B.Com Model I Taxation

Programme Outcomes

At the end of three year B.Com programme, the students will be able to :-

PO 1- Build a strong foundation in accounting, management and business subjects

PO 2- Seek variety of career options in accounting, management and business related fields

PO 3- Equip with skills and knowledge to excel in their future careers

PO 4- Develop critical thinking skills in students

PO 5- Enter master programmes like M.Com, MBA and pursue professional programmes like C.A, CMA, C.S, etc.

PO 6- Develop entrepreneurial skills

Programme Specific Outcomes

At the end of three year B.Com Model I programme with specialisation in Finance and Taxation, the students will be able to:-

PSO 1- Understand the application of business Knowledge in both theoretical and practical aspects.

PSO 2- Determine the procedures and schedules to be followed on preparing financial statements of Companies.

PSO 3- File Income tax return and compute the tax liability of individuals

PSO 4- Develop proficiency in the management of an organisation

PSO 5- Attain skills in conducting business transactions online

PSO6 - Learn the basic skills for the effective utilisation of funds

PSO7 - Follow the ethics pertaining to business transactions

Course Outcomes

After completing each course under three year B.Com programme with specialisation in Finance and Taxation, the students will be able :-

SEMESTER 1

Core Course -1: DIMENSIONS AND METHODOLOGY OF BUSINESS STUDIES

CO1- To understand business and its role in society

CO2- To have an understanding of Business ethics and CSR

CO3- To comprehend the business environment and various dimensions

CO4- To familiarise Technology integration in business

CO5- To introduce the importance and fundamentals of business research

Core Course -2: FINANCIAL ACCOUNTING– I

CO1- To equip the students with the skill of preparing accounts and financial statements of various types of business units other than corporate undertakings

CO2- To introduce single entry system of accounts

CO3- To enable students with the skills to prepare royalty accounts,

CO4- To understand the system of preparing consignment accounts

CO5- To familiar with the procedure involved in the farm accounts.

Core Course -3: CORPORATE REGULATIONS AND ADMINISTRATION

CO1- To understand the provisions of Company Act 2013.

CO2- To familiarize on capital structure and the procedure of share allotment.

CO3- To attain knowledge on rights and duties of shareholders, members and types of meetings in the companies.

CO4- To familiar with rules and regulations relating to appointment of directors

CO5- To acquire the knowledge on modes and procedure of winding up of companies

Complementary Course 1: BANKING AND INSURANCE

CO1- To familiarize the students with the basic concepts and practice of banking and the principles of Insurance

CO2- To provide the students an understanding about recent trends and innovations in the banking sector.

CO3- To provide basic awareness to students about the concept of risk and various types of insurance.

CO4- Gain knowledge on various kinds of life insurance plans

CO5- Familiarize the types of the general insurance in India

SEMESTER 2

Core Course -4 FINANCIAL ACCOUNTING – II

CO1- To gain knowledge on preparation of accounts in Hire purchase and Instalment system.

CO2- To acquire the skill to prepare different types of branch accounts.

CO3- To transform the accounting knowledge in preparing departmental accounting.

CO4- To familiar with the procedure involved in the dissolution of partnership firms.

CO5- To familiarize students with the application of important accounting standards.

Core Course -5 BUSINESS REGULATORY FRAMEWORK

CO1- To understand the rules governing Indian Contract Act

CO2- To familiarize the rights and discharges of duties by parties in Indemnity, Guaranty, Bailment and Pledge

CO3- To acquire knowledge of rules governs setting up of agency and termination of agency

CO4- To understand the legal provisions of Sale of Goods Act.

CO5- To know the legal provisions of the laws relating to business.

Core Course -6: BUSINESS MANAGEMENT

CO1- To acquire knowledge on principles of management

CO2- To understand the corporate strategic planning techniques

CO3- To acquire the knowledge on organization structure

CO4- To familiarize with the different types of leadership

CO5- To acquaint students with various the techniques of controlling and co-ordination management techniques like Quality Circle, TQM, BPR and Six Sigma

Complementary Course 2– PRINCIPLES OF BUSINESS DECISIONS

CO1- To help the students to understand Decision-making and application of economic theories in decision-making

CO2- To acquaint students with concept of demand, demand theory demands forecasting

CO3- To imparting idea about production function and analysis

CO4- To enable the students to understand Cost analysis

CO5- To make the students familiar with the pricing in different markets

SEMESTER 3

Core Course -7 CORPORATE ACCOUNTS – I

CO1- To make the students familiarise with the rules relating to issues of shares and debentures.

CO2- To make the students familiarise with the rules relating to underwriting of shares

CO3- To familiar with computation of the financial results of companies

CO4- To familiar with preparation of Investments account

CO5- To familiar with computation of Insurance claims

Core Course -8 QUANTITATIVE TECHNIQUES FOR BUSINESS – I

CO1- To explain the features and methods of statistics

CO2- To apply the appropriate sampling survey method and collect data

CO3- To calculate an appropriate measure of central tendency

CO4- To calculate an appropriate measure of dispersion

CO5- To interpolate and extrapolate a value from a series and use it for forecasting

Core Course -9 FINANCIAL MARKETS AND OPERATIONS

CO1- To introduce the operations of Indian financial system to the students

CO2- To create awareness regarding the operations of primary market in India

CO3- To understand the role of secondary market in the financial market operations

CO4-To gain knowledge about the mutual funds, its operations, advantages and disadvantages

CO5- To acquire knowledge about the various derivative instruments deal in the Indian financial market

Core Course 10: MARKETING MANAGEMENT

CO1- To understand the marketing concepts and marketing environment.
CO2- To acquire knowledge on product planning and product life cycle.
CO3- To gain knowledge on choice of distribution channels and pricing strategies.
CO4- To understand the various methods of promotion.
CO5- To understand the peculiarities of marketing, marketing of agricultural products and functions of commodity market.

Optional Core 1: GOODS AND SERVICE TAX

CO1- To provide knowledge about goods service tax
CO2- To create employability to the students in the commercial tax practices
CO3- To understand the procedure for registration, payment and refundof GST
CO4- To know tax related with movement of goods
CO5- To understand the appeals, offences and penalties with respect to GST

SEMESTER 4

Core Course 11: CORPORATE ACCOUNTS – II

CO1- To compute the final accounts for a corporate group like banking companies
CO2- To compute the final accounts for insurance companies
CO3- To give a detailed idea about internal reorganization of companies
CO4- To apply the knowledge gained in preparation of final accounts of amalgamated companies
CO5- To study the procedure followed for the liquidation of companies

Core Course 12: QUANTITATIVE TECHNIQUES FOR BUSINESS- II

CO1- To provide exposure on calculation of measures of correlation
CO2- To provide l exposure on calculation of Regression
CO3- To acquaint students with the concept of index number
CO4- To introduce the students about the concept of provability
CO5- To acquire knowledge about time series analysis

Core Course -13 ENTREPRENEURSHIP DEVELOPMENT AND PROJECT

MANAGEMENT

CO1- To understand the concept, functions and growth of entrepreneurship
CO2- To familiarise with project identification and feasibility analysis
CO3- To learn to design and appraise the project and factors influencing the plant location.
CO4- To acquire the knowledge on formalities and documentation for registration
CO5- To understand the government policies for the growth of SSIs

Optional Core 2: FINANCIAL SERVICES

CO1- To create basic idea about financial services and merchant baking
CO2- To facilitate the knowledge about venture capital and securitization
CO3- To understand the concept of leasing and factoring
CO4- To familiarity with the credit rating
CO5- To aware about the concept of mergers and acquisitions

SEMESTER 5

Core Course 14: COST ACCOUNTING- I

CO1- To understand the concept of costing and related terms.
CO2- To familiarity with the estimation and controlling of material cost
CO3- To understand the estimation and controlling of labour cost
CO4- To familiarity with the estimation of overhead cost
CO5- To able to prepare cost sheet

Core Course 15: ENVIRONMENT MANAGEMENT AND HUMAN RIGHTS

CO1- To give the students an understanding of natural resources and ecosystems
CO2-To create awareness among students about the importance of biodiversity and its conservation.
CO3- To create awareness among students about the consequences of pollution and possible solutions to avoid pollution
CO4- To familiarize students with human rights
CO5- To examine the application of Human rights in the field

Core Course 16: FINANCIAL MANAGEMENT

CO1- To learn the theoretical foundations of financial management and Financial management decisions.
CO2- To familiarize the theories of capital structure and the concept of cost of capital
CO3- To evaluate feasibility of various investment options
CO4- To provide basic knowledge about working capital management .
CO5- To understand the factors determining dividend policy adopted by companies.

Optional Core 3: INCOME TAX I

CO1- To collect the basic concepts and definitions of Income Tax Act 1961
CO2- To know the residential status of assesse and incomes exempted from tax
CO3- To familiar with the computation of income from salary
CO4- To familiar with the computation of income from house property
CO5- To familiar with the computation of income from business and profession

OPEN COURSE: FUNDAMENTALS OF ACCOUNTING

CO1- To familiarize the students with the basic accounting principles and practices in business

CO2- To enable students to record transactions in the books of original entry.

CO3- To enable students to post the transactions to the ledger

CO4- To enable students to prepare the final accounts.

SEMESTER 6

Core Course 17: COST ACCOUNTING- II

CO1- To enable the students to understand job costing, batch costing and contract costing.
CO2- To understand the students the different operating methods to control and reduce cost of rendering services
CO3- To inform the students about the methods of costing and also used to ascertain the cost at each stage of manufacturing
CO4- To aware the students to analyse the behavior of cost in relation to changes in volume of Output
CO5- To understand the students about the different tools in the hands of management for effective utilization of resources.

Core Course 18: ADVERTISEMENT AND SALES MANAGEMENT

CO1- By knowing about the various concepts related to advertisements, students will be able to identify misleading and false advertisements and will also get a general idea about framing advertisements.
C02- The students will acquire copy writing skills and will also be equipped with the ability to choose a particular medium for advertisement.

C03- The students will be able to decide an appropriate test for measuring the effectiveness of advertisement as they become aware of various tests for measuring the effectiveness of advertisements.

C04- Enable the students to prepare sales promotion budget and the knowledge about various sales promotion strategies may benefit those students who dream of a career in salesmanship.

C05- The students will be able to formulate their own strategies to manage sales force in their client organization.

Core Course 19 : AUDITING AND ASSURANCE

CO1- To acquaint themselves about the concepts and principles of auditing , auditing process and the objectives of auditing

CO2-To familiarize with basic terms used in auditing

CO3-To know more about internal control and internal check system

CO4-To understand the duties and liabilities of a company auditor

CO5-To get knowledge about preparation of audit report

CO6-To understand more about government audit ,audit of charitable and educational organizations, hospitals, clubs etc.

Core Course 20 : MANAGEMENT ACCOUNTING

CO1- To understand the basic concepts of management accounting

CO2- To understand the analysis of financial statements by using various methods

CO3- To enable the students to understand different ratios used for analyzing financial Statements

CO4- To helps the students to prepare fund flow statement for the business organization

CO5- To helps the students to prepare the cash flow statement required for the business

Optional Core-4: INCOME TAX II

CO1- To familiar with the computation of capital gain

CO2- To familiar with the computation of income from other sources

CO3- To know about the aggregation of income and deduction u/s 80C to 80U

CO4- To know about the assessment of individuals

CO5- To aware about the income tax authorities and their powers and duties.

B.Com Model III Computer Application

Programme Outcomes

At the end of three year B.Com programme, the students will be able to :-

PO 1- Build a strong foundation in accounting, management and business subjects

PO 2- Seek variety of career options in accounting, management and business related fields

PO 3- Equip with skills and knowledge to excel in their future careers

PO 4- Develop critical thinking skills in students

PO 5- Enter master programmes like M.Com, MBA and pursue professional programmes like C.A, CMA, C.S, etc.

PO 6- Develop entrepreneurial skills

Programme Specific Outcomes

At the end of three year B.Com programme with specialisation in Computer Application, the students will be able to:-

PSO 1- Understand the application of business Knowledge in both theoretical and practical aspects.

PSO 2- Determine the procedures and schedules to be followed on preparing financial statements of Companies.

PSO 3- Understand the basic concepts and functions of accounting, trade and computer software

PSO 4- Develop proficiency in the management of an organisation

PSO 5- Attain skills in conducting business transactions online

PSO6 – Analyse the scope of the business by adopting modern technology in the business practice

PSO7 - Follow the ethics pertaining to business transactions

COURSE OUTCOMES

After completing each course under three year B.Com programme with specialisation in Computer Application, the students will be able :-

SEMESTER 1

Core Course -1: DIMENSIONS AND METHODOLOGY OF BUSINESS STUDIES

CO1 To understand business and its role in society

CO2 To have an understanding of Business ethics and CSR

CO3 To comprehend the business environment and various dimensions

CO4 To familiarise Technology integration in business

CO5 To introduce the importance and fundamentals of business research

Core Course -2: FINANCIAL ACCOUNTING– I

CO1 To equip the students with the skill of preparing accounts and financial statements of various types of business units other than corporate undertakings

CO2 To introduce single entry system of accounts

CO3 To enable students with the skills to prepare royalty accounts,

CO4 To understand the system of preparing consignment accounts

CO5 To familiar with the procedure involved in the farm accounts.

Core Course -3: CORPORATE REGULATIONS AND ADMINISTRATION

CO1 To understand the provisions of Company Act 2013.

CO2 To familiarize on capital structure and the procedure of share allotment.

CO3 To attain knowledge on rights and duties of shareholders, members and types of meetings in the companies.

CO4 To familiar with rules and regulations relating to appointment of directors

CO5 To acquire the knowledge on modes and procedure of winding up of companies

Complementary Course 1: BUSINESS COMMUNICATION AND MANAGEMENT INFORMATION SYSTEM

CO1 Apply business communication strategies and principles to exchange information.

CO2 Learn to write business letters.

CO3 Attain oral communication skill for effective oral presentation.

CO4 Acquire skills to prepare reports.

CO5 Enrich written communication skill for employability.

Complementary Course 2: BANKING AND INSURANCE

CO1 To familiarize the students with the basic concepts and practice of banking and the principles of Insurance

CO2 To provide the students an understanding about recent trends and innovations in the banking sector.

CO3 To provide basic awareness to students about the concept of risk and various types of insurance.

CO4 Gain knowledge on various kinds of life insurance plans

CO5 Familiarize the types of the general insurance in India

SEMESTER 2

Core Course -4 FINANCIAL ACCOUNTING – II

CO1 To gain knowledge on preparation of accounts in Hire purchase and Instalment system.

CO2 To acquire the skill to prepare different types of branch accounts.

CO3 To transform the accounting knowledge in preparing departmental accounting.

CO4 To familiar with the procedure involved in the dissolution of partnership firms.

CO5 To familiarize students with the application of important accounting standards.

Core Course -5 BUSINESS REGULATORY FRAMEWORK

CO1 To understand the rules governing Indian Contract Act

CO2 To familiarize the rights and discharges of duties by parties in Indemnity, Guaranty, Bailment and Pledge

CO3 To acquire knowledge of rules governs setting up of agency and termination of agency

CO4 To understand the legal provisions of Sale of Goods Act.

CO5 To know the legal provisions of the laws relating to business.

Core Course -6: BUSINESS MANAGEMENT

CO1 To acquire knowledge on principles of management

CO2 To understand the corporate strategic planning techniques

CO3 To acquire the knowledge on organization structure

CO4 To familiarize with the different types of leadership

CO5 To acquaint students with various the techniques of controlling and co-ordination management techniques like Quality Circle, TQM, BPR and Six Sigma

Complementary Course -3 –BUSINESS ENVIRONMENT

CO1 To understand the elements of environment and its impact on business

CO2 To familiar with economic environment of business

CO3 To familiar with Government policies in business promotions

CO4 To gain knowledge on economic role of government in India

CO5 To appreciate the new technology policy and legal protection for natural environment and their impact on business

Complementary Course -4 – PRINCIPLES OF BUSINESS DECISIONS

CO1 To help the students to understand Decision-making and application of economic theories in decision-making

CO2 To acquaint students with concept of demand, demand theory demands forecasting

CO3 To imparting idea about production function and analysis

CO4 To enable the students to understand Cost analysis

CO5 To make the students familiar with the pricing in different markets

SEMESTER 3

Core Course -7 CORPORATE ACCOUNTS – I

CO1 To make the students familiarise with the rules relating to issues of shares and debentures.

