situations, differentiate between micro and macro economics.

2 To facilitate the student to know the importance of money, economic and non economic concepts.

3 To make the student understand and differentiate between the revenues and costs.

4 To make the student understand production, supply and different market structures and market equilibrium.

5 To facilitate the student to understand the macroeconomic concepts of the country by understanding national income, etc.

CO11:DSC III A Business Organization and Management –I

1 Develop knowledge, skills, attitudes, and values necessary for success in management and leadership positions in a variety of business, governmental education, and nonprofit settings.

2 Acquire knowledge through the application of principles of sound research designs to critical evaluation of academic literature related to organizational management

3 Demonstrate personal and professional ethical responsibility in all managerial and organizational decision making.

CO12: DSC IV A Fundamental Information Technology-I Program Learning Objectives (PLOs):

To prepare students to apply their knowledge and multifaceted skills to be employed and excel in IT Professional careers and/or to continue their education in IT and/or related post graduate programmes.

Program Objective College: Nizam College (Autonomous) Department: Commerce

To provide students with Core Competence in mathematical, scientific and basic engineering fundamentals necessary to formulate, analyze and solve hardware/software engineering problems and/or also to pursue advanced study or research.

To provide students hands on experience on MS Word Utilities

Learning Outcomes:

a. An ability to apply knowledge of mathematics, including discrete mathematics, probability, statistics, science, computer science and engineering, electronic engineering and electrical engineering as it applies to computer hardware and software.

b. An ability to design and conduct experiments, as well as to organize, analyze and interpret data to produce meaningful conclusions and recommendations.

c. An ability to design hardware and software systems, components, or processes to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.

d. An ability to work individually or as a member with responsibility to function on multi-disciplinary teams

e. To develop understanding of managerial aspects so as to use Information technology effectively and efficiently.

CO13: DSC VA Fundamentals of Electronic Commerce – I

1. Demonstrate an understanding of the foundations and importance of E-commerce

2. Describe the infrastructure for E-commerce

3. Assess electronic payment systems

4. Demonstrate an understanding of retailing in E-commerce by:

a. analyzing branding and pricing strategies,

b. using and determining the effectiveness of market research

c. assessing the effects of disintermediation.

5. Ability to create a webpage using Ms-Frontpage application

6. Ability to learn HTML Tags and make proper use of tags to help them developing webpages.

7. Use a web page editor to create effective web pages

CO14: DSC I B Financial Accounting –II

1 Recognize and understand ethical issues related to the accounting profession

2 Apply cost accounting methods to evaluate and project business performance

3 Define bookkeeping and accounting

4 Explain the general purposes and functions of accounting

5 Describe the main elements of financial accounting information – assets, liabilities, revenue and expenses

CO15: DSC II B Mangerial Economics

1 To explore the students the relevance of various trade theories/models

2 To explore the students to understand deep current issues in International Trade

3 To enable students to use economic tools to analyze diversity of issues in the international economy

CO16: DSCIII B Principles of Management

1 Equip with professional, inter personal and entrepreneurial skills.

2 Gear up with updated knowledge in implementing business practices

3 Prepare for post graduate studies and to achieve success in their professional careers

4 Assess managerial practices and choices relative to ethical principles and standards.

5 Specify how the managerial tasks of planning, organizing, and controlling can be executed in a variety of circumstances.

6 Determine the most effective action to take in specific situations.

7 Evaluate approaches to addressing issues of diversity

CO17: DSC IV B E-commerce and Digital Marketing

1 Describe the infrastructure for E-commerce

2 Describe the key features of Internet, Intranets and Extranets and explain how they relate to each other.

3 Discuss legal issues and privacy in E-Commerce

4 Assess electronic payment systems

5 Recognize and discuss global E-commerce issues

6 Develop a plan for marketing a product of business online.

7 Integrate social media tools into a marketing communications strategy.

8 Use a publishing platform to build a web presence with integrated data collection and links to social media

Course : B.Com(Regular) Year : II Semester : III

CO18: DSC I C Advanced Accounting –I

Students who successfully complete this paper should be able to:

1. Ability to explain and demonstrate accounting practice for equity investments (including accounting for group structures), measurement and disclosure of information, and financialdecision making

2. Identify and explain the conceptual underpinnings for current advanced financial accounting and reporting issues.

3. Identify and explain current issues related to financial accounting and financial reporting.

4. Critically analyse and interpret published financial information.

CO19:DSC II C Business Statistics –I

1 Emphasize statistical literacy and develop statistical thinking

2 Use real data

3 Understand how to organize and summarize data by using descriptive statistics and appropriate statistical graphics.

4 Understand the concept of probability and its applications in a business context.

CO20: DSC III C Banking law and Practices

1 Understand the features of Indian Banking System

2 Know the significant contribution of different types of banks – Appreciate how important banking services for the economy

3 Appreciate the role of banks and their regulatory and compliance requirements – Understand the Government and RBI's

4 Distinguish between the concepts of CRR and SLR

CO21:DSC IV (C) Entrepreneurial Development

1. Have the ability to discern distinct entrepreneurial traits

2. Know the parameters to assess opportunities and constraints for new business ideas .

3. Understand the systematic process to select and screen a business idea

4. Design strategies for successful implementation of ideas

5. Write a business plan

Course : B.Com(General) Year : II Semester : IV

CO22: DSC I D Corporate Accounting –I

1. A comprehensive understanding of the advanced issues in accounting for assets, liabilities and owner's equity.

2. The ability to account for a range of advanced financial accounting issues.

3. An understanding of the accounting requirements for a corporate group and familiarity with the theory underlying the methods used to account for inter-company investments.

4. The ability to prepare consolidated accounts for a corporate group.

CO23 :DSC II D Business Statistics –II

1. Explain basic statistical concepts such as statistical collection, species characteristics, statistical series, tabular and graphical representation of data, measures of central tendency, dispersion and asymmetry, correlation and regression analysis, time series analysis

2. Apply knowledge to solve simple tasks using computer (MS Excel)

3. Independently calculate basic statistical parameters (mean, measures of dispersion, correlation coefficient, indexes)

4. Based on the acquired knowledge to interpret the meaning of the calculated statistical indicators

5. Choose a statistical method for solving practical problems

CO24: DSC III D Financial Institution and Market:

1. Discuss the nature, determination and role of the interest

2. To explain the role and benefits of the financial intermediaries

3. Explain the difference between future, Option and swaps

4. To calculate Present Value and understand and discuss how these concept can also be related to explain the term structure of interest rates.

5. Explian the functioning and history of foreign exchange markets the significance of the balance of payment and the integration of currency areas

CO25: DSC IV D Auditing

1. Discuss the need for an independent or external audit and describe briefly the development of the role of the assurance provider in modern business society.
2. For major transaction types and account balances, identify appropriate assertions at risk and apply appropriate audit procedures to test the assertions identified.
3. Understand auditors' legal liabilities, and be able to apply case law in making a judgment whether auditors might be liable to certain parties
4. Describe the quality control procedures necessary to ensure that a competent assurance engagement is performed, and apply professional ethics including Code of Conduct to specific scenarios.

Course : B.Com(e-Commerce) Year : II Semester : III

CO26: DSC I C Advanced Accounting –I

Students who successfully complete this paper should be able to:

1. Ability to explain and demonstrate accounting practice for equity investments (including accounting for group structures), measurement and disclosure of information, and financial decision making

2. Identify and explain the conceptual underpinnings for current advanced financial accounting and reporting issues.

3. Identify and explain current issues related to financial accounting and financial reporting.

4. Critically analyse and interpret published financial information.

CO27: DSC II C Business Statistics –II

1. Explain basic statistical concepts such as statistical collection, species characteristics, statistical series, tabular and graphical representation of data, measures of central tendency, dispersion and asymmetry, correlation and regression analysis, time series analysis

2. Apply knowledge to solve simple tasks using computer (MS Excel)

3. Independently calculate basic statistical parameters (mean, measures of dispersion, correlation coefficient, indexes)

4. Based on the acquired knowledge to interpret the meaning of the calculated statistical indicators

5. Choose a statistical method for solving practical problems

CO28: DSC III C Banking law and Practices

1 Understand the features of Indian Banking System

For major transaction types and account balances, identify appropriate assertions at risk and apply appropriate audit procedures to test the assertions identified.

3. Understand auditors' legal liabilities, and be able to apply case law in making a judgment whether auditors might be liable to certain parties

4. Describe the quality control procedures necessary to ensure that a competent assurance engagement is performed, and apply professional ethics including Code of Conduct to specific scenarios.

Course : B.Com(e-Commerce) Year : II Semester : III

CO26: DSC I C Advanced Accounting –I

Students who successfully complete this paper should be able to:

1. Ability to explain and demonstrate accounting practice for equity investments (including accounting for group structures), measurement and disclosure of information, and financial decision making

2. Identify and explain the conceptual underpinnings for current advanced financial accounting and reporting issues.

3. Identify and explain current issues related to financial accounting and financial reporting.

4. Critically analyse and interpret published financial information.

CO27: DSC II C Business Statistics –II

1. Explain basic statistical concepts such as statistical collection, species characteristics, statistical series, tabular and graphical representation of data, measures of central tendency, dispersion and asymmetry, correlation and regression analysis, time series analysis

2. Apply knowledge to solve simple tasks using computer (MS Excel)

3. Independently calculate basic statistical parameters (mean, measures of dispersion, correlation coefficient, indexes)

4. Based on the acquired knowledge to interpret the meaning of the calculated statistical indicators

5. Choose a statistical method for solving practical problems

CO28: DSC III C Banking law and Practices

1 Understand the features of Indian Banking System

College: Nizam College (Autonomous) Department: Commerce

Know the significant contribution of different types of banks – Appreciate how important banking services for the economy

3 Appreciate the role of banks and their regulatory and compliance requirements – Understand the Government and RBI's

4 Distinguish between the concepts of CRR and SLR

CO29: DSC IV C Web technology

1. To develop a dynamic webpage by the use of java script and DHTML

2. To write a well formed / valid XML document.

3. To connect a java program to a DBMS and perform insert, update and delete operations on DBMS table.

4. To write a server side java application called Servlet to catch form data sent from client, process it and store it on database.

5. To write a server side java application called JSP to catch form data sent from client and store it on database.

Semester IV

CO30: DSC I D Corporate Accounting –I

1. A comprehensive understanding of the advanced issues in accounting for assets, liabilities and owner's equity.

2. The ability to account for a range of advanced financial accounting issues.

3. An understanding of the accounting requirements for a corporate group and familiarity with the theory underlying the methods used to account for inter-company investments.

4. The ability to prepare consolidated accounts for a corporate group.

CO31: DSC II D Business Statistics –II

1. Explain basic statistical concepts such as statistical collection, species characteristics, statistical series, tabular and graphical representation of data, measures of central tendency, dispersion and asymmetry, correlation and regression analysis, time series analysis

2. Apply knowledge to solve simple tasks using computer (MS Excel)

3. Independently calculate basic statistical parameters (mean, measures of dispersion, correlation coefficient, indexes)

4. Based on the acquired knowledge to interpret the meaning of the calculated statistical indicators

5. Choose a statistical method for solving practical problems

CO32: DSC III D Financial Institution and Market:

1. Discuss the nature, determination and role of the interest

Learning Outcomes

2. To explain the role and benefits of the financial intermediaries.

3. Explain the difference between future, Option and swaps

4. To calculate Present Value and understand and discuss how these concept can also be related to explain the term structure of interest rates.

5. Explain the functioning and history of foreign exchange markets the significance of the balance of payment and the integration of currency areas

CO33: DSC IV D PHP (Hyper text preprocessor) Program Objective:

1. Understand how server-side programming works on the web.

2. PHP Basic syntax for variable types and calculations.

3. Using PHP built-in functions and creating custom functions

4. How to receive and process form submission data.

5. Reading and writing cookies.

6. Create a database in phpMyAdmin.

7. Read and process data in a MySQL database

Learning outcomes:

1. On completion of this course, a student will be familiar with server-side programming works on the web and able to develop a web application

2. Students will gain the skills and project-based experience needed for entry into web application and development careers.

3. Students are able to develop a dynamic webpage by the use of PHP.

4. Students will be able to connect a PHP program to a DBMS and perform insert, update and delete operations on DBMS table.

CO34: Course : B.Com(Regular) Year : III Semester : V

DSC- IE Cost Accounting –I Program Objective

1. Explain the concept and role of cost accounting in the business management of manufacturing and non-manufacturing companies.

2. Define the costs and their impact on value creation in the manufacturing and non-manufacturing companies.

3. Use accounting methods of cost calculation.

Learning Outcome:

1. Express the place and role of cost accounting in the modern economic environment,

2. Select the costs according to their impact on business,

3. Differentiate methods of schedule costs per unit of production,

4. Differentiate methods of calculating stock consumption,

5. Interpret the impact of the selected costs method,

6. Identify the specifics of different costing methods

CO35: DSC – IIE Business Law – I

1. Understand the sources of law , including the development and operation of common law, precedent and court hierarchy, and the roles of parliament and the courts, and the role of the law of contract

2. Understand some basic strategies that can be used to solve legal problems

3. Read, analyse and apply statutes using the appropriate methods of statutory interpretation;

4. Conduct basic legal research, including by using legal databases to research case law, legislation and scholarly journal articles;

CO 36: DSC –IIIE Taxation-I

1. Students will apply critical thinking and problem-solving skills related to taxation of individuals, flow through entities, and corporations. In addition, students will recognize potential opportunities for tax savings and tax planning.

2. Students will convert complex and technical tax terminology into language that translates to nontechnical audiences. This outcome allows students to demonstrate strong interpersonal communication skills that build relationships with clients over time, and be able to prepare work products with careful attention to word choice, tone, and accuracy.

3. Students will use computer-based and paper-based systems to thoroughly research and analyze tax codes, tax law, rulings and interpretations, providing for adaptability as the tax law changes over time.

CO37: DSC –IVE Advance Corporate Accounting

1. 1.Ability to explain and demonstrate accounting practice for equity investments (including accounting for group structures), measurement and disclosure of information, and financial decision making

2. Identify and explain the conceptual underpinnings for current advanced financial accounting and reporting issues.

3. The ability to account for a range of advanced financial accounting issues.

4. An understanding of the accounting requirements for a corporate group and familiarity with the theory underlying the methods used to account for inter-company investments.

5. The ability to prepare consolidated accounts for a corporate group.

CO38:DSC VI E1 Specialization (Financial Management- I)

1. Describe and apply the basic techniques of financial statement analysis;
2. Explain the relationship between strategic business analysis, accounting analysis and financial analysis;
3. Identify and utilise value-relevant information contained within financial statements;
4. Recognise and explain the fundamental role of accounting numbers in the valuation of entities and the key financial claims on these entities assets (equity and debt securities);
5. Understand the impact of financial reporting choices on the usefulness of reported earnings to predict future performance

1. To make the students understand the techniques of financial management.
2. Analysis and differentiate the concepts of capital budgeting techniques, traditional and modern discounting methods.
3. To understand the tools and techniques of cash cycle and tools and techniques of inventory management.
4. Understanding the types of leverages and different approaches of capital structure.

5. To understand the dividend decisions

CO 39: DSC VII E2 Specialization (Accounting Standard I)

1. Identify and describe different types of inter-entity relationships based on relevant Australian Accounting Standards.

2. Discuss and solve accounting issues that arise from inter-entity relationships.

3. Explain the consolidation process and prepare consolidated financial statements based on relevant accounting Standards.

4. Demonstrate the ability to perform complex accounting techniques and methods as required by the relevant accounting standards.

5. Read and analyse consolidated financial statements including accounting policies and other information disclosures.

6. Conduct practical research in the accounting discipline.

Semester VI

CO 40: DSC- I F Managerial Accounting

1. Critically analyze and provide recommendations to improve the operations of organizations through the application of management accounting techniques;

2. Demonstrate mastery of costing systems, cost management systems, budgeting systems and performance measurement systems

3. Demonstrate the need for a balance between financial and non-financial information in

decision making, control and performance evaluation applications of management accounting; 4. Evaluate the costs and benefits of different conventional and contemporary costing systems; 5. Learn independently and to demonstrate high level personal autonomy and accountability;

CO 41: DSC –II F Company law

1. To know the relevant statutory materials, case law and regulatory practice relating to the major topics in Company Law

2. To understanding of the economic function of the company as a legal structure for business, the legal nature and significance of the limited liability of a company, the price paid for limited liability, the legal nature of the role of the board of directors of a company and of the legal relationships between a company's management and its various stakeholders.

3. To know the current policy trends and developments in Company Law and of the likely impact of these trends and developments on the major topics in Company Law.

4. To collect information from the sources available.

CO42: DSC –III F Taxation II

1. Students will demonstrate understanding of and apply consistently the ethical principles and professional standards related to the profession, including the standards in taking a tax position.

2. Students will also show the ability to express and follow rules of independence exhibiting the highest sense of professional ethics.

3. Students will be able to explain key differences in taxing policies related to expatriates and the countries they live and work in — allowing them to reflect on cultural and ethnic differences in approaches to business and taxation policies

CO43: DSC –IVF Computerized Accounting:

1. Processing a variety of accounting transactions;

2. Converting a manual accounting system to a computer based system;

3. Prepare Financial Statements on the completion of the accounting cycle in a timely fashion.

4. Create and customize a statement of cash flows for a specific period.

5. Investigate the detail underlying income statement items

CO43: DSC – VF Elective –Financial Services-I

1. The course provides a complete package of finance and financial services related subjects so that the students are well equipped with the functional aspects of the various types of financial products and services available in our country

2. Demonstrate broad and coherent knowledge of the theoretical and professional discipline of banking ,finance ,investment analysis ,portfolio management ,accountancy

3. Exercise informed commercial judgment within a professional setting which emphasizes ethical and responsible decision making

4. Acquire and synthesis information within a complex professional setting

CO44:DSC –VI F1 IFRS-II

1 Understand and explain the structure of the framework of IFRS
2 Apply relevant financial reporting standards to key elements of financial reports
3 Identify and apply disclosure requirements for companies in financial reports and notes
4 Prepare group financial statements (excluding group cash-flow statements) including subsidiaries, associates and joint ventures

CO45:DSC –VI F2 Accounting Standards-II

1. Know and apply accounting and finance theory;

2. Explain and apply international accounting standards;

3. Critically evaluate financial statement information;

4. Evaluate and compare different investments.

CO46:DSC- IE Cost Accounting –I Program Objective

1 Explain the concept and role of cost accounting in the business management of manufacturing and non-manufacturing companies.
2 Define the costs and their impact on value creation in the manufacturing and non- manufacturing companies.
3 Use accounting methods of cost calculation.

Learning Outcomes

1 Express the place and role of cost accounting in the modern economic environment,
2 Select the costs according to their impact on business,
3 Differentiate methods of schedule costs per unit of production,
4 Differentiate methods of calculating stock consumption,
5 Interpret the impact of the selected costs method,
6 Identify the specifics of different costing methods

CO47: DSC – IIE Business Law – I

1 Understand the sources of law , including the development and operation of common law, precedent and court hierarchy, and the roles of parliament and the courts, and the role of the law of contract

2 Understand some basic strategies that can be used to solve legal problems

3 Read, analyze and apply statutes using the appropriate methods of statutory interpretation;

4 Conduct basic legal research, including by using legal databases to research case law, legislation and scholarly journal articles;

CO48:DSC –IIIE Taxation-I

1 Students will apply critical thinking and problem-solving skills related to taxation of individuals, flow through entities, and corporations. In addition, students will recognize potential opportunities for tax savings and tax planning.

2 Students will convert complex and technical tax terminology into language that translates to nontechnical audiences. This outcome allows students to demonstrate strong interpersonal communication skills that build relationships with clients over time, and be able to prepare work products with careful attention to word choice, tone, and accuracy.

3 Students will use computer-based and paper-based systems to thoroughly research and analyze tax codes, tax law, rulings and interpretations, providing for adaptability as the tax law changes over time.

CO49: DSC –IVE Advance Corporate Accounting

1 Ability to explain and demonstrate accounting practice for equity investments (including accounting for group structures), measurement and disclosure of information, and financial decision making

2 Identify and explain the conceptual underpinnings for current advanced financial accounting and reporting issues.

3 The ability to account for a range of advanced financial accounting issues.

4 An understanding of the accounting requirements for a corporate group and familiarity with the theory underlying the methods used to account for inter-company investments.

5 The ability to prepare consolidated accounts for a corporate group.

CO50:DSC –VE Financial Statement Analysis

1 Describe and apply the basic techniques of financial statement analysis;

2 Explain the relationship between strategic business analysis, accounting analysis and financial analysis;

3 Identify and utilize value-relevant information contained within financial statements;

4 Recognize and explain the fundamental role of accounting numbers in the valuation of entities and the key financial claims on these entities assets (equity and debt securities);

5 Understand the impact of financial reporting choices on the usefulness of reported earnings to predict future performance

CO51:DSC VI E1 Specialization (Financial Management- I)

1. To make the students understand the techniques of financial management.

2. Analysis and differentiate the concepts of capital budgeting techniques, traditional and modern discounting methods.

3. To understand the tools and techniques of cash cycle and tools and techniques of inventory management.

4. Understanding the types of leverages and different approaches of capital structure.

5. To understand the dividend decisions

CO52:DSC VII E2 Specialization (Accounting Standard I)

1. Identify and describe different types of inter-entity relationships based on relevant Australian Accounting Standards.

2. Discuss and solve accounting issues that arise from inter-entity relationships.

3. Explain the consolidation process and prepare consolidated financial statements based on relevant accounting Standards.

4. Demonstrate the ability to perform complex accounting techniques and methods as required by the relevant accounting standards.

5. Read and analyze consolidated financial statements including accounting policies and other information disclosures.

6. Conduct practical research in the accounting discipline.

Semester VI

CO53:DSC- I F Managerial Accounting

1. Critically analyze and provide recommendations to improve the operations of organizations through the application of management accounting techniques;

2. Demonstrate mastery of costing systems, cost management systems, budgeting systems and performance measurement systems

3. Demonstrate the need for a balance between financial and non-financial information in decision making, control and performance evaluation applications of management accounting; 4. Evaluate the costs and benefits of different conventional and contemporary costing systems; 5. Learn independently and to demonstrate high level personal autonomy and accountability;

CO 54: DSC –II F Company law & Auditing

1 To know the relevant statutory materials, case law and regulatory practice relating to the major topics in Company Law

2 To know the current policy trends and developments in Company Law and of the likely impact of these trends and developments on the major topics in Company Law.

3 Understand how to conduct an opening and closing meeting

4 Be able to create a checklist of questions to ask

5 Have the skills to write an audit report

CO55: DSC –III F Taxation II

1 Students will demonstrate understanding of and apply consistently the ethical principles and professional standards related to the profession, including the standards in taking a tax position.

2 Students will also show the ability to express and follow rules of independence exhibiting the highest sense of professional ethics.

3 Students will be able to explain key differences in taxing policies related to expatriates and the countries they live and work in — allowing them to reflect on cultural and ethnic differences in approaches to business and taxation policies

CO56: DSC –IVF Computerized Accounting:

1 Processing a variety of accounting transactions;

2 Converting a manual accounting system to a computer based system;

3 Prepare Financial Statements on the completion of the accounting cycle in a timely fashion.

4 Create and customize a statement of cash flows for a specific period.

5 Investigate the detail underlying income statement items

CO57: DSC – VF Elective –Financial Services-I

1 The course provides a complete package of finance and financial services related subjects so that the students are well equipped with the functional aspects of the various types of financial products and services available in our country

2 Demonstrate broad and coherent knowledge of the theoretical and professional discipline of banking ,finance ,investment analysis ,portfolio management ,accountancy

3 Exercise informed commercial judgment within a professional setting which emphasizes

4 ethical and responsible decision making

5 Acquire and synthesis information within a complex professional setting

CO58: DSC –V F2 Retail Marketing

1 Understand what marketing means to business executives and academics

2 Understand the ways that retailers use marketing tools and techniques to interact with their customers.

3 Identify different retailing formats.

4 Analyze consumer evaluations of retail offerings.

5 Conduct an in-depth retailer analysis.

6 Formulate retail marketing strategies.

Department of Electronics

In B.Sc Electronics program syllabus is planned and practiced for more benefit of students. Necessary practical experiments are designed in the syllabus; connections of the circuit diagram on the electronic board are individually performed by the student in the practicals session. Experiments of practical with circuit diagrams and applications are practiced. Individual projects are done by the students at the end of programme. This is helping to the students for participation in the conferences, seminars, industries and filing patents. With the above practices students are becoming more subject and practical oriented which will help them in their future carrier

PROGRAM OUTCOMES

PO1: Can peruse masters in Electronics and allied subjects.

PO2: Can work in electronic labs and electronic industries.

PO3: Can write competitive exams.

PO4: Can take up teaching.

COURSE OUTCOMES

Paper-I : Analog circuits

Basic components of electronics, Basic definitions and units, Network theorems, AC brides, Fundamentals of AC and DC, Phasor, RC and RL circuits, Frequency response of RC and RL circuits, RLC series and parallel resonance circuits and Cathode Ray Oscilloscope(CRO)

CO1: Students will get basics and importance of electronics.

CO2: Theory & practical's of Network Theorems.

CO3: Theory & practical's of AC bridges.

CO4: Theory & practical's of RC and RL circuits.

CO5: Block diagram of CRO and its applications.

Paper-II : Electronic devices

Formation of PN junction, Depletion region, Junction capacitance, Diodes, PNP and NPN transistors, BJT static characteristics (Input and Output), Early effect, CB, CC, CE configurations of transistor h–parameter model and its equivalent circuit, Field Effect Transistor (FET), Uni Junction Transistor (UJT), Silicon Controlled Rectifier (SCR), Photo electronic Devices.

CO1: Students will get basics of semiconductors and importance of electronic devices.

CO2: Theory & practical's of Diodes.

CO3: Theory & practical's of Transistors.

CO4: Theory & practical's of FET, UJT and SCR.

CO5: Photo electronic devices and its applications.

Paper-III : Power supply and Analog circuits

Rectifiers and filters, Regulated Power Supplies, Transistor amplifier, Feedback in amplifiers, Oscillators and Multi-vibrators.

CO1: Students will get basics of power supply and importance of amplifiers.

CO2: Theory & practical's of Regulators.

CO3: Theory & practical's of Transistors amplifier.

CO4: Theory & practical's of Feedback amplifier and oscillators.

CO5: Applications of Rectifiers, Amplifiers and oscillators.

Paper-IV : Operational Amplifiers and Communication

Operational Amplifiers, Applications of Op-Amps, Modulation, Amplitude modulation, Frequency modulation.

CO1: Students will get basics of operational amplifiers and their importance.

CO2: Theory & practical's of Operational amplifiers.

CO3: Theory & practical's of Amplitude modulation.

CO4: Theory & practical's of Frequency modulation.

CO5: Applications of Operational amplifiers, Amplitude modulation and Frequency modulation.

Paper-V : Digital Electronics (Elective-I)

CO1:Number system and Logic gates, Logic gates, Boolean algebra and Combinational logic circuits, Sequential logic circuits, Counters and Semiconductor memories, Introduction to 8085 Microprocessor & its architecture, Instruction set of 8085 microprocessor.

NIZAM COLLEGE
Autonomous
Re-accredited by NAAC with B++
A Constituent College of Osmania University

Department of English

MA English I Semester

Course Outcome

Unit I

a) The learners are able to understand the importance of The Indo-European family of languages from which English has descended has eight branches including Eastern ones, like Indo-Iranian, Albanian, Armenian and Balto-Slavonic and the Western ones like Greek, Latin, Celtic and Teutonic.

b) The learners came to know that Old English is an old form of the English language that was spoken by the Anglo-Saxons and their descendants in parts of what are now England and south-eastern Scotland between at least the mid-5th century and the mid-12th century.

c) Middle English (ME) is collectively the varieties of the English language spoken after the Norman Conquest (1066) until the late 15th century.

Unit II

a) The learners are able to understand Foreign Contribution to the Growth of Vocabulary: Influence of Greek, Latin, French and German on the English language.

b) The learners are trained to what are linguistics (particularly morphology and lexicology), *word formation* refers to the ways in which new words are made on the basis of other words or morphemes.

Unit III

a) The learners are understood the Noun clauses function as noun phrase complements within noun phrases.

b) The learners are trained in a **verb phrase (VP)** is a syntactic unit composed of at least one verb and its dependents—objects, complements and other modifiers.

c) The learners are able to differentiate between Coordination and Subordination**.** Coordination is joining two related ideas of equal importance. Subordination **is** joining two related ideas of unequal importance.

Unit IV

a) This may include languages, **dialects**, **registers**, styles or other forms of **language**, as well as **a standard** variety

b) The learners are able to understand Jargon is the vocabulary of a particular group or subculture such as computer geeks, engineers, drug users, and so on. Style is how an individual chooses to express oneself— urban, informal, erudite, wordy, etc. Register is how an individual communicates to fit a particular context or convey a specific mood/feeling.

c) They can see differences between General American and Received Pronunciation for the standard accents in the United States and Britain.

Unit V

a) The learners are trained to understand how indirect speech focuses more on the content of what someone said rather than their exact words.

b) The learners are able to introduce you to different greetings, introductions, techniques for getting to know each other, and leaving remarks in English.

c) Knowing how to address your colleagues and your boss to a newly acquired client is vital.

M.A Previous 2013-14

Semester II

Paper I Language Learning Theories

Programme Specific Outcomes

PSO1: Understand An Introduction to Language and First Language Acquisition.

PSO2: Study the Behaviorism and Learning.

PSO3: Develop an understanding of Chomsky's Cognitive Theory and Cognivitism.

PSO4: Analyzing Role of L1 and L2 acquisition and Inter Language.

PSO5: Evaluating the Major Findings in L2 Research.

Course Outcomes

First Language Acquisition and Learning.

CO1: To Study the Human Brain and its Functions, Stages of development in a child.

CO2: To Understand Pavlov's Classical conditioning and its implications.

CO3: To Analyze the Cognivitism and Learning Gestalt Theory and its implications in learning and

teaching.

CO4: To understand the Difference between First Language Acquisition and Second Language Learning.

CO5: To Evaluate the Models of Second Language Acquisition.

Paper II English Language and Teaching I

Programme Specific Outcomes

PSO1: Understand the Landmarks in the History of Modern Indian Education and History of **English Language Teaching.**

PSO2: Study various techniques of teaching poetry, prose and Bilingual Method.

PSO3: Develop an understanding of various approaches and methods.

PSO4: Focus on communicative language teaching and task based learning.

PSO5: Finding alternative to method and humanistic approach.

Course Outcomes

English Language Teaching

CO1: To understand the History of English Language Teaching in India, Macaulay Minute, Three

Language Formula, Kothari Commission and Ramamurthy Commission.

CO2: To study the Role of English in India, Identifying Common Learner Errors.

CO3: To develop an in-depth knowledge of various approaches and methods- Direct method, Reading method, Structural Method and Audio-Lingual Method.

CO4: To Develop an overview of Communicative Competence and Linguistic Competence.

CO5: To Evaluate the Silent Way, Total physical response Suggestopedia and Electric Method.

Paper III 20th Century English Literature I

Programme Specific Outcomes

PSO1: Understand the Concepts of Modernism, Symbolism and Surrealism.

PSO2: Introduces Poets of the Century WB Yeats and T.S.Eliot.

PSO3: Develop an understanding the Novels of D.H.Lawrence and Joseph Conrad.

PSO4: Focus on Virginia Woolf and E.M Foster very powerful writers of the century.

PSO5: Evaluates the famous play wrights of the century Saint Joan and J M Synge.

Course Outcomes

Background

CO1: The Background study introduces various concepts like Dada and Surrealism, Stream of Consciousness Technique.

Poetry

CO2: To introduce the major works of the poets of the century 'Easter Coming', 'Byzantium', 'The Waste

Land'.

Fiction

CO3: To develop an analysis of texts 'sons and Lovers' and 'Heart of Darkness'.

Prose

CO4: To analyze the works 'A Room of One's Own' and 'Art for Art's Sake'.

Drama

CO5: To Evaluate 'Saint Joan', 'Riders to the Sea'.

Paper IV 20th Century English Literature II

Programme Specific Outcomes

PSO1: Understand concepts – Post Modernism and Existentialism.

PSO2: An overview of famous poets of the century – Ted Hughes, Philip Larken, Seamus Heaney.

PSO3: Develop an understanding of William Golding and Graham Greene.

PSO4: Analysis of the texts of Samuel Beckett and Tom Stoppard.

PSO5: Understand the stories by Roald Dahl and A S Byatt.

Course Outcomes

Background

CO1: The Background study introduces various concepts like Impressionism, Movement Poetry and

Existentialism.

Poetry

CO2: To Introduce the major works of the poets of the century ‘Thought Fox’, ‘Hawk Roosting’, ‘Church

Going’, ‘ Digging’, ‘ Punishment’.

Fiction

CO3: To develop an analysis of texts ‘Lord of the Flies’ and ‘Power and the Glory’.

Drama

CO4: To analyze the works – ‘Waiting for Godot’ and’ Indian Ink’.

Short Story

CO5: To Evaluate ‘Lamb to the Slaughter’, ‘The Umbrella Man’ and ‘Sugar’.

Paper V Indian Writing in English II

Programme Specific Outcomes

PSO1: Understand concepts – Decolonization and Counter Discourse.

PSO2: An overview of famous poets of the century – Nissim Ezekiel, Kamala Das, A.K. Ramanujan.

PSO3: Develop an understanding of Salman Rushdie and Shashi Despande.

PSO4: Analysis of the texts of Girish Karnad and Mahesh Dattani.

PSO5: Understand the short fiction of Bharathi Mukherjee and Anita Desai.

Course Outcomes

Background

CO1: The Background study introduces various concepts like Myth and Literature which helps to understand the text.

Poetry

CO2: To Introduce the major works of the poets of the century ‘Enterprise’, ‘ Poet, Lover and Birdwatcher’, An Introduction’, The Old Playhouse’, ‘River’ and ‘Love Poem For a Wife’

Fiction

CO3: To develop an analysis of ‘Midnight’s Children’ and ‘The Binding Vine’.

Drama

CO4: To analyze the works – ‘Hayavadana’ and ‘Final Solutions’.

Short Fiction

CO5: To Evaluate ‘A Wife’s Story’, ‘Management of Grief’, ‘The Accompanist’ and ‘A Devoted Son’.

M.A Previous

Semester II

Paper I Language Learning Theories

Programme Specific Outcomes

PSO1: Understand An Introduction to Language and First Language Acquisition.

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PSO3: Develop an understanding of Chomsky's Cognitive Theory and Cognivitism.

PSO4: Analyzing Role of L1 and L2 acquisition and Inter Language.

PSO5: Evaluating the Major Findings in L2 Research.

Course Outcomes

First Language Acquisition and Learning.

CO1: To Study the Human Brain and its Functions, Stages of development in a child.

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CO4: To understand the Difference between First Language Acquisition and Second Language Learning.

CO5: To Evaluate the Models of Second Language Acquisition.

Paper II English Language and Teaching

Programme Specific Outcomes

PSO1: understand the Landmarks in the History of Modern Indian Education and History of English Language Teaching.

PSO2: Study various techniques of teaching poetry, prose and Bilingual Method.

PSO3: Develop an understanding of various approaches and methods.

PSO4: Focus on communicative language teaching and task based learning.

PSO5: Finding alternative to method and humanistic approach.

Course Outcomes

English Language Teaching

CO1: To understand the History of English Language Teaching in India, Macaulay Minute, Three Language Formula, Kothari Commission and Ramamurthy Commission.

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CO3: To develop an in-depth knowledge of various approaches and methods- Direct method, Reading method, Structural Method and Audio-Lingual Method

CO4: To Develop an overview of Communicative Competence and Linguistic Competence.

CO5: To Evaluate the Silent Way, Total physical response Suggestopedia and Electric Method.

Paper III 20th Century English Literature I

Programme Specific Outcomes

PSO1: Understand Concepts of Modernism, Symbolism and Surrealism.

PSO2: Introduces Poets of the Century WB Yeats and T.S.Eliot.

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CO3: To develop an analysis of texts 'sons and Lovers' and 'Heart of Darkness'.

Prose

CO4: To analyze the works 'A Room of One's Own' and 'Art for Art's Sake'.

Drama

CO5: To Evaluate 'Saint Joan', 'Riders to the Sea'.

Paper IV 20th Century English Literature II

Programme Specific Outcomes

PSO1: Understand concepts – Post Modernism and Existentialism.

PSO2: An overview of famous poets of the century – Ted Hughes, Philip Larken, Seamus Heaney.

PSO3: Develop an understanding of William Golding and Graham Greene.

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CO5: To Evaluate 'Lamb to the Slaughter', 'The Umbrella Man 'and 'Sugar'.

Paper V Indian Writing in English II

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M.A

Semester II

Paper I Language Learning Theories

Programme Specific Outcomes

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Paper IV 20th Century English Literature II

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CO4: To analyze the works – 'Waiting for Godot' and' Indian Ink'.

Short Story

CO5: To Evaluate 'Lamb to the Slaughter', 'The Umbrella Man 'and 'Sugar'.

Paper V Indian Writing in English II

Programme Specific Outcomes

PSO1: Understand concepts – Decolonization and Counter Discourse.

PSO2: An overview of famous poets of the century – Nissim Ezekiel, Kamala Das, A.K. Ramanujan.

PSO3: Develop an understanding of Salman Rushdie and Shashi Despande.

PSO4: Analysis of the texts of Girish Karnad and Mahesh Dattani.

PSO5: Understand the short fiction of Bharathi Mukherjee and Anita Desai.

Course Outcomes

Background

CO1: The Background study introduces various concepts like Myth and Literature which helps to understand the text.

Poetry

CO2: To Introduce the major works of the poets of the century 'Enterprise', 'Poet, Lover and Birdwatcher', An Introduction', The Old Playhouse', 'River' and 'Love Poem For a Wife'

Fiction

CO3: To develop an analysis of Midnight's Children and The Binding Vine.

Drama

CO4: To analyze the works – 'Hayavadana' and 'Final Solutions'.

Short Fiction

CO5: To Evaluate 'A Wife's Story', 'Management of Grief', The Accompanist' and 'A Devoted Son'.

M.A

Semester II

Paper II English Prose

Programme Specific Outcomes

PSO1: Understand the Development of the English Essay and Translation of Bible.

PSO2: Analyze the Essays of Bacon, The Pilgrims Process and Apologie for Poetry.

PSO3: Develop an understanding about Swifts 'The Battle of Rocks, Addison's Sir Roger in Church.

PSO4: Analyzing Lamb's essays and Ruskin's 'unto this Last'.

PSO5: Discussing Woolf's A Room of One's Own and Politics and the English Language.

Course Outcomes

Background, Essays, Prose

CO1: Origin and Development of English Essay, Utopia, Allegory, Satire and Translation of Bible

CO2: To understand the development of 'Of Studies', 'Of Truth', 'An Apologie for Poetry and 'The Pilgrims Progress.

CO3: To Analyze the Addison's 'Sir Roger in Church', Swift's 'The Battle of Books' and 'Preface to

Shakespeare.

CO4: An Overview of Lamb's Essays, Hazlitt's The Indian Jugglers' 'On People with One Idea'

CO5: To get a Glimpse of Bertrand Russell's The Ethics of War', 'Education and Discipline', George

Orwell's 'Politics and the English Language', 'Reflections on Gandhi'.

Paper III English Fiction

Programme Specific Outcomes

PSO1: Understand The Rise of Novel, Realism and Magic Realism.

PSO2: Analyze Daniel Defoe's Robinson Crusoe, Austen's Emma, and Bronte's Jane Eyre.

PSO3: Develop an understanding of Dicken's Hard Times and Conrad's Heart of Darkness

PSO4: Critical appreciation of Lawrence's Sons and Lovers and Zadie Smith's White Teeth.

PSO5: Understand Rudyard Kipling's Lispeth and Roald Dahl's The Umbrella Man.

Course Outcomes

Background, Novels, Short Stories

CO1: To Study 'The Rise of the Novel', Naturalism and Stream of Consciousness.

CO2: A Critical Study of 'Robinson Crusoe' 'Emma' and' Jane Eyre'.

CO3: To Analyze 'Hard times', 'Tess of the Urbervilles', and' Heart of Darkness'.

CO4: The Analysis of 'sons and Lovers', 'Lord of the Flies' and 'White Teeth'.

CO5: To Evaluate the short stories of 'Thrown Away', 'The Man Who Could Work Miracles' and 'Lamb to

the Slaughter'.

Paper IV Women's writing

Programme Specific Outcomes

PSO1: Indigenous Roots of Feminism: Culture, and to understand Gynocritism

PSO2: Analysis of Lanyer, Plath, Nicholes poetry.

PSO3: Critical Appreciation of Wide Sargasso Sea, The Bluest Eye, Ameicanah.

PSO4: To Study Mary Woostonecraft, Adrinne Rich, Suniti Namjoshi's works.

Course Outcomes

Background

CO1: To Study Sex and Gender, Women's Liberation Movement, Women and the Canon, Black Feminist

criticism.

Poetry

CO2: To Understand the Poetry: ‘Eve’s Apology in Defense of Women’, ‘Lady Lazarus’, ‘ Daddy’,

‘waterpot’, ‘The Fat Black Woman Goes Shopping’ and ‘ Raisin eyes’.

Fiction

CO3: To Develop Feminist view Point through Toni Morrison, Jean Rhys, Chimamanda Adichie.

Prose

CO4: Feminism and Women Studies through ‘Vindication of the Rights of Women’and ‘From Feminist

Fables’.

Paper V Twentieth Century Literary Criticism and Theory

Programme Specific Outcomes

PSO1: Understand New Criticism, Structuralism and Post Structuralism

PSO2: Analyze Brooks, Fry’s writings.

PSO3: Critical Study of Foucault’s, Barthes, Williams works.

PSO4: Evaluate works of Said, Showalter and Louis Gates.

Course Outcomes

Background, Literary theory and Criticism

CO1: An Introduction to Literary Theory, Psychoanalytical Criticism and Principles of Criticism.

CO2: To Analyze ‘The Language of Paradox’ and ‘the Archetypes of Literature’.

CO3: To critically analyze ‘The Unities of Discourse’, ‘The Death of the Author ‘and ‘Literature’

CO4: To Evaluate ‘Feminist Criticism in Wilderness’ and Writing ‘Race’.

M.A

Semester II

Paper II English Prose

Programme Specific Outcomes

PSO1: Understand the Development of the English Essay and Translation of Bible.

PSO2: Analyze the Essays of Bacon, The Pilgrims Process and Apologie for Poetry.

PSO3: Develop an understanding about Swifts the Battle of Rocks, Addison's Sir Roger in Church.

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Pilgrims Progress.

CO3: To Analyze the Addison's 'Sir Roger in Church', Swift's 'The Battle of Books' and 'Preface to
Shakespeare.

CO4: An Overview of Lamb's Essays, Hazlitt's 'The Indian Jugglers' 'On People with One Idea'

CO5: To get a Glimpse of Bertrand Russell's 'The Ethics of War', 'Education and Discipline', George
Orwell's 'Politics and the English Language', 'Reflections on Gandhi'.

Paper III English Fiction

Programme Specific Outcomes

PSO1: Understand The Rise of Novel, Realism and Magic Realism.

PSO2: Analyze Daniel Defoe's Robinson Crusoe, Austen's Emma, and Bronte's Jane Eyre.

PSO3: Develop an understanding of Dicken's Hard Times and Conrad's Heart of Darkness

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PSO5: Understand Rudyard Kipling's Lispeth and Roald Dahl's The Umbrella Man.

Course Outcomes

Background, Novels, Short Stories

CO1: To Study 'The Rise of the Novel', Naturalism and Stream of Consciousness.

CO2: A Critical Study of 'Robinson Crusoe' 'Emma' and' Jane Eyre'.

CO3: To Analyze ‘Hard times’, ‘Tess of the Urbervilles’, and’ Heart of Darkness’.

CO4: The Analysis of ‘sons and Lovers’, ‘Lord of the Flies’ and ‘White Teeth’.

CO5: To Evaluate the short stories of ‘Thrown Away’, ‘The Man Who Could Work Miracles’ and ‘Lamb to the Slaughter’.

Paper IV Women’s writing

Programme Specific Outcomes

PSO1: Indigenous Roots of Feminism: Culture, and to understand Gynocriticism

PSO2: Analysis of Lanyer, Plath, Nicholes poetry.

PSO3: Critical Appreciation of Wide Sargasso Sea, the Bluest Eye, Americanah.

PSO4: To Study Mary Woostonecraft, Adrinne Rich, Suniti Namjoshi’s works.

Course Outcomes

Background

CO1: To Study Sex and Gender, Women’s Liberation Movement, Women and the Canon, Black Feminist criticism.

Poetry

CO2: To Understand the Poetry: ‘Eve’s Apology in Defense of Women’, ‘Lady Lazarus’, ‘ Daddy’, ‘water pot’, ‘The Fat Black Woman Goes Shopping’ and ‘ Raisin eyes’.

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CO3: To Develop Feminist view Point through Toni Morrison, Jean Rhys, Chimamanda Adichie. Prose

CO4: Feminism and Women Studies through ‘Vindication of the Rights of Women’and ‘From Feminist Fables’

Paper V Twentieth Century Literary Criticism and Theory

Programme Specific Outcomes

PSO1: Understand New Criticism, Structuralism and Post Structuralism.

PSO2: Analyze Brooks, Fry’s writings.

PSO3: Critical Study of Foucault’s, Barthes, Williams works.

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CO4: To Evaluate ‘Feminist Criticism in Wilderness’ and Writing ‘Race’.

Course out-come and programme out-come

Semester III (24 credits)

Paper I .ENG 301: English Language Teaching: Classroom Techniques and Practical English (5 Credits)

The components of this unit help students develop English Language teaching skills.

Paper II. ENG 302: American Literature—I (5 Credits)

Students acquire knowledge of American history , major literary events of america and read many authors under

five genres..

Paper III. ENG 303: Indian Writing in English—I (5 Credits)

Students read Literary Movements and special qualities of Indian English Writing ,besides reading many significant

texts of the Indian writers.

Paper IV. ENG 304: (A) Postcolonial Literature (4 Credits)

Students study Indian, African, Caribbean texts in terms culture, social and religion of post colonial era.

Paper V .ENG 305: (Inter-disciplinary)—Literature and Film (4 Credits)

Students learn similarities and differences of film making and writing.

Seminar: 2 hours per week (1 credit)

Semester IV (25 credits)

Paper I.ENG 401: English Language Teaching: Major Developments in L1 and L2 (5 Credits)

The components of this unit help students develop English Language teaching skills.

Paper II. ENG 402: American Literature-II (5 Credits)

Students acquire knowledge of American history , major literary eventsof America and read many authors under

five genres..

Paper III. ENG 403: Indian Writing in English—II (5 Credits)

Students read Literary Movements and special qualities of Indian English Writing besides reading many significant
texts of the Indian writers.

Paper IV. ENG 404: (A) Academic Writing and Research Methodology (4 Credits)

Components of this paper help students to acquire researching skills such as (a) Collecting primary material ,
secondary material. (b) Writing Bibiliography. (c) Writing critical articlecles

Paper V. ENG 405: (A) Project Work .(4 Credits)

Students take up the topics from their syllabus and write a critical document of 70 pages.

M.A. English Literature

Semester-1

Paper-1: **The English Language: History, Description and Practice**

Programm Outcome:

1.The learners get exposed to the history of Indo-European languages both existing and extinct languages.

2. The learner learns about the characteristic features of Old English, Middle English and Modern English.

3. The learner identifies the influence of other languages on the English language and learn the different processes in word formation and change of meaning.

4. The learner practises to constitute and organize simple sentences along with gaining knowledge in forming structures of English noun phrases and verb phrases.

5. The learner gets exposed to the differences in British English and American English and learn the forming structures of English noun phrases and verb phrases..

6. The learner is trained to improve his/her communication skills and help her/him to use English in the classroom and outside the classroom efficiently.

Course Outcome:

1. This paper introduces to the learners the various types of Indo-European languages and the characteristic features of Old, Middle and Modern English.

2. It focusses on different processes involved in word formation and the contribution of foreign languages to the growth of vocabulary in English language.

3. It exposes the learner to the types of simple sentences and semantic implications of co-ordination and sub-ordination.

4. It emphasizes on learning the standard dialect, register and style.

5. It trains the learner to use reporting verbs, degrees of comparison and master in using English in authentic situations.

Paper-4: English language and Phonetics

Programm Outcome:

1. The learner is exposed to the aspects related to verbal and non-verbal communication.

2. The learner is trained to improve the pronunciation of the target language through the effective use of speech organs and identifying consonants and vowel sounds.

3. The learner is trained to follow strictly the rules of word stress and tones of intonation.

4. The learner will become aware of different levels of language description.

Course Outcome:

1. The paper focusses on the features of human communication and its types.

2. It emphasizes on phonetics that includes organs of speech, classification of sounds and description of consonants and vowel sounds of consonants and vowel sounds.

3. It focusses on word stress, aspects of connected speech and tones of intonation which help the learn to improve his/her pronunciation.

4. The paper attempts a detailed study of the levels of language description: phonology, morphology and syntax.

Semester-2

Paper-1: English Language Teaching: History, Approaches and Methods

Programm Outcome:

1. The learner will learn about the landmarks in English education in India before independence and after independence.

2.The learner will understand the role of English in India and learn the various objectives of teaching English has L2 in India..

3.The learner learns the various theories related to Behaviourism and Cognitivism.

4. The learner is exposed to the four language skills and their sub-skills.

5.The learner will learn the different approaches and methods in language teaching and different types of syllabi.

6. Learner is exposed to thetypes of Language Testing.

7.Learner is trained to test the language skills.

Course Outcome:

1.This paper provides the knowledge about how English was introduced in India and the role played

by English in pre and post- independent India.

2. It focusses on the theories of English language learning: Behaviourism and Cognitivism.

3.It focusses on both the approaches and methods of language teaching.

4. It provides an indepth analysis of LSRW and their sub-skills.

5. It also provides an elaborated explanation of goals and objectives of curriculum and types of syllabi.

6. It also focusses on various types of testing.

Semester-3

Paper-1: English Language Teaching: Classroom Techniques and Practical English

Program Outcome:

1. The learner is trained to identify and deal with the common errors and they are exposed to the techniques of teaching grammar, prose poetry and drama.

2. The learner is trained to use classroom techniques effectively.

3. The learner will learn how to use teaching aids in a language classroom.

4.The learner learns the important techniques involved in teaching language through literature.

5.The learner is trained to design language tasks from literary text.

6. Learner is trained in practical English like how to participate in GD's, elocution, debate, presentation and trained to write letters and notices, memos etc.

Course Outcome:

1. The paper helps the learner to deal effectively with error analysis theory and the techniques of teaching grammar, poetry, prose, drama and vocabulary.

2. It mainly focusses on learner centred approach and expose the learner to the concepts of team teaching and teaching large classes.

3. It emphasizes on effective use of teaching aids and the importance of language lab in acquiring L2.

4.It focusses on teaching language through literature and the stylistic approach to the teaching of

literature.

5. It provides a platform for the learners to learn how to communicate effectively through letters, memos, notices, etc.

6. It also focusses on essentials of presentation skills, mock interviews, GD's, etc.

Semester-4

Paper-1: English Language Teaching: Major Developments in L1 and L2

Program Outcome:

1. The learner will be able to differentiate language learning from language acquisition and learn the functions of human brain in language acquisition.

2. The learner is exposed to major findings in L2 research and the different models of L2 acquisition.

3.The learner is trained to use the appropriate language learning strategies while learning the language.

4. The learner will be aware of the relationship between language, society and culture and to find the current trends of World Englishes.

5. The learner trained to design a standard test and learn the principles of designing ESP courses.

Course Outcome:

1.This paper gives a detailed account of the human brain and its function in language acquisition and learning.

2. This paper focusses on the major findings of L2 research and the models of L2 acquisition.

3.It provides a brief description of types of language learning strategies and the different learning styles of the learners.

4. It focusses on the importance of socio-linguistics, concept of post method pedagogy, World Englishes and New Englishes.

5.It briefly mentions the principles of designing ESP courses.

6. It provides the steps to design a standard test and also study the samples of competitive tests like TOEFL and IELTS.

Paper-4: Academic Writing and Research Methodology

Program Outcome:

1.The learner is trained to write effectively by studying the factors like cohesion, coherence, accuracy, appropriacy, management of tone and tenor, etc. that effect writing.

2 The learner is well trained in writing effective reports, essays, books reviews and film reviews.

3.The learner is trained to avoid plagiarism and also trained to analyse and to interpret data collected.

4.Learner is trained to prepare an outline for research articles and thesis.

Course Outcome:

1. This paper focusses on various factors that influence the effective writing.

2.It emphasizes on study skills and academic skills like note taking, note making, paraphrasing, summarizing, essay writing, report writing, writing book reviews, film reviews.

3.It gives an in-depth knowledge on types of research and how to analyse and interpret the collected data.

4.It exposes the learner to the two formats of documentation- APA and MLA styles.

Program Outcome for General English at Undergraduate level

General English for Undergraduate I and II year curriculum is designed with relevance to the need of the hour of communication skills. Students of Nizam College are a mix of foreign students from third world countries, rural students and urban students. Hence, the designed course caters to the developmental needs of this heterogeneous group, which is quite a challenge.

The activities therefore are designed with the learning objectives in the following areas

1. The development of language skills
2. The mastery of language
3. The development of communication skills
4. The inculcation of literary skills
5 The development of study skills
6. The development of soft skills
7.Increasing their overall proficiency levels in English.

The program outcome is to ensure the learning of English language skills in use. The program specific outcome is to help the heterogeneous unique mix of students to help with their practical usage of English. The course is graded in I and II year with basics in I year and advanced skills in II year.

UG - B.A. (ML) Programme Outcome

The syllabus of BA (ML-English Literature) is a three year programme comprising of six

semesters. The programme is designed as a gradient course starting from the modern and contemporary English literature, grading towards the classics of English literature. The student can easily relate to the contemporary literature, which further encourages him/her to explore the origins.

The programme outcomes for the student are as follows:

1. The learner is able to describe, analyze, interpret, and evaluate features of literary texts in several genres, using appropriate literary and cultural terms and contexts ,
2. The learner becomes proficient and critical readers of literary texts,
3.The learner is trained to write clear, well-developed, well-supported critical essays about literature, while integrating quality sources,
4. The learner is trained to plan, write, and revise substantial critical essays about literature with original insights and effective argument, organization, evidence, and analysis
5.The learner is trained to write short critical essays about literature that integrate primary and secondary sources with correct documentation and appropriate English,
6. The learner is trained to develop skills and values such as taking responsibility for work, confidence, cooperation, reflection and experience literature as an extension of life and a means for intellectual, aesthetic, personal growth and also foster creativity and social awareness.

UG - B.A. (ML) Course Outcome – I Semester

Paper I – Language and Literature I (Indian Literature in English)

This paper introduces to the learner both the aspects of English: Literature and Language. The focus of language as a means of communication emphasizes on both verbal and non verbal communication. An in depth analysis and learning is initiated into the four language skills Listening, Speaking, Reading and Writing. The learners also learn about varieties of English with reference to the unique variation of Indian English. The learner with an understanding of the elements of poetry and drama with an introduction into literary terminology, a student of literature should be thorough with. The learner will now be able to understand and appreciate higher order of language skills that are demonstrated in these genres. They also sample Indian writers and their work exploring the concept of literature within their context

UG - B.A. (ML) Course Outcome – II Semester

Paper II – Language and Literature II (British Literature of 20th Century)

This paper delves deeper into the phonology of English with a study on vowels and consonants and other components of language such as stress, syllable, word accent and contractions. It also trains the learner in listening, conversations and the power of positive markers in language. It further introduces definitions and major influences on literature such as Marxism, Modernism, Post Modernism and Feminism. Sample text/texts of all the major genre are introduced to the learner to create an overview and become a background on which the learner can work further. A broader sense of 20th century British Literature is established

UG - B.A. (ML) Course Outcome – III Semester

Paper III – Language and Literature III (British Literature of 19th Century)

As the learner proceeds to the next semester, he/she learns higher language skills and older concepts of literature than the earlier semester. Language and Communication is part of the impetus. Reading comprehension and Basics of writing help the learner comprehend the concepts of 'organisation', 'expansion', 'abridgement' and 'creative writing'. Sample text/texts of all the major genre are introduced to the learner to create an overview and become a background on which the learner can work further. A broader sense of 19th century British Literature is established

UG - B.A. (ML) Course Outcome – IV Semester

Paper IV – Language and Literature IV (British Literature of 18th Century)

After three semester of language and literature, this semester enables the student equip themselves with the aspects related to effective academic writing by exposing them to ideas related to documentation. Further, the students are given an idea of 18th century British literature, restoration drama, neo-classical age and a glimpse of the development of the novel and various kinds of novel.

UG - B.A. (ML) Course Outcome – V Semester

Paper V – Language and Literature V (British Literature of 16th& 17th Centuries)

By the end of the Fifth semester, students would be familiar with aspects of writers and a few writings of Renaissance and University wits, Elizabethan age and Metaphysical age. Works of William Shakespeare, John Donne, John Milton and Francis Bacon. The unit of seminar and presentation skills should hone their speaking skills and equip them for effective

presentations.

Paper VI- **Elective –A:** American Literature

After four semesters of exposure to British literature, the students who opt for American literature will get an idea of American literature. At the end of the semester, students would come out with movements and phases, and the struggles of America: slavery, racism, discrimination, American dream and individualism as reflected in works of Phyllis Wheatley, Mark Twain, Walt Whitman and H.D Thoreau

Elective- B: Post-Colonial Literature

After four semesters of exposure to British literature, the students who opt for American literature will be now introduced to Post-Colonial Literature. At the end of the course, the students should be familiar with concepts and ideas related to: Imperialism, Colonialism, Post colonialism, Diaspora and literature of Carribean , Australian and Nigerian witers such as: Edward

Braithwaite, Judith Wright, Ngugi Wa Thiango, Wole Soyinka and Chinua Achebe.

UG - B.A. (ML) Course Outcome – VI Semester

Paper VII – Literary Appreciation and Criticism

At the end of the semester, students will be gaining knowledge of the tools of critical analysis to analyze poetry, fiction, drama, and prose. Students will be also aware of concepts such as neo-criticism, feminism and Psychoanalysis. This paper also familiarizes them with the genre of film as literature and helps them understand the techniques of film making and the issues of the genre.

UG - B.A. (ML) Course Outcome – VI Semester

Paper VIII – Project Work

After the seven semesters of studying literature and learning about academic writing and documentation, the students are able to take up some kind of research work as submit as a project.The students are given a choice of their topics from the works and writers they have studied earlier.

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Department of Economics

Economics is the study of how people decide to use resources on an individual and a collective basis. It examines the kinds of work people do and how much time they spend doing it. Economics also looks at production, investments, taxation and how people spend and save money. Before you commit yourself to spending time and effort studying economics, it helps to know the advantages of doing so.

Economics is the study of how societies, governments, businesses, households, and individuals allocate their scarce resources. Our discipline has two important features. First, we develop conceptual models of behavior to predict responses to changes in policy and market conditions. Second, we use rigorous statistical analysis to investigate these changes.

Economists are well known for advising the president and congress on economic issues, formulating policies at the Federal Reserve Bank, and analyzing economic conditions for investment banks, brokerage houses, real estate companies, and other private sector businesses. They also contribute to the development of many other public policies including health care, welfare, and school reform and efforts to reduce inequality, pollution and crime.

The study of economics can also provide valuable knowledge for making decisions in everyday life. It offers a tool with which to approach questions about the desirability of a particular financial investment opportunity, whether or not to attend college or graduate school, the benefits and costs of alternative careers, and the likely impacts of public policies including universal health care and a higher minimum wage.

The complementary study of econometrics, the primary quantitative method used in the discipline, enables students to become critical consumers of statistically based arguments about numerous public and private issues rather than passive recipients unable to sift through the statistics. Such knowledge enables us to ask whether the evidence on the desirability of a particular policy, medical procedure, claims about the likely future path of the economy, or many other issues is really compelling or whether it simply sounds good but falls apart upon closer inspection.

COURCE OUTCOME –

MACRO ECONOMICS (M.A PREVIOUS- PAPER-II SEM- I& II)

CO1:Macro economics helps us to understand how a economy is moving as a whole. It is useful in multiple ways to multiple parties.
CO2:In Macro economics, a variety of economy –wide phenomena is thoroughly examined such as inflation, price levels, rate of growth, national income, gross domestic product and changes in unemployment.
CO3:Private companies decide the investment area depending on macroeconomics data like inflation or sector growth.
CO4:It helps us understand the functioning of a complicated modern economic system.
CO5:It helps to achieve the goal of economic growth, a higher GDP level, and higher level of employment.
CO6:It helps to bring stability in price level and analysis fluctuations in business activities.