CO2 To make the students familiarise with the rules relating to underwriting of shares

CO3 To familiar with computation of the financial results of companies

CO4 To familiar with preparation of Investments account

CO5 To familiar with computation of Insurance claims

Core Course -8 QUANTITATIVE TECHNIQUES FOR BUSINESS – I

CO1 To explain the features and methods of statistics

CO2 To apply the appropriate sampling survey method and collect data

CO3 To calculate an appropriate measure of central tendency

CO4 To calculate an appropriate measure of dispersion

CO5 To interpolate and extrapolate a value from a series and use it for forecasting

Core Course -9 FINANCIAL MARKETS AND OPERATIONS

CO1 To introduce the operations of Indian financial system to the students

CO2 To create awareness regarding the operations of primary market in India

CO3 To understand the role of secondary market in the financial market operations

CO4 To gain knowledge about the mutual funds, its operations, advantages and disadvantages

CO5 To acquire knowledge about the various derivative instruments deal in the Indian financial market

Core Course 10: MARKETING MANAGEMENT

CO1 To understand the marketing concepts and marketing environment.

CO2 To acquire knowledge on product planning and product life cycle.

CO3 To gain knowledge on choice of distribution channels and pricing strategies.

CO4 To understand the various methods of promotion.

CO5 To understand the peculiarities of marketing, marketing of agricultural products and functions of commodity market.

Complementary Course 5: BUSINESS ETHICS AND CORPORATE SOCIAL RESPONSIBILITY

CO1 To recollect concepts on ethical management practices in the business and appreciate the value system of ancient times and its applicability to modern business situations

CO2 To bring up value system in an organization based on ethics and provide knowledge about ethical decision making

CO3 To know the role of ethics in corporate governance.

CO4 To create knowledge about ethics and its application in functional areas of business

CO5 To create knowledge about ethics and corporate social responsibility

Optional Core 1: INFORMATION TECHNOLOGY FOR BUSINESS

CO1 To provide knowledge about computer hardware and softeware

CO2 To facilitate knowledge about application of IT in education, commerce,business and Industry

CO3 To understand different types of

CO4 To enable students to create webpages

CO5 To provide information about internet and its advantages and disadvantages.

SEMESTER 4

Core Course 11: CORPORATE ACCOUNTS – II

CO1 To compute the final accounts for a corporate group like banking companies

CO2 To compute the final accounts for insurance companies

CO3 To give a detailed idea about internal reorganization of companies

CO4 To apply the knowledge gained in preparation of final accounts of amalgamated companies

CO5 To study the procedure followed for the liquidation of companies

Core Course 12: QUANTITATIVE TECHNIQUES FOR BUSINESS- II

CO1 To provide exposure on calculation of measures of correlation

CO2 To provide l exposure on calculation of Regression

CO3 To acquaint students with the concept of index number

CO4 To introduce the students about the concept of provability

CO5 To acquire knowledge about time series analysis

Core Course -13 ENTREPRENEURSHIP DEVELOPMENT AND PROJECT MANAGEMENT

CO1 To understand the concept, functions and growth of entrepreneurship

CO2 To familiarise with project identification and feasibility analysis

CO3 To learn to design and appraise the project and factors influencing the plant location.

CO4 To acquire the knowledge on formalities and documentation for registration

CO5 To understand the government policies for the growth of SSIs

Complementary Course 6: LOGISTICS AND SUPPLY CHAIN MANAGEMENT

CO1 To learn about the importance of logistics to business organizations, provide a brief overview of the set of activities that make up the logistics process

CO2 To understand the nature of inventory and its role in the logistics management process , identify the goals and objectives of inventory management, and measure their process against these goals learn how to calculate safety stock, reorder points, and order quantities , understand the need for and how to maintain better inventory accuracy

CO3 To define and describe Supply Chain Management, understand the relationship between Supply chain Management and Integrated Logistics

CO4 To examine why Supply Chain Management has become increasingly important in today's business environment

CO5 To be familiar with and able to use identification systems correctly in different processes and identify the technologies needed for the traceability of the materials in the logistics chain of the company

Optional Core 2: INFORMATION TECHNOLOGY FOR OFFICE

CO1 To enable the students to master in Ms Word 2013

CO2 To enable the students to master in adobe page maker

CO3 To enable the students to master in Ms Excel 2013

CO4 To enable the students to master in advanced Ms Excel 2013

CO5 To enable the students to master in Ms Powerpoint 2013

SEMESTER 5

Core Course 14 : COST ACCOUNTING- I

CO1 To understand the concept of costing and related terms.

CO2 To familiarity with the estimation and controlling of material cost

CO3 To understand the estimation and controlling of labour cost

CO4 To familiarity with the estimation of overhead cost

CO5 To able to prepare cost sheet

Core Course 15: ENVIRONMENT MANAGEMENT AND HUMAN RIGHTS

CO1 To give the students an understanding of natural resources and ecosystems

CO2 To create awareness among students about the importance of biodiversity and its conservation.

CO3 To create awareness among students about the consequences of pollution and possible solutions to avoid pollution

CO4 To familiarize students with human rights

CO5 To examine the application of Human rights in the field

Optional Core 3: COMPUTERISED ACCOUNTING

CO1 To equip the students to meet the demands of the industry by mastering them with industry sought after computerized accounting packages.

CO2 To expose the students to computer applications in the field of accounting.

CO3 To develop practical skills in the application of tally accounting packages

CO4 To develop awareness regarding statutory features especially GST features

CO5 To make the students make aware of the payroll information and vouchers

Complementary Course 7: E COMMERCE

CO1 Recognizes the impact of Information and Communication Technologies, on the Internet in business Operations.

CO2 Acquire knowledge in identifying the main business and marketplace models for electronic Communications and Trading

CO3 Understanding Electronic Payment System and its environment.

CO4 Make ethical decisions related to ecommerce based on laws, privacy, and security.

CO5 Analyze the steps, tools, and security considerations needed create an E- commerce websites

SEMESTER 6

Core Course 17: COST ACCOUNTING- II

CO1 To enable the students to understand about job costing, batch costing and contract costing.

CO2 To understand the students the different operating methods to control and reduce cost of rendering services

CO3 To inform the students about the methods of costing and also used to ascertain the cost at each stage of manufacturing

CO4 To aware the students to analyse the behavior of cost in relation to changes in volume of Output

CO5 To understand the students about the different tools in the hands of management for effective utilization of resources.

Core Course 18: ADVERTISEMENT AND SALES MANAGEMENT

CO1- By knowing about the various concepts related to advertisements, students will be able to identify misleading and false advertisements and will also get a general idea about framing advertisements.

C02- The students will acquire copy writing skills and will also be equipped with the ability to choose a particular medium for advertisement.

C03- The students will be able to decide an appropriate test for measuring the effectiveness of advertisement as they become aware of various tests for measuring the effectiveness of advertisements.

C04- Enable the students to prepare sales promotion budget and the knowledge about various sales promotion strategies may benefit those students who dream of a career in salesmanship.

C05- The students will be able to formulate their own strategies to manage sales force in their client organization.

Core Course 19 : MANAGEMENT ACCOUNTING

CO1 To understand the basic concepts of management accounting

CO2 To understand the analysis of financial statements by using various methods

CO3 To enable the students to understand different ratios used for analyzing financial Statements

CO4 To helps the students to prepare fund flow statement for the business organization

CO5 To helps the students to prepare the cash flow statement required for the business

Optional Core-4: SOFTWARE FOR BUSINESS AND RESEARCH

CO1 To impart knowledge to use IT in business research analysis

CO2 To analyze data for business research

CO3 To enable student to use SPSS for business research analysis

CO4 To equip the students to use Libre office writer for research

CO5 To help the students to use Libre office calc for business research operations

Complementary Course 8: DATABASE MANAGEMENT SYSTEM

CO1 It provide students about the key concepts and database terminologies

CO2 It provide the students awareness about different data models and relationships in database and how to efficiently organize data in a database

CO3 It enable the students to create database in MS access 2013

CO4 It enable students to analyze and update data in database using queries

CO5 It enable the students to generate reports using Ms Access 2013

B.Com Model III Office Management and Secretarial Practice

Programme Outcomes

At the end of three year B.Com programme, the students will be able to :-

PO 1- Build a strong foundation in accounting, management and business subjects

PO 2- Seek variety of career options in accounting, management and business related fields

PO 3- Equip with skills and knowledge to excel in their future careers

PO 4- Develop critical thinking skills in students

PO 5- Enter master programmes like M.Com, MBA and pursue professional programmes like C.A, CMA, C.S, etc.

PO 6- Develop entrepreneurial skills

Programme Specific Outcomes

At the end of three year B.Com programme with specialisation in Office Management and Secretarial Practice, the students will be able to:-

PSO 1- Understand the application of secretarial practices in both theoretical and practical aspects.

PSO 2- Determine the procedures and schedules to be followed on preparing financial statements of Companies

PSO 3- Understand the basic concepts and functions of administration

PSO 4- Develop proficiency in the management of an organisation

PSO 5- Attain necessary skills for effective business communication

PSO6 - Analyse the administrative and secretarial practices which constitutes effectiveness to the business

PSO7 - Follow the ethics pertaining to business transactions

Course Outcomes

After completing each course under three year B.Com programme with specialisation in Office Management and Secretarial Practice, the students will be able :-

SEMESTER 1

Core Course -1: DIMENSIONS AND METHODOLOGY OF BUSINESS STUDIES

CO1 To understand business and its role in society

CO2 To have an understanding of Business ethics and CSR

CO3 To comprehend the business environment and various dimensions

CO4 To familiarise Technology integration in business

CO5 To introduce the importance and fundamentals of business research

Core Course -2: FINANCIAL ACCOUNTING– I

CO1 To equip the students with the skill of preparing accounts and financial statements of various types of business units other than corporate undertakings

CO2 To introduce single entry system of accounts

CO3 To enable students with the skills to prepare royalty accounts,

CO4 To understand the system of preparing consignment accounts

CO5 To familiar with the procedure involved in the farm accounts.

Core Course -3: CORPORATE REGULATIONS AND ADMINISTRATION

CO1 To understand the provisions of Company Act 2013.

CO2 To familiarize on capital structure and the procedure of share allotment.

CO3 To attain knowledge on rights and duties of shareholders, members and types of meetings in the companies.

CO4 To familiar with rules and regulations relating to appointment of directors

CO5 To acquire the knowledge on modes and procedure of winding up of companies

Complementary Course 1: **BUSINESS COMMUNICATION AND MANAGEMENT INFORMATION SYSTEM**

CO1 Apply business communication strategies and principles to exchange information.

CO2 Learn to write business letters.

CO3 Attain oral communication skill for effective oral presentation.

CO4 Acquire skills to prepare reports.

CO5 Enrich written communication skill for employability.

Complementary Course 2: BANKING AND INSURANCE

CO1 To familiarize the students with the basic concepts and practice of banking and the principles of Insurance

CO2 To provide the students an understanding about recent trends and innovations in the banking sector.

CO3 To provide basic awareness to students about the concept of risk and various types of insurance.

CO4 Gain knowledge on various kinds of life insurance plans

CO5 Familiarize the types of the general insurance in India

SEMESTER 2

Core Course -4 FINANCIAL ACCOUNTING – II

CO1 To gain knowledge on preparation of accounts in Hire purchase and Instalment system.

CO2 To acquire the skill to prepare different types of branch accounts.

CO3 To transform the accounting knowledge in preparing departmental accounting.

CO4 To familiar with the procedure involved in the dissolution of partnership firms.

CO5 To familiarize students with the application of important accounting standards.

Core Course -5 BUSINESS REGULATORY FRAMEWORK

CO1 To understand the rules governing Indian Contract Act

CO2 To familiarize the rights and discharges of duties by parties in Indemnity, Guaranty, Bailment and Pledge

CO3 To acquire knowledge of rules governs setting up of agency and termination of agency

CO4 To understand the legal provisions of Sale of Goods Act.

CO5 To know the legal provisions of the laws relating to business.

Core Course -6: BUSINESS MANAGEMENT

CO1 To acquire knowledge on principles of management

CO2 To understand the corporate strategic planning techniques

CO3 To acquire the knowledge on organization structure

CO4 To familiarize with the different types of leadership

CO5 To acquaint students with various the techniques of controlling and co-ordination management techniques like Quality Circle, TQM, BPR and Six Sigma

Complementary Course -3 –BUSINESS ENVIRONMENT

CO1 To understand the elements of environment and its impact on business

CO2 To familiar with economic environment of business

CO3 To familiar with Government policies in business promotions

CO4 To gain knowledge on economic role of government in India

CO5 To appreciate the new technology policy and legal protection for natural environment and their impact on business

Complementary Course -4 – PRINCIPLES OF BUSINESS DECISIONS

CO1 To help the students to understand Decision-making and application of economic theories in decision-making

CO2 To acquaint students with concept of demand, demand theory demands forecasting

CO3 To imparting idea about production function and analysis

CO4 To enable the students to understand Cost analysis

CO5 To make the students familiar with the pricing in different markets

SEMESTER 3

Core Course -7 CORPORATE ACCOUNTS – I

CO1 To make the students familiarise with the rules relating to issues of shares and debentures.

CO2 To make the students familiarise with the rules relating to underwriting of shares

CO3 To familiar with computation of the financial results of companies

CO4 To familiar with preparation of Investments account

CO5 To familiar with computation of Insurance claims

Core Course -8 QUANTITATIVE TECHNIQUES FOR BUSINESS – I

CO1 To explain the features and methods of statistics

CO2 To apply the appropriate sampling survey method and collect data

CO3 To calculate an appropriate measure of central tendency

CO4 To calculate an appropriate measure of dispersion

CO5 To interpolate and extrapolate a value from a series and use it for forecasting

Core Course -9 FINANCIAL MARKETS AND OPERATIONS

CO1 To introduce the operations of Indian financial system to the students

CO2 To create awareness regarding the operations of primary market in India

CO3 To understand the role of secondary market in the financial market operations

CO4 To gain knowledge about the mutual funds, its operations, advantages and disadvantages

CO5 To acquire knowledge about the various derivative instruments deal in the Indian financial market

Core Course 10: MARKETING MANAGEMENT

CO1 To understand the marketing concepts and marketing environment.

CO2 To acquire knowledge on product planning and product life cycle.

CO3 To gain knowledge on choice of distribution channels and pricing strategies.

CO4 To understand the various methods of promotion.

CO5 To understand the peculiarities of marketing, marketing of agricultural products and functions of commodity market.

Complementary Course 5: BUSINESS ETHICS AND CORPORATE SOCIAL RESPONSIBILITY

CO1 To recollect concepts on ethical management practices in the business and appreciate the value system of ancient times and its applicability to modern business situations

CO2 To bring up value system in an organization based on ethics and provide knowledge about ethical decision making

CO3 To know the role of ethics in corporate governance.

CO4 To create knowledge about ethics and its application in functional areas of business

CO5 To create knowledge about ethics and corporate social responsibility

Optional Core 1: INFORMATION TECHNOLOGY FOR BUSINESS

CO1 To provide knowledge about computer hardware and softeware

CO2 To facilitate knowledge about application of IT in education, commerce,business and Industry

CO3 To understand different types of

CO4 To enable students to create webpages

CO5 To provide information about internet and its advantages and disadvantages.