GROWTH & DEVELOPMENT ECONOMICS (M.A FINAL- PAPER-II – SEM-III)

Development economics is fascinating because it shows how economic analysis can help us to understand the big themes of the 21st century- poverty and inequality, globalization and trade, and the contrasting experience of success and failure in the economies of different regions of the world.

CO1: This enables consumers to enjoy more goods and services and enjoy better standards of living.
CO2: With higher output and positive economic growth, firms tend to employ more workers creating more employment.
CO3: Economic growth creates higher tax revenues and there is less need to spend money on benefits such as unemployment benefit. Therefore economic growth helps to reduce government borrowing.
CO4: With increased tax revenues the government can spend more on public services such as the

NHS education etc.

ENVIRONMENT ECONOMICS (M.A FINAL- PAPER-III- SEM IV)

CO1:Environmental economics will help us understand some important and controversial issues such as climate change policy, nuclear power, recycling policy and traffic congestion charging .
CO2:This is an exciting field of economics to study and very much at the heart of many public debates and controversies.
CO3:Under takes theoretical or empirical studies of the economic effects of national or local environmental policies around the world. Particular issues include the costs and benefits of alternative environmental policies to deal with air pollution, water quality, toxic substances, solid waste and global warming.

INDUSTRIAL ECONOMICS (M.A FINAL- PAPER-IV- SEM- IV)

CO1: Industrial Economics is the study of firms, industries, and markets. It looks at firms of all sizes – from local corner shops to multinational giants such as WalMart or Tesco. And it considers a whole range of industries, such as electricity generation, car production, and restaurants.
When analysing decision making at the levels of the individual firm and industry, Industrial Economics helps us understand such issues as:
1. The levels at which capacity, output, and prices are set;

2. The extent that products are differentiated from each other;
3. How much firms invest in research and development (R&D)
4.How and why firms advertise

CO2:Industrial Economics also gives insights into how firms organise their activities, as well as considering their motivation. In many micro courses, profit maximisation is taken as given, but many industrial economics courses examine alternative objectives, such as trying to grow market share. There is also an international dimension – firms have the option to source inputs (or outsource production) overseas. As such, while industrial economics more frequently uses skills and knowledge from micro courses, macroeconomic concepts are sometimes employed

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Department of Environmental Science

The Department of Environmental Science is one of the oldest departments of Nizam College, Osmania University, and it is equipped with well experienced faculty. Environmental Science has been offered at Nizam College as AECC, Ability Enhancement Compulsory Course for Undergraduate students during the first year. Environmental Science is meant for students of B.Sc., B.B.A.and BCA in the first semester whereas the students belonging to disciplines of B.A. and B.Com pursue Environmental Science in the second semester of their course. Environmental Science is also introduced to the Post GraduatestudentsinFive Year Integrated Course in Chemistry during the first semester.

The basic idea of this subject is to bring about awareness about our environment among the students and to make them realize their duty to protect it.The study will improve the problem solving capacity of students.The goals of Environmental Education are to develop a world population that is aware of and concerned about, total environment and its associated problems, and commitment to work individually and collectively towards solution of current problems and the prevention of new ones. In Nizam College a number of new objectives and guiding principles for developing environment of education at all levels in both formal and non-formal levels are formulated.

PROGRAMME OUTCOMES

PO1 : Acquire an awareness of and sensitivity to the total environment and its allied problems.

PO2 : Gain a variety of experiences and acquire a basic understanding of the environment and its associated problems.

PO3: Acquire a set of values and feelings of concern for the environment and the motivation for active participation in environmental improvement and protection.

PO4 : Acquire skills for identifying and solving environmental problems.

PO5 : Evaluate environmental measures and education programmes in terms of ecological, economic, social, aesthetic and educational factors.

PO6: Provide an opportunity to be actively involved at all levels in working towards the resolution of environmental problems.

PO7 : Have an appropriate set of professional skills to ensure a productive career.

PO8 : Work effectively in a multi-disciplinary environment.

PO9 : Exhibit positive attitudes and values toward the discipline, so that they can contribute to an increasingly complex and dynamic society.

COURSE OUTCOMES

CO1 : Students will be able to understand the composition of Environment.

CO2 : Students gain knowledge about the areas and aspects covered under Environmental Science.

CO3 :The science of Environment studies comprises various branches of studies like chemistry, physics, life science, medical science, agriculture, public health, sanitary engineering, geography, geology, atmospheric science, etc. It is the science of physical phenomena in the environment.Students acquire knowledge about composition of Environment.

CO4 :Students will get a clear understanding of environmental concerns and indicates the necessity to follow sustainable development practices. It will also help to stimulate them to develop their ability to apply their knowledge and adopt a standpoint on environmental issues.

CO5 :It helps studentsto establish a standard for a safe, clean and healthy natural ecosystem. It also deals with important issues like safe and clean drinking water, hygienic living conditions and clean and fresh air, fertility of land, healthy food and development.

CO6 :By including environmental studies, students will be able to associate their core subjects to the direct or indirect impact it has on the environment. Educating students on environment should result in them being more aware and sensitive towards the world we live in.

CO7 : Students will have an insight about structure and functions of ecosystem.

CO8 : Students acquire knowledge about natural resources, their importance and their conservation.

CO9 :Students get an opportunity to learn about different types of pollution and methods to control pollution.

CO10 : Students will learn about climate change, global warming, acid rain, ozone layer depletion, Air Act, Water Act, Wildlife Protection Act, Environmental Protection Act and Social Forestry.

Department of Geography

COURSE OUTCOME

1. Geotectonics and Geomorphology

CO 1 – Explaining the Fundamentals of Geotectonics and Geomorphology
CO 2 - Understanding crustal mobility and tectonics; with special emphasis on their role in landform development
CO 3 – Establishing the relationships between landforms, processes and underlying structure
CO 4 – Overview and critical appraisal of landform development models

2. Hydrology and Oceanography

CO 1 – Describing and analyzing the concepts of Hydrology and Oceanography
CO 2 – Understanding the variations of global hydrological cycle
CO 3 - Emphasizing the significance of groundwater quality and its circulation
CO 4 – Studying the behavior and characteristics of the global oceans

3. Economic Geography

CO 1 - Understanding the fundamental principles of Economic Geography
CO 2 – Assessing the importance of economic activities around the world
CO 3 – Discussing the locational factors for development of industries

4. Climatology Soil and Biogeography

CO 1 - Understanding the dynamics of the Earth's atmosphere and global climate
CO 2 - Explaining approaches to climate classification.
CO 3 - Assessing the role of man in global climate change
CO 4 - Explaining the Pedological and Edaphological Approaches to Soil Studies
CO 5 - Discussing processes of soil formation, types of soil, and principles of soil and land classification; and management.
CO 6 - Introducing ecosystem and biosphere concepts
CO 7 - Analyzing the importance and role of biogeochemical cycles
.

5. Social, Cultural and Political Geography

CO 1 - Explaining the concept and dynamics of human society.
CO 2 – Highlighting the emerging social patterns and contemporary principles of social ecology

CO 3 - Highlighting different cultural ethos, social and political milieu found in India
CO 4 - Analyzing the unity in the vast cultural background of India
CO 3 – Establishing the correlations between man and his natural and cultural landscape
CO 4 – Analyzing different political ideologies
CO 5 – Emphasizing the significance of different political systems

6. Population Settlement and Regional Geography

CO 1 – Identifying habitable parts of the world and different global population dynamics
CO 2 – Explaining the correlation between man and man-made structures on the natural landscape
CO 3 – Analyzing the concept of regions and regionalization.
CO 4 – Understanding the detailed geography of India
CO 5 – Studying typical physiographic, planning, arid and biotic regions of India
CO 6 – Describing and analyzing the problems and consequences of unreliable rainfall, soil salinity, urban slums and SEZ delineation

6. Philosophy of Geography

CO 1 – Discussing the evolution of geographical thought from ancient to modern times
CO 2 – Establishing relationship of Geography with other disciplines and man-environment relationships
CO 3 - Analyzing modern and contemporary principles of Empiricism, Positivism, Structuralism, Human and Behavioural Approaches in Geography

7. Contemporary Issues in Geography

CO 1 – Assessing the nature, impact and management of major natural and man-made hazards affecting the Indian subcontinent
CO 2 – Understanding fundamental concepts of hazards, disasters, and their management
CO 3 – Analyzing the impacts of globalization, economic disparity, poverty and unemployment across global economies
CO 4 - Studying the indicators of economic development

8. Practical Techniques in Geography

CO 1 – Interpreting, reading, analyzing and identifying features from Geological and Topographical Maps
CO 2 - Constructing scales and representing geographical data through Cartograms
CO 3 - Identifying rocks and minerals and listing their properties
CO 4 - Determining the area, the height and making of the plan of the land using dumpy level and prismatic compass in the field survey
CO 5 – Drawing of maps with the help of map projections
CO 6 – Using statistical techniques in order to summarize, represent, analyze and interpret data
CO 7 - Training in the use Geographic Information System (GIS) softwares for contemporary mapping skills.

CO 8 – Analyzing and interpreting remotely sensed satellite images and aerial photographs in order to understand topographical and cultural variations on the Earth's surface.

CO 9 – Conducting field excursions and preparation of field report on research on problem in different areas of India.

PROGRAM OUTCOMES:

PO 1 – Role of Humans on the Planet – An understanding and acknowledgment of the threats that endanger the earth's natural systems. This helps in further realization of the significance of anthropogenic causes of many of the disasters and threats that puts life on this planet on the edge.Enabling the students to understand that man and his ingenuity has given rise to resource and its utilization; which has sprung from man's need for a better life. Hence the students of this course become conserverationalists and support the principle of sustainable development with practices of reuse and recycling. Human role and his use of the planet are further discussed and analyzed by the Department through the organization of national seminars on **'The Fragile Himalayas at Crossroads'** (2014) and **'Landscapes on the Edge: Risks, Resilience and Restoration'** (2017).

PO 2 – Scientific and Critical Thinking – Development of knowledge, skills and holistic understanding of the discipline among students. Encouragement of scientific mode of thinking and scientific method of enquiry in students. This goal is achieved through the regular field excursions conducted by the Department to various parts of India extensively and the writing of a report/thesis on it.

PO 3 – Disaster Response and Management – Students become equipped with the ability to respond to both natural and man-made disasters and acquire management skills. This is attained through the curriculum by studying and analyzing hazards, disasters, their impact and management. The Department had also held a Workshop on **'Disaster Preparedness: A Community based Management Approach for My City Kolkata'** for the schools of Kolkata in 2014 and 2015 as well as conducted a **Certificate Course on Disaster Management** in 2015; both of which were aimed at inculcating skills beyond the curricular requirement.

PO 4 – Interdisciplinary Research Skills – Ability to undertake research in interdisciplinary studies and problems or issues beyond the realm of what strictly comes under the purview of geography. This is possible because of the varied nature of the curriculum that encompasses the study and analyses of concepts of sub-disciplines and allied disciplines of Geology, Seismology, Pedology, Hydrology, Environmental Studies, Disaster Management, Resource Management and Conservation, Regional Planning and Development Studies etc.

PROGRAMME SPECIFIC OUTCOME

PSO 1 - Imbibing knowledge, skills and holistic understanding of the Earth, atmosphere, oceans and the planet through analysis of landform development; crustal mobility and tectonics,

climate change and dynamics; soil formation and classification; hydrological and oceanographic studies etc.

PSO 2 – Associating landforms with structure and process; establishing man-environment relationships; and exploring the place and role of Geography vis-a-sis other social and earth sciences.

PSO 3 – Understanding the role and functioning of global economies, industrial locations; and the use and exploitation of resources with impacts.

PSO 4 – Developing a sensitive and sustainable approach towards the ecosystem and the biosphere with a view to conserve natural systems and maintain ecological balance.

PSO 5 – Inculcating a tolerant mindset and attitude towards the vast socio-cultural diversity of India by studying and discussing contemporary concepts of social and cultural geography.

PSO 6 – Developing an understanding of geopolitics, global geostrategic views and functioning of political systems.

PSO 7 – Analyzing the differential patterns of the human habitation of the Earth, through studies of human settlements and population dynamics.

PSO 8 – Understanding and accounting for regional disparities, poverty, unemployment and the impacts of globalization. Explaining and analyzing the regional diversity of India through interpretation of natural and planning regions.

PSO 9 – Overviewing ancient and contemporary geographical thought and its relationship with modern concepts of empiricism, positivism, radicalism, behaviouralism etc.

PSO 10 – Sensitization and awareness about the hazards and disasters to which the subcontinent is vulnerable; and their management.

PSO 11 – Training in practical techniques of mapping, cartography, softwares, interpretation of maps, photographs and images etc; so as to understand the spatial variation of phenomena on the Earth's surface.

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Department of Genetics

The undergraduate syllabus in Genetics is designed to offer classical, basic and advanced information in the field of genetics without undue importance to any specific branch. As the course is being offered with microbiology and chemistry, due care is taken to avoid redundancy. While framing the curriculum, a vertical movement in the field is kept in mind so that they can take up postgraduate or integrated doctoral programme. The subject being one of the most debated, with advancement of knowledge rapidly progressing, due changes are periodically incorporated by revising the syllabus. Beside classical, focus is on molecular and microbial genetics with due lab work. Biostatistics and population genetics being offered as a core paper, while the electives are framed as plant and human genetics.

PROGRAM OUTCOMES

PO1- To develop problem solving abilities based on probability by making them solve the problems based on inheritance mechanism.

PO2- To build the necessary skill and analytical abilities for developing solutions for problems based on inheritance.

PO3 -To make understand the molecular basis of inheritance.

PO4 -To helps the students to have a thorough understanding of the molecular biology of gene.

PO5 -To inculcating scientific attitude.

PO6- To make understand the evolutionary aspects of genes in population.

PO67-To train students for applications of molecular biology tools in genetics engineering.

PO8-To help students to show interest in entrepreneurship and skill development

COURSE OUTCOME

Paper 1 -Transmission genetics

Mendelian inheritance and its extensions: Linkage, Crossing over and Gene mapping: Cell division and Chromosome segregation: Chromosome structure, chromatin organization and variation:

CO1-Understand the concept of inheritance.

CO2-Understand types of interactions between genes and environment.

CO3-Understand the concept of recombination and variations.

CO4-Developsthe problem-solving ability based on probability.

Paper 2-Molecular genetics and genetic engineering

Nucleic acids, DNA replication & DNA repair: Gene expression in Prokaryotes & Eukaryotes: Gene regulation in prokaryotes & eukaryotes: Microbial Genetics & Genetic Engineering

CO1-Understand the molecular aspects of inheritance in prokaryotes and eukaryotes.

CO2-Understand molecular biology aspect of genes and their expression and regulation.

CO3-It provides the knowledge for applications of molecular biology tools in genetics engineering.

CO4-Develop skills in entrepreneurship.

Paper 3-Biostatistics and Bioinformatics

Descriptive Biostatistics and Probability: Applications of Biostatistics: Introduction to bioinformatics and biological databases: Sequence Alignment

CO1-To learn the basis of significance of biostatistical concepts in genetics.

CO2-To handle statistical applications in the study of genetics.

CO3-To create building research methodology

CO4-To Understand bioinformatics basics to know the significance of databases and its applications.

Paper 4-population genetics and evolution.

Principles of Population genetics: Selection, Mutation & Migration: Inbreeding, Genetic Drift and Quantitative inheritance: Genetic Variation and Molecular Evolution

CO1-To understand concepts of finding out the frequency of lethal genes in the population and evolutionary aspects of the population.

CO2-To understand significance of genes in population and the concept of evolution.

CO3-To understand the reason behind the selection of mutations.

CO4-To understand the significance of selections in the population which leads to variations.

Paper 5- Elective 1-Animal genetics and Biotechnology

Livestock Genetics: Laboratory Animal Genetics: Mouse models for Human disease: Animal Cell Culture Biotechnology

CO1-To understand the significance of live stocks in the study of genetics, their improvement and maintenance.

CO2-The study also provides the knowledge of using live stock as models of genetic studies and their role in biotechnology.

CO3-To inculcates the scientific attitude in the students and encourage entrepreneurship.

CO4-To ensure the production of economically important products based on the concept of genetic engineering and animal breeding.

Paper 5 Core -Biostatistics and Population Genetics

Statistical Analysis in Genetics: Structure of population and Genetic Equilibrium: Mutations and selections

CO1-To learn the basis of significance of biostatistical concepts in genetics

CO2-To handle statistical applications in the study of genetics

CO3-To understand concepts of finding out the frequency of lethal genes in the population and evolutionary aspects of the population

CO4-To understand significance of genes in population and the concept of evolution

Paper 6 elective 1- Human genetics

Inherited Human disorders: Management of inherited human diseases: Gene therapy and genome projects

CO1-This course provides the insight of human genome, human genome projects and its applications.

CO2-It also provides the knowledge of various genetic disorders, prevention and cure.

CO3-This course enables knowledge of clinical genetics aspects and signifies the cause of genetic disorders and recent advances in detecting the various disorders, diagnosis and therapeutics.

CO4-The course contains information related to the genetic aspects of diseases like cancer and blood disorders.

CO5-The molecular aspects of genetics behind these disorders makes the students develop various strategies to combat with these disorders.

Paper 6 elective 2-Breeding and Genome Evolution

Inbreeding and its effect: Selection and breeding methods in plants& animals: Genome evolution and population variation.

CO1-This course provides the basic principle of breeding to improve livestock and crop varieties.

CO2-It helps in improving varieties of crop plants and livestock based on the principles of genetics.

CO3-To understand the concept of genome evolution.

CO4-Thus making understand the significance of evolution and population variation.

Paper 7 Core-Genome analysis and genetic engineering

Advanced techniques in Genome analysis: Gene transfer techniques: Genetic engineering of plants and animals

CO1-This course involves the advanced techniques in molecular biology.

CO2-Thus, making the students to learn different techniques utilized in genome analysis

and recombinant DNA technology.

CO3-It fulfils the requirement of production of transgenic plants and animals.

CO4-It provides significance of productivity improvement according to the market requirements.requirements.

Paper 8Elective 1- Medical Genetics

Cancer Genetics; Immuno Genetics; Hemoglobinopathies and pharmacogenomics

CO1-This course information related to the genetic aspects of diseases like cancer and blood disorders.

CO2-The molecular aspects of genetics behind these disorders makes the students develop various strategies to combat with these disorders.

CO3-Development of vaccines and various immunological techniques involved in diagnosis of diseases and different techniques utilized in genome analysis.

CO4-Thus, inculcating research strategies and helping them in curing and preventing genetic disorders.

Paper 8Elective 2- Plant Genetics and Biotechnology

Plant Genetics; Introduction to plant tissue culture; Methods in Plant Tissue Culture.

CO1-This course involves the application part of genetics dealing with biotechnological aspects.

CO2-The plant genetics and tissue culture techniques are discussed.

CO3-These aspects ensure the production of economically important crop plants on vegetative mode in a less time duration compared to the conventional method to meet the requirements of the society.

CO4-It fulfils the requirement of knowledge of genetics in understanding the various techniques for producing medicinally important compounds.

Department of History(UG)

PROGRAM OUTCOMES

PO1 To provide the students a basic methodology of studying and writing History

PO2 To provide the students the scientific way of learning history.

PO3 To provide the students with the opportunity to pursue courses that emphasizes quantitative and theoretical aspects of History.

PO4 To provide students with the opportunity to focus on applied issues in History.

PO5 To provide a well-resourced learning environment for History.

COURSE OUTCOME

101: History of India (From the earliest times to 700 CE)
CO1: By studying this course the student can understand the human evaluations like the transformations occurred right from Indus valley civilization times to 7th century A.D.

CO2: Identify and define various kinds of sources and understand how evidences are notified.

CO3: Compare and contrast various stages of progress from Indus valley civilization to Vedic age and analyze the Jain, Buddhist and Vedic faiths.

CO4: Increase the awareness of transition from territorial states to emergence of empires. Analyze the emergence of the mauryan ,gupta and Harshavardhan empires during the "Classical age" in India.

CO5: Critically examine the nature of monarchic rule and develop a comprehensive understanding of cultural evolution during ancient period.

s 201: History of India (700 CE - 1526 CE)
CO1: By studying this course the student can understand the Rise of Regional States: North and south.

CO2: Arab Conquest of Sind, Ghaznavids and Ghoris- Invasions.

CO3: Bhakti and Sufi Movements and its impact.

CO4: Kakatiyas and their significance in south India.

CO5: Vijayanagara and Bahamanis Kingdoms—and their Contribution to the Deccan Culture.

301 History of India (1526-1857 CE)

CO1: By studying this course, students identifies Establishment of Mughal Dynasty

CO2: Rise of Regional Powers Marathas ,Hyderabad -Avadh - Junagarh -Mysore – Kashmir.

CO3: By studying this paper, students identifies Europeans arrival, the disintegrations among the kings and the weakness of fleet etc. that led the British invasions on India and finally occupying political power in this country.

CO4: Three Stages of Colonialism and its impact on India

CO5: Decline of Rural Cottage Industries and Urban Handicrafts - Growth of Railways, Roads, Communication

Historical and Cultural Tourism Skill Enhancement Course (SEC)

CO1: The students will know the importance of historical tourism and types of tourism. It helps build image, it helps preserve the cultural and historical heritage, with culture as an instrument it facilities harmony and understanding among people.

CO2: By studying this paper the students will know the tourist spots ,handicrafts and cultural instruments; their History and importance. The students will know the primary purpose of exploring history and heritage of place.

401: History of India (1858-1964 CE)

CO1: By studying this course, students understand Queen's Proclamation-Beginning of Colonial Rule in India

CO2: Socio-Religions Reform Movements in India and its impact on society.

CO3: By studying this paper, students identify Rise of Nationalism in India and the roile of Indian national congress in freedom struggle.

CO4: Revolutionary Movement, Peasant and Workers Movements in India

CO5: Emergence of Communal Politics and partition of India.

Introduction to Archaeology; Skill Enhancement Course (SEC)

CO1: This course examines the significance of in retrieving the human part and its development as an important discipline in India.

CO2: This course equips the students with techniques of Identifying an archaeological site, its excavation, documentation and conservation methods.

501A: History of Modern World (From 1453 CE to 1848 CE)

CO1: By studying this course, students understand Dawn of New Age-Geographical Discoveries- Renaissance- Impact

CO2: Rise of Nation States in Europe: England, France, Spain, Portugal.

CO3: By studying this paper, students learn The Glorious Revolution and Era of Enlightened Despotism in Europe.

CO4: Age of Revolutions- American Revolution and French Revolution

CO5: 1830 and 1848 Revolutions in France

501C: History and Culture of Telangana (From earliest times to 1724 CE)

CO1: By studying this course, students understand Geographical features of Telangana

CO2: Student understand aboiut Satavahanas , Ikshvakus, Vishnukundins, Badami Chalukyas, Rashtrakutas, Vemulavada Chalukyas, MudigondaChalukyas and Western Chalukyas.
CO3: By studying this paper, students learn about Kakatiyas- Velamas, Padmanayakas

CO4: The Qutub Shahis-

CO5: Aurangazeb's invasion on Golconda kingdom and Political turmoil-SarvaiPapaiah & BalamooriKondala Rao.

Indian National Movement (1857 CE-1947 CE) GE - Generic Elective

CO1: By studying this course, students understand 1857 Revolt – Causes- Consequences.

CO2: Student understand about Process of Indian National Congress and its activities.

CO3: By studying this paper, students learn Gandhi and his contribution to Indian freedom movement.

CO4: Peasant and Tribal Movements and Emergence of Independent India.

601A: History of Modern World (1848 CE-1950 CE)

CO1: By studying this course, students understand Impact of 1830 and 1848 Revolutions and Unification of Italy and Germany

CO2: Student understand aboiut Rise of Socialist and Marxist Ideas and First World War.
CO3: By studying this paper, students learn League of Nations--Russian and Chinese Revolution

CO4: Rise of Fascism and Nazism-Second World War- and U.N.O-
CO5: National and Liberation Movements in Asia and Africa.
601C: History and Culture of Telangana (1724 CE to 2014 CE) (DSE)

CO1: By studying this course, students understand The Nizams of Hyderabad state and Revolt of 1857.

CO2: Student understand about Process of Modernization in Hyderabad State and sir salarjung reforms.

CO3: By studying this paper, students learn Public Awakening in Hyderabad State and rise of Political Consciousness

CO4: Cultural Awakening in Telangana
CO5: Political Awakening in Telangana and Emergence of Separate Telangana State.

Department of History (P.G) M. A. History

PROGRAM OUTCOMES:

PO1. Student will learn basic narrative of historical events, chronology, personalities and turning points of the history of the India, World and Telangana.

PO2. Build critical ability through competing interpretations and multiple narratives of the past, offer multi-causal explanations of major historical developments based on contextualized analysis of interrelated political, social, economic, cultural and intellectual processes.

PO3. Evaluation of historical ideas, arguments and points of view, presentation of a summary of a topic in an organized, coherent, and compelling fashion orally or written.

PO4. Construct original historical arguments based on primary or secondary source material and ability to identify and describe the contours and stakes of conversations among historians within defined historiographical fields.

PO5. Students will acquire basic historical research skills, including, effective use of libraries, archives, and databases.

COURSE OUTCOME

101 History of India: From Earliest times to 1206 CE

CO 01 Students are able to understand the genesis of history and development of history writing in different country as well as in India.

CO2. Identify and define various kinds of sources and understand how evidences are notified.

Co3. Compare and contrast various stages of progress from Indus valley civilization to Vedic age and analyze the Jain, Buddhist and Vedic faiths.•

CO4. Increase the awareness of transition from territorial states to emergence of empires.

CO5.Analyze the emergence of the Alexander, mauryan and gupta empires during the “Classical age” in India..

102 World History: 1453-1871 CE

CO 01. student learn about the history of Constantinople 1453

CO 02 student learn about the history of rise of national state in europe.

CO 03 student learn about the history of colonialism in the 18th Century.

CO 04 student learn about the industrial revaluation.

103 History and Culture of Telangana: From Earliest Times to 1724 CE

CO 01. student learn about the Archeological and literary sources of telangana

CO 02 student learn about the history of Shatavahanas, Ikshvakus etc.,.

CO 03 student learn about the history of Chalukyas badami, Rastakutas, Vemulavada chanukyans etc.

CO 04 student learn about the history of Kakatiyas.

CO 05 student learn about the history of Kutubshaihis of golkona.

104 Course History of Ancient Civilizations

CO 01. student learn about the history of Ancient Civilizations like Mesopotamia

CO 02 student learn about the history of Ancient Civilizations like Egypt.

CO 03 student learn about the history of Ancient Civilizations like Greece, Roman.

CO 04 student learn about the history of Ancient Civilizations like Indus, China.

105 Tourism and Culture

CO 01. student learn about the Tourism & Culture

CO 02 student learn about the Travel and Tourism through the Ages.

CO 03 student learn about the Social, Economic, Ecological and Cultural Impact on Tourism.

CO 04 student learn about the Types of Tourism.

201 HISTORY OF INDIA: 1206-1858 CE

CO 01. student learn about the Foundation of the Delhi Sultanate

CO 02 student learn about the history of Deccan Kingdoms - The Hoysalas, Pandyas, Yadavas, Kakatiyas.

CO 03 student learn about the history of The Mughals.

CO 04 student learn about the Advent of European Trading Companies in India.

CO 05 student learn about the history of Social and Economic Policies of English East India Company.

202 Paper II – HISTORIOGRAPHY AND HISTORICAL METHOD

CO 01. student learn about the Introduction of Historiography

CO 02 student learn about the history of Ancient Historiography

CO 03 student learn about the history of Modern Historiography- Western .

CO 04 student learn about the history of Modern Historiography- Marxist and Subaltern Schools.

CO 05 student learn about the Historical methodology.

203 HISTORY OF TELANGANA: FROM 1724-2014 CE

CO 01. student learn about the Asaf Jahi Dynasty

CO 02 student learn about the history of The Rule of Mir Osman Ali Khan

CO 03 student learn about the history of The Role of Andhra Maha Sabha.

CO 04 student learn about the history of Modern Anti-Nizam and Anti-Feudal Movements.

CO 05 student learn about the Discrimination, Dissent and Protest movements in Telangana for separate state.

204 HISTORY OF MODERN WORLD: 1871-1964 CE

CO 01. student learn about the Rise of Imperialism and Rivalry among the Colonial Powers

CO 02 student learn about the history of Formation of Alliances - Causes and Consequences

CO 03 student learn about the history of Europe between Two World Wars.

CO 04 student learn about the history of National Liberation Movements in Asia and Africa.

205 ENVIRONMENTAL HISTORY OF MODERN INDIA

CO 01. student learn about the Environmental History.

CO 02 student learn about the Colonialism and Exploitation of Natural Resources.

CO 03 student learn about the history of Colonial Policies on Land Alienation.

CO 04 student learn about the history of Emergence of Environmental Movements in India.

301 SOCIAL, ECONOMIC AND CULTURAL HISTORY OF MEDIEVAL INDIA: 1206-1707 CE

CO 01. student learn about the Sources for the Study of Social, Economic and Cultural History

CO 02 student learn about the history of Society in Medieval India

CO 03 student learn about the history of Cultural Developments in Medieval India.

CO 04 student learn about the history of Economic Developments in Medieval India.

CO 05 student learn about the Trade and Commerce in Medieval India.

302 SOCIAL AND ECONOMIC HISTORY OF MODERN INDIA: 1707-1947 CE

CO 01. student learn about the Social and Economic History

CO 02 student learn about the history of Socio-Religious and Cultural Reform Movement in India 19^{th} and 20^{th} Centuries

CO 03 student learn about the history of Role of Social Reformers in Emancipation of Women.

CO 04 student learn about the history of Stages of Colonialism.

CO 05 student learn about the Growth of Transport & Communication.

303 HISTORY OF DALIT MOVEMENTS IN INDIA: 1900-1947 CE

CO 01. student learn about the The Concept of Dalit

CO 02 student learn about the history of Caste System in India

CO 03 student learn about the history of Anti-Caste Movements in Colonial India.

CO 04 student learn about the history of Caste Reform Movements.

CO 05 student learn about the Caste Annihilation Movement in India.

304 HISTORY OF SCIENCE AND TECHNOLOGY IN MODERN INDIA: 1800-1964 CE

CO 01. student learn about the introduction of Science and Technology

CO 02 student learn about the history of Modernization of Agriculture under the British Rule in India

CO 03 student learn about the history of History of Growth of Scientific and Technical Education in India.

CO 04 student learn about the History of Colonial Medicine in India.

305 CULTURAL HISTORY OF INDIA (Inter Disciplinary)

CO 01. student learn about the introduction of Indian Culture

CO 02 student learn about the Religion and Philosophy – Ancient India

CO 03 student learn about the Indian Painting – Performing Arts in India.

CO 04 student learn about the Development of Science & Technology in India.

401 NATIONAL MOVEMENT IN INDIA: 1858-1947 CE

CO 01. student learn about the introduction of Nationalism

CO 02 student learn about the history of Emergence of Gandhi

CO 03 student learn about the history of Revolutionary Terrorism in India.

CO 04 student learn about the history of Growth of Communal Politics.

CO 05 student learn about the Freedom Struggle in Princely States in India.

402 HISTORY OF CONTEMPORARY INDIA: 1947-2000 CE

CO 01. student learn about the Colonial Legacy - National Movement

CO 02 student learn about the history of Consolidation of India as a Nation

CO 03 student learn about the history of Democracy, Secularism and Nation State in India.

CO 04 student learn about the history of Land Question and Indian Peasantry.

CO 05 student learn about the Caste and Communalism in Indian Politics.

403 TRIBAL AND PEASANT MOVEMENTS IN INDIA, 19^{TH} & 20^{TH} CENTURIES

CO 01. student learn about the introduction of Tribal & Peasant Movements

CO 02 student learn about the history of Tribal Uprisings (Central, North India and Andhra)

CO 03 student learn about the history of Peasant Movements in British India in 19th Century.

CO 04 student learn about the history of Peasant Movements in 20th Century.

CO 05 student learn about the Integration of Peasantry into the Nationalist Movement in India

404 CONSTITUTIONAL HISTORY OF INDIA: 1773-1947 CE

CO 01. student learn about the Constitutional Developments 1773-1919

CO 02 student learn about the history of Constitutional Development from 1919 to 1935

CO 03 student learn about the history of Government of India Act, 1935.

CO 04 student learn about the history of Growth of Central and Provincial Legislatures.

405 WOMEN STUDIES IN MODERN INDIA

CO 01. Student learns about the Historiography of women studies in India.

CO 02 student learn about the history of Women and Social Reform Movements in Colonial India

CO 03 student learn about the Women in Liberation Movements in India.

CO 04 student learn about the history of Women & Nationalism in India.

COURSE OUTCOME

Marketing Communication

CO1: Explaining Basic concepts of marketing (production concepts, product concept, societal concept, marketing concept, market concept), Origin of marketing

CO2: Elaborating the Marketing Vs Market, Marketing Mix(4pc's product, price, promotion, physical distribution.) , marketing Strategy distribution.) , marketing Strategy

CO3: Highlighting the Marketing environment in brief (Internal environment- Company, suppliers, marketing intermediates)

CO4: Describe the Internal environment – middlemen, agent middlemen, merchant middlemen, financial intermediates, customers, competitors, public, internal public.

CO5: Explaining the External environment- Economic environment, unemployment, agricultural, per capita income, pattern of savings and expenditure, price level change, impact of govt policies.

CO6: Describing the External environment - Industrial conditions, supply conditions, demography conditions, social and cultural environment, consumerism.

CO7: Marketing strategy, its applications and usages in brief, Functions of marketing, scope of marketing, Characteristics of marketing.

Communication

CO1: Highlighting the General communication – nature of communication, Objectives of

Communication – communication process (sender , encoding, message, decoding , receive ,

feedback).

CO2: : Explaining the Importance of communication (for all the fields),Barriers of communication (semantic barriers, physical barriers, psychological barriers)

CO3: Elaborating the Steps in developing effective marketing communication, Inter-personnel

Communication Vs Intra personnel communication.

Overview of Marketing Communication

CO1: Highlighting Overview of Marketing communication: Marketing communication, Why we need marketing communication.

CO2: : Explaining the Role and importance of marketing communication, Elements in marketing

Communication.

CO3: Highligting the Process of marketing communication, Limitations of marketing communication.

Types of Communication

CO1: Elaborating the Types of communication- Vertical communication (Downward, upward),

Horizontal communication. CO1: Explaining the concept of Advertising , Marketing Characteristics.

CO2: Elaborating the Origin and Growth of advertising, Objectives ofadvertising.

CO3: Highlighting the differences between Advertising Vs. Marketing, Advertising Vs. Communication.

CO4: Describe the Importance of advertising in Modern marketing.

Types of advertising

CO1: Explaining the Types of advertising- Commercial, Non-Commercial, Institution.

CO2: Describing the National & Local, comparative, Co-operative, Classified and Display, Persuasive types of advertising.

CO3: Highlighting the Consumer & Industrial advertising, Primary & Selective demand advertising.

Role of Advertising in Global Marketing

CO1: Explaining the Role of advertising in the Global Marketing, Scope of Advertising.

CO2 : Highlighting the Functions of Advertising, Advertising vs. Marketing.

Advertising plan

CO1: Explaining the Introduction to Advertising Strategy, the terms- Campaign, Campaign Planning , Basis of Campaign planning.

CO2: Elaborating the Phase of campaign planning, Advertising Agency Features, Function , Structure.

CO3: Describing the Function, Structure of ad agency.

Advertising Budget

CO1: Explaining the Introduction to advertising budget , Steps involved in preparing budget.

CO2: Highlighting the Methods involved in framing, Factors affecting the advertising expenditure in company.

CO3: Describing the Features of Advertising budget, Functions of advertising budget.

CO2: Explaining the Grapevine communication, Consensus communication, Limitations.

CO3: Highlighting the Inter personal communication, Formal and informal communication.

Media for marketing communication

CO1: Explaining the Overview of media, Introduction to media, Media analysis.

CO2: Highlighting the Integrated communication in marketing, Rural Marketing Vs. Urban Marketing.

CO3: Elaborating the Contemporary Issues in marketing.

Advertising

CO1: Explaining the concept of Advertising , Marketing Characteristics.

CO2: Elaborating the Origin and Growth of advertising, Objectives ofadvertising.

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CO2: Highlighting the Methods involved in framing, Factors effecting the advertising expenditure in company.

CO3: Describing the Features of Advertising budget, Functions of advertising budget.

Ad Agency

CO1: Explaining the Introduction to ad agency, History of ad agency.

CO2: Describing the Functions of ad agency, Features of ad agency.

CO3: Elaborating the Role and Importance in advertising ,Structure of ad agency.

CO4: Highlighting the Selection of an adagency.

Advertising Media

CO1: Explaining the Advertising Media: Meaning – Classification of ad-media.

CO2: Describing the Indoor media (Newspaper, Magazines, Radio, TV. Cinema, Video), Outdoor media(Poster, Displays, Electronic Signboards, Travelling Displays, Sandwich men etc.).

CO3: Highlighting the Display media (Postcard, Envelop enclosure, booklet, Catalogues- Sales letter, Widow Display, Country Display (interior Decoration), Show Room – Exhibitions, Show Cases, Trade Fairs), Direct media.

CO4: Elaborating the Factors to be kept in mind while selecting advertising media.

Media Planning

CO1: Explaining the Media Planning: Introduction.

CO2: Describing the Importance of media planning, Steps involved in media planning.

CO3: Highlighting the Factors influencing Media planning.

Media Scheduling

CO1: Describing the introduction to media scheduling

CO2: Explaining the Importance of Media Scheduling.

CO3: Highlighting the Methods of media scheduling.

Evaluation of advertising effectiveness

CO1: Explaining the Evaluation of Advertising Effectiveness: Introduction, Importance of evaluation of advertising effectiveness.

CO2: Describing the Methods of measuring Advertising Effectiveness,Pre - testing and Post – testing.

Personal Selling

CO1: Explaining the Personal selling: Introduction, Nature and Importance of Personal Selling.

CO2: Describing the Objectives of Personal selling, Advantages of personal selling

CO3: Highlighting the Limitation of Personal selling.

Psychology in buying and selling motives

CO1: Explaining the Psychology in selling and Buying Motives: Introduction to Psychology Selling.

CO2: Highlighting the Stages in Psychology process of Buying Motives and Selling points.

CO3: Describing the Buying Motives and Group Influence.

Process of Effective Selling

CO1: Explaining the introduction to process of effective selling, Stages involved in Selling process.

CO2: Describing the Prospecting , Pre-Approach, Approach.

CO3: Highlighting the Presentation Demonstration,Handling.

CO4:Elaborating the Objectives, Closing of sales, Post Sales activities.

Salesmanship

CO1: Explaining the Salesmanship: Introduction to Salesmanship, Origin and Evolution of Salesmanship.

CO2: Describing the Essential features of Good Salesmanship, Nature of Salesmanship.

CO3: Highlighting the Scope of Salesmanship.

Sales Organisation

CO1: Describing the Sales Organization: Introduction to Sales Organization, Structure of Sales Organization.

CO2: Explaining the Objectives of Sales Organization, Functions of Sales Organization.

CO3: Highlighting the Importance of Sales Organization, Types of Sales Organization.

Sales Force Management

CO1: Highlighting the Sales force: Meaning ,Need of Sales force.

CO2: Describing the Objectives of Sales force, Functions of Sales force.

CO3: Explaining the Importance of Sales force skills possessed by sales force.

Personnel Management in selling field

CO1: Explaining the Personnel Management in the selling field, Activities of Sales force Management.

CO2: Describing the Sales Execution, Sales force management.

Recruitment and selection of sales personnel

CO1: Explaining the Recruitment and Selection of sales personnel: Recruitment sources, Recruitment Process.

CO2: Describing the Recruitment Techniques, Selection sources.

CO3: Highlighting the Selection Process,Selection Techniques.

Sales Force Training

CO1: Explaining the Sales force Training, Aims of training.

CO2: Describing the Identification of training needs, Contents of the training programme.

CO3: Highlighting the Training methods,Executive and evaluation of sales training programmes.

Motivation and morale of sales force

CO1: Explaining the Motivation and Moral of sales force, Compensation of sales force.

CO2: Describing the Performance Appraisal of sales force.

Elements of Entrepreneurship

CO1: Highlighting the Entrepreneurship – Meaning, Need of entrepreneurship.

CO2: Explaining the Characteristics of entrepreneurship, Evolution and Development of entrepreneurship.

CO3: Describing the Factors influencing entrepreneurial growth, Entrepreneur.

CO4: Elaborating the Classification and Types of Entrepreneurs, Qualities of entrepreneurs : Creativity, innovation and Entrepreneurship.

Market Survey

CO1: Explaining the Market Survey, Objectives of market survey.

CO2: Describing the Techniques of market survey, PERT, CPM (Applications – Advantages-

Limitations).

CO3: Highlighting the differences between PERT Vs CPM.

Identification of Opportunities

CO1: Explaining the Identification of Opportunities, Project Identification.

CO2: Describing the Criteria for selecting a particular project, Converting Business opportunities into reality.

CO3: Highlighting the SWOT Analysis.

Location Problems

CO1: Highlighting the Location problems, Factors influencing location of projects.

CO2: Describing the Environmental problems, Measures and actions, Technology utilization and Quality control.

Setting up of small scale industry

CO1: Explaining the Setting up of Small Scale Industry, Steps involved in setting up Small Scale Industry.

CO2: Describing the Preparation of feasibility report, Guidelines for feasibility report.

Concept of Service Marketing

CO1: Highlighting the Concept of services marketing, Natureof services marketing.

CO2: Describing the Scopeof services marketing, Characteristics of services marketing.

CO3: Explaining the Importanceof services marketing, Goods Vs Services.

CO4: Elaborating the Emergence and Reasons for growth of service sector in India Classifications of services marketing.

CO5: Giving a brief note on Environment of services marketing.

Marketing Mix of Services

CO1: Elaborating of Marketing Mix of Services: 8 P's of marketing mix-Product, Price, Promotion, Marketing Mix of Services: Place, Physical evidence, People.

CO2: Describing the Marketing Mix of Services: Processes, Planning and creating of services,Identifying and classifying supplementary services.

CO3: Highlighting of Product life cycle of services,Branding of services, New Service development.

Pricing of Services

CO1: Explaining of Pricing of Services, Objectives,Approaches.

CO2: Describing the Methods, Problems in pricing. Promotion and Personal Selling in service industry, designing the communication mix for services.

CO3: Highlighting the Objectives of communication, Challenges and Opportunities,Distribution channels for services.

CO4: Elaborating the Options for service delivery,Modes of delivery¸The role of intermediaries.

Importance of people in Service Marketing

CO1: Elaborating the Importance of people in service marketing, Role of various people involved.

CO2: Explaining the Physical Evidence, Concept of Physical Evidence.

CO3: Describing the Importance,Types of Physical Evidence in various services.

CO4: Highlighting the Process concept, Types of process,Role of process in various services.

Challenges in Marketing of Services

CO1: Explaining the Challenges in marketing of services, Application of Service Marketing to Hospitals.

CO2: Describing the Application of Service Marketing toEducational Institutions, Application of Service Marketing toTourism.

CO3: Highlighting the Application of Service Marketing toBanking and Hospitality Industries.

Sales Promotion

CO1: Explaining the Meaning of sales promotion, Nature and growing Importance of sales promotion.

CO2: Describing the Methods of sales promotion: Consumer oriented sales promotion, Manufacturing

oriented sales promotion.

CO3: Elaborating the Trade oriented sales promotion.

Tools of Sales Promotion

CO1: Describing the Major tools of sales promotion – Samples , Point of purchases , Display ,

Demonstrations, Yellow Pages , Exhibitions , Fashion shows , Consumer contest.

CO2: Explaining the Coupons, Lotteries ,Gifts , Premiums , free goods,Conventions , Conference , Trade Shows.

CO3: Highlighting the Rebate Patronage ,Rewards , Sales promotion on internet.

Developing Sales Promotion Programmes

CO1: Elaborating the Developing sales promotion program, Pretesting.

CO2: Describing the Post testing, Implementing and evaluating the sales promotion programs.

CO3: Explaining the Making necessary modifications for effective sales promotion program.

Public relations

CO1: Explaining the Meaningof Public Relations, Functions of Public Relations.

CO2: Elaborating the Public Relations and Marketing, Evaluation of Public Relations.

Corporate Image Building

CO1: Highlighting the Corporate Image Building, Media Relations.

CO2: Describing the Internal communications, Newsletters.

CO3: Explaining the Events marketing and sponsorship, Sports promotion, Crisis communication.

Department of Mathematics

The Department of Mathematics is one of the oldest departments of Nizam College OU, and was established since its inception. It has well qualified and experienced faculties with a vision to promote mathematics in every walk of life as it is an essential part to develop analytical and logical skills which are imperative, to master the skills required to solve the problems of everyday or research Oriented. The department offers mathematics course for B.Sc. Students with Mathematics as one of the core subject along with Physics , Chemistry, Electronics; Computer Hardware. To cater the needs of the students with non Mathematics background, the department also offers an add-on course "Basic Mathematics" to brush up the skills required to learn the concepts of Mathematics in an easy and effective way.

In addition to this the department also offers Reasoning and Aptitude to the final year students as a skill Enhancement course to give them an edge to face the challenges of the competitive exams like UPSC , Civil Services, Banks, GATE.

In the year 2021, the department introduced a new course B.Sc. Data Science as it is in high demand now-a- days with an intake of 60 students. The department aims at strengthening the roots in the field of Mathematics and nurture the young students to become future Mathematicians. For the academic year 2021-22 the department introduced Generic Elective (SEC) for final year students with non mathematics background.

PROGRAMME OUTCOME

PO1: Be able to analyze, test, interpret and form independent judgments in both academic and non-academic contexts

PO2: Recognize and appreciate the connections between theory and applications

PO3: Have an appropriate set of professional skills to ensure a productive career

PO4: Work effectively in a multi-disciplinary environment

PO5: Exhibit positive attitudes and values toward the discipline, so that they can contribute to an increasingly complex and dynamic society

PO6: Communicate effectively with whom they are interacting and the society to make effective presentations, and give and receive clear instructions

PO7: Function effectively as an individual, and as a member or leader in diverse teams.

COURSE OUTCOMES

Differential Equations

CO1: Solve separable, homogeneous, exact, and linear first-order differential equations with and without initial conditions.

CO2: Determine regions of the plane over which a given first-order differential equation will have a unique solution.

CO3: Solve application problems modelle d by separable, homogeneous, exact, linear first-order differential equations, and equations reducible to first order differential equations.

CO4: Solve linear equations with constant coefficients.

CO5: Solve and understand the application problems modelled by linear differential equations.

CO6: Solve non-homogeneous linear equations with constant coefficients using the methods of undetermined coefficients and variation of parameters.

CO7: Learn to solve differential equations with variable coefficients.

CO8: Recognize and solve Cauchy-Euler equations.

Differential & Integral Calculus:

CO1. Find the limit of a function using the Limit Laws.

CO2. Use the formal definition of limit to establish the limit of linear and quadratic functions.

CO3. Find the derivative of elementary algebraic functions and trigonometric functions using the definition of derivative.

CO4. Find the derivative of a function using implicit differentiation.

CO5. Solve related rates application problems.

CO6. Find intervals of concavity and points of inflection of elementary algebraic functions and trigonometric functions.

CO7. Classify local extreme values using the first and second derivative tests.

CO8. Sketch the graph of algebraic and trigonometric functions by putting together all the information obtained using derivatives and limits.

CO9. Find absolute extreme values of a function using the Extreme Value Theorem.

Real Analysis:

CO1.prove a basic set theoretic statement

CO2.Define the limit of a function at a value, a limit of a sequence, and the Cauchy criterion

CO3.Prove a theorem about limits of sequences and functions

CO4.Check the convergence of Infinite series by using various methods

CO5.Solve the convergence of sequence and series of functions and Radius of convergence

CO6.State the Bolzano-Weierstrass theorem, Rolle's theorem, extreme value theorem, and the Mean Value theorem

CO7.Define Riemann integrable and Riemann sums

CO8.Prove a theorem about Riemann sums and Riemann integrals.

Algebra:

CO1. Demonstrate understanding of the relationships between abstract algebraic structures with familiar numbers systems such as the integers and real numbers.

CO2. Demonstrate understanding of and the ability to verify relationships between operations satisfying various properties (e.g. commutative property).

CO3. Demonstrate understanding the ability to work within various algebraic structures.

CO4. Demonstrate understanding of the importance of algebraic properties with regard to working within various number systems.

CO5.Demonstrate understanding the concept of Homomorphism & Isomorphism

CO6. Demonstrate ability to solve permutation groups

CO7. Demonstrate the understanding the cyclic groups.

CO8.Demonstrate the concepts of ring theory

CO9.Solving the problems on Ring theory

CO10. Demonstrate the concept of homomorphism and isomorphism on rings

CO11.Identifying the maximal ideals

Linear Algebra:

CO1: To learn the concepts of vector space ,Basis and Dimenstions.

CO2: To learn the importance of linear transformation in Physics, Engineering, Social sciences and various branches of Mathematics.

CO3: To learn and understand the concepts of Linear Dependence and Independence ,Linear span and it's applications

CO4: To learn to find Eigen values and Eigen vectors of a matrix which is used in the study of vibrations, chemical reactions and geometry.

CO5: To learn Inner Product spaces and Gram-Schmidt process of orthogonalization.

CO6: To get well equipped with Mathematical Modelling abilities.

Numerical Analysis:

CO1**:** Demonstrate understanding of common numerical methods and how they are used to obtain approximate solutions to otherwise intractable mathematical problems.

C02**:** Apply numerical methods to obtain approximate solutions to mathematical problems.

CO3**:** Derive numerical methods for various mathematical operations and tasks, such as interpolation, differentiation, integration, the solution of linear and nonlinear equations, and the solution of differential equations.

CO4**:** Analyse and evaluate the accuracy of common numerical methods**.**

CO5: Applications of initial value problems with various methods .

Analytical Solid Geometry

CO1: Calculate measurements of plane and solid geometric figures.

CO2: Construct logical arguments, based on axioms, definitions and theorems, to
CO3:Prove theorems and other results in geometry.

CO4: Know and apply properties of geometric figures to solve real-world and mathematical problems and to logically justify results in geometry.

CO5: Relate solid geometry to familiar objects of everyday experiences.

CO6: Develop their imagination in visualizing space objects.

PROGRAM OUTCOMES:

P01:Understand, analyze and develop computer programs in the areas related to algorithm, web design and networking for efficient design of computer based system.

P02:Work in the IT sector as system engineer, software tester, junior programmer, web developer, system administrator, software developer etc.

P03:Apply standard software engineering practices and strategies in software project development using open source programming environment to deliver a quality of product for business success.

COURSE OUTCOME

Environmental Science

Definition, Scope & Importance of Environmental Studies, Structure of Ecosystem – Abiotic & Biotic components Producers ,Function of an Ecosystem :Energy flow in the Ecosystem, Definition of Biodiversity , Genetic, Species & Ecosystem diversity , Hot-spots of Biodiversity, Renewable & Non – renewable resources , Disaster management – floods, earthquakes & cyclones, Role of Information technology in environment and human health.

CO1:To be interdisciplinary in approach.

CO2:To emphasize active participation in prevention and solution to environmental problems.

CO3:To examine major environmental issues from local, national, regional and international points of view.

CO4:To focus on current, potential environmental situations.

CO5:To consider environmental aspects in plans for growth and development.

English

SHORT FICTION: "The Curb in the Sky" by James Thurber- PRONUNCIATION: Consonant sounds-GRAMMAR: Noun PROSE: "Happy People" by William Ralph Inge -

PRONUNCIATION: Vowels: monophthongs- GRAMMAR: Pronoun- POETRY: " A Psalm of Life" by Henry Wadsworth Longfellow-PRONUNCIATION: Vowels: diphthongs-GRAMMAR:

WRITlNG: Dialogue writing-SOFT SKILLS: Interpersonal skills-VALUE ORIENTATION: faith can move mountains

CO1:Gain a good communication skill with grammatical errors in English Language.

CO2:Make the student to understand Listening skill and through Role play method.

CO3:Understand the use of articles and vocabulary in a playful method.

CO4:Understand the use of speaking skill through communication among their peer group.

CO5:Gain knowledge by writing different writing skills

Mathematical Foundations of Computer Science

Fundamentals of Logic: Basic Connectives and Truth Tables, Logical Equivalence, Logical Implication,

Relations and Functions: Cartesian Product, Functions onto Functions, Special Functions, Recurrence Relations: First – order linear recurrence relation, second – order linear homogenous recurrence relation with constant coefficients. Graph Theory: Definitions and examples, sub graphs, complements and graph Isomorphism, Vertex degree, Planar graphs.

CO1:Simplify and evaluate basic logic statements including compound statements, implications, inverses, converses, and contra positives using truth tables and the properties of logic.

CO2:Determine the domain and range of a discrete or non-discrete function, graph functions, identify one-to-one functions, perform the composition of functions, find and/or graph the inverse of a function, and apply the properties of functions to application problems.

CO3:Verify that a simple program segment with given initial and final assertions is correct using the rule of inference for verification of partial correctness and loop invariants.

CO4:Describe binary relations between two sets; determine if a binary relation is reflexive, symmetric, or transitive or is an equivalence relation; combine relations using set operations and composition.

CO5:Describe N-ary relations between N sets and apply basic database operations such as projections to determine if a given graph is simple or a multigraph, directed or undirected, cyclic or acyclic, and determine the connectivity of a graph. N-ary relations.

Digital Principles

Binary Systems: Digital Systems, Binary Numbers, Number Base Conversions, Minimization: K-Map Method – Table Method, POS - SOP, Don't Care Conditions, NAND, NOR Implementation.

Synchronous Sequential Logic: Sequential Circuits - Latches, Flip-Flops, An analysis of Clocked Sequential Circuits Asynchronous Sequential Circuit ,Introduction, Analysis Procedure, Circuits with Latches.

CO1:Make students understand the structure and function of digital computers.

CO2:Gain knowledge on basic digital systems and number system

CO3:Analyse and model the structure and functioning of a digital computer, including overall system architecture and digital components.

CO4:To describe the structure and functioning of a digital computer, including its overall system
architecture and digital components.

CO5:To understand the generic principles that underlie the building of a digital computer, including
data representation, digital logic.

Programming in 'C'

Introduction to Computers: Computer Systems, Computing Environments, Computer Languages, Creating and Running Programs ,Conditional Control Statements, Functions: Function Basics, Arrays - Concepts, Using Arrays in C, Pointers - Introduction, Pointers Strings - Concepts, Structures: Definition and Initialization of Structures , Standard Library Input/Output.

CO1:Understand fundamentals of programming such as variables, conditional and iterative execution.

CO2:Be able to understand functions,arrays.

CO3:Be able to write programs using pointers ·

CO4:To be able to understand Structures and Standard Input/output.

Introduction to Web Technology

Introduction to World Wide Web, Web Browsers, Web Servers, Uniform Resource Locators, HTTP.

Dynamic HTML, Introduction to Java script, Java Script and Forms Variables , Introduction to XML, XML document structure, Document Type Definition.

CO1:To learn HTML tags and Java Script Language programming concepts and techniques.

CO2:To develop the ability to logically plan and develop web pages.

CO3:To learn to write, test, and debug

web pages using HTML and Java Script.

CO4:To learn how to develop XML document.

CO5:Develop a dynamic webpage by the use of DHTML.

Programming in C LAB

CO1:Develop programming skills using the fundamentals and basics of C Language.

CO2:Develop programs using the basic elements like control statements, Arrays and Strings.

CO3:Enable effective usage of arrays, structures, functions and pointers.

CO4:Implement files and command line arguments.

Introduction to Web Technology LAB

CO1:Analyze a web page and identify its elements and attributes.

CO2:Create web pages using XHTML and Cascading Style Sheets. ·

CO3:Build dynamic web pages using JavaScript (Client side programming).

CO4:Create XML documents and Schemas.

IT workshop LAB

CO1:Identify various hardware components of a system

CO2:Assemble the computer.

CO3:Use various Microsoft tools.

CO4:Use Linux Commands

Human Ethics

Definition, Nature and Scope of Ethics; Concept, Definition and Nature of Values; Family Values – Role of Family in Character Development, Life Skills – Concept and Meaning; the Need for Life Skills during Teenage, Environmental Ethics; Professional Ethics.

CO1:To create an awareness on Ethics and Human Values.

CO2:To study the moral issues and decisions confronting individuals and organizations engaged in profession..

CO3:To study the related issues about the moral ideals, character, policies, and relationships of people and corporations involved in technological activity.

CO4:Learn the moral issues and problems, find the solution to those problems.

CO5:Learn the need for professional ethics, codes of ethics and roles, concept of safety, risk assessment.

CO6:Gain exposure to Environment Ethics & computer ethics; know their responsibilities and rights

English

SHORT FICTION: " A Visit of Charity" by Eudora Welty-PRONUNCIATION: Plosive-GRAMMAR: Non-finite verbs- PROSE: "Benares" by Aldous Huxley-PRONUNCIATION: Fricative -GRAMMAR: Adjective, POETRY: 'Stanzas Written in Dejection, Near Naples' by Percy Bysshe Shelley WRITING: Formal letters-SOFT SKILLS: Etiquette and grooming-VALUE ORIENTATION: Necessity is the mother of invention.

CO1:Gain a good communication skill with grammatical errors in English Language.

CO2:Make the student to understand Listening skill and through Role play method.

CO3:Understand the use of articles and vocabulary in a playful method.

CO4:Understand the use of speaking skill through communication among their peer group.

CO5:Gain knowledge by writing different writing skills

Fundamental of Probability and Statistics

Descriptive Statistics,Concept of primary and secondary data, Classification and tabulation of data,

Probability, Basic concepts of probability, deterministic and random experiments, trial, outcome, Random Variables: Definition of random variable, discrete and continuous random variables, functions of random variables, Mathematical Expectation, Mathematical expectation of a function of a random variable, Raw and central moments, covariance using mathematical expectation with examples.

CO1:To provide an understanding for the graduate business students on statistical concepts

CO2:To include measurements of location and dispersion, probability, probability distributions, sampling

CO3:Estimation, hypothesis, testing, regression, and correlation analysis, multiple regression

CO4:Goal is to develop knowledge and skills in theoretical and computational, application oriented statistics.

CO5:Along with a depth knowledge in algebra, analysis or statistics. Students will formulate complete concise and correct mathematical proofs.

Object Oriented Programming

Introduction to OOP, Procedure oriented programming, object oriented programming, basic concepts of OOP, benefits and applications of OOP, Classes and Objects, Constructors & Destructors, Inheritance: Introduction to inheritance, Operator Overloading ,Polymorphism and Virtual Functions, Templates,

Exception Handling.

CO1:Perform object oriented programming to develop solutions to problems demonstrating usage of control structures, modularity, I/O. and other standard language constructs.

CO2:Demonstrate adeptness of object oriented programming in developing solutions to problems demonstrating usage of data abstraction, encapsulation, and inheritance.

CO3:Demonstrate ability to implement one or more patterns involving realization of an abstract interface and utilization of polymorphism in the solution of problems which can take advantage of dynamic dispatching.

CO4:Be able to understand the difference between object oriented programming and procedural oriented language and data types in C++.

CO5:Be able to program using C++ features such as composition of objects, Operator overloading, inheritance, Polymorphism etc

Data Structures using CPP

Introduction to Data Structures: Definition, Uses, Types, Sorting, Bubble, Selection, Insertion sort,

Searching Techniques: Linear Search, Binary Search, Stacks and Queues: Representation of Stacks, Representation of Queue, Binary Search Tree, Operations on Binary Search Tree.

C01:To import the basic concepts of data structures and algorithms.

C02:To understand concepts about searching and sorting techniques.

C03:To understand basic concepts about stack, queues, lists, trees and graphs.

C04:To understanding about writing algorithms and step by step approach in solving problems with the help of fundamental data structures.

Data Communications

A communication model, data communications, networks, the internet. Protocol Architecture: Need for protocol architecture, TCP/IP protocol architecture, Signal encoding techniques: Digital

data to digital signals Data link control protocols: Flow control, error control, high level data link control (HDLC) protocol. Multiplexing: Frequency division multiplexing, characteristics.