SEMESTER 4

Core Course 11: CORPORATE ACCOUNTS – II

CO1 To compute the final accounts for a corporate group like banking companies

CO2 To compute the final accounts for insurance companies

CO3 To give a detailed idea about internal reorganization of companies

CO4 To apply the knowledge gained in preparation of final accounts of amalgamated companies

CO5 To study the procedure followed for the liquidation of companies

Core Course 12: QUANTITATIVE TECHNIQUES FOR BUSINESS- II

CO1 To provide exposure on calculation of measures of correlation

CO2 To provide l exposure on calculation of Regression

CO3 To acquaint students with the concept of index number

CO4 To introduce the students about the concept of provability

CO5 To acquire knowledge about time series analysis

Core Course -13 ENTREPRENEURSHIP DEVELOPMENT AND PROJECT MANAGEMENT

CO1 To understand the concept, functions and growth of entrepreneurship

CO2 To familiarise with project identification and feasibility analysis

CO3 To learn to design and appraise the project and factors influencing the plant location.

CO4 To acquire the knowledge on formalities and documentation for registration

CO5 To understand the government policies for the growth of SSIs

Complementary Course 6: LOGISTICS AND SUPPLY CHAIN MANAGEMENT

CO1 To learn about the importance of logistics to business organizations, provide a brief overview of the set of activities that make up the logistics process

CO2 To understand the nature of inventory and its role in the logistics management process , identify the goals and objectives of inventory management, and measure their process against these goals learn how to calculate safety stock, reorder points, and order quantities , understand the need for and how to maintain better inventory accuracy

CO3 To define and describe Supply Chain Management, understand the relationship between Supply chain Management and Integrated Logistics

CO4 To examine why Supply Chain Management has become increasingly important in today's business environment

CO5 To be familiar with and able to use identification systems correctly in different processes and identify the technologies needed for the traceability of the materials in the logistics chain of the company

Optional Core 2: INFORMATION TECHNOLOGY FOR OFFICE

CO1 To enable the students to master in Ms Word 2013

CO2 To enable the students to master in adobe page maker

CO3 To enable the students to master in Ms Excel 2013

CO4 To enable the students to master in advanced Ms Excel 2013

CO5 To enable the students to master in Ms Powerpoint 2013

SEMESTER 5

Core Course 14 : COST ACCOUNTING- I

CO1 To understand the concept of costing and related terms.

CO2 To familiarity with the estimation and controlling of material cost

CO3 To understand the estimation and controlling of labour cost

CO4 To familiarity with the estimation of overhead cost

CO5 To able to prepare cost sheet

Core Course 15: ENVIRONMENT MANAGEMENT AND HUMAN RIGHTS

CO1 To give the students an understanding of natural resources and ecosystems

CO2 To create awareness among students about the importance of biodiversity and its conservation.

CO3 To create awareness among students about the consequences of pollution and possible solutions to avoid pollution

CO4 To familiarize students with human rights

CO5 To examine the application of Human rights in the field

Optional Core 3: OFFICE MANAGEMENT AND ADMINISTRATION

CO1 To enables the students to have knowledge regarding the working of an office, the

role of manager, functions and roles played by him.

CO2 To office Environment has an important bearing on the efficiency of employees. this section provides them knowledge regarding the factors which contributes to sound scheme of office environment, so that the workers can increase their efficiency.

CO3 To preservation and maintenance of records and letters are essential for future reference and also the same can be provided to the authorities when asked for. Different methods by which files and indexes are to be maintained, its importance, role of mailing department in an office-an understanding regarding all theses will help students to have theoretical knowledge regarding the activities in an office and the duties of employees in an office.

CO4 Systems are preplanned approach to the day today working to attain the aimed goal. After learning this module students will get an understanding regarding different systems through which works are carried out, different types of machines used in modern office.

CO5 Advances in information technology are revolutionising the mode of operation of marketing and business system. Therefore it is necessary to be updated regarding the recent trends in office practices so that students can also plan their career.

Complementary Course 7: E COMMERCE

CO1 Recognizes the impact of Information and Communication Technologies, on the Internet in business Operations.

CO2 Acquire knowledge in identifying the main business and marketplace models for electronic Communications and Trading

CO3 Understanding Electronic Payment System and its environment.

CO4 Make ethical decisions related to ecommerce based on laws, privacy, and security.

CO5 Analyze the steps, tools, and security considerations needed create an E- commerce websites

SEMESTER 6

Core Course 17: COST ACCOUNTING- II

CO1 To enable the students to understand about job costing, batch costing and contract costing.

CO2 To understand the students the different operating methods to control and reduce cost of rendering services

CO3 To inform the students about the methods of costing and also used to ascertain the cost at each stage of manufacturing

CO4 To aware the students to analyse the behavior of cost in relation to changes in volume of Output

CO5 To understand the students about the different tools in the hands of management for effective utilization of resources.

Core Course 18: ADVERTISEMENT AND SALES MANAGEMENT

CO1- By knowing about the various concepts related to advertisements, students will be able to identify misleading and false advertisements and will also get a general idea about framing advertisements.

C02- The students will acquire copy writing skills and will also be equipped with the ability to choose a particular medium for advertisement.

C03- The students will be able to decide an appropriate test for measuring the effectiveness of advertisement as they become aware of various tests for measuring the effectiveness of advertisements.

C04- Enable the students to prepare sales promotion budget and the knowledge about various sales promotion strategies may benefit those students who dream of a career in salesmanship.

C05- The students will be able to formulate their own strategies to manage sales force in their client organization.

Core Course 19 : MANAGEMENT ACCOUNTING

CO1 To understand the basic concepts of management accounting

CO2 To understand the analysis of financial statements by using various methods

CO3 To enable the students to understand different ratios used for analyzing financial Statements

CO4 To helps the students to prepare fund flow statement for the business organization

CO5 To helps the students to prepare the cash flow statement required for the business

Optional Core-4: SECRETARIAL PRACTICE

C01-The students will know about the qualifications required for a Company Secretary, identify the scope, role and functions of a CS in an organisation and apply them in the client organisation and also advise the board of directors on important matters.

C02-The students will have a theoretical knowledge about the procedure for filing documents related to share subscription and allotment.

C03- The students will know about the various statistical books, statutory books and annual reports prepared by an organisation and they will also acquire the ability to prepare annual reports.

C04-Students will be able to conduct meetings in an organisation and have working knowledge of preparation of agenda, minutes and resolutions.

C05-The students will acquire the ability to identify the legal implications regarding payment of dividend and interest in an organisation and advise the board on such matters.

Complementary Course 8: CONSUMER BEHAVIOUR

CO1 To understanding the basics related with the consumer behaviour , students can enters into the field of business and exel there by having a good customer relationship.

CO2 To understanding the different motivational theories enables the students to influence and motivate the consumers in practical situations.

CO3 To provide the knowledge regarding various social classes and various cultures help the students to develop the marketing strategies and products that matches with consumer need.

CO4 To understanding various psychological theories the students will become able to manage various psychological needs of different types of consumers.

CO5 To inculcate knowledge regarding various consumer protection act help the students in very faster redressal of complaints.

SEMESTER 1

Core Course -1: DIMENSIONS AND METHODOLOGY OF BUSINESS STUDIES

CO1 To understand business and its role in society

CO2 To have an understanding of Business ethics and CSR

CO3 To comprehend the business environment and various dimensions

CO4 To familiarise Technology integration in business

CO5 To introduce the importance and fundamentals of business research

Core Course -2: FINANCIAL ACCOUNTING– I

CO1 To equip the students with the skill of preparing accounts and financial statements of various types of business units other than corporate undertakings

CO2 To introduce single entry system of accounts

CO3 To enable students with the skills to prepare royalty accounts,

CO4 To understand the system of preparing consignment accounts

CO5 To familiar with the procedure involved in the farm accounts.

Core Course -3: CORPORATE REGULATIONS AND ADMINISTRATION

CO1 To understand the provisions of Company Act 2013.

CO2 To familiarize on capital structure and the procedure of share allotment.

CO3 To attain knowledge on rights and duties of shareholders, members and types of meetings in the companies.

CO4 To familiar with rules and regulations relating to appointment of directors

CO5 To acquire the knowledge on modes and procedure of winding up of companies

Complementary Course 1: **BUSINESS COMMUNICATION AND MANAGEMENT INFORMATION SYSTEM**

CO1 Apply business communication strategies and principles to exchange information.

CO2 Learn to write business letters.

CO3 Attain oral communication skill for effective oral presentation.

CO4 Acquire skills to prepare reports.

CO5 Enrich written communication skill for employability.

Complementary Course 2: BANKING AND INSURANCE

CO1 To familiarize the students with the basic concepts and practice of banking and the principles of Insurance

CO2 To provide the students an understanding about recent trends and innovations in the banking sector.

CO3 To provide basic awareness to students about the concept of risk and various types of insurance.

CO4 Gain knowledge on various kinds of life insurance plans

CO5 Familiarize the types of the general insurance in India

SEMESTER 2

Core Course -4 FINANCIAL ACCOUNTING – II

CO1 To gain knowledge on preparation of accounts in Hire purchase and Instalment system.

CO2 To acquire the skill to prepare different types of branch accounts.

CO3 To transform the accounting knowledge in preparing departmental accounting.

CO4 To familiar with the procedure involved in the dissolution of partnership firms.

CO5 To familiarize students with the application of important accounting standards.

Core Course -5 BUSINESS REGULATORY FRAMEWORK

CO1 To understand the rules governing Indian Contract Act

CO2 To familiarize the rights and discharges of duties by parties in Indemnity, Guaranty, Bailment and Pledge

CO3 To acquire knowledge of rules governs setting up of agency and termination of agency

CO4 To understand the legal provisions of Sale of Goods Act.

CO5 To know the legal provisions of the laws relating to business.

Core Course -6: BUSINESS MANAGEMENT

CO1 To acquire knowledge on principles of management

CO2 To understand the corporate strategic planning techniques

CO3 To acquire the knowledge on organization structure

CO4 To familiarize with the different types of leadership

CO5 To acquaint students with various the techniques of controlling and co-ordination management techniques like Quality Circle, TQM, BPR and Six Sigma

Complementary Course -3 –BUSINESS ENVIRONMENT

CO1 To understand the elements of environment and its impact on business

CO2 To familiar with economic environment of business

CO3 To familiar with Government policies in business promotions

CO4 To gain knowledge on economic role of government in India

CO5 To appreciate the new technology policy and legal protection for natural environment and their impact on business

Complementary Course -4 – PRINCIPLES OF BUSINESS DECISIONS

CO1 To help the students to understand Decision-making and application of economic theories in decision-making

CO2 To acquaint students with concept of demand, demand theory demands forecasting

CO3 To imparting idea about production function and analysis

CO4 To enable the students to understand Cost analysis

CO5 To make the students familiar with the pricing in different markets

SEMESTER 3

Core Course -7 CORPORATE ACCOUNTS – I

CO1 To make the students familiarise with the rules relating to issues of shares and debentures.

CO2 To make the students familiarise with the rules relating to underwriting of shares

CO3 To familiar with computation of the financial results of companies

CO4 To familiar with preparation of Investments account

CO5 To familiar with computation of Insurance claims

Core Course -8 QUANTITATIVE TECHNIQUES FOR BUSINESS – I

CO1 To explain the features and methods of statistics

CO2 To apply the appropriate sampling survey method and collect data

CO3 To calculate an appropriate measure of central tendency

CO4 To calculate an appropriate measure of dispersion

CO5 To interpolate and extrapolate a value from a series and use it for forecasting

Core Course -9 FINANCIAL MARKETS AND OPERATIONS

CO1 To introduce the operations of Indian financial system to the students

CO2 To create awareness regarding the operations of primary market in India

CO3 To understand the role of secondary market in the financial market operations

CO4 To gain knowledge about the mutual funds, its operations, advantages and disadvantages

CO5 To acquire knowledge about the various derivative instruments deal in the Indian financial market

Core Course 10: MARKETING MANAGEMENT

CO1 To understand the marketing concepts and marketing environment.

CO2 To acquire knowledge on product planning and product life cycle.

CO3 To gain knowledge on choice of distribution channels and pricing strategies.

CO4 To understand the various methods of promotion.

CO5 To understand the peculiarities of marketing, marketing of agricultural products and functions of commodity market.

Complementary Course 5: BUSINESS ETHICS AND CORPORATE SOCIAL RESPONSIBILITY

CO1 To recollect concepts on ethical management practices in the business and appreciate the value system of ancient times and its applicability to modern business situations

CO2 To bring up value system in an organization based on ethics and provide knowledge about ethical decision making

CO3 To know the role of ethics in corporate governance.

CO4 To create knowledge about ethics and its application in functional areas of business

CO5 To create knowledge about ethics and corporate social responsibility

Optional Core 1: GOODS AND SERVICE TAX

CO1 To provide knowledge about goods service tax

CO2 To create employability to the students in the commercial tax practices

CO3 To understand the procedure for registration, payment and refund of GST

CO4 To know tax related with movement of goods

CO5 To understand the appeals, offences and penalties with respect to GST

SEMESTER 4

Core Course 11: CORPORATE ACCOUNTS – II

CO1 To compute the final accounts for a corporate group like banking companies

CO2 To compute the final accounts for insurance companies

CO3 To give a detailed idea about internal reorganization of companies

CO4 To apply the knowledge gained in preparation of final accounts of amalgamated companies

CO5 To study the procedure followed for the liquidation of companies

Core Course 12: QUANTITATIVE TECHNIQUES FOR BUSINESS- II

CO1 To provide exposure on calculation of measures of correlation

CO2 To provide l exposure on calculation of Regression

CO3 To acquaint students with the concept of index number

CO4 To introduce the students about the concept of provability

CO5 To acquire knowledge about time series analysis

Core Course -13 ENTREPRENEURSHIP DEVELOPMENT AND PROJECT MANAGEMENT

CO1 To understand the concept, functions and growth of entrepreneurship

CO2 To familiarise with project identification and feasibility analysis

CO3 To learn to design and appraise the project and factors influencing the plant location.

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CO5 To understand the government policies for the growth of SSIs

Complementary Course 6: LOGISTICS AND SUPPLY CHAIN MANAGEMENT

CO1 To learn about the importance of logistics to business organizations, provide a brief overview of the set of activities that make up the logistics process

CO2 To understand the nature of inventory and its role in the logistics management process , identify the goals and objectives of inventory management, and measure their process against these goals learn how to calculate safety stock, reorder points, and order quantities , understand the need for and how to maintain better inventory accuracy

CO3 To define and describe Supply Chain Management, understand the relationship between Supply chain Management and Integrated Logistics

CO4 To examine why Supply Chain Management has become increasingly important in today's business environment

CO5 To be familiar with and able to use identification systems correctly in different processes and identify the technologies needed for the traceability of the materials in the logistics chain of the company

Optional Core 2: FINANCIAL SERVICES

CO1 To create basic idea about financial services and merchant baking

CO2 To facilitate the knowledge about venture capital and securitization

CO3 To understand the concept of leasing and factoring

CO4 To familiarity with the credit rating

CO5 To aware about the concept of mergers and acquisitions

SEMESTER 5

Core Course 14 : COST ACCOUNTING- I

CO1 To understand the concept of costing and related terms.
CO2 To familiarity with the estimation and controlling of material cost
CO3 To understand the estimation and controlling of labour cost
CO4 To familiarity with the estimation of overhead cost
CO5 To able to prepare cost sheet

Core Course 15: ENVIRONMENT MANAGEMENT AND HUMAN RIGHTS

CO1 To give the students an understanding of natural resources and ecosystems
CO2 To create awareness among students about the importance of biodiversity and its conservation.
CO3 To create awareness among students about the consequences of pollution and possible solutions to avoid pollution
CO4 To familiarize students with human rights
CO5 To examine the application of Human rights in the field

Optional Core 3: INCOME TAX I

CO1 To collect the basic concepts and definitions of Income Tax Act 1961
CO2 To know the residential status of assesse and incomes exempted from tax
CO3 To familiar with the computation of income from salary
CO4 To familiar with the computation of income from house property
CO5 To familiar with the computation of income from business and profession

Complementary Course 7: E COMMERCE

CO1 Recognizes the impact of Information and Communication Technologies, on the Internet in business Operations.
CO2 Acquire knowledge in identifying the main business and marketplace models for electronic Communications and Trading
CO3 Understanding Electronic Payment System and its environment.
CO4 Make ethical decisions related to ecommerce based on laws, privacy, and security.