Course Outcome:

CO1:To understand the basic concepts of data communication, layered model, protocols and interworking between computer networks

CO2:To understand Signal Encoding.

CO3:To understand Data link Control protocol HDLC.

CO4:To understand Multiplexing.

Data Structures using CPP LAB

C01:Be able to design and analyze the time and space efficiency of the data structure

C02:Be capable to identity the appropriate data structure for given problem

C03:Have practical knowledge on the applications of data structures

Object Oriented Programming LAB

C01:Implement the concepts of object oriented programming.

C02:Apply string functions to perform operator overloading.

C03:Demonstrate virtual functions and inheritance.

C04:Implement files and command line arguments.

Web Programming with PHP LAB

C01:Write PHP scripts to handle HTML forms.

C02:Write regular expressions including modifiers, operators, and metacharacters.

C03:Create PHP programs that use various PHP library functions, and that manipulate files and directories.

C04:Analyze and solve various database tasks using the PHP language.

C05:Analyze and solve common Web application tasks by writing PHP programs.

Applied Mathematics

Partial Differentiation: Introduction - Functions of two variables - Neighbourhood of a point (a, b) - Continuity of a Function of two variables, Theorem on Total Differentials - Composite Functions - Differentiation of Composite Functions - Vector Spaces: vector spaces and

subspaces- Null Spaces, Column Spaces, and –Linear Transformations, The Dimension of a Vector Space – Rank – Change of Basis – Eigen Values.

CO1:Ability to solve the problems of partial Differentiation.

CO2:To understand Vector Spaces

CO3:Ability to solve p;roblems using linear Transformations.

CO4:Solve the problems of eigen values.

Computer Architecture

Basic Structure of Computers Functional units, Basic operational concepts, Bus structures, Basic Processing Unit

Fundamental concepts, Execution of a complete instruction Memory System,Basic concepts, Semiconductor RAMs, ROMs, Speed, size and cost I/O Organization,Accessing I/O devices, Interrupts, Direct Memory Access.

CO1:To know the data representation, fixed and floating point representation.

CO2:Basic concept of Binary codes and error Detection codes.

CO3:To know about Digital logic circuits and Logic gates.

CO4:Understand CPU instruction formats, addressing modes and interrupts

CO5:To understand input output organization Direct Memory Allocation.

Core Java Programming

OOPS concepts, History of java, Features of java, data types, variables, scope and lifetime of variables,

Inheritance- basics ,Interfaces - Defining and Implementing an Interface, Exception handling- Concepts and benefits of exception handling, usage of try, catch, throw, throws and finally, java's built in exceptions

AWT- Introduction, the AWT class hierarchy, AWT controls - Buttons, Labels, TextField, Checkbox.

CO1: Gain knowledge about basic Java language syntax and semantics to write Java programs and use concepts such as variables, conditional and iterative execution methods etc.

CO2:Understand the fundamentals of object-oriented programming in Java, including defining classes objects, invoking methods etc and exception handling mechanisms. .

CO3:Understand the principles of inheritance, packages and interfaces.

CO4:Understand the working of AWT package.

Database Design

Database System Architecture, overview on database concepts, definitions, Types of databases and models, Data Models: E-R Models, SQL: Queries, constraints, Set Operators, Transaction Management: ACID Properties, Transaction and schedules, Backup and Recovery.

CO1:Describe basic concepts of database system.

CO2:Design a data model and schemas in RDBMS.

CO3:Be competent in use of Structured Query Language SQL.

CO4:Analyse functional dependencies for designing a robust database.

CO5:Implement transactions, concurrency control, and be able to do Database recovery.

Operating Systems Concepts

Introduction, Definition, Computer system Architecture, Operating system Architecture, Operating system services, Process concept, Process scheduling, Operations on process, Main Memory,swapping, contiguous memory allocation, File System Implementation, File system structure, File system Implementation.

CO1:To understand the services provided by and the design of an operating system.

CO2:To understand the structure and organization of the file system.

CO3:To understand what a process is and how processes are synchronized and scheduled.

CO4:To understand different approaches to memory management.

CO5:Students should be able to use system calls for managing processes, memory and the file system.

Core JAVA Programming LAB

CO1:Remember the fundamentals of Java programming language.

CO2:Understand the basics of Java programming, multi-threaded programs and Exception handling.

CO3:Analyze and use Java in a variety of applications.

CO4:Write and debug a software application developed using the Java programming language.

Database Design LAB

CO1:Apply the basic concepts of Database Systems and Applications.

CO2:Use the basics of SQL and construct queries using SQL in database creation and interaction.

CO3:Design a commercial relational database system (Oracle, MySQL) by writing SQL using the system.

CO4:Analyze and Select storage and recovery techniques of database system.

Operating Concepts LAB

CO1:Inter process communication including shared memory, pipes and messages

CO2:Simulation of CPU Scheduling Algorithms. (FCFS, RR, SJF, Priority, Multilevel Queuing)

CO3:Simulation of Banker's Algorithm for Deadlock Avoidance, Prevention Program for FIFO, LRU, and OPTIMAL page replacement algorithm

Distributed and cloud Computing

Trends in Distributed Systems – Focus on resource sharing – Challenges, Introduction to Cloud Computing: Cloud Computing in a Nutshell, System Models for Distributed and Cloud

Computing, Roots of Cloud Computing, Virtual Machines and Virtualization of Clusters and Data Centers, Architectural Design of Compute and Storage Clouds, Public Cloud Platforms.

CO1:Understand the importance of virtualization in distributed computing and how this has enabled the development of Cloud Computing.

CO2:Understand the Performance and various metrics of cloud computing

CO3:Understand the various types of clouds and their roles in cloud computing

CO4:Understand the various concepts of security and Cloud infrastructure models

Artificial Intelligence

Introduction & Problem Solving: AI problems, AI Technique, Defining problem as a State Space Search,

Using Predicate Logic: Representing simple facts in logic, , implementation of Depth First Search and Breadth first search, learning, Learning by taking advice, Learning in problem solving, Induction, Learning by Decision trees.

CO1:Design an Intelligent Agent using PAGE Concept.

CO2:Optimise Problem Solving Techniques.

CO3:Applying First order Logic and Predicate logic to develop a Goal Based Agent

CO4:Solving Problems by Searching Algorithms.

CO5:Application of Inference Rules in First Order Logic

Data Science with Python

Introduction to data science – Introduction to data science, Data Science Components,

Data Science Jobs Roles, Applications of Data science, Challenges of Data science Technology, Introduction to Numpy – The basics of numpy array, computation on numpy arrays , . Data Manipulation with Pandas – Introducing pandas objects.

CO1:Understand Data Science Importance.

CO2:Understand the jobs of Data Science and where we can use these concepts.

CO3:Develop the applications of Data Science using Python language.

CO4:Understand the concepts of Numpy and Pandas.

CO5:Develop the applications on Numpy and Pandas.

Software Engineering

Software Engineering – Introduction, Program Versus Software, Software Engineering, Software Development Process and its Stages, Generic Software Development Process Models, Architectural Styles – Introduction, Architecture Styles, Object Oriented Architecture, Object Oriented Design Using UML – Introduction, Sequence Diagram, State Machine Diagram, Timing Diagram, Describing Detailed Object Oriented Design.

CO1:To know the quality, cost and schedule of the project.

CO2:Understand development models i.e.: waterfall model, RUP model, Spiral model etc.

CO3:Understand project management models.

CO4:Understand the architectural styles ,design and evaluate the test cases

CO5:Application of software in different areas by selecting development process models

Computer Networks

Multiple Access, Wired LAN-Ethernet IEEE 802.3LAN, CSMA/CD protocol, Network Layer: Logical Addressing-IPv4, Subnetting, and supernetting, Transport Layer: TCP State diagram,

Window Management, Socket Programming: Primitive and Advanced Systems Calls, Application Layer: Domain Name System, Simple Mail Transfer Protocol (SMTP).

CO1:Able to Understand Medium Access protocol like CDMA/CD

CO2: Able to Understand Wired LAN Architecture

CO3:Able to Understand IP Addressing in detail.

CO4:Able to Understand Transport layer state diagram

CO5:Able to Understand Socket programming .

Data Science with Python LAB

CO1:Develop algorithmic solutions to simple computational problems.

CO2:Demonstrate programs using simple Python statements and expressions.

CO3:Learn control flow and functions concept in Python for solving problems

CO4:Use Python data structures – lists, tuples & dictionaries for representing compound data.

CO5:Use files, exception, modules and packages in Python for solving problems

Software Engineering LAB

CO1:Able to prepare SRS document, design document, test cases and software configuration management and risk management related document.

CO1:Develop function oriented and object oriented software design using tools like rational rose.

CO1:Able to perform unit testing and integration testing.

CO1:Apply various white box and black box testing techniques

Computer Networks LAB

CO1: Understand the structure and organization of computer networks; including the division into network layers, role of each layer, and relationships between the layers.
CO2: Understand the basic concepts of application layer protocol design; including client/server models, peer to peer models, and network naming. ·

CO3:In depth understanding of transport layer concepts and protocol design; including connection oriented and connection-less models, techniques to provide reliable data delivery and algorithms for congestion control and flow control

Programming using ASP Dot NET

Asp.Net Overview- Introduction to ASP.Net, Introduction to web Applications with web servers,

ASP.Net role:-ASP.Net framework, CLR(Common Language Runtime), MSIL, (Microsoft Intermediate Language), ASP.Net web forms-Introduction to web forms, Web form validation controls-Required field validation Control, Compare Validation Control, Overview of ADO.Net XML, XML to HTML, XML & Databases XML Support in .Net retrieve data with datasets & Data Adapters

CO1:Able to understand the frame work architecture, advantages in building the console applications

CO2:Able to understand and Run different console application programs in C# Programming

CO3:Able to understand to create a web page and design the various components by using the .NET
framework toolbox

CO4:Understand to connect its web page to Databases using the ADO,NET API.

Unix Programming

Introduction to Unix,Architecture of Unix, Features of Unix, Unix Commands, Introduction to Shells, Unix Session, Standard Streams, Redirection, Shell/Environment Customization. Introduction to PHP, Overview, syntactic characteristics, primitives, operations and expressions, output, control statements

CO1:Run various UNIX commands on a standard UNIX/LINUX Operating system.

CO2:Understand and handle UNIX commands.

CO3:Do shell programming on UNIX OS.

CO4:Run programs on UNIX.

CO5:Become familiar with php programs.

Data Science using R

Getting the hang of R, command packages,some simple maths calculations,reading ad getting Data into R,Types of Data Items, structure of data items. Summary statistics for vectors, cummlative statistics, statistics on data frames, Data distributions, Box-Whisker plots, Scatter plots.

CO1:download and install R and RStudio

CO2:navigate and optimise the R integrated development environment (IDE) RStudio

CO3:install and load add-in packages

CO4:import external data into R for data processing and statistical analysis

CO5: learn the main R data structures – vector and data frame

Software Quality Testing

Introduction to Software Quality,Ethical Basis for Software Quality – Total Quality Management Principles – Software Processes and Methodologies, Software Quality Metrics and reliability,Analyzing Software Documents using Inspections and Walkthroughs, Test Managament, Testing and Debugging, Goals and Policies – Test Planning – Test Plan Components, Controlling AND Monitoring, Measurement and Milestones for Controlling and Monitoring.

CO1:Understand software testing and quality assurance as a fundamental component of software life cycle.

CO2:Define the scope of SW T&QA projects

CO3:Efficiently , T&QA activities using modern software tools

CO4:Estimate cost of a T&QA project and manage budgets

CO5:Prepare test plans and schedules for a T&QA project

Mobile Application and Development

Applications, history of mobile communications, reference model, Key services for mobile internet. Mobile IP - Goals, assumptions, requirements, entities, Wireless Application Protocol - Overview of WAP architecture, components. Network infrastructure Design principles WML - Document model, Basics, WML Script - language basics, standard libraries, script libraries, script development.

CO1:To learn about the concepts and principles of mobile application development

CO2:To explore both theoretical and practical issues of mobile application development

CO3:To develop skills of finding solutions and building software for mobile application development

CO4:grasp the concepts and features of mobile technologies and applications.

CO5:have a good understanding of how the underlying wireless and mobile communication

Data Mining

Introduction: Kinds of Data Can Be Mined, Kinds of Patterns Can Be Mined, Basic Concepts-Market Basket Analysis: A Motivating Example, Frequent Itemsets, Classification: Basic

Concepts, Decision Tree Induction, Bayes Classification Methods, Cluster Analysis- Cluster Analysis, Requirements for Cluster Analysis.

CO1:Understand basic concepts and fundamentals in Data mining.

CO2: Learn how to gather and analyze large sets of data to gain useful business understanding

CO3:Learn how to produce a quantitative analysis report/memo with the necessary information to make decisions.

CO4:Master the basic data mining algorithms, methods, and tools

CO5:Identifies business applications of data mining

Programming using ASP Dot NET LAB

CO1:Understand the Microsoft .NET Framework and ASP.NET page structure

CO2:Design web application with variety of controls

CO3:Access the data using inbuilt data access tools

CO4:Use Microsoft ADO.NET to access data in web Application

CO5:Configure and deploy Web Application

Unix Programming LAB

CO1:Able to run various UNIX commands on a standard UNIX/LINUX Operating system

CO2:Able to run C / C++ programs on UNIX.

CO3:Able to do shell programming on UNIX OS.

CO4:Write PHP scripts to handle HTML forms.

CO5:Write regular expressions including modifiers, operators, and meta characters.

Data Science using R LAB

CO1:Learn to program in R Language

CO2:Learn to use R Studio

CO3:Master statistics for machine learning

CO4:Master Vectors, Lists & Dataframes

Information Security

Introduction: History, Critical characteristics of information, NSTISSC security model,laws international laws and legal bodies, Ethics and information security, Security policy, Standards and practices, Intrusion detection, access control and other security tolls: Intrusion detection and prevention systems, Scanning and analysis tools.

CO1:Understand the role of Information security in the organization.

CO2:Understand the different standard, ethics and policies own by the organization.

CO3:Able to understand strategic planning of information security

CO4:Able to understand the cryptographic method to secure the information from the intruder over the network.

Advance Java

Introducing JDBC: Describing Components of JDBC , Features of JDBC , JDBC Architecture,

Introducing CGI , Introducing Servlet , Advantages of Servlet over CGI , Features of Servlet,

Introduction to JSP :Advantages of JSP over Servlet , JSP architecture , JSP life cycle,

JSTL core tag- General purpose tag, conditional tag, networking tag, JSTL core tag: General purpose tag, conditional tag, networking tag.

CO1:To provide the ability to design console based, GUI based and web based applications.

CO2:To understand integrated development environment to create, debug and run multi-tier and enterprise-level applications

CO3:Create a software application using the Java programming language.

CO4:Debug a software application written in the Java programming language.

Big data Analytics

Introduction to Big data, problem with old technologies, key trends with big data, A brief history of hadoop, apache hadoop and its eco-system, Map-reduce framework, Jobtracker and Mapreduce jobs, Name Node and Secondary Namenode functionality in job execution, HDFS basic file operation -storing and retrieving data, HDFS and other storages – Hive ,Hbase. Pig and Pig Latin benefits.

CO1:Introduce students the concept and challenge of big data (3 V's: volume, velocity, and variety).

CO2:Teach students in applying skills and tools to manage and analyze the big data.

CO3: To explore the fundamental concepts like HDFS and Map Reduce of big data analytics.

CO4:To understand the applications using Map Reduce Concepts.

CO5:To learn to analyze the big data using intelligent techniques.

Internet of Things

Introduction to Internet of Things –Definition and Characteristics of IoT, Physical Design of

IoT, Iot Communication APIs, Domain Specific IoTs, IoT Physical Devices and Endpoints - Introduction to Raspberry PI, IoT Physical Servers and Cloud Offerings – Introduction to Cloud Storage models and communication, Getting around Linux on Raspberry pi, using command line and file system.

CO1:To understand about the fundamentals of Internet of Things and its building blocks along with their characteristics

CO2:To understand the recent application domains of IoT in everyday life

CO3:To understand the protocols and standards designed for IoT and the current research on it.

CO4:To understand the other associated technologies like cloud and fog computing in the domain of IoT

Department of Informatics -**MCA**

PROGRAMME OUTCOMES

P01:Understand and apply mathematical foundation, computing and domain knowledge for the conceptualization of computing models from defined problems.

P02:Ability to identify, critically analyze and formulate complex computing problems using fundamentals of computer science and application domains.

P03:Ability to transform complex business scenarios and contemporary issues into problems, investigate, understand and propose integrated solutions using emerging technologies.

P04:Ability to devise and conduct experiments, interpret data and provide well informed conclusions.

P05:Recognize the need for and develop the ability to engage in continuous learning as a Computing professional.

COURSE OUTCOME

Mathematical Foundations of Computer Science

Basic Connectives and Truth Tables, Logical Equivalence, LogicalImplication, Use of Quantifiers, Definitions and the Proof of Theorems. Partial Orders, Equivalence Relations and

Partitions First – order linear recurrence relation, second – order linearhomogenous recurrence relation with constant coefficients, Algebraic System – General Properties, Semi Groups, Definitions and examples, sub graphs, complements and graph Isomorphism.

C01:To learn logic theory and Boolean algebra related to computer science

C02:To understand relations and functions

C03:To gain insights into recurrence relation

C04:To comprehend algebraic structure

C05:To study graph theory and concepts of trees

Data Structures using C

Structure of a C program – compilation and linking processes – Constants, Variables – Data Types – Expressions using operators in C, LINEAR DATA STRUCTURES-

Arrays and its representations, Stacks and Queues – Applications, NON-LINEAR DATA STRUCTURES- Trees – Binary Trees – Binary tree representation and traversals , – Applications of trees. Linear Search – Binary Search Linear Search – Binary Search

C01:Implement linear and non-linear data structure operations using C

C02:Suggest appropriate linear / non-linear data structure for any given data set.

C03:Apply hashing concepts for a given problem

C04:Modify or suggest new data structure for an application

C05:Appropriately choose the sorting algorithm for an application

Object Oriented Programming using Java

Understanding Object Oriented Development, Understanding Object Concepts, Benefits of Object Oriented Development, Java Programming Fundamentals,Introduction, Overview of Java, Data Type, Variables and Arrays, Operators, Control statements, I/O basics, Stream and Byte classes, Character Streams, Reading Console input and output, Exploring Java Language, Collections Overview, Collections Interfaces, Collections Classes , Introducing AWT working With Graphics: AWT Classes, Working with Graphics

C01:To Explain OOPs features and concepts

C02:To Write basic Java programs

C03:To Write I/O programs in Java

C04:To Use various built-in Java classes and methods

C05:To Create window based Java programs

Computer Architecture

Data Representation, Data types, Complements, Fixed and Floating Point representations, and Binary codes. Register Transfer Micro operations: Register Transfer Language, Register Transfer, Bus and Memory Transfers, Arithmetic, Logic and Shift micro operations, Arithmetic Logic Shift Unit. Basic Computer Organization and Design: Instruction Codes, Computer Registers, Computer Arithmetic: Addition and Subtraction, Multiplication, Division, and Floating Point Arithmetic Operations. Input-Output Organization, Peripheral Devices, Input-Output Interface, Asynchronous data transfer, Modes of Transfer.

C01:Apply data representation methods

C02:Write logic diagrams for microoperations

C03:Write general register organization diagrams

C04:Analyze computer arithmetic algorithms.

C05:Explain I/O organization

Probability and Statistics

Vector Spaces - Vector Spaces and Subspaces -Null Spaces, Column Spaces and Linear Transformations Probability - Basic terminology, Three types of probability, Probability rules, Statistical independence, statistical dependency, Bayes' theorem. Sampling and Sampling Distributions - Random sampling, Regression and Correlation – Simple Regression - Estimation using regression line, correlation analysis, making inferences about population parameters.

C01:Understanding of Linear Algebra will boost the ability to understand and apply various data science algorithms.

C02:Calculate probabilities by applying probability laws and theoretical results, knowledge of important discrete and continuous distributions, their inter relations with real time applications.

C03:Understanding the use of sample statistics to estimate unknown parameters.

C04:Become proficient in learning to interpret outcomes.

C05:Compute and interpret Correlation Analysis, regression lines and multiple regression analysis with applications

Managerial Economics and Accountancy

Fundamental Concepts of Managerial Economics-Scarcity, Marginalism, Equi-marginalism, Opportunity costs, Discounting, Time Perspective, Risk and Uncertainty, Profits, Law of Demand, Determinants, Types of Demand; Elasticity of Demand (Price, Income and Cross-

Elasticity) ,Production Function, Law of Variable Proportion, Price - Output determination under Perfect Competition and Monopoly,working capital requirements, sources of capital.

preparation of Final Accounts with simple adjustments, Analysis and interpretation of Financial Statements through Ratios.

C01:Apply the fundamental concepts of managerial economics to evaluate business decisions Understand types of Demand and factors related to it.

C02:Identify different types of markets and determine price –output under perfect competition.

C03:Determine working capital requirement and payback

C04:Analyze and interpret financial statements through ratios

Data Structures using C Lab

C01:Write basic and advanced programs in C

C02:Implement functions and recursive functions in C

C03:Implement data structures using C

C04:Choose appropriate sorting algorithm for an application and implement it in a modularized way

Java Programming Lab
write simple java programs

C02:Be able to write multithreaded programs

C03:Be able to write I/O programs

C04:Be able to write serialization programs

C05:Be able to write URL class program

Soft Skills Lab

C01:Express conversational skills

C02:Specify reading strategies

C03:Perform time management

C04:Perform stress management

C05:Explore career planning

Operating Systems
Introduction to Operating Systems: OS structure and strategies, Process concepts,

Process scheduling, Paging, Segmentation, Segmentation with paging, Virtual memory management : Demand paging,File concepts, Access methods and protection, Mass storage structures, I/O systems. The Linux System–Design principles, Windows 7 –Design principles

C01:Explain operating systems and Unix OS, illustrate the workings of various OS components.

C02:Analyze the process, its states and process scheduling algorithms.

C03:Demonstrate paging, demand paging, page replacement and segmentation with illustrations.

C04:Elaborate the file access and allocation methods and mass storage structures.

C05:Describe concrete implementations of Linux system and Windows 7.

Database Management System

Database System Applications, Purpose of Database Systems, Overview of the Design Process, The Entity- Relationship Model, Constraints, Entity-Relationship Diagrams, Relational – Algebra Operations, Extended Relational - Algebra Operations, Basic Structure of SQL Queries, Basic Concepts, Ordered Indices, B+-tree Index Files, B-tree Index Files, Static Hashing, Dynamic Hashing, Concurrency Control Concepts, Need for NoSQL, aggregate data models

C01:Able to Explain the DB concepts and model requirements as ER-model

C02:Suggest relational algebra queries from text specification

C03:Write SQL queries for the ,given questions

C04:Elaborate indexing and hashing and describe concurrency control concepts

C05:Comprehend NoSQL technology

Design and Analysis of Algorithms

Introduction to Algorithms, Algorithm Specification, Performance Analysis, Divide and Conquer, Binary Search, The Greedy Method, Knapsack Problem, Dynamic Programming ,General Method, Back Tracking, General Method, 8-Queens Problem.

C01:Carry out algorithms time complexity

C02:Explain divide and conquer approach

C03:Illustrate greedy method

C04:Elaborate dynamic programming

C05:Explore backtracking

Artificial Intelligence

Python Data, Expressions, Statements, Problem Solving - State - Space Search and Control Strategies, Introduction, Propositional Calculus Propositional Logic, Predicate Logic, Logic Programming, Knowledge Representation: Introduction, Natural Language Processing: Introduction, Sentence Analysis Phases.

C01:Write python programs

C02:Solve search problems

C03:Apply propositional, predicate calculus and knowledge representation

C04:Analyze probability theory

C05:Explore machine learning and explain NLP

Machine Learning

Basic Maths, Probability, Linear Algebra, Regression, Linear Regression, Ridge Regression, Lasso Dimensionality Reduction: Principal Component Analysis, Partial Least Squares, Classification: Linear Classification, Logistic Regression, Clustering, K-means, K-medoids, Density-based Hierarchical, Spectral

C01:Solve regression problems

C02:Apply dimensionality reduction methods

C03:Analyze classification schemes

C04:Explore clustering mechanisms

C05:Explain evaluation metrics

Operations Research

Linear Programming: Introduction, Concept of Linear Programming Model, Development of LP models, Transportation Problem: Introduction, Mathematical Model for 'Transportation Problem, Assignment Problem: Introduction, Zero-One Programming Model, Dynamic Programming Introduction, Applications of Dynamic Programming, Game Theory: Introduction, Game with Pure Strategies, Game with Mixed Strategies.

C01:Solve linear problems

C02:Apply transportation problems

C03:Analyze assignment problems

C04:Explore dynamic programming

C05:Explain gaming theory

Operating Systems Lab

C01:Be able to execute shell commands and write shell scripts

C02:Be able to write programs on CPU scheduling

C0:Be able to create memory management algorithms

C04:Be able to execute programs to demonstrate synchronization problems

C05:Be able to implement file allocation methods and be able to create disk scheduling algorithms.

AI with Python Lab :

C01:Write machine learning algorithms in python

C02:Write supervised algorithm programming

C03:Write unsupervised algorithm programming

C04:Write NLP programming

C05:Write neural network programming

Database Management Systems Lab

C01:Write SQL queries

C02:Write stored procedures

C03:Write triggers

C04:Use file locking and table locking facilities

C05:Create small full-fledged database application

Software Engineering

The software Problem Cost, Schedule and Quality, Scale and change, Software Requirements Analysis and Specification, Value of a good SRS, Requirements Process, Requirements Specification, Planning a Software Project, Effort Estimation, Project Schedule and staffing, Quality Planning, Risk Management Planning, Coding and Unit Testing: Programming Principles and Guidelines, incrementally developing code, managing evolving code, Maintenance and Re-engineering: Software Maintenance, supportability, Reengineering

C01:The student able to know the quality, cost and schedule of the project.

C02:Understand development models i.e.: waterfall model, RUP model, Spiral model etc.

C03: Understand project management models.

C04: Understand the architectural styles ,design and evaluate the test cases

C05: Basic concepts of software engineering

Computer Networks

Data Communications,Components - Direction of Data flow - networks - Components and Categories - types of connections -Datalink Layer: Error detection and correction, CRC, Hamming code, Network Layer, Distance Vector Routing, Link State Routing,

IP v4 addressing, Transport Layer,Services of transport layer, Multiplexing. Transmission Control Protocol (TCP) Congestion Control, Socket Programming, Primitive and Advance System calls.

C01:Build an understanding of the fundamental concepts of computer networking.

C02:Familiarize the student with the basic taxonomy and terminology of the computer networking area.

C03:Introduce the student to advanced networking concepts, preparing the C04:Student for entry Advanced courses in computer networking.

C04:Allow the student to gain expertise in some specific areas of networking such as the design and maintenance of individual networks.

Data Science

Introduction To R:Introduction, Downloading and Installing R, IDE and Text Editors, Handling Packages in R., Exploring Data In R: Introduction, Data Frames, R Functions for Understanding Data in Data Frames, Linear Regression Using R:Introduction, Model Fitting, Linear Regression, Assumptions of Linear Regression, Validating Linear Assumption.Decision Tree, Introduction, Decision Tree Representation In R, Appropriate Problems For Decision Tree Learning, Clustering: Introduction,Clustering, Basic Concepts in Clustering, Hierarchical Clustering, K-Means Algorithm, CURE Algorithm.

CO1:download and install R and RStudio

CO2:navigate and optimise the R integrated development environment (IDE) RStudio

CO3:install and load add-in packages

CO4:import external data into R for data processing and statistical analysis

CO5: learn the main R data structures – vector and data frame

Web Technologies

HTML, Markup languages, common tags, header, test styling, linking images Formatting text, Unordered lists, nested and ordered list, Tabs-and formatting, Object model and collections: Object referencing, collections all, children frames, navigator object.

Introduction to scripting, Java Script, Data types, Arithmetic's Equality relational, assignment increment, decrement operators, Client side scripting with VB Script, operations, Data types and control structures, Functions, Arrays, String manipulations, classes and objectsActive Sever Pages, Client side Scripting vs Server side Scripting, Server side Active X Component, ADO, file system objects, Session tracking.

C01:Demonstrate competency in the use of common HTML code.

C02:Construct efficient file structure for websites.

C03:Evaluate the functions of specific types of web pages in relationship to an entire web site.

C04:Create web pages that meets accessibility need of those with physical disabilities.

C05:Understand how CSS will effect web page creation.

Information Security

Introduction, History, Critical characteristics of information, NSTISSC security model, Components of an information system Legal, Ethical and professional Issues: Law and ethics in information security, Relevant U.S laws- international laws and legal bodies.

Planning for Security, Security policy, Standards and practices, Security blue print, Security education, Continuity strategies Security Technology: Intrusion detection, access control and other security tolls,Intrusion detection and prevention systems, Scanning and analysis tools, Access control devices. Implementing Information Security: Information security, project management, Technical topics of implementation, Non technical aspects of implementation, Security certification and accreditation.

C01:Understand the role of Information security in the organization.

C02:Understand the different standard, ethics and policies own by the organization.

C03:Able to understand strategic planning of information security

C04:Able to understand the cryptographic method to secure the information from the intruder over the network.

Computer Networks Lab

C01:Structure and organization of computer networks; including the division into network layers, role of each layer, and relationships between the layers.

C02:Understand the basic concepts of application layer protocol design; including client/server models, peer to peer models, and network naming. ·

C03:In depth understanding of transport layer concepts and protocol design; including connection oriented and connection-less models, techniques to provide reliable data delivery and algorithms for congestion control and flow control.

Software Engineering Lab

C01:Able to prepare SRS document, design document, test cases and software configuration management and risk management related document.

C02:Develop function oriented and object oriented software design using tools like rational rose.

C03:Able to perform unit testing and integration testing.

C04:Apply various white box and black box testing techniques

Data Science LabCourse Outcome:

C01:Use various data structures and packages in R for data visualization and summarization.

C02:Use linear , non-linear regression models, and classification techniques for data analysis.

C03:Use clustering methods including K-means and CURE algorithm

Big Data Analytics

Introduction to Big Data, Structuring Big Data, Types of Data, Elements of Big Data,

Introducing Hadoop, HDFS and MapReduce, Hadoop functions, Hadoop Ecosystem

The MapReduce Framework ,Exploring the features of MapReduce, Working of MapReduce, Techniques to optimize Map Reduce Jobs, RDBMS and Big Data, Issues with Relational Model, Non – Relational Database, Issues with Non Relational Database, Introduction to NoSQL, Characteristics of NoSQL, History of NoSQL, Types of NoSQL Data Models.