CO5 Analyze the steps, tools, and security considerations needed create an E- commerce websites

SEMESTER 6

Core Course 17: COST ACCOUNTING- II

CO1 To enable the students to understand about job costing, batch costing and contract costing.

CO2 To understand the students the different operating methods to control and reduce cost of rendering services

CO3 To inform the students about the methods of costing and also used to ascertain the cost at each stage of manufacturing

CO4 To aware the students to analyse the behavior of cost in relation to changes in volume of Output

CO5 To understand the students about the different tools in the hands of management for effective utilization of resources.

Core Course 18: ADVERTISEMENT AND SALES MANAGEMENT

CO1- By knowing about the various concepts related to advertisements, students will be able to identify misleading and false advertisements and will also get a general idea about framing advertisements.

C02- The students will acquire copy writing skills and will also be equipped with the ability to choose a particular medium for advertisement.

C03- The students will be able to decide an appropriate test for measuring the effectiveness of advertisement as they become aware of various tests for measuring the effectiveness of advertisements.

C04- Enable the students to prepare sales promotion budget and the knowledge about various sales promotion strategies may benefit those students who dream of a career in salesmanship.

C05- The students will be able to formulate their own strategies to manage sales force in their client organization.

Core Course 19 : MANAGEMENT ACCOUNTING

CO1 To understand the basic concepts of management accounting

CO2 To understand the analysis of financial statements by using various methods

CO3 To enable the students to understand different ratios used for analyzing financial Statements

CO4 To helps the students to prepare fund flow statement for the business organization

CO5 To helps the students to prepare the cash flow statement required for the business

Optional Core-4: INCOME TAX II

CO1 To familiar with the computation of capital gain

CO2 To familiar with the computation of income from other sources

CO3 To know about the aggregation of income and deduction u/s 80C to 80U

CO4 To know about the assessment of individuals

CO5 To aware about the income tax authorities and their powers and duties.

Complementary Course 8: INCOME TAX ASSESSMENT AND PROCEDURE

CO1 To Compute the total income and tax liability of firms and Association of Persons
CO 2 To carry out assessment of companies and determine their tax liability
CO 3 To make the assessment of co-operative societies and trusts.
CO 4 To Understanding about the assessment procedures, TDS and advance payment of tax and application in various situations
CO5 To learn tax planning concepts and apply the same

B.Com Model III Taxation

Programme Outcomes

At the end of three year B.Com programme, the students will be able to :-

PO 1- Build a strong foundation in accounting, management and business subjects

PO 2- Seek variety of career options in accounting, management and business related fields

PO 3- Equip with skills and knowledge to excel in their future careers

PO 4- Develop critical thinking skills in students

PO 5- Enter master programmes like M.Com, MBA and pursue professional programmes like C.A, CMA, C.S, etc.

PO 6- Develop entrepreneurial skills

Programme Specific Outcomes

At the end of three year B.Com Model III programme with specialisation in Taxation, the students will be able to:-

PSO 1- Understand the application of business Knowledge in both theoretical and practical aspects.

PSO 2- Determine the procedures and schedules to be followed on preparing financial statements of Companies.

PSO 3- File Income tax return and compute the tax liability of individuals

PSO 4- Develop proficiency in the management of an organisation

PSO 5- Attain skills in conducting business transactions online

PSO6 - Learn the basic skills for the effective utilisation of funds

PSO7 - Follow the ethics pertaining to business transactions

Course Outcomes

After completing each course under three year B.Com programme with specialisation in Finance and Taxation, the students will be able :-

SEMESTER 1

Core Course -1: DIMENSIONS AND METHODOLOGY OF BUSINESS STUDIES

CO1 To understand business and its role in society

CO2 To have an understanding of Business ethics and CSR

CO3 To comprehend the business environment and various dimensions

CO4 To familiarise Technology integration in business

CO5 To introduce the importance and fundamentals of business research

Core Course -2: FINANCIAL ACCOUNTING– I

CO1 To equip the students with the skill of preparing accounts and financial statements of various types of business units other than corporate undertakings

CO2 To introduce single entry system of accounts

CO3 To enable students with the skills to prepare royalty accounts,

CO4 To understand the system of preparing consignment accounts

CO5 To familiar with the procedure involved in the farm accounts.

Core Course -3: CORPORATE REGULATIONS AND ADMINISTRATION

CO1 To understand the provisions of Company Act 2013.

CO2 To familiarize on capital structure and the procedure of share allotment.

CO3 To attain knowledge on rights and duties of shareholders, members and types of meetings in the companies.

CO4 To familiar with rules and regulations relating to appointment of directors

CO5 To acquire the knowledge on modes and procedure of winding up of companies

Complementary Course 1: **BUSINESS COMMUNICATION AND MANAGEMENT INFORMATION SYSTEM**

CO1 Apply business communication strategies and principles to exchange information.

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Complementary Course 2: BANKING AND INSURANCE

CO1 To familiarize the students with the basic concepts and practice of banking and the

principles of Insurance

CO2 To provide the students an understanding about recent trends and innovations in the banking sector.

CO3 To provide basic awareness to students about the concept of risk and various types of insurance.

CO4 Gain knowledge on various kinds of life insurance plans

CO5 Familiarize the types of the general insurance in India

SEMESTER 2

Core Course -4 FINANCIAL ACCOUNTING – II

CO1 To gain knowledge on preparation of accounts in Hire purchase and Instalment system.

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Core Course -5 BUSINESS REGULATORY FRAMEWORK

CO1 To understand the rules governing Indian Contract Act

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CO1 To help the students to understand Decision-making and application of economic theories in decision-making

CO2 To acquaint students with concept of demand, demand theory demands forecasting

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SEMESTER 3

Core Course -7 CORPORATE ACCOUNTS – I

CO1 To make the students familiarise with the rules relating to issues of shares and debentures.

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Core Course -8 QUANTITATIVE TECHNIQUES FOR BUSINESS – I

CO1 To explain the features and methods of statistics

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Core Course -9 FINANCIAL MARKETS AND OPERATIONS

CO1 To introduce the operations of Indian financial system to the students

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Complementary Course 5: BUSINESS ETHICS AND CORPORATE SOCIAL RESPONSIBILITY

CO1 To recollect concepts on ethical management practices in the business and appreciate the value system of ancient times and its applicability to modern business situations

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SEMESTER 4

Core Course 11: CORPORATE ACCOUNTS – II

CO1 To compute the final accounts for a corporate group like banking companies

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Core Course 12: QUANTITATIVE TECHNIQUES FOR BUSINESS- II

CO1 To provide exposure on calculation of measures of correlation

CO2 To provide l exposure on calculation of Regression

CO3 To acquaint students with the concept of index number

CO4 To introduce the students about the concept of provability

CO5 To acquire knowledge about time series analysis

Core Course -13 ENTREPRENEURSHIP DEVELOPMENT AND PROJECT MANAGEMENT

CO1 To understand the concept, functions and growth of entrepreneurship

CO2 To familiarise with project identification and feasibility analysis

CO3 To learn to design and appraise the project and factors influencing the plant location.

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Complementary Course 6: LOGISTICS AND SUPPLY CHAIN MANAGEMENT

CO1 To learn about the importance of logistics to business organizations, provide a brief overview of the set of activities that make up the logistics process

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CO4 To examine why Supply Chain Management has become increasingly important in today's business environment

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Optional Core 2: FINANCIAL SERVICES

CO1 To create basic idea about financial services and merchant baking

CO2 To facilitate the knowledge about venture capital and securitization

CO3 To understand the concept of leasing and factoring

CO4 To familiarity with the credit rating

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SEMESTER 5

Core Course 14 : COST ACCOUNTING- I

CO1 To understand the concept of costing and related terms.

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Core Course 15: ENVIRONMENT MANAGEMENT AND HUMAN RIGHTS

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Complementary Course 7: E COMMERCE

CO1 Recognizes the impact of Information and Communication Technologies, on the Internet in business Operations.

CO2 Acquire knowledge in identifying the main business and marketplace models for electronic Communications and Trading

CO3 Understanding Electronic Payment System and its environment.

CO4 Make ethical decisions related to ecommerce based on laws, privacy, and security.

CO5 Analyze the steps, tools, and security considerations needed create an E- commerce websites

SEMESTER 6

Core Course 17: COST ACCOUNTING- II

CO1 To enable the students to understand about job costing, batch costing and contract costing.

CO2 To understand the students the different operating methods to control and reduce cost of rendering services

CO3 To inform the students about the methods of costing and also used to ascertain the cost at each stage of manufacturing

CO4 To aware the students to analyse the behavior of cost in relation to changes in volume of Output

CO5 To understand the students about the different tools in the hands of management for effective utilization of resources.

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CO1- By knowing about the various concepts related to advertisements, students will be able to identify misleading and false advertisements and will also get a general idea about framing advertisements.

C02- The students will acquire copy writing skills and will also be equipped with the ability to choose a particular medium for advertisement.

C03- The students will be able to decide an appropriate test for measuring the effectiveness of advertisement as they become aware of various tests for measuring the effectiveness of advertisements.

C04- Enable the students to prepare sales promotion budget and the knowledge about various sales promotion strategies may benefit those students who dream of a career in salesmanship.

C05- The students will be able to formulate their own strategies to manage sales force in their client organization.

Core Course 19 : MANAGEMENT ACCOUNTING

CO1 To understand the basic concepts of management accounting

CO2 To understand the analysis of financial statements by using various methods

CO3 To enable the students to understand different ratios used for analyzing financial Statements

CO4 To helps the students to prepare fund flow statement for the business organization

CO5 To helps the students to prepare the cash flow statement required for the business

Optional Core-4: INCOME TAX II

CO1 To familiar with the computation of capital gain

CO2 To familiar with the computation of income from other sources

CO3 To know about the aggregation of income and deduction u/s 80C to 80U

CO4 To know about the assessment of individuals

CO5 To aware about the income tax authorities and their powers and duties.

Complementary Course 8: INCOME TAX ASSESSMENT AND PROCEDURE

CO1 To Compute the total income and tax liability of firms and Association of Persons

CO 2 To carry out assessment of companies and determine their tax liability

CO 3 To make the assessment of co-operative societies and trusts.

CO 4 To Understanding about the assessment procedures, TDS and advance payment of tax and application in various situations

CO5 To learn tax planning concepts and apply the same

B.Sc Botany

Programme Outcomes

Undergraduate Botany course offered by Department of Botany, Nirmala College, Muvattupuzha follows the syllabus prescribed by M.G. university, Kottayam. The course is combination of general and specialised education, simultaneously introducing the concepts of breadth and depth in learning. It also stresses learning to learn rather than learning of specific lessons. The attempt is to prepare the students for lifelong learning by drawing attention to the vast world of knowledge of plants and introducing him/her to the methodology of systematic academic enquiry. With this in mind, we aim to provide a firm foundation in every aspect of Botany and to explain a broad spectrum of modern trends in Botany and to develop experimental, observational, computational skills also which lead him as an ambassador of sustainable development of our country.

1. Know the importance and scope of the discipline

2. Inculcate interest in and love of nature with its myriad living forms

3. Impart knowledge of Science as the basic objective of Education

4. Develop a scientific attitude to make students open minded, critical and curious

5. Develop an ability to work on their own and to make them fit for the society

Programme Specific Outcomes

1 Expose themselves to the diversity amongst life forms

2. To develop skill in practical work, experiments, equipment and laboratory use along with collection and interpretation of biological materials and data

3. Make aware of natural resources and environment and the importance of conserving it.

4. Develop ability for the application of the acquired knowledge in the fields of life so as to make our country self reliant and self sufficient

5. Appreciate and apply ethical principles to biological science research and studies.

Course Outcomes

SEMESTER I, Core Course 1 BO1CRT01

METHODOLOGY OF SCIENCE AND AN INTRODUCTION TO BOTANY

By completing this course student would have understood the universal nature of science

§ Able to understand the use scientific method in the experimentation

§ develop a strong foundation in the area of plant science

§ Would be able to classify the organisms present in the living kingdom according to their character

§ They would develop a culture to appreciate the world of organisms and its course of evolution and diversity.

§ Develop basic skills to study the subject Botany in a systematic and detailed manner

SEMESTER II Course 2 BO2CRT02

MICROBIOLOGY, MYCOLOGY AND PLANT PATHOLOGY

By completing this course student would be able to understand the world of microbes, fungi and lichens and they will appreciate the adaptive strategies of the microbes, fungi and lichens. It also helps to understand the economic and pathological importance of microorganisms

Semester III Course-3 BO3CRT03
PHYCOLOGY AND BRYOLOGY

By completing this course each student would be able to recognize the evolutionary importance of algae leads to the development of land plants. They will familiarize the general characters of algae and bryophytes and would be able to identify them and they also get a clear picture about the morphology, internal structure and reproduction of different types of algae and bryophytes.

Semester IV Course-4 BO4CRT04
PTERIDOLOGY, GYMNOSPERMS AND PALEOBOTANY

By completing this course student would be able to understand the diversity in habits, habitats and organization of various groups of plants and an insight would be developing among students into the modern classifications in lower forms of plants. Imparting this course would also help to understand the evolutionary trends in Pteridophytes and Gymnosperms. Students would be able to recognize the variations in the anatomical characters of vascular plants. They also understand the significance of Paleobotany and its applications

Semester V Course-5 BO5CRT05

ANATOMY, REPRODUCTIVE BOTANY AND MICROTECHNIQUE

By completing this course student would be able to distinguish the internal structure of most evolved groups of plants, Angiosperms and also be able to understand the different reproductive methods in the Angiosperm. They would be able to understand the individual cells and also tissues simultaneously. Students would understand the structural adaptations in plants growing in different environment and understand the morphology and development of reproductive parts. They recognize the way of fruit and seed development and clear knowledge would develop to preserve and study plant materials.

Semester V Course 6 BO5CRT06

RESEARCH METHODOLOGY, BIOPHYSICS AND BIOSTATISTICS

The aim of the course is to acquaint the students about various techniques in research and develop and research aptitude. The course also envisages to prepare the students for conducting independent research work (dissertation work) in the next semester and enable them to prepare research reports. The course of also envisages acquaint with different tools and techniques used in research work. □ To equip the students with basic computer skills necessary for conducting research. By including biostatistics, the course aims to enable the students to have handle numerical data and carry out accurate mathematical/statistical evaluation of results.

Semester V Course 7 BO5CRT07

PLANT PHYSIOLOGY AND BIOCHEMISTRY

To development an understanding about the basic principles related to various physiological functions in plant life. Familiarize with the basic skills and techniques related to plant physiology. Understand the role, structure and importance of the bio molecules associated with plant life. Familiarize with the recent trends in the field of plant physiology. Familiarize with applied aspects of plant physiology in other fields like agriculture.

Semester V Course 8 BO5CRT07

ENVIRONMENTAL SCIENCE AND HUMAN RIGHTS

The aim of this course is to acquaint the student with the significance of Environmental Science. Help the students to understand the extent, limitations and depletion of natural resources. Help the student to design novel mechanism for the sustainable utilization of natural resources. Enable the students to understand the structure and function of the Ecosystems. Make the students to identify the nature and interactions of populations in the ecosystem. Enable the students to understand various kinds of pollution in the environment, their impacts on the ecosystem and their control measures. Make the students aware about the nature and structure of various environmental laws in India. Make the students aware about the role of various movements in the protection of nature and natural resources. Make the students aware about the extent of the total biodiversity and their conservation. Make the students to assess the positive and negative impacts of Ecotourism and its role in the sustainable utilization of resources for tourism.
The course with its human right component aims to impart and understanding of the rights and duties of the students towards society.

Semester V Open Course 1 BO5OPT01

AGRI-BASED MICRO-ENTERPRISES

The course aims to provide basic information about the business opportunities in plant sciences. The course also aims to provide information about sustainable agriculture and organic farming. The course also aims to acquaint the learner with the benefits and opportunities in pursuing organic and sustainable farming techniques. Inculcate an enthusiasm and awareness about ornamental gardening, nursery management and mushroom cultivation

Semester VI Course 9 BO5CR509

GENETICS, PLANT BREEDING AND HORTICULTURE

The aim of the course is to impart a basic understanding about the basic principles of heredity. Understand the inheritance pattern of nuclear and extra nuclear genes. Understand the methods of crop improvement. Understand the importance of horticulture in human welfare**.**

Semester VI Course 10 BO5CRT10

CELL AND MOLECULAR BIOLOGY

The course aims to develop and understanding the Ultra structure and functioning of cell in the submicroscopic and molecular level. Get an idea of origin, concept of continuity and complexity of life activities. Familiarization of life process. Understand the basic and scientific aspect of diversity. Understand the cytological aspects of growth and development. Understand DNA as the basis of heredity and variation. Understand the concept of evolution as the basis of biodiversity.

Semester VI Course 11 BO6CRT11

ANGIOSPERM MORPHOLOGY, TAXONOMY AND ECONOMIC BOTANY

Acquaint with the aims, objectives and significance of taxonomy. Identify the common species of plants growing in Kerala and their systematic position. Develop inductive and deductive reasoning ability. Acquaint with the basic technique in the preparation of 7 with the plants having immense economic importance.

Semester VI Course 12 BO6CRT12

BIOTECHNOLOGY AND BIOINFORMATICS

The course aims to develop an understanding about the development of the branch of biological science and its links to various other branches of Science. The course envisages to inculcate the learner about the immense potential of various techniques and processes in Biotechnology. The course also envisages to impart and develop an understanding of the current developments in the field of Biotechnology and Bioinformatics. The course also aims to equip the students with necessary skill sets to carry out plant tissue culture. The course also aims to introduce the vast repositories of biological data knowledge. Equip to access and analyze the data available in the database

BSc CHEMISTRY PROGRAMME

Program Outcomes

The students of BSc Chemistry at the time of graduation will be able to

PO1- Critical Thinking- Read, understand and interpret chemical information-verbal, mathematical, physical and graphical. The students are equipped to think critically by asking questions on the fundamental concepts in chemistry.

PO2- Generation of Skills- To impart skills required to gather information from resources and use them.

PO3- Effective Communication- Enabling students to interact positively and efficiently using English language and inculcating a culture of science discussion among the peers and society.

PO4- Making students Competitive- To give need based education in chemistry of the highest quality at the undergraduate level to make them competitive.

PO5- Decision Making- Offer courses to the choice of the students. This will make the students to take decisions by considering the pros and cons of the decisions they make.

PO6- Practical Skills- Perform experiments and interprets the results of observation. It will help the students to be efficiently participate in academic as well as industrial organizations.

PO7- Environment and Sustainability- To give the importance of green chemistry and educating them to utilize resources in a green method by limiting the use of organic solvents, hazardous chemicals etc.

PO8- Social Responsibility- Make the students socially responsible by giving awareness regarding the role of chemistry in social development. Making them actively participating in discussions about the destructive possibilities of science.

Program Specific Outcomes

- Read, understand and interpret chemical information- verbal, mathematical and graphical.
- Impart skills required to gather information from resources and use them.
- To give need based education in chemistry of the highest quality at the undergraduate level.
- Offer courses to the choice of the students.

- Perform experiments and interpret the results of observation.
- Provide an intellectually stimulating environment to develop skills and enthusiasms of students to the best of their potential.
- Use Information Communication Technology to gather knowledge at will.
- Attract outstanding students from all backgrounds.

Course Outcome

Semester 1

CH1CRT01- General and Analytical Chemistry

CO1- To develop the scientific aptitude of students and critical thinking and equip them in pursuing chemistry as a career.

CO2- To have a fundamental idea regarding the elements of chemistry and periodic properties of atoms.

CO3- To develop scientific skills, observation and interpretation and evaluation of chemical analysis.

CO4- To have an insight on the separation, purification and isolation of compounds.

CO5- Enabling students to handle basic statistical tools for analyzing data.

Semester 2

CH2CRT02 – Theoretical and Inorganic Chemistry

CO1- Make students to have ideas on the theory of atomic structure, electronic configuration and various rules for the filling up of electrons.

CO2- Various types of bonds, polarization of bonds and properties of ionic compounds. Valence bond theory, concept of resonance, hybridization, VSEPR theory and properties of covalent bonds. The students will be able to understand the fundamental attractive forces that unite atoms in a molecule.

CO3- Molecular Orbital theory of bonding, hydrogen bonding and applications. The students will be able to understand the advanced attractive forces that unite atoms in a molecule.

CO4- Enabling students to have an idea of the s and p block elements in the periodic table.

CO5- To have an idea regarding the transition metals, lanthanides and their applications.

Semester 1 and 2 Core Chemistry Practicals

CH2CRP01- Volumetric Analysis

CO1- Enabling students to manage neutralization titrations- acidimetry and alkalimetry.

CO2- Enabling students to manage complexometric titrations.

CO3- Enabling students to manage oxidation reduction (Redox) titrations like permanganometry, dichrometry, iodimetry and iodometry.

Semester 3

CH3CRT03- Organic Chemistry- I

CO1- Introducing students to the world of organic chemistry. Naming of organic compounds and the fundamental concepts in organic chemistry.

CO2- Various electronic displacement effects, cleavage of bonds, reagents, reactive intermediates and types of organic reactions. Students will be able to distinguish various organic molecules and predict their utility in organic synthesis.

CO3- Making students to visualize molecules. Understanding Optical isomerism and Geometrical isomerism with conformational analysis. Through this imagination of students will be tested.

CO4- The students are given opportunity to learn the reactions of alkanes, alkenes, alkynes and alkyl halides. Here they are performing experiments and interpret the results of observation.

CO5- Fundamental concepts of aromaticity- benzene, naphthalene, anthracene and aryl halides.

CO6- Introduction to pericyclic reactions with example. The intellectual aptitude will be increased with this course.

Semester 4

CH4CRT04- Organic Chemistry- II

CO1- Providing students to learn the basic reactions and properties of alcohols, phenols and ethers. Making students competitive with the knowledge of industrially important compounds.

CO2- Aldehydes and ketones are taught here. Preparation, properties and reactions of formaldehyde, acetaldehyde, acetone, benzaldehyde and benzophenone. Various named reactions are also introduced. Making students competitive with the knowledge of industrially important compounds.

CO3- Enabling the students to deal with carboxylic acids, sulphonic acids and their derivatives. Making students competitive with the knowledge of industrially important compounds.

Semester 3 and 4 Core Chemistry Practicals

CH4CRP02- Qualitative Organic Analysis

CO1- Equipping students for the qualitative analysis of organic compounds.

CO2- Indulging in experiments make the students more focused and oriented in both the theory and observation of the experiment.

CO3- Prepapration of the derivatives of different compounds will make the students more competitive.

Semester 5

CH5CRT05- Environmental Studies and Human Rights

CO1- Students would be able to understand the multifaceted nature of environmental studies. He will be aware of the various resources and how to handle them effectively.

CO2- Making students to recognize the harmful effects of pollution and ho to tackle the problems related to pollution. At the end he will transform to a socially responsible person.

CO3- Enabling students to get an idea about population explosion and related problems. Additionally student would be able to understand various environmental movements conducted.

CO4- Students will get awareness about ecological stress posed upon ecosystems by the presence of chemicals. Students are made aware of the various agencies that impose ecological stress.

CO5- Students are made known of their rights thereby motivating them to be a better person. Various rules are also introduced.

CH5CRT06- Organic Chemistry- III

CO1- The nitrogen containing containing compounds are important class of compounds in organic chemistry. Preparation and reactions of various nitro compounds will make the students competitive.

CO2- Amines are industrially important compounds. Preparation, structure and reactivity of both aromatic and aliphatic amines will equip the students to work in industry. Diazonium salts are also fall in this category of industrially important compounds.

CO3- Students are given an opportunity to learn the various heterocyclic compounds and their applications. Students are made aware of the synthetic applications of these compounds.

CO4- Active methylene compounds find use in the synthesis of various industrially significant compounds. Preparation and reactions are also taught here.

CO5- An introduction to carbohydrates, their structure and reactivity and biological importance are also dealt here.

CO6- Classification of drugs,structure, therapeutic uses and mode of action of antibiotics, sulpha drugs, antipyretics, analgesics, antimalarials, antacids, anti-cancer drugs ,anti-HIV agents, psychotropic drugs. By enabling the students by making aware of the drug addiction and abuse.

CO7- The fundamental and advanced applications of dyes and polymers will make the students aware of the industrial application of these compounds.

CH5CRT07- Physical Chemistry- I

CO1- To make the students aware of the kinetic theory of gases and application of kinetic gas equation.Various critical phenomena are also discussed. Various distribution laws of molecular

velocities are also included.

CO2- Liquid state is one of the important states of matter. Various properties of liquids are dealt here. Students will have an indepth knowledge in liquid state.

CO3- Students will be able to go deep in the solid state and crystallography. Various defects in crystal systems are also available to ponder. An introduction to liquid crystals is also dealt here.

CO4- Surface chemistry and colloidal state of materials will induce curiosity among the students and make them go further towards the deeper aspects of the subject.

CH5CRT08- Physical Chemistry- II

CO1- To make the students aware of the fundamentals of classical mechanics and quantum mechanics. Applications of quantum mechanics to various systems are also discussed here. Molecular orbital theory is also dealt here.

CO2- An introduction to molecular spectroscopy. Various aspects of rotational, vibrational and Raman spectroscopy are also discussed. Students will be able to elucidate the structure of simple compounds using these methods.

CO3- Various aspects of electronic, NMR and ESR spectroscopy are also discussed. Students will be able to elucidate the structure of simple compounds using these methods.

.**CH5OPT01- Chemistry in Everyday Life**

CO1- An introduction to food additives like preservatives, flavours, sweetners, emulsifying agents, antioxidants and leavening agents.

CO2- Soaps and detergents are industrially important compounds. Detailed study of these items will enable the students to understand the chemistry behind these molecules.

CO3- Cosmetics is a field in which drastic changes are happening due to extensive research that is going on. A study of cosmetics will make the students aware of the damages that cosmetics can do in human body.

CO4- The students are given an introduction about plastics, paper and dyes and the environmental aspects of their uses.

CO5- A detailed study of drugs will enable the students to understand the various classification of drugs, their use, mode of action and abue. Classification of drugs, structure, therapeutic uses and mode of action of antibiotics, sulpha drugs, antipyretics, analgesics, antimalarials, antacids, anti-cancer drugs ,anti-HIV agents, psychotropic drugs. Enabling the students by making aware of the drug addiction and abuse.

CO7- The interrelationship between chemistry and agriculture, use of fertilizers, and their environmental hazards are well explained to the students. An introduction to nanomaterials also discussed here. The various terminologies involved in nanochemistry are also discussed.

Semester 6

CH6CRT09- Inorganic Chemistry

CO1- An introduction to coordination chemistry and structural aspects of coordination compounds.

CO2- Bonding present in coordination compounds are discussed. Crystal field theory will enable the students to interpret the splitting pattern of tetrahedral and octahedral complexes.

CO3- Reactivity of the coordination compounds are taught. SN1 and SN2 reactions and their mechanisms are also discussed here.

CO4- The students are given an introduction about organometallic compounds. Their naming, structure, reactions and applications are also discussed.

CO5- Basic concepts of bioinorganic chemistry, living systems and enzymes are also discussed here.

CO7- Boron compounds, interhalogen and noble gas compounds are included and the students might be able to understand the noble gas chemistry.

CH6CRT10- Organic Chemistry- IV

CO1- An introduction to natural products like terpenoids and alkaloids.

CO2- Lipids are an important compound found in nature. Fats and oils, their properties soaps and detergents and their mode of action are also discussed here.

CO3- A brief study of vitamins, steroids and hormones are included here.

CO4- Classification of amino acids, peptides and proteins, their structure and reactions are also studied here.

CO5- Basic concepts of nucleic acids, living systems, enzymes and supramolecular systems are also discussed here.

CO7- Organic photochemistry and organic spectroscopy are taught here. Various aspects of rotational, vibrational and mass spectroscopy are also discussed. Students might be able to elucidate the structure of organic molecule at the end of the course.

CH6CRT11- Physical Chemistry- III

CO1- Basic concepts of thermodynamics, first law, second law and third law are studied in detail. Mathematical and graphical tools are involved in it and students might be able to use them.

CO2- Law of mass action and chemical equillibria will enable the students to predict the direction of a chemical reaction in equilibrium.

CO3- A detailed study of ionic equilibrium will make the students to thin critically and logically. Buffer solutions, its mode of action are also incorporated in this. Phase equilibrium also included in this.

CO4- Study of chemical kinetics will enable the students to determine the speed and rate of a chemical reaction. Effect of various parameters on reaction rate are also included. An introduction to catalysis is also given so that the students might be able to develop new systems.

CH6CRT12- Physical Chemistry- IV

CO1- Fundamental and advanced studies of solutions. Solubility of gas in solutions are also included.

CO2- Electrical conductance, ionic mobility, transference number, various theories of electrical conductance and their applications are included in this. The students might be able to have a in depth knowledge in conductance.

CO3- Introduction to electromotive force, concentration cells, applications of emf measurements, potentiometric titrations, acid base titrations, redox titrations and indicators. Corrosion of metals also incorporated in this. Through this the students might be able to develop awareness of the daily life related utensils and their corrosion.

CO4- Photochemistry and group theory are incorporated in this. These advanced topics will help the students to develop scientific aptitude to advance in career.

CH6CBT02- Nanochemistry and Nanotechnology

CO1- Introduction to the world of Nano chemistry. The fundamental concepts and historical evolution of nanotechnology will make the students more creative and enthusiastic.

CO2- The various microscopic techniques for the characterization of nanomaterials will fascinate the students and motivate them to go to the deep of Nano world.

CO3- Electrical and optical properties of nanomaterials are also incorporated which will develop curiosity and increase the scientific temper.

CO4- The students will be highly motivated when they study the different applications of nanotechnology.

Semester V &VI Practicals

CH6CRP03- Qualitative Inorganic Analysis.

CO1- Study of the reactions of the acid and base radicals and the theory behind these reactions.

CO2- Systematic and qualitative analysis of the inorganic mixture of radicals will increase the skills of the students especially practical and observation.

CH6CRP04- Organic Preparations and Laboratory Techniques.

CO1- Basic Laboratory Techniques will give the students a hands-on training to determine the fundamental parameters of molecules like crystallization, distillation, solvent extraction etc.

CO2- Students are encouraged to synthesize simple organic molecules which will increase the practical and synthetic skills of the students.

CO3- Chromatographic techniques will enable the students to develop the skills to purify impure organic compounds.

CH6CRP05- Physical Chemistry Practicals.

CO1- To develop skills in doing experiments in kinetics, potentiometry and phase rule. Enable the students to prepare data analysis using spread sheet program.

CH6CRP06- Gravimetric Analysis.

CO1- Students would be able to precipitate different metal ions and estimation of these ions gravimetrically.

COMPLEMENTARY COURSE IN CHEMISTRY

Semester 1

CH1CMT01- Basic Theoretical and Analytical Chemistry

CO1- This course will provide an insight into some of the fundamental concepts and principles that are very essential in the study of chemistry.