C01:Understand the concept and challenge of big data and why existing technology is inadequate to analyze the big data

C01:Understand the concept and challenge of big data and why existing technology is inadequate to analyze the big data

C02:Work with big data platform and explore the big data analytics techniques.

C03:Design efficient algorithms for mining the data from large volumes.

C04:Analyze the HADOOP and Map Reduce technologies associated with big data analytics.

C05:Explore on Big Data applications Using Pig and Hive.

Cyber Security

Cyber Security, Cyber Security policy, Domain of Cyber Security

Policy, Laws and Regulations, Cyber Security Metrics, Security Management Goals, Counting Vulnerabilities, Security Frameworks,Cyber Governance Issues, Net Neutrality, Internet Names and Numbers, Copyright and Trademarks,Fiduciary Responsibility – Risk Management – Professional Certification – Supply Chain – Security

C01:Analyze and evaluate the cyber security needs of an organization.

C02: Determine and analyze software vulnerabilities and security solutions to reduce the risk of exploitation.

C03:Measure the performance and troubleshoot cyber security systems.

C04: Comprehend and execute risk management processes, risk treatment methods, and key risk and performance indicators

C05:Design and develop a security architecture for an organization.

Organization Behaviour

Management Process and Functions, Scientific and Modern Management,

Decision Making and Negotiations: Approaches to Decision making - Rational, Behavioral, Practical, Psychological contract - Personality Traits, Big 5 personality traits, MBTI inventory, the Process of Perception - Perceptual distortions and errors, Models of Organization Behavior - Autocratic, Custodial, Supportive, Collegial and System Models, Transactional Analysis,

Organization Design, Organization culture and organization climate, Stress Management and Counseling,

C01:Define the organizational functions, tasks management responsibilities.

C02:Understand basic financial problems

C03:Describe project and production management, critical path, bar chart.

PROGRAMME OUTCOMES

P01:An ability to apply knowledge of computing, mathematics, and basic sciences appropriate to the discipline.

P02:An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution

P03:An ability to function effectively on teams to accomplish a common goal

P04:An understanding of professional, ethical, legal, security and social issues and responsibilities f. An ability to communicate effectively with a range of audiences

P05:An ability to use current techniques, skills, and tools necessary for computing practice.

P06:An ability to identify and analyze user needs and take them into account in the selection, creation, evaluation, and administration of computer-based systems

P07:An ability to effectively integrate IT-based solutions into the user environment

Advance Data Structures and Algorithms

Role of algorithms in computing, Analyzing Algorithms, Hierarchical data structures, Basics – Querying a Binary search tree, Algorithm design technique, Greedy method- General method, applications-Knapsack problem.

CO1:Analyze the asymptotic performance of algorithms.

CO2:Understand the process of writing algorithms to perform a task.

CO3:Demonstrate and compare various Algorithms.

CO4:Apply important algorithmic design paradigms and methods of analysis.

CO5:Synthesize efficient algorithms in common engineering design situations.

Mobile and Pervasive Computing

Introduction History – Wireless communications: GSM – DECT – TETRA – UMTS – IMT – 2000 – Blue tooth, Overview of a Modern 4G Telecommunications System Introduction. LTE-A System Architecture. LTE RAN. Pervasive Concepts and Elements Technology Trend Overview - Pervasive Computing: Concepts - Challenges - Middleware, HCI in Pervasive Computing Prototype for Application Migration - Prototype for Multimodalities .

CO1:To learn about the concepts and principles of mobile computing;

CO2:To explore both theoretical and practical issues of mobile computing;

CO3:To develop skills of finding solutions and building software for mobile computing
CO4:grasp the concepts and features of mobile computing technologies and applications.

CO5:have a good understanding of how the underlying wireless and mobile communication networks work, their technical features, and what kinds of applications they can support.

Distributed System

Introduction, Goals and Types of Distributed systems,Architectural Styles,Names, Identifiers and Addresses, Flat Naming, Synchronization: clock synchronizations,Fault Tolerance: Introduction to fault tolerance, Process Resilience, Introduction to coordination Models, Architecture, Processes.

CO1:The course learning outcomes, specific knowledge, skills and about DN

CO2:Knowledge about connecting users and resources.

CO3:Knowledge about the Basic RPC Operation, parameter passing

CO4:Knowledge about Requirements Capture.

CO5:Knowledge about An Fault Tolerance, Security

Software Project Management

Conventional Software Management, Evolution of Software Economics,

Life – Cycle phases, Artifacts of the process, Model Based Software Architecture

Iterative Process Planning, Project Organizations & Responsibilities,

Modern Project profiles, Next Generation Software Economics,

Process improvement & mapping to the CMM.

CO1:Use an object-oriented method for analysis and design.

CO2:Write diagrams in UML.

CO3:Analyse information systems in real-world settings and application of UML.

CO4:Have an understanding of a systems development with focus on unified software development process.

CO5:Know techniques to effectively apply systems development process.

Machine Learning

Learning – Types of Machine Learning – Supervised Learning, Learning – Types of Machine Learning – Supervised Learning, Learning with Trees – Decision Trees – Constructing Decision Trees

Dimensionality Reduction – Linear Discriminant Analysis , Markov Chain Monte Carlo Methods – Sampling – Proposal Distribution.

CO1:Gain a good understanding of the techniques and tools for applying machine learning.

CO2:Understand the analysis part using Machine Learning Algorithms.

CO3:Understanding the usage of ML algorithms at appropriate place.

CO4:Understanding the need for implementation of ML algorithms.

CO5:Design a Statistical and Machine Learning algorithm.

Advance Data Structures and Algorithms LAB

CO 1: Implementation of Merge Sort and Quick Sort-Analysis

CO 2:Implementation of a Binary Search Tree

CO 3: Red-Black Tree Implementation

CO 4: Heap Implementation

CO 5: Fibonacci Heap Implementation

Machine Learning LAB

CO1:Able to Implement and demonstrate the FIND-S algorithm for finding the most specific hypothesis based on a given set of training data samples. Read the training data from a .CSV file.

CO 2:For a given set of training data examples stored in a .CSV file, implement and demonstrate the Candidate-Elimination algorithm to output a description of the set of all hypotheses consistent with the training examples.
CO 3: Able to Write a program to demonstrate the working of the decision tree based ID3 algorith . Use an appropriate data set for building the decision tree and apply this knowledge to classify Use an appropriate data set for building the decision tree and apply this knowledge to classify a new sample.

CO4:Able to Build an Artificial Neural Network by implementing the Backpropagation algorithm and test the same using appropriate data sets.

CO 5: Able to Write a program to implement the naïve Bayesian classifier for a sample training data set stored as a .CSV file. Compute the accuracy of the classifier, considering few test data sets.

Cloud Computing

Basics of Virtual Machines - Process Virtual Machines – System Virtual Machines ,

Comprehensive Analysis – Resource Pool – Testing Environment –Server Virtualization

Cloud deployment models: public, private, hybrid, community, Introduction to Hadoop Framework - Map reduce, Input splitting, map and reduce functions, Cloud Infrastructure security: network, host and application level – aspects of data security, Key privacy issues in the cloud –Cloud Security and Trust Management.

CO1:Good understanding of cloud computing and systematic knowledge of the fundamental technologies, architecture and security.

CO2:Cloud computing allow to provide sufficient foundations to enable further study and research.

CO3:Articulate the main concepts, key technologies, strength and limitations of cloud computing.

CO4:Identify the architecture and infrastructure of cloud computing including iaas , paas, saas, public, private cloud, hybrid cloud etc..

CO5:Understand the core issues in security and privacy.

Network Security

Introduction, Attributes of Security, Integrity, Authenticity, Non-repudiation, Confidentiality,

Secret Key Cryptography, DES, Triple DES, AES, Key distribution, Integrity, Authentication and Non-Repudiation, Hash Function (MD5, SHA5) ,PKI Interface, Digital Certificates,

Certifying Authorities, POP Key Interface. Applications, Kerberos, Web Security Protocols (SSL).

CO1:Provide students with a high level understanding of how information security functions in an organisation.

CO2:Develop solutions for networking and security problems; balancing business concerns technical issues and security.

CO3:Students develop a secure network

CO4:Defence networking and wireless security, applied cryptography as well as ethical, legal, social and economic facets of security.

Natural Language Processing

Introduction of Elementary Probability Theory, Essential Information Theory,

Linguistic Essentials Corpus-Based Work Collocations. Statistical Inference, Forming Equivalence Classes, Building ngram models, Methodological Preliminaries, Supervised and unsupervised learning, Pseudo words, Evaluation Measures, Markov Models: Hidden Markov Models, Use,

Introduction of Clustering.

CO1:Learn the Basic Fundamentals of Probability Theory, Conditional Distribution and Entropy.

CO2:Understand the Linguistic Essentials and Collocations.

CO3:Learn about the Statistical models for NLP, Word Sense Disambiguation.

CO4:Understand the Hidden Markov Models, Part-of-Speech Tagging.

CO5:Understand Probabilistic Context Free Grammars and Clustering,

Advance Software Engineering

Software engineering concepts – Development activities – Software lifecycle models - Classical waterfall - Iterative waterfall,Requirement analysis and specification – Requirements gathering and analysis, Software design – Design process – Design concepts – Coupling – Cohesion – Functional independence – Design patterns – Testing – Unit testing – Black box testing– White box testing – Integration and System testing– Regression testing, DevOps,Motivation-Cloud as a platform-Operations.

CO1:The student able to know the quality, cost and schedule of the project.

CO2:Understand Software Models i.e. Waterfall model, Prototyping, Spiral Model etc.

CO3:Understand Software Project Management and Software Configuration Management

CO4:Understand Software Requirement Specification

CO5:The student able to know the architecture and design and design patterns

Information Retrieval System

Basic Concepts – Practical Issues - Retrieval Process – Architecture - Boolean Retrieval

Taxonomy and Characterization of IR Models – Boolean Model,Static and Dynamic Inverted Indices – Index Construction and Index Compression,Text Classification and Naïve Bayes – Vector Space Classification – Support vector machines and Machine learning on documents Searching the Web –Structure of the Web –IR and web search – Static and Dynamic Ranking – Web Crawling and Indexing

CO1:To present the basic concepts in information retrieval and more advance techniques of multimodal based information systems.

CO2:Understand the underlined problems related to IR

CO3:Acquired the necessary experience to design, and implement real applications using Information Retrieval systems.

Natural Language Processing LAB

CO1:Understand approaches to syntax and semantics in NLP.

CO2:Understand approaches to discourse, generation, dialogue and summarization within NLP.

CO3:Understand current methods for statistical approaches to machine translation.

CO4:Understand machine learning techniques used in NLP, including hidden Markov models and probabilistic context-free grammars, clustering and unsupervised methods, log-linear and discriminative models, and the EM algorithm as applied within NLP.

Advance Software Engineering LAB

CO1:Able to prepare SRS document, design document, test cases and software configuration management and risk management related document.

CO2:Develop function oriented and object oriented software design using tools like rational rose.

CO3:Able to perform unit testing and integration testing.

CO4:Apply various white box and black box testing techniques

Big Data Analytics

Big Data,Evolution of Big Data, Structuring Big Data, Types of Data, The Map Reduce Framework, Techniques to Optimize MapReduce Jobs, Uses of Map Reduce, Introducing Pig, Running Pig, Getting Started with Pig Latin, Working with Operators in Pig, Working with Functions in Pig, Data Types in Hive, Built-In Functions in Hive, Hive DDL, Data Manipulation in Hive.

CO1:Gain a good understanding of the architecture and functioning of Big Data Architecture as well as associated tools and techniques.

CO2:Understand and apply the principles of data analysis using Map Reduce.

CO3:Understanding the use of Eco System components of Hadoop.

CO4:Understanding the need for No-SQL implementation.

CO5:Understand the need of Hadoop implementation over Text Analystics, and social media data.

Cyber Security

Introduction - Cyber Security, Cyber Security policy, Domain of Cyber SecurityPolicy, Laws and Regulations, Cyber Security Metrics, Cyber Security Management, Cyber User Issues, Malvertising, Impersonation. Appropriate Use, Cyber Crime, Geo location, Privacy, Cyber Conflict Issues, Intellectual property Theft, Risk Management – Professional Certification – Supply Chain – Security Cyber Infrastructure Issues - Principles – Research and Development – Cyber Infrastructure Issue.

CO1:Analyze and evaluate the cyber security needs of an organization.

CO2: Determine and analyze software vulnerabilities and security solutions to reduce the risk of exploitation.

CO3:Measure the performance and troubleshoot cyber security systems.

CO4:Implement cyber security solutions and use of cyber security, information assurance, and cyber/computer forensics software/tools.

CO5:Comprehend and execute risk management processes, risk treatment methods, and key risk and performance indicators.

Deep learning

Basics,Biological Neuron, Idea of computational units, Deep Neural Networks,Difficulty of training deep neural networks, Greedy layerwise training.Better Training of Neural Networks,Recurrent Neural Networks,Back propagation through time, Convolutional Neural Networks: LeNet, AlexNet.Generative models,Restrictive Boltzmann Machines (RBMs), Recent trends, Variational Autoencoders, Generative Adversarial Networks,Applications, Vision, NLP, Speech.

CO1:Understand the Basic concepts of Biological Neuron, Idea of computational units.

CO2:Implement deep learning algorithms, understand neural networks and traverse the layers of data abstraction which will empower the student to understand data more precisely.

CO3:Learn topics such as convolutional neural networks, recurrent neural networks, training deep networks and high-level interfaces.

CO4:Learn deep learning models .

CO5:Understand the language and fundamental concepts of NLP,Speech

Principles of Management and Organizational Behaviour

Management, Functions of Management.the Nature of Organizing - Organizational Structure, Effective Organizing and Organizational Culture ,the System and Process of Controlling - Control Techniques and Information Technology -Global Controlling and Global Challenges

Organizational Behaviour responses to Global and Cultural diversity. Personality - Determinents, structure, behaviour, assessment, psycho-analytical social learning, job-fit, trait theories. Emotions and Emotional Intelligence as a managerial tool. Stress - Nature, sources, Effects, influence of personality, managing stress.

CO1:Define the organizational functions, tasks management responsibilities.

CO2:Understand basic Organizational Structure.

CO3:Describe the system and process of Controlling

CO4:Understand Behavior responses to Global.

CO5:Understand Stress,Managing Stress.

Web Mining

Characteristics of Web Applications. Requirements of Engineering in Web Applications

Introduction- Categorizing Architectures- Specifics of Web Application Architectures,

Design for WebApps Introduction-Fundamentals-Test Specifics in Web Engineering-

Introduction-challenges in launching the web Application-Promoting Web Application- Content Management-Usage Analysis-Web Project Management-Challenges in Web Project Management-Managing Web Team- Managing the Development Process of a Web Tracking the Project. Introduction to node JS - web sockets.

CO1:Implement web search concepts and methods to return documents automatically based on user queries.

CO2:Design and implement a crawler application to collect and index documents from the web.

CO3:Design computational methods to classify documents by topic.

CO4:Use distance metrics to compute the similarity of pairs of documents.

CO5:Create a system to collect and analyze streaming data.

Big Data Analytics LAB

CO1:Able to Install and Set up Hadoop

CO2: Able to Write Map Reduce program to count the occurrences of words in an input file.

CO3: Able to Install and configure Hive

CO4: Able to Install and configure Pig

CO5: Able to Install and configure H base

Deep Learning LAB

CO1:Able to Write Program on perceptron

CO2: Able to Write Program on feed forward neural network

CO3: Able to Write Program on convolutional neural network

CO4: Able to Write Program on activation function

CO5: Able to Write Program on optimization methods

PROGRAM OUTCOMES

In B.Sc Microbiology program syllabus is designed and practiced for more benefit of students. More laboratory practicals are designed in the syllabus; individual student execution of practicals is practiced. Practical experiments with real time samples and applications are practiced. Individual innovative projects are carried out by the students. This is helping participation of students in the conferences and filing patents. With the above practices students are becoming more subject and practical oriented which will help them in their future endeavor.

PO1: Can peruse masters in Microbiology and allied subjects.

PO2: Can work in diagnostics labs and industry.

PO3: Can write competitive exams.

PO4: Can take up teaching.

COURSE OUTCOMES

Paper-I General Microbiology

History & Development of Microbiology, Microscopy, staining and sterilization techniques, Ultra-structure of cell. Structure and classification of virus. Microbial nutrition, metabolism and growth.

CO1: Students will get basics and importance of Microbiology.

CO2: Theory & practical's of Microscopy.

CO3: Theory & practical's of staining.

CO4: Theory & practical's of sterilization .

CO5: microbial and virus structure.

Paper-II Microbial Diversity

Concept of biodiversity, Metabolic characteristics', Eukaryotic microbial diversity, microbial ecosystems.

CO 1: This paper will provide basis to understand microbial diversity.

CO 2:Topics covered will be helpful in remaining courses.

CO3: Microbial biodiversity will be useful in research and

CO4 :Study of ecosystem related problems.

Paper-III Food And Enviromental Microbiology

Fermented foods, Microbial food spoilage and poisoning, Detection of pathogens in food. Aerobic and Anaerobic Sewage treatment. Air, Water and Soil Microbiology.

CO 1:Basics of food microbiology will help in food and beverage industry

CO 2: Also help in disease control

CO 3: Help in treatment of disease

CO 3:Study Air ,water and soil microbiology

CO 4: Help in environmental research

SKILL ENHANCEMENT COURSE-I (SEC-I)

Title: HAEMATOLOGY

Blood: definition, characters, composition. Collection of blood – capillary blood: from adults and infants, examinations employed. Venous blood: from adults and infants, examinations employedComposition of blood (RBC, WBC, Plasma, Serum, Platelet cells), Staining of blood films. Total blood picture, Differential count. Blood grouping.Blood Transfusion

CO 1:Teaches students about blood collection

CO 2:Gives knowledge about blood grouping

CO 3:Applications in pathological laboratories

CO 4: Teaches about blood transfusion

Paper-IV Medical Microbiology & Immunology

It contains Diagnosis and pathogenesis of various diseases. Antimicrobial defense and different toxins is covered .In immunology Types of Immunity, immune organs, cells, antibodies and antigen-antibody interactions were discussed

CO1: It provides knowledge of pathogenic microorganisms, their characteristics,

CO2: Pathogenesis and control of microbes

CO3:Student can safeguard themselves & society

CO4:Work in diagnostics and hospitals.

CO5:Immunology plays an important role in Diagnosis

CO6:Prevention of diseases

CO7:Control of diseases

Title: MUSHROOM CULTIVATION

It contains Introduction to mushroom cultivation Importance and history of mushroom cultivation in India Global status of mushroom production Edible mushrooms (white button oyster, Paddy straw).Nutritional value and health benefits of mushrooms.

CO1: Students have scope in Mushroom Cultivation Industry

CO2:Gives knowledge about health benefits of mushroom

CO3:Teaches about mushroom preservation

CORE V Microbiology And Human Health

Microorganisms related to human health, viral and bacterial diseases. Introduction to immunity, Epidemic, endemic, pandemic. Waste management and health hazards.

CO 1: It provides knowledge of pathogenic microorganisms related to human health.

CO2:Helps understand about pathogenesis and prophylaxis.

CO3:Teaches students about safe disposal of waste

CO 4: Treatment of waste which will be useful for the society and environment

Elective-II Microbial Omics

Structure of DNA & RNA, next generation sequencing. Proteomics, protein engineering, Genomics and bioinformatics and molecular databases. FASTA, BLAST and primer designing.

CO 1:Students will gain knowledge about Proteomics and Genomics

CO 2:Help students in further studies and Proteomic research.

CO 3:Students with this exposure can work in biotechnology

CO 4: Application in genetic engineering etc

Elective-I: Industrial Microbiology

Explains History, screening, media, Fermentation, assays with examples of industrially important processes.

COURSE OUTCOMES

CO1: It makes students self reliance in the industrial microbiology

CO2:Application of Microbiology in life and industry.

CO3:Entrepreneurship can be established with the gained knowledge.

Department of Persian

This course introduce students to the Persian language while, developing proficiency in reading, writing, comprehending and speaking modern Persian, through communicative methods. Students acquire an understanding of grammer that is well integrated into their language usage. Dialogs and reading texts are geared toward facilitating practical mastery of basic skills.

Course objective : To enable students to

- Know the alphabets of the language and structure formation of word and sentences.
- Know the grammer of the language and its uses.
- Know the simple word translation, process and its Technique.
- Know the life and poetry of the authors

Course outcome: At the end of the course, student will be able to

- Discribe basic concept of language
- Analyze Tence, Verbs and a sentence
- Greater proficiency in speaking, listening comprehension.

2.Course : Classical language, Optional Subject for the B.A. Students.

Duration of this course is three years.

Language is defined as a tool for understanding and being understand and as means of communication between cultures and civilization. Thus, Learning each new language means getting aquatinted with a new culture and a new world. Knowing a new language provides one with an opportunity to get familiar with customs and traditions of people living in different part of the world, they may even discover that they possess common cultural and spiritual legacies. It is believed that a nations literature is a perfect reflection of their social life which is depicted in their stories, poetry, allegories, plays , handicrafts and ultimately in all of their litenery and social representations. Persian language and literature, being no exception, has, thanks its cultural richness long been the language of knowledge, religion and mysticism, that is what makes Persian a language, talking upon which is never outdated. A long as morality, love and friendship have not lost their lure in the world, Persian language and literature will continue to live.

The background of Persian language goes back to ancient times, when it developed common links with Sanskrit. With passing centuries, Persian become the messenger of the pure Iranian / Khurasanian literature to India and the people of this country were over powered by its heart inspiring fragrance to such an extent that Persian in India become the language of men of pure hearts and spirits and it gave birth to a beautiful daughter by the name of Urdu its eloquence influenced all the other current languages of India.

This course serves as an intensive introduction to classical Persian philology. Textual analysis of works enable students to gain a strong grounding in persian literary history.

3.Objective of the course; It aims to teach ;

- Grammer
- Vocabulary
- Common phrases
- Conversational language and
- Formal / Literary Persian

Course out comes: At the end of the course, able to

- Read and write Persian
- In depth textual study and analysis that
- Translation Text.
- Read different types of Persian caligraphy
- Greater awareness and appreciation of the cultural richness of an ancient civilization.

Department of Poltical Science

COURSE OUTCOMS:

1). Semester I

Paper I: **PS101: Western Political Thought I** (Core Paper)

CO 1:The course introduces to the student the Political Thought processes and Theory making in the West. From the Greek Political thinkers to down the ages including Utilitarian's, this course introduces the student to the richness and variations in the political perceptions of Western Thinkers.

CO 2:It provides a foundation to students of Political Science in familiarizing themselves to the Western Theory and Philosophy.

CO3: It particularly focuses on the evolution of the idea and institution of State in the West. It covers ancient, medieval and early modern thinkers.

Paper II: PS102: INTERNATIONAL RELATIONS-I (Core Paper)

CO1:The purpose of this course is to familiarise the students with some of the broad themes in the study of International Relations

CO2:It introduces the students to the evolutionary history of International Relations as a distinct discipline and provides them with the theoretical and conceptual dimensions of the subject.

CO3:The course concludes with a description of contemporary history from the pre Cold War to the post Cold War era and goes on to describe the globalization process. Its aim is to enable the students gain a theoretical understanding of world politics.

CO4:The course helps Indian as well as foreign students alike in understanding International Relations as part of Political Science from a global, theoretical and discipline centric perspective, serving its purpose as a foundation course.

Paper III: PS103: INDIAN POLITICAL SYSTEM (Core Paper)

CO1:This Course on Indian Political System introduces a student to the Constitution of India and the Institutions in their historical and contemporary context.

CO2:It brings out the various dynamics of the Institutions at Central and State level. It gives an understanding of the functioning of Parliamentary system in the Country.

CO3:The course mainly emphasizes on four aspects 1) The historical legacies leading to the making of the Indian Constitution; 2) It explains the basic ideals and concepts of the Indian Constitution ; 3) It discusses about the organization of the state and working of the political system; 4) Lastly, it deals with Federalism and Panchayati Raj institutions..

Paper IV(A): PS104A: POLITICAL SOCIOLOGY (Elective)

CO1: The course introduces students to the dynamics between Sociology & Political Science and explains the mutual impact of Political Science and Sociology in influencing Politics & Society.

CO2:The course introduces important concepts and theories that deal with the subject.

CO3: It focuses on nature of political power, the cultural dimensions of politics, dynamics of political change, the manner in which political power intersects with social structures, and the determinants of political upheavals and revolutions.

Paper IV(B): PS104B: SOUTH ASIA (Elective)

CO1:South Asia is one of the regional systems which arrived late on the global political and economicscenario. Since its transformation in to a regional organization it is struggling to move forward due to asymmetries in terms of geography, political system, demography, scale of economy and pluralism.

CO2:It also suffers from internal contradictions due to divergent perspectives on issues common to all the members. Since it has to go a long way, serious study is to be carried out by universities and civil society organizations.

CO3:The course is designed to make students to know the South Asian region in a greater detail. The future of one's own destiny is intertwined with the future of others in the region.

CO4:Scope for research in the area is bright as a number of foundations are coming forward to finance the studies in the region. As policy Planning Division of the Ministry of External Affairs is contemplating to recruit area specialists with deeper knowledge due to inadequate staff, opportunities may arise in near future for the students.

CO5:The students may get a chance in joining the think tanks after completion of the course..

Paper V(A): PSC-105A: POLITICAL IDEOLOGIES (Elective)

None can dispute that abstract ideas to govern human behaviour.

CO1: Politics constitute a most important element in that realm. While ideas are not in and of themselves ideologies, they are part of the raw material needed to produce a full-fledged ideology.

CO2:As will be seen below ideologies have special qualities that set them apart from other political entities. When combined with other factors such as effective leadership, persuasive rationale', timely development, and popular appeal political ideology goes a considerable distance in the direction of comprehending things political.

CO3:Nature of Political Ideologies has been called "immaculate perceptions" of an imperfect reality. This may also be applicable to the concept of political ideologies.

CO4: The students of political science will get enriched by studying Ideologies as it enhances their analytical skills of public phenomenon.

Paper V(B): PS105B: REGIONAL ORGANISATIONS (Elective)

CO1:This course is offered to familiarize students with International Relations background with issues of Regionalism and Functionalism.

CO2:It teaches the significance of Regionalism from a theoretical perspective; provides a brief historical overview of the origin and evolution of several regional organizations; their challenges and the areas of concern.

CO3:The last unit provides students with India's interaction with several of the Regional Organizations. This is a Course with immense potential in the political, economic, business and trade offices of the Corporate and Ministries.

2) SEMESTER II

Paper I: PS201: WESTERN POLITICAL THOUGHT–II (Core Paper)

CO1:Having covered the early modern political thinking in the first part of Western Political Thought in the first semester, it goes on to give further understanding on the later part of modern times particularly the 20th century political thinking in variety of ways.

CO2:Beginning with Hegel and enlightenment, the course explains how two major political ideologies- Liberalism and Marxism are juxtaposed and interjected during the rest of the period. Finally, it also explains, how these two thought frames have come to face challenges in the later part of 20th Century and reoriented themselves which resulted in new frame of things such as

New Right or Neo Liberalism and on the other hand, Marxism gave way to New Left, Post structuralism or even Post Modernist ideas.

CO3:The Course is rich in so far as understanding such crucial issues and concepts as rights, equality,liberty, freedom, constitutionalism, community rights, multiculturalism, democracy, social justice, identities, hegemony and dominance, importance of civil society etc. The Course equips the students with the most current understanding of thought processes.

Paper II: PS202: INTERNATIONAL RELATIONS II (Core Paper)

COI:This is a second part of the course on International Relations. The content aims at enabling the students to develop critical understanding of issues in the contemporary International Relations.

CO2:Like the previous cours, it offers divergent perspectives on various contemporary issues and provides the basis for the students to undertake further studies and research in International Relations. After undergoing the course a student will be in a position to better the explain different phenomenon in International Relations

Paper III: PS203: INDIAN POLITICAL PROCESS (Core Paper)

CO1:This course emphasizes on processes such as Party Politics, Electoral Politics, and Identity Politics and so on.

CO2:The course opens up the debate on nature of the Indian State to understand the political processes. Thecourse maps the Indian Political processes with major issues such as Communalism, Extremism,Regionalism and issues related to autonomy. It also attempts to capture the changing State- Civil Society relations.

CO3:The course also discusses small parties that emerged in the context of rise of civil society. Another major development that occurred in the political process has been a significant change in the leadership and its association with media. The leader-centric politics and its association with media has become a ubiquitous phenomenon across the country. The course is also sensitive to the factors that led to intense competitive electoral politics.

Paper IV(A): PS204A: POLITICAL ECONOMY (Elective)

CO1:This course explores the linkages and relationships between Economics and Politics. It provides an exposition to the students on the evolution of politico-economic ideas from classical period to modern era.

CO2: It deals with various economic structures and ideas of development and their impact

on political processes.

CO3: The course provides evolution of different streams of economic ideas and their political contexts from the beginnings of capitalism to the contemporary era. It addresses the issues of market mechanisms, development and underdevelopment and the process of globalization from the perspective of Liberal, Marxist and Neo-Marxist analysis and in the last section it lays an emphasis on developing countries and issues of development.

Paper IV(B): PS204B: PEACE AND CONFLICT STUDIES (Elective)

CO1:Post-World war transformation has changed the nature of not only world politics but also the study of peace and conflict in the international system. Peace and Conflict as concepts are being studied as Wars are replaced by Conflicts. Efforts are made to theorise Peace and realising it within States, among States and at the global level.

CO2: A lot of research on importance of realising Peace and resolving Conflicts has been going on with the publication of number of periodicals.

CO3:This course is designed to develop conceptual, theoretical and analytical skills of students regarding Peace and Conflict. Study of the course enables a student to prepare himself to face any situation and to make right decisions and to create peace within communities and come out with proposals suggesting alternatives in realising the larger goal of peace in the international system

.CO4:The course may provide an opportunity to join with NGOs working on conflict resolution.

Paper V(A): PS205A: PANCHAYATI RAJ IN INDIA (Elective)

CO1:The course deals with the perspectives of decentralization, institutional aspects, models of Panchayati raj in Kerala and Telangana and the present complexities. Some of them include the processes of decentralization that emerged with the introduction of new sets of governance such as Self Help Groups (SHGs), Parallel Bodies. Further, the course seeks to bring back the debate on the important goals of Panchayati raj - democracy and development.