CO2- To study atomic structure and fundamental concepts in chemistry.

CO3- Chromatographic techniques will enable the students to develop the skills to purify impure organic compounds.

CO4- The students will understand the fundamentals of principles of analytical chemistry.

Semester 2

CH2CMT02- Basic Organic Chemistry

CO1- The students will understand some fundamental aspects of organic chemistry.

CO2- Students are motivated to study the mechanism of some organic reactions, classification of polymers, structure and uses of some commercial and natural polymers.

Semester 1 and 2 Complementary Chemistry Practicals

CH2CMP01- Volumetric Analysis

CO1- Enabling students to manage neutralization titrations- acidimetry and alkalimetry.

CO2-. Enabling students to manage oxidation reduction (Redox) titrations like permanganometry, dichrometry, iodimetry and iodometry.

Semester 3

CH3CMT03- Physical Chemistry I

CO1- To enable the students to get a clear idea about the molecular structure- Solids, liquids, gaseous and crystalline state.

CO2- To make students capable of understanding and studying electrical and nuclear properties of molecules.

CO3- To study the surface chemistry of materials and phase equilibrium.

CH3CMT04- Inorganic and Organic Chemistry

CO1- This course will promote understanding facts and concepts in inorganic and organic chemistry.

CO2- This will give the students a basic understanding of nuclear chemistry and heterocyclic compounds and various types of food additives, cosmetics and drugs.

CO3- To study the surface chemistry of materials and phase equilibrium.

CH4CMT05- Physical Chemistry II

CO1- This course will promote understanding facts and concepts in spectroscopy.

CO2- Introduction to the world of Nano chemistry. The fundamental concepts and historical evolution of nanotechnology will make the students more creative and enthusiastic.

CO3- This will give the students a basic understanding of kinetics, catalysis, photochemistry and electrochemistry of molecules.

CH4CMT06- Advanced Bio organic Chemistry

CO1- An introduction to natural products like terpenoids and alkaloids.

CO2- Lipids are an important compound found in nature. Fats and oils, their properties soaps and detergents and their mode of action are also discussed here.

CO3- A brief study of vitamins, steroids and hormones are included here.

CO4- Classification of amino acids, peptides and proteins, their structure and reactions are also studied here.

CO5- Basic concepts of nucleic acids, living systems, enzymes and supramolecular systems are also discussed here.

Semester 3 and 4 Complementary Chemistry Practicals

CH4CMP02- Physical Chemistry Practicals

CO1- To develop skills in doing experiments in kinetics, potentiometry and phase rule. Enable the students to prepare data analysis using spread sheet program.

CH4CMP03- Organic Chemistry Practicals

CO1- Equipping students for the qualitative analysis of organic compounds.

CO2- Indulging in experiments make the students more focused and oriented in both the theory and observation of the experiment.

CO3- Prepapration of the derivatives of different compounds will make the students more competitive.

MATHEMATICS

B. Sc. Mathematics

Program Specific Outcomes

After the successful completion of this course, the student will:

- Be able to explain the core ideas and the techniques of mathematics at the college level.
- Be able to recognize the power of abstraction and generalization, and to carry out investigative mathematical work with independent judgment.
- Be able to setup mathematical models of real world problems and obtain solutions in structured and analytical approaches with independent judgement.
- Be able to carry out objective analysis and prediction of quantitative information with independent judgment.
- Be able to communicate effectively about mathematics to both lay and expert audiences utilizing appropriate information and communication technology.
- Be able to work independently, and to collaborate effectively in team work and team building.
- Be able to conduct self-evaluation, and continuously enrich themselves through lifelong learning.
- Be able to communicate to lay audiences and arouse their interest in the beauty and precision of mathematical arguments and science.
- Be able to recognize the importance of compliance with the ethics of science and being a responsible citizen towards their community and a sustainable environment.
- Be able to cultivate a mathematical attitude and nurture the interests.

Course Outcomes

First Semester

MM1CRT01: FOUNDATION OF MATHEMATICS

On completion of this course, successful students will be able to:

- prove statements about sets and functions;
- analyze statements using truth tables;
- Construct simple proofs.
- Identify mathematical Symbols and understand standard methods of proofs.

Second Semester

MM2CRT01: ANALYTIC GEOMETRY, TRIGONOMETRY AND MATRICES

On completion of this course, successful students will be able to:

- find the equation to tangent, normal at a point on a conic;
- find the polar equation of a line, circle, tangent and normal to conics
- recognise real and imaginary parts of a circular and hyperbolic functions of a complex variable
- solve a System of Linear equations using the inverse of a matrix
- find characteristic roots and characteristic vectors.
- find the inverse of a matrix by Cayley-Hamilton theorem

Third Semester

MM3CRT01: CALCULUS

After completing this course the learner should be able to

- Find the higher order derivative of the product of two functions.
- Expand a function using Taylor's and Maclaurin's series.
- Conceive the concept of asymptotes and obtain their equations.
- Learn about partial derivatives and its applications.
- Find the area under a given curve, length of an arc of a curve when the equations are given in parametric and polar form.
- Find the area and volume by applying the techniques of double and triple integrals

FOURTH SEMESTER

MM4CRT01 : Vector Calculus, Theory of Equations and Numerical Methods

After completing this course the learner should be able to

- Represent vectors analytically and geometrically, and compute dot and cross products for presentations of lines and planes,
- Analyze vector functions to find derivatives, tangent lines, integrals, arc length, and curvature,
- Compute limits and derivatives of functions of 2 and 3 variables,
- Apply derivative concepts to find tangent lines to level curves and to solve optimization problems,
- Evaluate double and triple integrals for area and volume,

- Differentiate vector fields
- Determine gradient vector fields and find potential functions
- Analyze the fundamental theorem of calculus and see their relation to the fundamental theorems of calculus in calculus , leading to the more generalised version of Stokes' theorem in the setting of differential forms.
- Evaluate line integrals directly and by the fundamental theorem
- Analyze different forms of equations and finding their roots
- Understand relation between roots and coefficients

- Derive numerical methods for approximating the solution of problems of continuous mathematics,
- Analyze the error incumbent in any such numerical approximation,
- Implement a variety of numerical algorithms using appropriate technology
- Compare the viability of different approaches to the numerical solution of problems arising in roots of solution of non-linear equations, interpolation and approximation, numerical differentiation and integration, solution of linear systems.

Fifth Semester

MM5CRT01: MATHEMATICAL ANALYSIS

After completing this course the learner should be able to

- Describe the real line as a complete, ordered field
- Determine the basic topological properties of subsets of the real numbers
- Use the definitions of convergence as they apply to sequences, and functions,
- Determine the continuity, differentiability, and integrability of functions defined on subsets of the real line
- Apply the Mean Value Theorem and the Fundamental Theorem of

Calculus to problems in the context of real analysis

- Produce rigorous proofs of results that arise in the context of real analysis.
- Write solutions to problems and proofs of theorems that meet rigorous standards based on content, organization and coherence, argument and support, and style

MM5CRT02: DIFFERENTIAL EQUATIONS

After studying this course the students should be able to

- Obtain an integrating factor which may reduce a given differential equation into an exact one and eventually provide its solution.
- Identify and obtain the solution of Clairaut's equation.
- Fine the complementary function and particular integrals of linear differential equation.
- Familiarize the orthogonal trajectory of the system of curves on a given surface.
- Method of solution of the differential equation $\frac{dx}{P} = \frac{dy}{Q} = \frac{dz}{R}$
- Describe the origin of partial differential equation and distinguish the integrals of first order linear partial differential equation into complete, general and singular integrals.
- Use Lagrange's method for solving the first order linear partial differential equation
- Solve differential equations of first order using graphical, numerical, and analytical methods,
- Solve and apply linear differential equations of second order (and higher),
- Solve linear differential equations using the Laplace transform technique,
- Find power series solutions of differential equations, and
- Develop the ability to apply differential equations to significant applied and/or theoretical problems.
- Demonstrate their ability to write coherent mathematical proofs and scientific arguments needed to communicate the results obtained from

differential equation models

- Demonstrate their understanding of how physical phenomena are modeled by differential equations and dynamical systems
- Implement solution methods using appropriate technology.

MM5CRT03: ABSTRACT ALGEBRA

After completing this course the learner should be able to

- Assess properties implied by the definitions of groups and rings,
- Use various canonical types of groups (including cyclic groups and groups of permutations) and canonical types of rings (including polynomial rings and modular rings),
- Analyze and demonstrate examples of subgroups, normal subgroups and quotient groups,
- Analyze and demonstrate examples of ideals and quotient rings,
- Use the concepts of isomorphism and homomorphism for groups and rings
- Produce rigorous proofs of propositions arising in the context of abstract algebra.

MM5CRT04 : ENVIRONMENTAL MATHEMATICS AND HUMAN RIGHTS

After the completion of this course the student will be able to:

- Develop awareness about natural resources and the role of individuals in conservation of natural resources.
- Understand the causes, effects and control measures of various types of pollution
- Understand the relation between Fibonacci numbers and nature.
- Realize the presence of the Golden ratio in different spheres of life.

- Acquire basic knowledge about various human rights

ST1 CMT01 - DESCRIPTIVE STATISTICS

The course gives an insight to the students in the areas of

- Different aspects of data, and its collection.
- Concepts of a statistical population and sample.
- Different methods of sampling - simple random sample, systematic, stratified and cluster.
- Central tendency, Dispersion, skewness and kurtosis.
- Data graphics - Ogives and Box plot.
- Index Numbers - Laspeyer's, Paasche's and Fisher's Index Numbers.
- Time-Reversal and Factor-Reversal tests for index numbers.
- Cost of living index numbers.

The goal of this course is to give awareness about data and its primary analysis.

ST2 CMT02 - PROBABILITY THEORY

The course gives an insight to the students in the areas of

- Probability theory which includes basic concepts and important properties.
- Random Variables - discrete and continuous and its properties.
- Bivariate Random Variables - discrete and continuous and its properties.
- Correlation - scatter diagram, Karl Pearson's and Spearman's rank correlation coefficients.
- Regression - fitting of polynomial equations of degree one and two.
- Identification of regression equations.

ST3 CMT03 - PROBABILITY DISTRIBUTIONS

The course gives an insight to the students in the areas of

- Mathematical Expectation and its important properties.
- Probability Distributions (discrete/continuous) such as Uniform, Bernoulli, binomial, Poisson, geometric, hyper-geometric, exponential, gamma- one and two parameter(s), beta (type I and type II), Normal and its properties.
- Law of Large Numbers and Central Limit Theorem.
- Sampling Distributions including t, F, chi-square.

ST4 CMT04 - STATISTICAL INFERENCE

The course gives an insight to the students in the areas of

- Concepts of Estimation, Estimators and Estimates.
- Point and interval estimation.
- Properties of good estimators.
- Methods of Estimation.
- Cramer-Rao inequality.

- Testing of Hypotheses – basic concepts, Statistical hypotheses, null and alternate hypotheses, simple and composite hypotheses, type-I and type-II errors, size and power of a test, p-value, Neyman-Pearson approach.
- Large Sample Tests using Neyman-Pearson approach.
- Small Sample Tests.

Open course

MM5OPT02: APPLICABLE MATHEMATICS

After the completion of this course the student will be able to

- Understanding the basic operations of Mathematics
- Applies shortcut methods for solving problems
- Apply mathematical concepts and principles to perform computations
- Apply mathematics to solve real life problems
- Create, use and analyze graphical representations of mathematical relationships
- Communicate mathematical knowledge and understanding
- Apply technology tools to solve problems
- Perform abstract mathematical reasoning
- Learn independently
- Compute limits, derivatives, and definite & indefinite integrals of algebraic, logarithmic and exponential functions
- Analyze functions and their graphs as informed by limits and derivatives
- Familiarize with basic operations on real numbers, logarithms and quadratic equations
- Identify the definitions of trigonometric ratios and their applications to problems involving heights and distance
- Get basic ideas of two dimensional geometry and graphing straight lines
- Use various methods to compute the probabilities of events
- Acquires basic ideas of derivatives, standard results and various

rules for finding the derivatives of functions

- Differentiate integration from differentiation and integration of simple functions
- Acquires the basic arithmetic skills involving percentages, averages, time and rates, elementary algebra and geometry

SIXTH SEMESTER

MM6CRT01: REAL ANALYSIS

After the completion of this course the student will be able to:

- Identify Continuity and Discontinuity of various functions in different contexts
- Distinguish Uniform continuity from continuity and related theorems
- Understand partitions and their refinement
- Understand Integrability and theorems on integrability
- Recognize the difference between pointwise and uniform convergence of a sequence of functions
- Illustrate the effect of uniform convergence on the limit function with respect to continuity, differentiability, and integrability
- Develops a knowledge about Riemann Integration and applies into problems
- Determine the Riemann integrability and the Riemann Stieltjes integrability of a bounded function and prove a selection of theorems concerning integration

MM6CRT02: GRAPH THEORY AND METRIC SPACES

After the completion of this course the student will be able to

- Understand the new topics Graph Theory
- Understand the basic concepts of graphs, directed graphs, and weighted graphs and able to present a graph by matrices
- Understand the properties of trees and able to find a minimal spanning tree for a given weighted graph

- Understand Eulerian and Hamiltonian graphs

MM6CRT03: COMPLEX ANALYSIS

On completion of this course, the students will be able to

- Compute sums, products, quotients, conjugate, modulus, and argument of complex numbers
- Define and analyze limits and continuity for complex functions as well as consequences of continuity
- Conceive the concepts of analytic functions and will be familiar with the elementary complex functions and their properties
- Determine whether a given function is differentiable, and if so find its derivative
- Use differentiation rules to compute derivatives
- Write complex numbers in polar form
- Evaluate exponentials and integral powers of complex numbers
- Find all integral roots and all logarithms of nonzero complex numbers
- Apply the concept and consequences of analyticity and the Cauchy Riemann equations and of results on harmonic and entire functions including the fundamental theorem of algebra
- Find parametrizations of curves, and compute complex line integrals directly
- Understand the theory and techniques of complex integration
- Applies the theory into application of the power series expansion of analytic functions
- Understand the basic methods of complex integration and its application in contour integration.
- Analyze sequences and series of analytic functions and types of convergence,

- Evaluate complex contour integrals directly and by the fundamental theorem, apply the Cauchy integral theorem in its various versions, and the Cauchy integral formula
- Represent functions as Taylor, power and Laurent series, classify singularities and poles, find residues and evaluate complex integrals using the residue theorem
- Use the Cauchy Residue Theorem to evaluate integrals and sum series
- Identify the isolated singularities of a function and determine whether they are removable, poles, or essential
- Compute Laurent series at an isolated singularity, and determine the residue
- Understand uses of improper integrals in various situations
- Use the residue theorem to compute complex line integrals and real integrals

MM6CRT04: LINEAR ALGEBRA

Upon completion of this course, students should be able to:

- Understand the idea about vector space and metric space
- Analyze finite and infinite dimensional vector spaces and subspaces over a field and their properties, including the basis structure of vector spaces
- Use the definition and properties of linear transformations and matrices of linear transformations and change of basis, including kernel, range and isomorphism
- Compute with the characteristic polynomial, eigenvectors, eigenvalues and Eigen spaces, as well as the geometric and the algebraic multiplicities of an eigen value and apply the basic diagonalization result
- Recall the defining properties of a metric space, and determine whether a given function defines a metric

- Determine how that a function is or is not a metric
- Show that a set in a metric space is or is not open and/or closed
- Show that a function between metric spaces is or is not continuous
- Show that a sequence in a metric space is or is not convergent
- Show that a metric space is or is not complete
- Familiarize with open sets, closed sets and Cantor set

MM6CBT01 : OPERATIONS RESEARCH

Upon completion of this course, students should be able to:

- Understand the new term LPP
- Applies the theory into different types of problems

- Understand Transportation Problem, Assignment problem and Queuing models
- Solving problems using different methods
- Formulate and model a linear programming problem from a word problem and solve them graphically in 2 and 3 dimensions, while employing some convex analysis
- Place a Primal linear programming problem into standard form and use the Simplex Method or Revised Simplex Method to solve it
- Find the dual, and identify and interpret the solution of the Dual Problem from the final tableau of the Primal problem
- Be able to modify a Primal Problem, and use the Fundamental Insight of Linear Programming to identify the new solution, or use the Dual Simplex Method to restore feasibility
- Interpret the dual variables and perform sensitivity analysis in the context of economics problems as shadow prices, input values, marginal values, or replacement values

- Explain the concept of complementary slackness and its role in solving primal/dual problem pairs
- Classify and formulate integer programming problems and solve them with cutting plane methods, or branch and bound methods
- Formulate and solve a number of classical linear programming problems and such as the minimum spanning tree problem, the assignment problem, (deterministic) dynamic programming problem, the knapsack problem, the XOR problem, the transportation problem, the maximal flow problem, or the shortest path problem, while taking advantage of the special structures of certain problems
- Understands duality theorems and dual simplex method
- Uses dual simplex method to find optimal solutions
- Explains the Transportation Problem and formulate it as an LPP and hence solve the problem
- Determine that an Assignment Problem is a special case of LPP and hence solve by Hungarian method
- Identifies the Queuing models, their various forms and methods of solutions

Project

- Demonstrate library research skills in the area of mathematics,
- Critique mathematical presentations, and
- Produce a mature oral presentation of a non-trivial mathematical topic.