CO2:The course is marked with three phases – pre and post amendment phases and the third phase covering the contemporary conflicts between Panchayati raj and parallel bodies emerging from the rural governance framework. It is designed in such a way that it would throw light on the dynamics of Panchayati Raj System in conjunction

with structural changes at the macro level in terms of market reforms and policy shifts at the national level.

Paper V(B): PS205B: INTERNATIONAL LAW (Elective)

CO1:This course is an introductory course on International Law for Political Science students. It introduces the basic concepts that a student should know about the international dimensions of law, as an extension of International Relations.

CO2:It aims to provide the necessary knowledge to understand the limitations and potentials of international law in the context of the globalised international relations. The objective is to make students conversant in international law and able to develop a critical appreciation when confronted with the reality.

CO3: The learning outcomes by the end of the course are: 1). Understand the basic doctrines and concepts of International Law; 2). Critically discuss the limitations and potentials of International Law and 3). Analyse contemporary international issues from the perspective of international law.

3) SEMESTER III

Paper 1: PS301: INDIAN POLITICAL THOUGHT-I (Core Paper)

CO1:Political ideas are basis for the strength of any political system. They reflect diverse spectrum of times in a country. India is no exception to this.

CO2:The course on Indian Political Thought provides an opportunity to a student to know the political ideas in ancient, medieval and modern periods reflecting India's diversity, pluralism in social, political and economic spheres.

CO3The ideas contain classical as well as modern approaches to the issues in existence in the Indian society. These ideas aim at realizing socio-political transformation. The ideas of modern Indian thinkers also resemble western political ideas also. At the same time they reflect a critique of older native system that had been in existence for centuries and articulate the ideals of equality and justice.

Paper II: PS302: COMPARATIVE GOVERNMENT AND POLITICS (Core Paper)

CO1:The course is intended to offer theoretical and methodological issues in Comparative Politics. It seeks to enhance the students' understanding of politics, state, government, democracy, development, civil society, parties and interest groups, social movements from a comparative perspective.

CO2:The course seeks to examine the diversity of political systems in contemporary world, the historical evolution of State: its

political economy; key political institutions; mode and extent of representation and participation; current and future dilemmas; place in the world system and the key factors such as globalization that influence the functioning of the political systems.

CO3:The key issues and categories of Comparative Politics are examined in the light of experiences from the Western and non-Western political systems such as United States, Britain, Canada, France, India, and China.

Paper III: PS303: GOVERNMENT AND POLITICS OF TELANGANA (Core Paper)

CO1:In the wake of formation of new state, Telangana State, it is an imperative on the part of the Department to start a Course on the Government and Politics of Telangana.

CO2:It provides understanding on the historical processes, the agencies and social forces that contributed to the formation of state. However, not to lose sight on the political practices of the institutions in the erstwhile Andhra Pradesh that discriminated against Telangana region, it also focuses on the politics processes of those times.

CO3:It provides to the students rich understanding on the different dynamics of the state formations and shaping of governance in the state currently.

Paper IV(A): PSC-304A: POLICY STUDIES (Elective)

CO1:In contemporary times, to address complex and dynamic issues governments are formulating policies find solutions to societal problems from different ideological perspectives. A lot of technical expertise is becoming a necessity to understand and analyze issues and to suggest possible alternative solutions based on cost benefit analysis.

CO2:In this context there is a need to conduct serious research on public issues by policy experts from Policy Science perspective.Public Policy course aims at providing a comprehensive view of issues, policy making processes, decision making related to policy matters.

CO3:It also aims at producing experts who can advise the government or who can provide inputs to government in policy

making.

Paper IV(B): PS304B: WOMEN'S STUDIES (Elective)

CO1:This Course attempts to provide the significance of gender studies and Womens' studies to students of Political Science.

CO2: It deals with: Womens' Movements globally and in India; Provides the necessary theoretical perspectives; major issues in women's studies and in the fourth and final unit provides empowerment policies in India.

CO3:Another area with immense potential for further research in nongovernmental sectors, both nationally and globally.

Paper V(A): PS305A: SOCIAL MOVEMENTS IN INDIA (Elective)

CO1:On This course has been taught for long in the department. The course content has undergone many mutations along the changing nature of the social movements.

CO2: It covers from the conventional forms of social movements to the present identitarian movements, from class based peasant movements to the present farmers movements.

The is sensitive, not only to processes of the movements, but also to the ideological frameworks of them- Leftist, Liberal and identitarian .

CO3:The Corse is designed to cover most current developments in civil society, state, economic spheres

Paper V(B): PS305B: SECURITY STUDIES (Elective)

CO 1:Security Studies course enables students to gain insights into the field from a developed as well as developing world perspective.

CO2: Units II & III elaborate on the different approaches to the field and the last unit deals with traditional and emerging issue areas.

CO3: Paper prepares the final semester students for advanced courses in research or move towards voluntary sector and consultancy in the emerging areas. Employment opportunities are abundant in Think tanks, embassies, Ministries, investigation agencies and business houses.

CO4: This course is useful for both Indian and Foreign students.

4) SEMESTER IV

Paper I: PS401: INDIAN POLITICAL THOUGHT-II (Core Paper)

CO1:Political ideas are basis for the strength of any political system. They reflect diverse spectrum of times in a country. India is no exception to this.

CO2: The course on Indian Political Thought provides an opportunity to a student to know the political ideas in ancient, medieval and modern periods reflecting India's diversity, pluralism in social, political and economic spheres. The ideas contain classical as well as modern approaches to the issues in existence in the Indian

society. These ideas aim at realizing socio-political transformation.

CO3:The ideas of modern Indian thinkers also resemble western political ideas also. At the same time they are reflect a critique of older native system that had been in existence for centuries and articulate the ideals of equality and justice.

Paper II: PS402: INDIA'S FOREIGN POLICY (Core Paper)

CO1:A student of this course studies India's Foreign Policy; its determinants; the role played by different institution in the policy formulation as well as implementation. Further, the student evaluates India's relations with neighbors as well as with global powers. Critically, the course provides a comprehensive understanding of India in the global theatre.

CO2:It provides greater scope for employment in the policy planning divisions of Ministries as consultants and researchers.

Paper III: PS403: RESEARCH METHODS FOR POLITICAL SCIENCE (Core Paper)

CO1:The course provides Social Science research perspective to the students. It offers various research methods (both qualitative and quantitative) used in Social Sciences and Political Science by drawing upon a range of theoretical and empirical research questions that are prevailing in Social Sciences.

CO2:The theoretical aspects of the course will comprise an exploration
of various theories, concepts and terms that are part of the Research Methodology.

CO3:The empirical aspects will provide a broad understanding of various research methods and techniques, besides dealing with the practical realm of research.

Paper IV(A): PS404A: HUMAN RIGHTS (Elective)

CO1:This is an introductory course on Human Rights from a historical and political perspective. As an interdisciplinary elective, it introduces the students to the theoretical perspectives, provides them global and national level, institutional level and develolpmental mechanisms.

CO2: The last Unit is India specific and promotes a student's employment potential in voluntary sector, Media and teaching profession. Additional qualifications by way of diplomas in Human Rights, Media Studies, in the field of Law and Education are helpful to students.

Paper IV(B): PS404B: GLOBAL ENVIRONMENTAL POLITICS (Elective)

CO1:Origin of the Environmental issues in International Relations can be traced at the global level to the Stockholm Conference. Therefore, it is imperative to study the global

environmental issues to understand the national environmental policies.

CO2:This course, arranged into four units starting with basic environmental concepts and problems; Unit two discusses about the global environmental governance.

CO3: In Unit three it explains about contemporary global environmental regimes. Lastly, it deals with issues of Environment and Development, Human Rights and Justice. This is a course with great potential for employment in the government and the voluntary sector.

Paper V(A): PS405A: ADMINISTRATIVE THEORIES & CONCEPTS (ELECTIVE)

CO1:This paper aims to make student aware about different theoretical perspectives on Public Administration.

CO2:In this context there is a need to introduce different concepts and principles of administration to the students. Further its relevance to be explained through historical evolution of the subject.

CO3: In this regard the paper introduces different classical and contemporary thinkers and their ideas to students. The outcomes are to be assessed through its multidisciplinary manifestations.

Paper V(B): PSC-405B: AMBEDKAR STUDIES (Elective)

CO1:The paper is in tune with the debates on Dr.Ambedkar, emerging in the last few decades and beyond.

CO2:The course specifically addresses an important question in Philosophy drawn on the issues around ‘universal’and ‘particular.’

CO3: In this context, Dr.Ambedkar is sought to be understood as a philosopher who seeks to synthesize universal and particular. In the same wane, the course discusses Ambedkar, while being champion of Dalit cause, seeks to transform the society on principles of equality and justice.

CO4:T:he paper specifically seeks to discuss Dr.Ambedkar’s life in the company of his ideas on social, economic and political spheres. His life is portrayed in terms of his experience with untouchability, his exposure to liberal ideas in the west and his engagement with the political practices in India during nationalist movement. His ideas on annihilation of caste, critique of Hinduism and his journey to Buddhism are extensively discussed.

CO5:The Course also includes his ideas on property and socialism. Lastly and importantly the paper takes a serious look at Dr.Ambedkar’s vision of nation-state. This course is designed with

the understanding that the students should be able to understand the various ideas and philosophy of Dr.Ambedkar and should be helpful in resolving various problems in the society.

NIZAM COLLEGE
Autonomous
Re-accredited by NAAC with B++
A Constituent College of Osmania University

Department of Psychology

Department of Psychology was established in the year 1963, and a Counselling Centre has been established in the year 1984. Centre for Psychological testing and counselling was sanctioned under the centre of potential excellence (2005). It is a three year full time programme following Semester system. Psychology is one of the major optional subjects offered at the undergraduate level with other 4 combinations. This course is aimed at introducing students the fundamental processes underlying human behaviour and familiarize them with a few emerging branches of psychology such as Developmental Psychology, Social Psychology, Abnormal Psychology, Health Psychology, Child Psychology, Educational Psychology, Adolescent Psychology. Along with the theory the psychology course includes Practical, Statistics and Research Project.

PROGRAMM OUTCOMES

PO1. To teach the undergraduates the basic principles of Psychology which helps them to be future professionals.

PO2. To provide counselling services and career guidance to the students based upon aptitude interest and personality profiles**.**

PO3. To conduct awareness programs and workshops on various Psychological issues.

COURSE OUTCOMES

General Psychology

CO 1. To familiarize students about the field of Psychology and give them the necessary exposure to develop interest in the field thus to prepare them for Post-graduate programme in psychology.

CO 2. To appreciate and explain the vast branches and emerging fields of psychology for professional application.

Personality theories and Assessments

CO 1. To introduce the basic behavioural processes underlying Human Behaviour.

CO 2. Introduce the different theorist to explain behaviour and influence on behaviour

CO 3. Identify critical area of personality development

Social Psychology

CO1. To familiarize students the process of human development and various developmental changes from biological, psychological and socio-cultural perspectives.

CO2. Identify the respective areas of social context and influence of behaviour

CO3. Awareness Social stigmas mental sets like attitude formation and change prejudices and social discrimination and change in the human behaviour.

Abnormal Psychology

CO 1. To introduce students the abnormal behaviour and the various components that promote health through papers such as Abnormal Psychology and Health Psychology.

CO 2. Understanding the critical area of DSM V and ICD 10 will help students identify the mental disorders.

Child and Educational Psychology

CO 1 To make the students to understand the different aspects of human behaviour from child perspective.

CO 2 Allows students to establish the connection between the children and behavioural problem.

CO3 Allows students to understand the educational perspective in a school, teacher student, curriculum relation and influence on behavioural process of student.

Adolescence and health Psychology

CO 1 Understand the adolescent behaviour from behavioural perspective

CO 2 Understand the risky behaviours of an adolescent and influencing factors

CO3. Helping students to understand the importance of change in behaviour

CO4. Help understand the criteria of personality leading to career development.

CO5 Help understand the health and illness behaviour

CO6 Help understand the core component of stress and importance of coping

CO7 understand the resilient techniques with behavioural phenomenon

CO5. To familiarize students the basic aspects in Experimentation, Psychological testing, Research methodology and Statistics.

Department of Sociology

PROGRAMM OUTCOMES

PO1:Understand the basic concepts in Sociology and develop an understanding about macro and micro perspectives in Sociology

PO2: Comprehend the various features of Indian Society and culture including unity in diversity; Indian social structure and understanding rural, urban and tribal India

PO3: Develop an understanding of various aspects of doing social science research with focus on methodology; making research proposal, doing fieldwork and report writing

PO4:Analyse the critical aspects of Sociology of Development and Planning, the development theories and the Planning system for development

PO5:Understand the characteristics, social structure, institutions and problems of tribal community in India.

PO6:Develop an understanding about various aspects of Industry; Population studies

PO7: Understand the philosophical foundations of Sociology and its application

PO8: Evaluation of Development Policies

COURSE OUTCOMES

Basic Concepts and Perspectives in Sociology

CO1: Describing Nature, Scope and Origin of Sociology

CO2: Understanding the methods in Sociology and contributions of Founding fathers of Sociology

CO3: Elaborating on basic concepts in Sociology, social structure, social system

CO4: Elucidating various types of groups, culture and various concepts in connection with culture.

CO5: Describing the various socio-cultural processes and influence of heredity and environment on Personality

CO6:Holistic understanding of Functional, Conflict and Symbolic Interactionist Perspective.

Indian Society and Culture

CO1: To elaborate on perspectives on Indian society

CO2:Understanding Historical Moorings of the Indian Society, Purusharthas, Ashrama Dharma and Four fold Varna System; Impact of Buddhism, Islam and West; Factors of continuity and change

CO3:Describing Stratification System in India including Caste and Class (Agrarian and Industrial class structure)

CO4: Elucidating the problems of Indian Society (rural and urban)

CO5:Elaborating on social institutions like Marriage, Family and Kinship among various religious communities; Decline of Joint Family System – Causes and Consequences

CO6:Describing the types of Mobility; Open and Closed Models, Factors and Constraints to Social Mobility

CO7:Analysing the social change in Modern India especially through the processes of Modernization, Sanskritisation, Westernization and De- Sanskritisation

Research Methodology

CO1:Understanding Sociology as a science, concepts and steps in research

CO2:Differentiate between the Quantitative and Qualitative Research and understand different types of Research Design

CO3:Understand the various techniques of Data Collection- Observation, Questionnaire, Interview Schedule; Case Study, Social Survey, Content Analysis

CO4: Describing various types of Sampling

CO5: Elaborate on Data Processing and Data Analysis

CO6:Calculation of measures of central tendency – Mean, Median and Mode; Graphic Representation: Bar Graph and Histograms

CO7: Writing research reports

Sociology of Development and Planning

CO1: Elaborating the concepts of Development and Underdevelopment:

CO2:Describing the Concepts and Indicators of development; Human Development and Economic Growth; Concepts of Social Development, Economic Development, and Sustainable Development

CO3:Explaining the theoretical Perspectives on Development and Contemporary critical perspectives on development .

CO4: Understanding the role of International Institutions (World Bank, IMF, WTO, ILO, UNO, UNICEF) in Development Policies

CO5: Interface between Democracy and People's participation for development; Modernization, Globalization and Development.

CO6: Describe Development, Migration and Displacement

CO7: Elaborate on victims of development, Rehabilitation and Resettlement – Role of Civil society and NGOs. SEZs/AEZs and Development.

CO8:Describe the concept Social and Economic Planning; Five Year Plans; Intervention Programmes for development.

Principles of Social Anthropology

CO1: Elaborate on meaning, scope and branches of Social Anthropology

CO2: Explain the meaning, characteristics and geographical distribution of Tribes in India

CO3:Describe the concept, characteristics of Culture and Cultural Processes-Diffusion and Evolution.

CO4: Analyse the social institutions in terms of types and functions

CO5: Understand Tribal Economy, Religion and Magic

CO6:Analyse Tribal Problems, Law and Justice – Exploitation of Tribes, Land Alienation and Displacement; Problems of Health and Nutrition

CO7: Identify the Constitutional Provisions and measures for Tribal Development in India

Industrial Sociology

CO1: Describe the Nature and Scope of Industrial Sociology; Growth of Industrialization, Industrial Revolution and its impact on Society

CO2:Elaborating on Changing Structure of modern Industrial enterprises and principles of Organization – Formal and Informal

CO3:Understand Scientific Management of F.W. Taylor, Human Relations Approach of Elton Mayo

CO4: Elaborate Human Relations in Industry; Fordism and Post-Fordism

CO5:Describe Trade Union Movement in India; Workers Participation in Management and Collective Bargaining.

CO6: Explain Industrial Conflicts and means of Settlement of industrial Disputes

CO7: Understand Labor Problems – Absenteeism, Alcoholism and Alienation;

CO8: Identify Labor Welfare Schemes and role of ILO

CO9: Understand Impact of Globalization on Industry and Labour.

Social Demography

CO1: Explain Nature and Scope of Social Demography.

CO2:Elaborate on Sources of Demographic Data - Census, Vital Registration, Sample Surveys and Population Registers.

CO3:Describe Population Theories - Malthusian Theory, Demographic Transition Theory.

CO4:Analyse the Composition of Population in India and the trends in population growth in India.

CO5:Describe Population Processes and types, factors and consequences of Migration.

CO6:Understand the Population Policy (UN and India), Family Planning and Family Welfare;
CO7: Explain Population Education.

Philosophical Foundations and Applications of Sociology

CO1:Explain the Philosophical Foundations of Sociology (Positivism, Empiricism, Ethnomethodology, Phenomenology)

CO2: Describe the contributions of contributions of Founding Fathers - August Comte, Herbert Spencer, Karl Marx, Emile Durkheim and Max Weber

CO3:Understand about Applied Sociology and relation between Sociology and Social Policy; Sociology and Professions

CO4:Elaborate on Participatory Development, Need and Advantages of social participation

CO5:Elucidate Community Development and Community Organization, Group Formation and Social Action

CO6: Explain Capacity Building Measures; Action Research and Evaluative Research

CO7: Describe Participatory Rural appraisal – Meaning, Principles and Techniques

CO8: Understand Counseling- Meaning, Types and Methods

Principles of Sociology

CO1: Elaborate on Nature, Scope, Emergence, Importance of Sociology

CO2: Describe relationship between Sociology and other social sciences; Theoretical Perspectives in Sociology

CO3: Explain basic concepts of Society; types of society, culture and Groups

CO4: Elaborate social Interaction, Social Processes and socialisation

CO5: Discuss social institutions

CO6: Explain social stratification and its theories; Means and agencies of social control

CO7: Describe Social Change – Theories and Factors of Social Change

Classical Sociological Theories

CO1: Assess Social and Sociological Theories; Phenomenon and Perspectives; Influence of Industrial and French Revolution on Sociological thought and contributions of August Comte

CO2:Describe the contributions of Herbert Spencer, Vilfredo Pareto and Thorstein Veblen

CO3: Analyse Life & Major Works of Karl Marx

CO4: Explain contributions of Emile Durkheim

CO5: Elaborate on contributions of Max Weber

Research Methodology – Social Statistics and Computer Applications

CO1: Understanding Sociology as a science, Scientific Method, Concepts and Steps in Research

CO2: Differentiate between the Quantitative and Qualitative Research and understand different types of Research Design

CO3:Understand the various techniques of Data Collection- Observation, Questionnaire, Interview Schedule; Case Study, Social Survey, Content Analysis

CO4: Describing various types of Sampling

CO5: Elaborate on Data Processing and Data Analysis

CO6: Calculation of measures of central tendency – Mean, Median and Mode; Graphic Representation: Bar Graph and Histograms.

CO7: Understanding and calculating Quartile, Decile, Percentile. Measures of Dispersion: Range, Skewness, Kurtosis, Standard and Mean Deviation

CO8: Measures of Association/Relations: Correlation and Regression. Measures of Testing of Hypothesis, writing research reports

Industrial Sociology

CO1:Elaborate on Definition, Nature and Scope of Industrial Sociology

CO2:Explain Growth of Industrialization, Industrial Revolution and its Impact on Society, Changing Structure of Modern Industrial Enterprises, Principles of Organization - Formal and Informal

CO3:Describe Sociological Theories related to Industry and Society

CO4:Write about Trade Union Movement in India

CO5:Explain Industrial Disputes and Settlements

CO6:Describe the Labour Problems; Role of ILO and Commitment and Motivation of Workers.

Rural and Urban Sociology

CO1:Explain Nature and Scope of Urban Sociology; Differentiation and Continuum of Rural urban

CO2:Understand relation between Urbanization and Industrialization

CO3:Describe Social Structure of Rural & Urban Communities

CO4:Analyse major theoretical Perspectives in Urban Sociology and Patterns of Urban Growth – Urban

CO5:Describe rural economy in India-Rural Development Initiatives; Urbanization and Industrial growth

CO6:Explain Village Governance during pre and post-independence; Panchayati Raj System: its impact on Rural India-Land Reforms – Liberalization

CO7:Describe Globalization, Rural Unrest – Suicides of farmers and weavers

CO8:Explain the concept of City/Town Planning and Urban Problems –

CO9:Describe National Urbanization Policy in India

Modern Sociological Theory

CO1:Explain Functional and Middle Range Theories of Talcott Parsons and Robert Merton

CO2:Elaborate on Conflict theory of CW Mills and George Simmel

CO3:Present an Overview on Neo-Marxism with specific contribution of Antonio Gramsci, Althusser and Nicos Poulontzas

CO4:Describe the contributions of Charles Horton Cooley; George Herbert Mead, Herbert Blume, George Homans, Peter Blau with reference to Symbolic Interactionism and Exchange theory

CO5:Explain the contributions of Anthony Giddens, Alfred Schutz, Harold Garfinkel, Husserl and Goffman

Social Stratification and Social Mobility

CO1: Explain dimensions of Social Differentiation and Social Stratification; Principal types of stratification systems: Caste, Class, Estate and Gender

CO2: Present theoretical perspectives with reference to social stratification

CO3: Describe Caste and Class

CO4: Elaborate on relationship between social stratification and mobility; types of social mobility; Social and Occupational Mobility, Gender and Social Mobility and factors of mobility.

CO5: Describe Reference Group Theory and Mobility

CO6:Write about Sanskritization and De-sanskritization, Modernization, Westernization and Islamization

Qualitative Research and Participatory Learning & Action (PLA) Techniques

CO1:Explain importance and scope of Qualitative Research

CO2:Differentiate Qualitative and Quantitative Research

CO3:Explain methods of Qualitative Research

CO4:Explain Participatory methods

CO5:Describe principles and methods of Participatory Learning & Action

CO6:Understand PLA fieldwork

CO7:Identify Development Issues & Challenges

CO8:Describe Data Processing and Analysis; Developing Research Plan and Presentation of Report.

Social Demography

CO1: Explain Nature and Scope of Social Demography

CO2:Describe Population Theories (Malthusian Theories, Demographic Transition Theory, Optimum Population Theory)

CO3:Composition of Population in India and trends in population growth

CO4:Describe Population Processes (Fecundity, Mortality, Migration)

CO5:Understand Population Policy (UN and India); family planning and family welfare; Population Education; National Rural Health MissioN

Science, Technology and Society

CO1:Explain Sociology of Science and Historical and social context of scientific knowledge .

CO2: Describe Technology, Society and Historical Change

CO3: Identify Social Consequences of Technology

CO4: Elaborate Methods in Science: Inductivism and Falsification.

CO5:Understand Sociological Perspectives on Scientific practice: Marx, Durkheim, Mannheim & Merton.

CO6:Understand Thomas Kuhn's, Paradigm of Science

CO7:Present Ben David institutional perspective and post Kohnian Sociology of Science; Diane Krane's Communication and international Model – Notion of Techno-Science.

CO8: Analyse the information Technology paradigm and Network Societies

CO9:Understand impact of Information Technology on Society; interface between Bio Technology, Society and Sustainable Development

CO10:Elaborate the relation between Nano Technology, Development and Social Change

CO11: Explain approaches to the environment and sustainable development

Contemporary Sociological Theories

CO1:Explain events and thinkers of Pre-Modernity

CO2:Describe The Project of Modernity; Classical theories and Contemporary Theories .

CO3:Present critique of Modernity and New Philosophy of Science

CO4:Understand critical Theory, Theory of World, Communicative Action

CO5:Describe the Idea, Conditions and theory of Post Modernity

CO6:Present Critique of Post-Modernism

Sociology of Development

CO1: Explain Conceptual Perspective on Development

CO2: Describe Theories of Development.

CO3: Identify paths of Development

CO4: Describe interrelationship between social Structures and Development

CO5: Identify and analyse Development Issues in India

CO6: Describe Development Planning and Policies

Indian Society, Structure and Change

CO1: Explain Approaches to the Study of Indian Society:

CO2: Describe Ethnic Formation of Indian Society; Unique Vs. Mosaic Theory of Indian Society

CO3: Elaborate on foundation of Indian Social Organization

CO4: Describe Caste features and Theories of Origin of Caste

CO5: Analyse Economy and Polity of Kautilya and Foundations of Adwaitha, Dwaitha, Visista adwaitha, etc

CO6: Explain Advent of Islam and Zoroastrianism; Sufism and Bhakti Movements; Colonial Period: Advent of British and Christianity

CO7: Describe the emergence of Modern Structures and Classes

CO8: Contributions of Indian and European thinkers

CO9: Explain Post-Colonial Development: Indian Constitution and its Idea of Democracy

CO10:Describe Planning and Development; Tensions and Conflicts in India; Globalization and Emerging Trends.

Gender and Society

CO1: Explain Gender in Sociological Analysis

CO2: Describe the relation between Social Structure and Gender Inequality

CO3: Understand theories and Perspectives of Feminism

CO4: Analyse the relation between Gender and Development.

CO5: Explain the Politics of Gender (Women's Movements in Pre-Independence and Post-Independence India, Current Women's Movements, Displacement and Eco-Feminism, Women Reservation as Socio-Political Issue)

Development, Management and Research

CO1: Explain the evolution of the concept of Development Management

CO2:Describe Participatory Development and fields of Development

CO3:Understand the development interventions – Role of State, Community based organizations and NGO's in the Development – Various actors implementing these interventions

CO4:Describe the Development Administration in India

CO5:Elaborate on Development Research (Qualitative Research and Quantitative Research

CO6:Understand Proposal writing for Development project and Evaluation of the Development

Project outcomes

CO7:Explain Project Report writing and case studies writing

Sociology of Environment and Sustainable Development

CO1:Explain the concept of Environment and Society, Environmental Sociology

CO2:Describe issues and theoretical approaches of Environment and Ecology

CO3:Explain the interface between Technology, nature and society; Environmental Policy

CO4:Elaborate the Environmental Movements and the role of NGO's in Environmental Movements

CO5:Elucidate sociologist's view of sustainable development; Environmental Management

CO6:Identify Environmental problems and means for environmental awareness

Social Movements in India

CO1: Explain Social Movements and Types of Movements

CO2: Describe Reform Movements

CO3: Describe Radical/ Revolutionary Movements

CO4: Elaborate Regional Movements – DMK, Shiva Sena, Jharkhand, Telangana

CO5: Understand Environmental and Women's Movements

CO6: Explain the impact of Social Movements on Social Policy

Social Anthropology

CO1:Elaborate on meaning, scope and branches of Social Anthropology

CO2:Explain the meaning, characteristics and geographical distribution of Tribes in India

CO3:Describe the concept, characteristics of Culture and Cultural Processes-Diffusion and Evolution

CO4:Describe Cultural Theories: British, American and Chicago School of thoughts - Tylor, Malinowski and Benedict on culture

CO5:Analyse the social institutions in terms of types and functions

CO6:Understand Tribal Economy, Religion and Magic

CO7:Analyse Tribal Problems, Law and Justice – Exploitation of Tribes, Land Alienation and Displacement; Problems of Health and Nutrition;

CO8:Identify the Constitutional Provisions and measures for Tribal Development in India

Theory and Practice of Social work

CO1:Explain Social Work Profession, Philosophy and Ideology

CO2:Understand the Concept of Social Welfare, Social Service and Social Work; Objectives and Goals of Social Work Service: Development and Remedial.

CO3:Describe the Historical Development of Social Work in India

CO4:Highlight the emergence and Development of Social Work as a Profession

CO5:Describe Fields of Social Work Practice

CO6:Elaborate Research Process and Nature of Social Work Research; Role of Research in Social Work Practice.

CO7:Describe Social Work Research and Social Reconstruction.

CERTIFICATE COURSE IN HUMAN RELATIONS AND PERSONALITY DEVELOPMENT

PROGRAMME OUTCOMES

PO1: Facilitate simultaneous persuasion of the present course and regular UG/PG course

PO2:Acquiring educational knowledge and practical training and skills which relevant to new job profiles that are emerging in all sectors

PO3:Learning about interpersonal relations, negotiation skills, counseling and intervention strategies, problem solving and conflict management skills, combating different problems arising out of human relations in various organizations and social structures.

COURSE OUTCOMES

CO1:Explaining Nature and Scope of Sociology and Psychology; Significance in Human Relations and Personality Development

CO2: Understanding about Family, Marriage and Personal Life; Alternatives to family and marriage

CO3: Describing Culture, Society and the Individual- The interrelationship

CO4: Elucidating the role of motivation in life

CO5: Elaborating the nature and development of emotions; Managing the emotions- Anger, Anxiety and Depression

CO6: Explaining Nature and Functions of Personality, Factors affecting the personality; Components of Self Concept (Self-esteem, Self-confidence, Self- assertiveness)

CO7: Developing Positive attitude, Stress Management, Time Management and Conflict Management, enhancing creative thinking, Problem-solving and Decision-making skills.

CO8: Developing Communication Skills and Interpersonal Relationships; identifying the barriers to effective communication

CO9: Elucidating leadership, Traits of leaders, enhancing leadership qualities.

CO10: Importance of Group Dynamics and Team Building

DIPLOMA IN CRIMINOLOGY AND CORRECTIONAL ADMINISTRATION

PROGRAMME OUTCOMES

PO1:Diagnosis the study of human society, Understand Family, kinship, Caste and class Political parties & Trade unions & Social disorganization in India.