B.Sc. Physics Model II

Programme Outcomes

At the completion of under graduate programme, the student will be able to imbibe the following programme outcomes.

- Create logical reasoning and critical thinking through the knowledge that they acquired in classrooms, laboratory etc. and apply them in real-life situations.
- Internalize the significance of various academic as well as extracurricular activities that will enable them to become skilled professionals.
- Grow into accountable and empowered individuals who will emerge as scientists, entrepreneurs etc., and be employed in various governmental and non-governmental sectors.
- Attain expertise in communication skills, acquire moral and social values that keep one creative and compassionate human in all walks of life and turn out to be responsible citizens
- Build up self-esteem and ability to engage in independent and life-long learning in the context of an ever-changing world and competence to face challenges.

Recognize the current local and global issues of environmental contexts and involves in activities that promote sustainable and green living

B.Sc. Physics Model II Programme Specific Outcomes

- Develop deep understanding of the various subjects of physics.
- Enhance practical and mathematical skills and competencies to conduct scientific experiments.
- Create analytical thinking and interpret the inferences from verbal, mathematical and graphical data.
- Develop problem solving skills and formulate questions from theoretical understanding of the subject.
- Equipped with knowledge to participate in the design and development of electronic systems.
- Ability to perform various task using their creativity, intellectual capacity, innovative thoughts and enthusiasm with precision and responsibility.
- Skill to organize events and transfer knowledge through fruitful communications and interact effectively with people from sundry backgrounds.

- Ascertain their area of interest in academic and R&D and get prepared for competitive exams.

B. SC. PHYSICS MODEL II: APPLIED ELECTRONICS

SEMESTER I

PH1CRT01: METHODOLOGY AND PERSPECTIVES OF PHYSICS

This paper helps in the following ways

1. Acquire an overview on the inspiring history in the development of physics.
2. Develop a knowledge on different number systems and their conversion process and to identify the application of binary numbers in computers.
3. Learn the relevance of vectors in physics.
4. Get acquainted with different coordinate systems and their applications in various kinds of problems in physics.
5. Attain knowledge on the importance of care to be taken while doing experiment and distinguish different types of errors that can involve in the experiment.

AE1VOT01 PRINCIPLE OF ELECTRONIC COMPONENTS

1. Understand the fundamental operation of various electronic components.
2. Find out the unknown value of resistance, capacitance and inductance.
3. Construct, understand and analyze various electronic circuits.
4. Apprehend the principles and working of transformers.
5. Understand the working of display devices like LED, LCD etc.

AE1VOT02 - ELECTRONICS APPLICATION

1. Analyze and describe the working of fundamental electronic circuits.
2. Familiarize transducers and understand the working of various types of transducers.
3. Describe soldering technique and design electronic circuits on PCB.
4. Acquire knowledge in using different types of measuring instruments used in the electronics laboratory.

SEMESTER II

PH2CRT02: MECHANICS AND PROPERTIES OF MATTER

1. Understand superposition of waves.
2. Define simple harmonic motion and deduce total energy of SHM.
3. Analyze the theory of various oscillations and resonance.
4. State and prove parallel and perpendicular axes theorems.
5. Derive expressions for moment of inertia of regular bodies using parallel/perpendicular axes theorem.

AE2VOT03 - BASICS OF POWER ELECTRONICS

1. Gain knowledge about power electronic components like FET and its applications.
2. Comprehend different types of MOSFETS.
3. Understand the working of FET Amplifier and evaluate its practical significance.
4. Describe the basic operation of field effect transistors.

AE2VOT04 - POWER ELECTRONICS

1. Acquire knowledge in different thyristors
2. Identify the role of power electronics in electrical energy management.
3. Describe various phase controlling circuits.
4. Solve numerical problems related to SCR, TRIAC and UJT.

SEMESTER III

PH5CRT03 OPTICS, LASER AND FIBER OPTICS

1. Distinguish the basic phenomena like interference, diffraction and polarization that occur in nature.
2. Understand the basic theories and applications of these phenomena.
3. Understand the basic working principle of Laser and different types of lasers.
4. Familiarize applications of lasers in different fields.
5. Study the light propagation in optical fibres and acquaint with different kinds of optical fibres and its applications.

AE3VOT05 - MICROPROCESSOR AND INTERFACING DEVICES

1. Understand Architecture of Intel 8085.
2. Familiarize different types of program instructions.
3. Write programs for addition, subtraction, division, multiplication, sorting etc.
4. Write programs for delay subroutines.

AE3VOT06 - COMMUNICATION ELECTRONICS

1. Discuss various forms of communication systems including mobile communication.
2. Analyze the process of Modulation and Demodulation; the heart of modern communication systems.
3. Describe various communication systems and their pros and cons.
4. Understand PAL-D color television and Radar system.

SEMESTER IV

PH5CRT04 SEMICONDUCTOR PHYSICS

1. Provides the student with the fundamental skills to understand the basic of semiconductor components like diode, transistor, FET, MOSFET and operational amplifier.
2. Build foundation to understand the role of electronic components such as resistors, capacitors, inductors, ordinary diode, zener diode etc. in a circuit when connected individually or in combination.
3. Equipped with knowledge to participate in the design and development of electronic systems.

AE4VOT07-LINEAR INTEGRATED CIRCUITS

1. Gain knowledge of various Linear Integrated Electronic circuits and its application.
2. Design and analyze filter circuits, 555 timer etc. using op-amp.
3. Distinguish digital IC's and linear IC's.
4. Gain theoretical understanding of different IC's and use them in laboratory sessions.
5. Analyze applications of amplifiers.

AE4VOT08 - APPLICATIONS OF MICROPROCESSORS

1. Write programs for stepper motor control using Intel 8255.

2. Write programs for traffic control using PPI 8255.
3. Write programs for temperature control.
4. Write a program for square wave generator.
5. Write programs for seven segment display.

SEMESTER V

PH5CRT05 ELECTRICITY AND ELECTRODYNAMICS

1. Lay a sound theoretical foundation in electricity and electrodynamics.
2. Realize how the development of modern technological world rely on the field- electricity and electrodynamics.
3. Comprehend various phenomena and applications around them related to electric and magnetic field.
4. Understand the power of Maxwell's Equations and their various solutions to ponder into various topics that include Energy and Momentum of Electromagnetic Fields, Radiation Sources and Antennas, Electrodynamics in Macroscopic Media, Wave Guides and Cavities.

5 Acquire practical knowledge to handle electronic gadgets and explain its working principle.

PH5CRT06 CLASSICAL AND QUANTUM MECHANICS

1. Understand the basic concepts of constraints and the formulation of Lagrangian and Hamiltonian.
2. Appreciate the historical development and origin of quantum mechanics.
3. Understand the basic mathematical formulation of quantum mechanics.
4. Apply the Schrodinger equation for solving the problem of a particle in a box.
5. Distinguish between classical mechanics and quantum mechanics.

PH5CRT07 DIGITAL ELECTRONICS AND PROGRAMMING

1. Explain the basic logic operations of NOT, AND, OR, NAND, NOR, and XOR gates.

2. Simplify circuits and Boolean expressions using the Boolean laws.
3. Design different registers and counters.
4. Design basic combinational and sequential logic circuits.
5. Simplify Boolean algebra expressions using Karnaugh maps.
6. Understand the basics of object oriented C++ programming.
7. Acquire the skills to write the programs using the basic concepts of C++.

PH5CRT08 ENVIRONMENTAL PHYSICS AND HUMAN RIGHTS

1. Gain basic knowledge about water resources and proper water management.
2. Realize different aspects of pollution, its dangers and means to prevent it.
3. Recognize the need to protect various energy sources and understand advantages of renewable energy sources and steps to harness them.
4. Identify different means of harnessing solar energy and its advantages.
5. Understand their basic rights as well as ways and means to prevent the violation of rights.

SEMESTER VI

PH6CRT09 THERMAL AND STATISTICAL PHYSICS

1. Define the concept of entropy and explain its physical significance.
2. Explain fundamental concepts of statistical mechanics.
3. Explain Lees Disc experiment and can calculate the thermal conductivity by experimentally.
4. Derive Maxwell-Boltzmann, Bose-Einstein and Fermi-Dirac distribution laws and compare the laws.

PH6CRT10 RELATIVITY AND SPECTROSCOPY

1. Explain special theory of relativity.
2. Derive Lorentz transformation equations.
3. Illustrate twin paradox.
4. Explain relativistic time dilation and length contraction.
5. Derive Einstein's mass energy relation $E=mc^2$.

PH6CRT11 NUCLEAR, PARTICLE AND ASTROPHYSICS

1. Understand the basic tenants of nuclear physics and particle physics.
2. Differentiate the different types of nuclear reactions.
3. Explain the origin and effects of cosmic rays.
4. Develops a research interest in nuclear & Astrophysics.

PH6CRT12 SOLID STATE PHYSICS

1. Realize the importance of crystallography in solid state physics.
2. Classify materials as metals, semiconductors and insulators based on band theory.
3. Distinguish various chemical bonding in common crystal structures.
4. Describe material properties such as magnetism, dielectric properties, super-conductivity and understand the theoretical framework of the same.
5. Solve problems and analyze experimental results.

PH6CBT03 COMPUTATIONAL PHYSICS (CHOICE BASED COURSE)

1. Understand the methods to solve linear algebraic and nonlinear equations.
2. Explain the methods of curve fitting.
3. Discuss numerical differentiation and integration methods.
4. Understand numerical differentiation and integration methods.
5. Use numerical methods to solve ordinary differential equations.

B.Sc. Physics Programme Outcomes

At the completion of under graduate programme, the student will be able to imbibe the following programme outcomes.

- Create logical reasoning and critical thinking through the knowledge that they acquired in classrooms, laboratory etc. and apply them in real-life situations.
- Internalize the significance of various academic as well as extracurricular activities that will enable them to become skilled professionals.
- Grow into accountable and empowered individuals who will emerge as scientists, entrepreneurs etc., and be employed in various governmental and non-governmental sectors.
- Attain expertise in communication skills, acquire moral and social values that keep one creative and compassionate human in all walks of life and turn out to be responsible citizens
- Build up self-esteem and ability to engage in independent and life-long learning in the context of an ever-changing world and competence to face challenges.
- Recognize the current local and global issues of environmental contexts and involves in activities that promote sustainable and green living.

B.Sc. Physics Model I Programme Specific Outcomes

- Develop deep understanding of the various subjects of physics.
- Enhance practical and mathematical skills and competencies to conduct scientific experiments.
- Create analytical thinking and interpret the inferences from verbal, mathematical and graphical data.
- Develop problem solving skills and formulate questions from theoretical understanding of the subject.
- Ability to perform various task using their creativity, intellectual capacity, innovative thoughts and enthusiasm with precision and responsibility.
- Skill to organize events and transfer knowledge through fruitful communications and interact effectively with people from sundry backgrounds.
- Ascertain their area of interest in academic and R&D and get prepared for competitive exams.

COURSE OUTCOMES (CO)

Course Code	Title of the Course
PH5CRT01	METHODOLOGY AND PERSPECTIVES OF PHYSICS
PH5CRT02	Mechanics and properties of Matter
PH5CRT03	optics and photonics
PH5CRT04	Semiconductor physics
PH5CRT05	Electricity and Electrodynamics
PH5CRT06	Classical and Quantum Mechanics
PH5CRT07	Digital Electronics and Programming
PH5CRT08	Environmental Physics and Human Rights
PH5OPT0X	Open Course PH5OPT01: Our Universe PH5OPT02: Physics in Daily Life
PH6CRT09	Thermal and Statistical Physics
PH6CRT10	Relativity and Spectroscopy
PH6CRT11	Nuclear, Particle and Astrophysics
PH6CRT12	Solid State Physics
PH6CBT0X	Choice Based Course PH6CBT03 Computational Physics

SEMESTER I

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This paper helps in the following ways

1. Acquire an overview on the inspiring history in the development of physics.
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SEMESTER II

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2. Define simple harmonic motion and deduce total energy of SHM.
3. Analyze the theory of various oscillations and resonance.
4. State and prove parallel and perpendicular axes theorems.
5. Derive expressions for moment of inertia of regular bodies using parallel/perpendicular axes theorem.

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3. Understand the basic working principle of Laser and different types of lasers.
4. Familiarize applications of lasers in different fields.
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SEMESTER IV

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1. Gain knowledge about the basic of semiconductor components like diode, transistor, FET, MOSFET and operational amplifier.
2. Build foundation in the theoretical understanding to handle the electronic components such as resistors, capacitors, inductors, ordinary diode, zener diode etc. in a circuit when connected individually or in combination.

3. Grasp the knowledge to participate in the design and development of electronic systems.

SEMESTER V

PH5CRT05 ELECTRICITY AND ELECTRODYNAMICS

1. Lay a sound theoretical foundation in electricity and electrodynamics.
2. Realize how the development of modern technological world rely on the field-electricity and electrodynamics.
3. Comprehend various phenomena and applications around them related to electric and magnetic field.
4. Understand the power of Maxwell's Equations and their various solutions to ponder into various topics that include Energy and Momentum of Electromagnetic Fields, Radiation Sources and Antennas, Electrodynamics in Macroscopic Media, Wave Guides and Cavities.
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1. Explain the basic logic operations of NOT, AND, OR, NAND, NOR, and XOR gates.
2. Simplify circuits and Boolean expressions using the Boolean laws.
3. Design different registers and counters.
4. Design basic combinational and sequential logic circuits.

5. Simplify Boolean algebra expressions using Karnaugh maps.

6. Understand the basics of object oriented C++ programming.

7. Acquire the skills to write the programs using the basic concepts of C++.

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1. Gain basic knowledge about water resources and proper water management.
2. Realize different aspects of pollution, its dangers and means to prevent it.
3. Recognize the need to protect various energy sources and understand advantages of renewable energy sources and steps to harness them.
4. Identify different means of harnessing solar energy and its advantages.
5. Understand their basic rights as well as ways and means to prevent the violation of rights.

SEMESTER VI

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2. Explain fundamental concepts of statistical mechanics.
3. Explain Lees Disc experiment and can calculate the thermal conductivity by experimentally.
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1. Explain special theory of relativity.
2. Derive Lorentz transformation equations.
3. Illustrate twin paradox.
4. Explain relativistic time dilation and length contraction.
5. Derive Einstein's mass energy relation $E=mc^2$.