PO2: Examine Criminal law Clinical White collar crime Terrorism organized crime & Prostitution

PO3:Analyze Psychology of development evidence eye witness testimony Forensic psychiatry risk assessment Victim rights victim trauma intimate violence spousal abuse child maltreatment

PO4:Examine Constitution of India – Preamble Fundamental rights Indian penal code Voluntarily, Office, Illegal, Oath

PO5: Hierarchy of courts Powers of courts & Lok Ayukta system Police system in India Maintenance of law and order Universal declaration of human rights

PO6:The prison system Goal of imprisonment Prison reforms Moral and cultural education Society for helping released prisoners Prison building and environment

COURSE OUTCOMES

Sociology of Law and Order

CO1: To diagnosis the study of human society Social orders Social process Social change & culture.

CO2: To Understand Family, kinship, Caste and class. Education and society Law and society

CO3: To Examine the Social change in India, Formal organizations Political parties & Trade unions

CO4:To Examine Theories of society, Functionalism, Marxism, Interactionism, Ethno methodology

Crime and Criminolog

CO1:To examine Criminal law Clinical and Relationship between criminology, criminal policy and criminal law

CO2:To see the Positive school of criminology Bio–criminological theories. Theories related to intelligence Schizophrenia and criminality. Psychoanalytic theories (Freudian School)

CO3:To examine White collar crime Juvenile delinquent Terrorism organized crime & Prostitution.

CO4:To examine Steps in social and criminological research Sources of data Statistical approach

Principles of Psychology and Victimology

CO1:To analyze Psychology of development, attention and perception process of learning memory and forgetting motivation attitudes, values and emotions

CO2:Psychology of evidence eye witness testimony acquisition of nature of witnessed incident

CO3:To see the Forensic psychiatry risk assessment clinical prediction actuarial prediction treatment of mentally disordered offender

CO4:To diagnosis Victim rights victim trauma intimate violence spousal abuse child maltreatment and abuse

Legal Aspects of Criminology

CO1:To examine Constitution of India – Preamble Fundamental rights laws in regulating society and quality of life

CO2:To see Indian penal code Voluntarily, Office, Illegal, Oath, Good faith, Common intention, Dishonesty, Mistake of fact, Mistake of law.

CO3:To analysis criminal jurisprudence ignorance of fact and ignorance of law motive consent attempt necessity M'Naghten Rules and insanity

CO4:To examine Narcotic Drugs and Psychotropic Substances Act Arms Act, Prevention of Corruption Act

Criminal Justice Administration

CO1:To examine Criminal justice system in India, Criminal procedure code Hierarchy of courts Powers of courts & Lok Ayukta system

CO2:To see Law enforcement organization Police system in India Maintenance of law and order Police public relations

CO3:To examine Universal declaration of human rights International convenant on civil, political and cultural rights

CO4:To analysis Scientific methods of investigation Forensic scientist and police interaction Expert evidence

Penology and Correctional Administration

CO1:To diagnosis Theories of punishment Utilitarian theory Retributive theory Reformative theory Deterrence theory & Preventive theory

CO2:To The prison system Goal of imprisonment English prison system Indian prison system prison systems in other countries

CO3:To examine Prison reforms Moral and cultural education Society for helping released prisoners Prison building and environment

CO4:To see Juvenile delinquency and juvenile justice Delinquency in children Differential treatment of juvenile offenders' Legal protection of children

DIPLOMA IN DEVELOPMENT MANAGEMENT STUDIES AND DEVELOPMENT RESEARCH METHODOLOGIES

Basic Concepts; Sociology, Political Sciences and Economics

CO1: To understand the basic concepts in Social sciences; rise of nationalism in Third World Societies and Socio-economic development

CO2: To understand the concept, meaning and need of Development; and Ethics of development

CO3: To understand the concept of Human Development; Economic Growth; Development and Health

CO4:To understand the concept of Community Development: Tribal, Rural and Urban Communities and their development

CO5: Understand Social Change and Development: Factors of Change and Development of Marginalized Communities: SC, ST, BC, Women and Minorities.

Theories and Perspectives of Development

CO1:Examine the process of change and development; economic and social development. Explore the pre-Marxian theories of Development and Underdevelopment

CO2:Understand the theories of Economic Development and Under-Development. (Karl Marx theory; Max Weber's theory, Andre Guilder Frank, Samir Amin, Wallerstein's theory)

CO3:Understand Partial theories of development - the theory of big push, the theory of balanced growth. Theories of Social and technological dualism.

CO4:Understand Social structures and Development: Socialist, Mixed and Gandhian path of development. India's Model of Development & Consequences. Modernization, globalization, SEZs and Development

CO5:Understand the Concept of Planning - Social and Economic Planning; Planning and Development with reference to Five Year Plans

Development Methodologies

CO1: Understand major steps in scientific research; research designs.

CO2:Analyze various methods of Data Collection and Sampling methods.

CO3:Understand various methods of Qualitative Research (Participant observation, Ethnography, In-depth interviewing, historical analysis, oral/life histories; focus group methodology.); Qualitative vs Quantitative Research

CO4:Analysis of Qualitative data, questions of reliability and validity, writing a qualitative research report.

CO5:Participatory Rural Appraisal – Principles, Methods and Applications; Attitudes and Behavior of the researcher for Participatory Rural Appraisal

Poverty, Livelihoods, Gender and Human Rights

CO1: To analyze Poverty; Factors affecting rural and urban poverty; Economic Growth and Poverty Reduction Strategies- Aid, Institutions and Development

CO2:Understand the concept of Livelihoods; Sustainability; Alternative livelihoods; Gender and Livelihood; ILO and UN Reports on Livelihood.

CO3:To examine the role of women in development; Employment and Wages; Displacement and Gender; Work and Equity; Harassment; Law and Gender.

CO4:To examine the role of rights in development process.

CO5:To analyze Human Rights in India: Indian Constitution- Fundamental Rights and Directive Principles; Globalization and Emerging challenges in Human Rights.

Environmental Issues in Development

CO1: Understand the concept of Environment and Society: Issues and theoretical approaches. Human Ecology to Eco-Sociology; Eco-Psychology; Global Environmentalism

CO2:To examine Environmental Policy – Environmental law and legislation – Environmental movements: the role of NGO's in Environmental Movements.

CO3:To examine Sustainable and Ecological Development: Definition, origin and implications of the concept; Environmental Management and sustainable development process.

CO4:Understand the importance of Natural Resource Management -Water management, participatory development. Women and Environment, Eco feminism,

CO5:To analyze Environmental Problems: Environmental awareness. Environmental Education and information.

Managing Development

CO1: To understand the role of civil society in development: the role of social forces in social organization and their response to formation of the development policies in India.

CO2:Understand the concept of Retreat of State and the rise of civil society initiatives - voluntarism, voluntary sector - NGOs, QUANGO. Advent of global non-States actors in development.

CO3: To analyze International Institutions and Development Policies; Democracy and People's participation for development

CO4:Critically analyze the role of Third world societies in economic development - State; limitation of the state; Issues of Governance.

CO5:A critical appraisal of State, Civil society and NGOs and development - including victims of development. Case studies from different States of India.

Department of statistics

Students who finish their under graduation in statistics as one of the main subjects acquire good knowledge in all aspects of statistical data analysis and hence offer competitiveness in grabbing Govt jobs at clerical to executive level.

Also they find opportunities in computer software, banking and data analytics. Most of the students who wish to continue further studies shall be ahead in getting seats in their P.G programs.

PROGRAM OUTCOME

PO1: Acquiring enough knowledge of Statistical data analysis for various types of data (Secondary &Primary) in terms of measuring central value , spread and shape of the frequency distribution.

PO2: Learning foundation concepts of probability and its complexities.

PO3: Learning foundation concepts of random variable univariate and bivariate probability distributions and various definitions

PO4: Learning mathematical expectation and various statistical measurements in terms of expectation for univariate and bivariate probability distributions and various generating functions

PO5:Learning discrete distributions and continuous distributions understanding various properties of these probability distributions.

PO6:understanding correlation and regression and principal of least squares, multiple and partial correlation coefficients for three variables.

PO7:Analysis of categorical data association and independence of attributes.

PO8:understanding sampling distributions nad exact sampling distributions viz t, F and chi-square.

PO9:understanding theory of estimation, criterion of good estimator viz unbiasedness, consistancy, efficiency and sufficiency.

PO Sec2: Data collection, Presentation and interpretation.

PO ID Paper- Basic Statistics for non statistics students.

PO10:Being able to test statistical hypothesis for large and small samples also understanding non parametric statistical test procedures.

PO11:Designing sample surveys their advantages over census and estimating population parameters based on various sampling techniques.

PO12:understanding various components of time series and analyzing time series data.

PO13:Understanding various forms of Mathematical linear programming problems viz . Linear programming problem(L.P.P), Transportation problem assignment problem transshipment problem and job sequencing problem also learning how to solve them.

PO14:Understanding vital statistics and Indian official statistics.

PO15:Understanding inference for economic phenomena.

PO16:Designing methods of various statistical experiments for the analysis of variance in the data.

PO17: understand economic barometers viz Index numbers and their construction.

PO18: Understand demand and supply analysis

PO19: Understand statistical quality control of production process through control charts and product control through sampling inspection plans also designing them.

PO20: Understand frame and solve game theory and network problems with their applications.

COURSE OUTCOME

CO1:Given a statistical data condensing, analyzing and interpreting .

Co2: understand given probability distribution and its statistical characteristics.

Co3:Analyze bivariate statistical (Probability distributions) correlation and regression also multiple and partial correlation for three variables .

CO4: Describe estimation theory and statistical inference.

CO5: Analyze economic data Viz time series data, demand and supply data and whole sale and retail price and quantity index numbers.

CO6: Solve mathematical linear programming problems, statistical quality control problems, econometric problems, and reliability.

CO7:Describe vital and Indian official statistics

CO8:Compute various statistical measures and executing various statistical tests and techniques using MS-Excel.

CO9: R software for learning basic statistics analysis and visualization and testing of hypotheses.

Department of Sanskrit

Sanskrit is a very rich language of IE language group. Sanskrit is a medium to know about ancient Indian history, culture, religion, social life through its text. The academic programme of both Second language and Classical Language courses are designed not only professional skill but also develop a deep understanding of rich heritage and dynamic prevalent scenario of India through various Sanskrit texts

PROGRAMM OUTCOME

PO1. Develop a strong concept of ancient Indian history, philosophy and literature.

PO2. Enhance communication skills-Listening, Speaking, Reading, Writing.

PO3.Students will be able to write Devnagari scripts which provide them geographical knowledge to read out the script of modern languages like Telugu and Hindi.

PO4. Increase in depth knowledge of the Core Areas of the subject.

PO5.Students will demonstrate the skill needed to participate in conversation that builds knowledge with collaboration.

PO6.Reasonable understanding of multi-disciplinary relevance of literature of Sanskrit like poetry and prose.,Philosophy, Grammar, Kavya,Drama, Smritisastra etc.

PO7. To make them eligible for higher education.

PO8. Develop research aptitude and independent thinking.

PO9. After becoming graduate students can apply in the field of UPSE, WBCS etc. And also after post-graduation they can apply against teaching posts in schools, colleges and other educational institutions.

PO 10 : Students learn Relationship between Regional Languages and Sanskrit,and impact of Sanskrit language on regional languages vocabulary and grammar.

COURSE OUTCOMES

CO1.Students will be able to know not only ancient literature and their classification but also modern Sanskrit literature.

CO2:they will be manage their cognition, emotive apparatus, confusion and conflict of mind.

CO3.They should general introduction of Indian Petrology and definitions and examples of various artharlankaras.

CO4.The students would learn about the ancient Indian Educational system and Polity, their nature, concepts through the texts ofDharmasastras and Arthasastra.

CO5.The students would know about the historical importance of Indian Epigraphy, Paleography, Chronology and Inscription.

CO6.They will be able to know the importance, propagation across the world of this language.

CO7.Students would know about the Ancient Sanskrit literature , their application, Language grammar, socio-cultural life.

CO8. Grammar is very important part of this language for the making of sentences, to know appropriate meaning of texts, oral communication and perfection.

CO9.Yogashastraand Drametical literature should also help them to know the source of this syllabubs language and the relation between other languages.

CO10.The students will take the knowledge about of Indian philosophy, Philosophers and their thoughts. They could relate the philosophical theory in practical life.

Department of Telugu

PROGRAMM OUTCOMES

PO1. ఏ సమాజానికైనా భాష జీవం వంటిది. అట్లాంటి భాషను లిఖిత రూపంలో విద్యార్థులకు అందించటం వలన సామాజిక ప్రయోజనం నెరవేరుతుంది

PO2. సాహిత్యం సామాజిక ప్రతిబింబం. సమాజంలోని ప్రాకృతిక, మానవ వికాస దశలను లిఖిత రూపంలో సాహిత్యం ఒక తరం నుంచి మరో తరానికి అందిస్తుంది.

PO 3 ఆధునిక సమాజాలలో ప్రింట, ఎలక్ట్రానిక్ మీడియ, సోషల్ మీడియ ప్రాధాన్యత విపరీతంగా పెరిగింది. తెలుగు భాషను చదువుకున్న విద్యార్థులకు ఈ అన్నిరకాల మీడియాలో ఉపాధి అవకాశం దొరుకుతుంది.

PO 4 రచయితలకు సమాజంలో మేధోపరమైన గౌరవం ఉంటుంది. దాదాపుగా రచయితలందరూ సాహిత్య అధ్యయనం వలననే తయారవుతారు. కనుక తెలుగు సాహిత్యాన్ని బోధించడం వలన విద్యార్థులు రచయితలుగా మారే అవకాశం ఉంది.

COURSE PROGRAMM

CO1 పద్యాన్ని చదివి అర్థం చేసుకునే పద్ధతిని నేర్పించడం ఉంటుంది.

CO2 వచన కవిత్వాన్ని చదివి దానిలో ఉన్న వస్తు, శిల్ప నైపుణ్యాలను , వైవిధ్యాన్ని విద్యార్థికి అర్థం చేయించే బోధనా పద్ధతి ఉంటుంది

CO3 కవిత్వ అధ్యయనం వలన విద్యార్థికి భాషా నైపుణ్యం పెరుగుతుంది

CO4 దీని ద్వారా నివేదికా రచన , వ్యాస రచనలో ప్రావీణ్యం పొంది ఉపాధి అవకాశాలను పొందుతారు

CO5 సాహిత్య చరిత్రను అధ్యయనం చేయడం వలన విద్యార్థికి తెలుగు సాహిత్య గత , వర్తమానంపై అవగాహన పెరుగుతుంది .

CO6 వ్యాకరణాన్ని విద్యార్థి అధ్యయనం చేయడం వలన భాషా నిర్మాణం తెలుస్తుంది . అక్షర దోషాలు లేకుండా రాసే శక్తి లభిస్తుంది . దీని వలన అధ్యాపకులుగా ఉపాధిని పొందవచ్చు.

CO7వ్యాకరణ అలంకారాలు , ఛందస్సులను కలిపి సాహిత్య శాస్త్రం అంటారు . ఈ శాస్త్రానికి సంబంధించిన సంపూర్ణ అవగాహన ఈ కోర్సు ద్వారా విద్యార్థికి అందుతుంది

CO7. భాష సాహిత్యాన్ని వ్యక్తీకరించే ఉత్తమ సాధనం . ఈ భాషను విద్యార్థులకు ఈ కోర్సు ద్వారా నేర్పించబడుతుంది.

CO8 లేఖనా నైపుణ్యం భాష ద్వారానే సాధ్యమవుతుంది . విద్యార్థులకు ఈ స్కిల్ను

బోధించడానికి ఈ కోర్సు దోహద పడుతుంది .

CO9 ఈ కోర్సు బోధన వలన విద్యార్థిలో విమర్శనాత్మక దృక్పథం పెరుగుతుంది.

CO10కవులను ప్రత్యక్షంగా కలిసి ఇంటర్వ్యూ చేయడం వలన విద్యార్థులకు మధురానుభూతిగా మిగులుతుంది

CO11 కవుల, రచయితల ప్రభావం విద్యార్థులపై పడి భవిష్యత్లో సృజనశీలురుగా రూపొందుతారు

CO12 ప్రభావశీల కవుల, రచయితల పరిచయం విద్యార్థులు తమ జీవితంలో స్థిరపడడానికి ఉపయోగపడుతుంది

NIZAM COLLEGE
Autonomous
Re-accredited by NAAC with B++
A Constituent College of Osmania University

Department of Zoology

PROGRAM OUTCOME

PO1 - Students gain knowledge and skill in the fundamentals of animal sciences, understands the complex interactions among various living organisms

PO2 – Analyse complex interactions among the various animals of different phyla, their distribution and their relationship with the environment

PO3 – Apply the knowledge of internal structure of cell, its functions in control of various metabolic functions of organisms.

PO4 – Understands the complex evolutionary processes and behaviour of animals

PO5 – Correlates the physiological processes of animals and relationship of organ systems

PO6 – Understanding of environmental conservation processes and its importance, pollution control and biodiversity and protection of endangered species

PO7 – Gain knowledge of Agro based Small Scale industries like sericulture, fish farming, butterfly farming and vermicompost preparation.

PO8 – Understands about various concepts of genetics and its importance in human health

PO9 - Apply ethical principles and commit to professional ethics and responsibilities in delivering his duties

PO10 – Apply the knowledge and understanding of Zoology to one's own life and work

PO11 – Develops empathy and love towards the animals

COURSE OUTCOME

Animal Diversity – Invertebrates

CO1 Describe general taxonomic rules on animal classification

CO2 Classify Protista up to phylum using examples from parasitic adaptation

CO3 Classify Phylum Porifera to Echinodermata with taxonomic keys

CO4 Describe Phylum Nematoda and give examples of pathogenic Nematodes

Animal Diversity – Vertebrates

CO1 Imparts conceptional knowledge of vertbrates, their adaptations and associations in relation to their environment

CO2 Classify phylum Protochordates to Mammalia

CO3 Complex Vertebrate interactions

Animal physiology and Animal Behaviour:

CO1 Seeks to understand the mechanisms that work to keep the human body alive and functioning

CO2 Physiological and biochemical understanding through scientific enquiry into the nature of mechanical, physical, and biochemical functions of humans, their organs, and the cells of which they are composed

CO3 Interactions and interdependence of physiological and biochemical processes.

CO4 Understand Animal behaviour and response of animals to different instincts

CO5 Interaction of biota abiota

CO6 Various kinds of Animal adaptations

Cell Biology, Genetics & Developmental Biology:

CO1 Structural and functional aspects of basic unitof lifei.e cell concepts

CO2 Mendelian and non mendielian inheritance

CO3 Concept behind genetic disorder, gene mutations- various causes associated with inborn errors of metabolism

CO4 Basic concepts of developmental biology

Physiology and Biochemistry:

CO1 Seeks to understand the mechanisms that work to keep the human body alive and functioning

CO2 Physiological and biochemical understanding through scientific enquiry into the nature of mechanical, physical, and biochemical functions of humans, their organs, and the cells of which they are composed

CO3 Interactions and interdependence of physiological and biochemical processes

Entomology:

CO1 Imparts knowledge of beneficial and non-beneficial insects

CO2 Knowledge of how they interact with their environment, other species and humans

CO3 Classification of Insects

CO4 Role of insects in spread of diseases

Sericulture:

CO1 Gives knowledge of silk worm rearing

CO2 Mulberry cultivation

CO3 Pests and diseases associated with silk worm and mulberry

CO4 Various process involved in silk production

Research Methodology:

CO1 Understanding of scientific method, concepts and steps in research

CO2: Differentiate between the Quantitative and Qualitative Research and understand different types of Research Design

CO3: Understand the various techniques of Data Collection- Observation, Questionnaire, Interview Schedule; Case Study, Social Survey, Content Analysis

CO4: Describing various types of Sampling

CO5: Elaborate on Data Processing and Data Analysis

Immunology:

CO1 Imparts in depth knowledge of tissues, cells and molecules involved in host defense mechanisms

CO2 Understanding of types of immunity

CO3 Interactions of antigens, antibodies, complements and other immune components

CO4 Understanding of immune mechanisms in disease control, vaccination, process of immune interactions

Clinical science:

CO1 Gives knowledge related to the techniques involved in detection of various diseases

CO2 Pathology associated with various diseases

CO3 Practical skills of conducting basic clinical lab experiments

CO4 Application of knowledge of clinical science and pathology to one's own life

Animal biotechnology:

CO1 Imparts the Knowledge to culture animal cells in artificial media.

CO2 Knowledge of animal cells in culture, growth of cell lines

CO3 Use in recombinant DNA technology, genetic manipulations and in a variety of industrial processes.

Aquarium fish management

CO1 Provides knowledge of ornamental fish breeding which is highly professional and attractive avenue for youth

Project

CO1: Make research proposal .

CO2: Construct tool of data collection

CO3: Learn fieldwork modalities

CO4: Understand the process of data analysis

CO5: Writing research report (Dissertation)

Structural Biology [SB]

CO1 Allows the students to gain basic knowledge about various bio molecules and their role in metabolism

CO2 Classification of enzymes, enzyme kinetics

CO3 Metabolism of carbohydrates, nucleic acids and metabolic disorders

CO4 Gains understanding of cellular organization and functional biology of nucleic acids

Environmental and Conservation Biology [ECB]

CO1 Imparts knowledge to the student regarding environment and conservation biology.

CO2 Gains knowledge in the areas of responses to Laws of limiting factor, Law of minimum, Laws of Tolerance and Tragedy of commons

CO3 Types of ecosystem – freshwater, marine and terrestrial

CO4 Population characteristics and dynamics – conceptual approach

CO5 Growth curves and pyramids; sigmoid curve, J curve and hyperbola; logistic equation and concepts relating to growth

CO6 The students will be well equipped to become very competent in research or teaching fields after completion of this course

Immunology [IMM]

CO1 Provides basics knowledge about immune system and allows the student to create insight as how to improve their immune system and good health.

CO2 Types of immunity, antigens-antibodies and their properties

CO3 Complement system, MHC's and immune responses

CO4 Understanding of types of hypersensitivity reactions and auto immune diseases

CO5 Ability to understand concepts of tumor immunology and transplantation immunology

Taxonomy, Systematics and Functional Anatomy of Invertebrates [TSFAI]

CO1 Imparts knowledge regarding the various Invertebrates species and the regulatory processes to safeguard them

CO2 With the study of this paper students gain knowledge in the areas of responses to Systematic position, general organization and affinities of Ctenophora and Nemertea

CO3 Rhynchoceola; Systematic position, general organization and affinities of Rotifera;

CO4 Systematic position, general organization and affinities of Hemichordata

CO5 The students will be well equipped to become very competent in research or teaching fields after completion of this course

Tools, Techniques and Biostatistics [TTB]

CO1 Students gain knowledge about various tools & techniques used in biological systems and givesthem insight about their usein research.

CO2 Biostatistics teaches them to use the best data analysis methods in their research projects

CO3 Students gains knowledge about statistical methods like measures of central tendencies, Probability

CO4 Learns about hypothesis testing and inferential statistics

CO5 Learns the problem-solving methods

Animal Physiology [AP]

CO1 Imparts knowledge about various metabolic and physiological mechanisms of the human body.

CO2 Understands about neurophysiology and receptors

CO3 Gain knowledge about hormones and bioluminescence

CO4 Understanding of stress physiology and endocrine mechanisms will allow them to control their stress and emotions there by diverting their energy towards the positive nation building activities

Molecular Genetics and Developmental Biology [MGDB]

CO1 Knowledge about genetics, developmental biology and organogenesis

CO2 Application of DNA technology and molecular biology for research

CO3 Gains knowledge about gametogenesis, cleavage mechanisms, gastrulation and role of hormones in metamorphosis and regeneration

CO4 Provides students insight into maintaining healthy relationships with their opposite gender and allows them to make right choice about their life partner thus preventing congenital/consanguial diseases.

Evolution and Functional Anatomy of Vertebrates [EFAV]

CO1 Imparts knowledge regarding the various theories of evolution, evolutionary process such as variation, speciation, natural selection, origin of primates and man

CO2 Understanding of origin and salient features of Ostracoderms to Actinopterygii, adaptive radiation of Amphibians, Reptiles, birds and Mammals

CO3 Gains knowledge of functional anatomy of vertebrates from fishes to mammals

CO4 Understanding of evolutionary significance of internal fertilization, neoteny and paedogenesis .

CO5 Identifies the significance of amniotic egg its structure and evolutionary significance of skeletal system

Systems Biology[SB]

CO1 Imparts knowledge regarding the various concepts of systems biology, systems approach and its application in biological systems

CO2 The structural biology paper is physiological chemistry of all the bio molecules.

CO3 The paper imparts thorough knowledge in the fundamentals of biochemistry of all the biomolecules like carbohydrates ,proteins,lipids,nucleic acids, their classification structure and metabolism.

CO4 Understanding of Mammalian biological clocks, Sustainable pest and disease management and bioremediation

CO5 Develops skills of Insect outbreak models, Data formats, simulation techniques, modelling tools

CO6 Application, characterization and interactions ofnanoparticles in biological systems

Research Methodology [RM]

CO1 The course provides wide knowledge about research, experimental & sampling design,

CO2 Data collection, analysis & interpretation of data and allows student to present the research data in scientific method

CO3 Gains skill to solve problems using inferential statistical tools

CO4 Learns to collect literature collection, literature citation, and components of research report – Text, tables, figures, bibliography.

CO5 Writing of dissertations, project proposals, project reports, research papers.

CO6 Intellectual Property Rights – Biopiracy, copyrights, patent and traditional knowledge and plagiarism.

CO7 Understanding of Laboratory safety measures, laboratory good practices, animal model systems, animal ethics- animal welfare guidelines for care and use of animals.

Comparative Animal Physiology I

CO1 Comparative animal physiology is a comprehensive subject that gives in depth knowledge of various physiological processes in the animal kingdom .

CO2 students gain knowledge about the comparative physiological concepts of nutrition digestion respiration excretion metabolism and osmoregulation.

CO3 Course provides students comprehensive understanding about neurobiology, neurophysiology, molecular neurobiology

CO4 Understanding of cognitive/behaviour neurobiology, thus allowing then to correlate the human behaviour under given situation.

CO5 It gives comprehensive understanding regarding inborn disorders and deranged metabolisms.

CO6 Students feel confident in teaching physiology as well as executing research projects

Comparative animal physiology- II

CO1 With the study of this paper students gain knowledge in the areas of responses to environment with study of receptors CNS integration of behavior

CO2 Understanding of the functions of effectors in all aspects as well as the circulatory physiology and reproduction and adaptations by animals to environment

CO3 The students will be well equipped to become very competent in research.

CO4 The course provides employability in teaching fields

Applied Toxicology

CO1 It is a discipline overlapping with biology, chemistry, medicine that involves the study of toxicants, their mechanism of action.

CO2 It involves the study of the adverse effects of chemical substances on living organisms.

CO3 Skill development in environmental and occupational Toxicology

CO4 It provides opportunities for students research projects, internships in assessing the effects of toxic pollutants on the environment and in the food chain

Medical Entomology I & II

CO1 Medical Entomology is an integral part of applied ecology involving the study of diverse ecto and endoparasites

CO2 Understanding of fundamental complement of numerous diseases which have significant impact on human health

CO3 Understanding ofInsect vector host interactions of many important diseaseslike Malaria, Filaria, Dengue etc.

CO4 Understanding of denudation of forests its results in increased human vector contact which have become almost irreversible.

CO5 Course gives insight into physiology, biochemistry and reproduction of insect vectors and their control measures.

CO6 Students gain knowledge about the concepts of overview of Entomology

CO7 Source reduction and environmental methods for vector control, biological control and other Insect bites

CO8 Knowledge of hormonesand Insects

CO9 Students gets good insight into how Medical Entomology is acting as a promising factor for entomologist vacancies in both public and private sectors

CO10 Student gains knowledge regarding vector born diseases their pathology, control measures, thus aiming at 'Swach and Swasth Bharat'

CO11 Students feel confident in teaching Medical Entomology as well as executing research projects

Sericulture

CO1 Gives knowledge of silk worm rearing, mulberry cultivation, pests and diseases associated with silk worm, mulberry and various process involved in silk production.

CO2 It is an agro based cottage industry in India that enables them to get self-employment

CO3 Sericulture is a comprehensive subject that gives in depth knowledge of the study of silkworms both physiological as well as commercial purposes including the various processes involved in the formation of silk.

CO4 Students gain knowledge about various systems of silkworms, Harvesting of cocoons, Defective cocoons

CO5 Silk reeling and testing of silk

CO6 Students feel confident in teaching Sericulture as well as executing research projects

Animal Biotechnology[AB]

CO1 It gives insight into various cell/tissues culture techniques

CO2 Understanding of in vitro culturing of organisms and production of transgenic animals.

CO3 Understanding of cloning of mammals, large scale culture and production from recombinant microorganisms

CO4 Gains skills in medical, environmental biotechnology, biopesticides, Biotechnology of aquaculture and use of animals as bioreactors

CO5 This insight allows students to take into consideration about ethical issues involved in production transgenic animals and BT products.

Fish Biology [FB]

CO1 Course provides them comprehensive understanding about aquatic ecosystem and various economical important fishes.

CO2 Students gain knowledge in the areas of responses characterization and classification of Ostracoderms, placoderms, acanthodians,holocephali,elasmobranchs.

CO3 Students gain knowledge of integumentary system - basic structure of skin, dermal and epidermal pigments, fins, andscales.

CO4 Understanding of embryogenesis - Early development and post embryonic development

CO5 Understanding of fishes habits and habitats and their functional anatomy

CO6 The students will be well equipped to become very competent in research or teaching fields

CO7 It is one of the small scale industry which can provide the student employment opportunity.

Instrumentation and computer applications in biology

CO1 Understanding of basic concepts of instrumentation such as cell fractionation, homogenation and centrifugation

CO2 Students gain skills in techniques of chromatography, electrophoresis, spectroscopy and radioisotopes

CO3 Students gain skills in histological, immunological and electrophysiological techniques

CO4 Students gain skills in basics of computers, operating systems, overview of programming languages

CO5 Application of internet and statistical bioinformatics in research

Agricultural Nematology CO1 Students gain knowledge of nematodes, their taxonomic importance, collection and fixation

CO2 Understanding of morphology of nematodes, life cycles, pathogenic and predatory nematodes

CO3 Understanding of feeding mechanisms of nematodes and nematode associations

CO4 Students gain skills of various kinds of nematode control measures .

CO4 Understand Animal behaviour and response of animals to different instincts

CO5 Interaction of biota abiota

CO6 Various kinds of Animal adaptations

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