PH6CRT11 NUCLEAR, PARTICLE AND ASTROPHYSICS

1. Understand the basic tenants of nuclear physics and particle physics.

2. Differentiate the different types of nuclear reactions.

3. Explain the origin and effects of cosmic rays.

4. Develops a research interest in nuclear & Astrophysics.

PH6CRT12 SOLID STATE PHYSICS

1. Realize the importance of crystallography in solid state physics.
2. Classify materials as metals, semiconductors and insulators based on band theory.
3. Distinguish various chemical bonding in common crystal structures.
4. Describe material properties such as magnetism, dielectric properties, super-conductivity and understand the theoretical framework of the same.
5. Solve problems and analyze experimental results.

PH6CBT03 COMPUTATIONAL PHYSICS (CHOICE BASED COURSE)

1. Understand the methods to solve linear algebraic and nonlinear equations.
2. Explain the methods of curve fitting.
3. Discuss numerical differentiation and integration methods.
4. Understand numerical differentiation and integration methods.
5. Use numerical methods to solve ordinary differential equations.

OPEN COURSE

PH5OPT01: OUR UNIVERSE

1. Explain various models of universe and fundamental concepts of observational astronomy.
2. Understand the origin and evolution of the universe.
3. Understand fundamentals of telescopes and its classifications.
4. Describe the solar system.
5. Realize the impact of Earth's orbital motion on seasonal changes.
6. Illustrate the different phenomenon occurring in the universe.

PH5OPT02: PHYSICS IN DAILY LIFE

1. List the units and dimensions of fundamental and derived quantities.
2. Explain the concepts of reflection, refraction, diffraction, interference, scattering and total internal reflection.
3. Understand the different methods of power generation and evaluate the merits and demerits of the same.
4. Realize the importance of satellites.
5. Understand the different phenomena that occur in the universe.

COMPLEMENTARY PHYSICS FOR MATHEMATICS

PH1CMT01: PROPERTIES OF MATTER & ERROR ANALYSIS

1. Understand the theory behind the modulus of elasticity.
2. Analyze the bending moments/torsion while applying force on different objects.
3. Understand and evaluate the practical significance of the fluid dynamics.
4. Explain different types of errors in measurements.
5. Estimate and report errors in physical measurements.
6. Apply mathematics to explain different physical phenomena.

PH2CMT01: MECHANICS AND ASTROPHYSICS

1. Recall the laws of gravitation.
2. Apply parallel and perpendicular axes theorem.
3. Formulate and numerically solve problems.
4. Describe the characteristics of waves.
5. Acquire numerical problem solving skills.

PH3CMT01: MODERN PHYSICS AND ELECTRONICS

1. Describe different atom models.
2. Calculate various factors related to radioactivity.
3. Comprehend the theory behind diodes and transistors.
4. Use basic number system.
5. Explain the inadequacies of classical physics and experimental evidences for quantum theory.
6. Obtain the Schrodinger equation and use it for solving the problem of a particle in a box.

PH4CMT01: OPTICS & ELECTRICITY

1. Distinguish the basic phenomena like interference, diffraction and polarization that occur in nature.
2. Understand the basic working principle of Laser and its applications.
3. Develop a knowledge on the theory of light propagation through fibres.
4. Develop practical skills based on optical and electrical experiments.

5. Identify the optical technology used in day to day gadgets.

COMPLEMENTARY PHYSICS FOR CHEMISTRY

PH1CMT01: PROPERTIES OF MATTER & THERMODYNAMICS

1. Understand the theory behind the modulus of elasticity.
2. Analyze the bending moments/torsion while applying force on different objects.
3. Understand and evaluate the practical significance of the fluid dynamics.
4. Explain thermodynamic systems and processes.
5. Understand the theory and practical aspects of heat engines.

PH2CMT01: MECHANICS AND SUPERCONDUCTIVITY

1. Recall the laws of gravitation.
2. Apply parallel and perpendicular axes theorem.
3. Describe the characteristics of waves.
4. Understand the origin of superconductivity.
5. Classify materials like insulators, semiconductors and superconductors.

PH3CMT01: MODERN PHYSICS AND MAGNETISM

1. Describe different atom models.
2. Calculate various factors related to radioactivity.
3. Explain the inadequacies of classical physics and experimental evidences for quantum theory.
4. Obtain the Schrodinger equation and use it for solving the problem of a particle in a box.
5. Understand the principles of various spectroscopic methods.
6. Comprehend the theory behind diodes and transistors.
7. Discuss about magnetism, different magnetic materials, its properties and reason for Earth's magnetism.

PH4CMT01: OPTICS & SOLID STATE PHYSICS

1. Distinguish the basic phenomena like interference, diffraction and polarization that occur in nature.
2. Understand the basic working principle of Laser and its applications.

3. Develop a knowledge on the theory of light propagation through fibres and various kinds of fibres.
4. Define different types of polarization leading to dielectric property.
5. Model different crystal structures.
6. Enhance problem solving skills and correlate between numerical problems and real life situations.

Importance of Practical's

Laboratory provides a wide space for students to nurture their hidden scientific potential, creative thinking and systematic analyzing skills. Through B. Sc. Physics programme, students will realize how theory, experiment and observation mutually correlated and help each other to expand the frontiers of knowledge of the physical universe. By conducting various experiments, students will be able to internalize a number of skills and they will be benefitted in life many ways as follows:

- Understand the basic concepts of physics thoroughly.
- Provide platform to test out the theoretical knowledge gained in class rooms.
- Learn to formulate physical phenomenon mathematically.
- Make inferences from observations.
- Earn competency to use mathematical methods to solve physics problems.
- Enhance the observational and technical skills.
- Ability to handle various instruments in the laboratory.
- Learn to tabulate the data systematically.
- Development of personal learning and thinking capacity.
- Develop observational, analytical and evaluating skills.
- Grow the aptitude towards research.

CONSOLIDATED SCHEME FOR I TO VI SEMESTERS- PRACTICALS

MODEL I

Course Code	Title of the Practical
PH2CRP01	Mechanics and properties of Matter
PH4CRP02	Optics and Semiconductor Physics
PH6CRP03	Electricity, Magnetism and Laser

PH6CRP04	Digital Electronics
PH6CRP05	Thermal Physics, Spectroscopy and C++ programming
PH6CRP06	Acoustics, Photonics and Advanced Semiconductor Physics

CONSOLIDATED SCHEME FOR I TO VI SEMESTERS- PRACTICALS

MODEL II

Course Code	Title of the Practical
PH2CRP01	Mechanics and properties of Matter
AE2VOP01	Basic and Power Electronics
PH4CRP02	Optics and Semiconductor Physics
AE4VOP02	Microprocessor and Linear Integrated Circuits
AE4VOP03	Microprocessor and Communication Electronics
PH6CRP03	Electricity, Magnetism and Laser
PH6CRP04	Digital Electronics
PH6CRP05	Thermal Physics, Spectroscopy and C++ programming
PH6CRP06	Acoustics, Photonics and Advanced Semiconductor Physics

Language and subsidiary courses

For a perfect curriculum language learning is necessary. It helps students to think creatively and nurture their imaginative and artistic talents. It fosters the knowledge about various cultures and respect the diversity. Expertise in language strengthen students to think, speak, read or write creatively and make communications more effective.

Along with core courses, subsidiary courses too have an unavoidable role in a programme. Subsidiary subjects not only broaden student's knowledge, but it also supports to learn the main stream courses in a better way. To learn and understand physics in a better way, mathematics is an essential tool. Basic mathematical tools such as differential and integral calculus, vector calculus, linear algebra, Fourier series and transforms and functions of a complex variable used in physics to explain phenomena's accurately and prove theoretical concepts. Likewise chemistry also complement BSc physics programme.

B. Sc. Zoology Programme (Model I)

Programme outcome

The BSc. Zoology programme is designed to help the students to:

1. Impart basic knowledge of various disciplines of Zoology and General biology meant both for a graduate terminal course and for higher studies.
2. Inculcate interest in and love of nature with its myriad living creatures.
3. Understand the unity of life with the rich diversity of organisms and their ecological and evolutionary significance.
4. Acquire basic skills in the observation and study of nature, biological techniques, experimental skills and scientific investigation.
5. Acquire basic knowledge and skills in certain applied branches to enable them for self employment.
6. Impart awareness of the conservation of the biosphere.

Programme specific outcome

The graduate of this programme should be able to:

1. Identify and list out common animals
2. Explain various physiological changes in our bodies
3. Analyze the impact of environment on our bodies
4. Understand various genetic abnormalities
5. Develop respect for nature
6. Explain the role and impact of different environmental conservation programmes
7. Identify animals beneficial to humans
8. Identify various potential risk factors to health of humans
9. Explain the importance of genetic engineering
10. Use tools of information technology for all activities related to zoology

Course outcome

Semester I

ZY1CRT01 - General Perspectives in Science & Protistan Diversity

The students should :-

- Have awareness about the basic philosophy of science, its history, concepts and scope.
- Develop proper scientific mind, culture and work habits.
- Get familiarized with the basic tools and techniques of scientific study with emphasis on biological sciences.
- Have knowledge on different phylums of Protista with examples, helps us to identify various disease causing organisms, parasites and their stages of life cycle, that cannot be observed with naked eye.

Semester II

ZY2CRT02 - Animal Diversity - Non Chordata

The students should :-

- Be able to scientifically classify invertebrate fauna.
- Have knowledge about the physiological and anatomical peculiarities of some invertebrate phyla through type study.
- Know evolutionary significance of various invertebrate fauna.
- Be curious about the living things around them.

Semester III

ZY3CRT03 - Animal Diversity – Chordata

The students should :-

- Observe the diversity in chordates and their systematic position.
- Be aware of the economic importance of various classes of Chordates
- Have knowledge about the physiological and anatomical peculiarities of some vertebrate phyla through type study.
- Be aware of the evolutionary importance of different classes of organisms**.**

Semester IV

ZY4CRT04 - Research Methodology, Biophysics and Biostatistics

The students should :-

- Be familiar with basic concept of scientific method in research process.
- Have knowledge on various research designs, research communication and scientific documentation.
- Be aware about the laws and ethical values in biology.
- Be equipped with basic techniques of animal rearing collection and preservation.
- Apply statistical methods in biological studies.

Semester IV

ZY4CRP04 – Animal Diversity – Chordata, Research Methodology, Biophysics and Biostatistics

The students should :-

- Identify and classify organisms to their respective taxa.
- Develop skill on scientific drawing and dissections
- Be able to identify organisms using taxonomic keys
- Identify the different bones of bird and rabbit
- Be equipped with basic techniques of animal rearing collection and estimation.
- Know about the working principle and uses of different instruments used in the laboratory.
- Use computer applications for various biological and statistical uses.

Semester V

ZY5CRT05 – ENVIRONMENTAL BIOLOGY AND HUMAN RIGHTS

The students should :-

- Have knowledge on the basic concepts of environmental sciences, ecosystems, natural resources, population, environment and society.
- Be aware of natural resources, their protection, conservation, and the factors polluting the environment, their impacts and control measures.
- Know about the basic concepts of toxicology, their impact on human health and remedial measures.
- Be conscious about biodiversity, environmental issues and conservation strategies.
- Develop the real sense of human rights – its concepts & manifestations

Semester V

ZY5CRT06 – CELL BIOLOGY AND GENETICS

The students should :-

- Understand the structure and function of the cell, fundamental unit of life.
- Be aware of different cell organelles, their structure and role in living organisms
- Have knowledge about cell signalling and cell division.
- Know about the central role of genes and their inheritance in the life of all organisms.
- Be familiar with chromosomal theory of sex determination, linkage and recombination.
- Identify and understand the different genetic abnormalities and mutations.

Semester V

ZY5CRT07 – EVOLUTION, ETHOLOGY & ZOOGEOGRAPHY

The students should :-

- Know about the evolutionary history of earth – living and non living
- Understand about evolutionary concepts and theories
- Know the mechanism and factors affecting evolution.
- Acquire knowledge about species, speciation and various mechanisms involved in development of new species.
- Know the origin of earth and various organism and how humans evolved.
- Obtain basic knowledge on animal behavioural patterns and their role.
- The social organization in insects and mammals.
- Understand about the distribution of animals on earth, its pattern, evolution and causative factors.

Semester V

ZY5CRT08 – HUMAN PHYSIOLOGY, BIOCHEMISTRY AND ENDOCRINOLOGY

The students should :-

- Be able to explain the basic principles of biochemistry.
- Understand the metabolism of various biological molecules.
- Know about the organs, their structure and function associated with different systems in human body.
- Be able to illustrate different kinds of food, their structure, function and metabolism.

- Be able to explain various aspects of physiological activities of animals with special reference to humans.
- Understand hormonal regulation of physiological processes in invertebrates and vertebrates
- Be familiar with hormonal regulation of physiological systems in several invertebrate and vertebrate systems

Semester V

ZY5OPT02 – PUBLIC HEALTH AND NUTRITION

The students should :-

- Aware the real sense of health
- Understand the role of balanced diet in maintaining health
- Practice yoga and meditation in day to day life.

Semester VI

ZY6CRT09 – DEVELOPMENTAL BIOLOGY

The students should :-

- Understand the structure and function of reproductive organs.
- Know about various stages involved in development of embryos.
- Acquire knowledge about embryology of frog, chick and humans
- Have the knowledge on experimental methods and designs that can be used for future studies and research in embryology,teratology and developmental defects..

Semester VI

ZY6CRT10

MICROBIOLOGY & IMMUNOLOGY

The students should :-

- Understand the microbial world, its structure and function.
- Know about various microbial infections and their epidemiology
- Knowledge on fundamental aspects of basic biology of bacteria and viruses
- Familiarize the role of immunology in human health and well – being.

Semester VI

ZY6CRT11 – BIOTECHNOLOGY, BIOINFORMATICS & MOLECULAR BIOLOGY

The students should :-

- Acquire intensive and in depth learning in the field of biotechnology.
- Familiarise with emerging field of biotechnology practices and approaches.
- Know about the applications in medical, industrial, environmental agricultural and nano-medicine.
- Familiarize with public policy, biosafety and intellectual property rights issues related to biotechnology.
- Study structural and functional details of basic unit of life at the molecular level.

Semester VI

ZY6CRT12

OCCUPATIONAL ZOOLOGY

The students should :-

- Equip with self employment capabilities.
- Know about profitable farming.
- Aware of cottage industries.

Semester VI

ZY6CBT04 – NUTRITION, HEALTH AND LIVESTYLE MANAGEMENT

The students should :-

- Understand general concept of health and wellness.
- Know principles of nutrition and its role in health.
- Familiarize with food safety, food laws and regulations.
- Familiarize life style diseases.
- Value of good life style practices, physical fitness and healthy food habits.

COMPLEMENTARY COURSE : ZOOLOGY MODEL 1

Semester I

ZY1CMT01-NON-CHORDATE DIVERSITY

The students should :-

- Study the scientific classification of invertebrate fauna
- Learn the physiological and anatomical peculiarities of invertebrate phyla through type study.
- Learn the unity of life with rich diversity of organisms and evolutionary significance of invertebrate fauna
- Generate curiosity in the biota living around them

Semester II

ZY2CMT02- CHORDATE DIVERSITY

The students should :-

- Observe the diversity in chordates and their systematic position
- Aware of the economic importance of Chordates
- Learn the physiological and anatomical peculiarities of Vertebrate phyla through type study.
- Generate curiosity in Vetrebrates living around them

Semester III

ZY3CMT03-PHYSIOLOGY AND IMMUNOLOGY

The students should :-

- Appreciate the correlation between structure and function of organisms
- Aware of the health related problems, their origin and treatment
- Understand how efficiently our immune system work in the body
- Know about preventing common diseases rather than curing

Semester IV

ZY4CMT04-APPLIED ZOOLOGY

The students should :-

- Acquire basic knowledge and skills in applied branches of Zoology

- Understand the technology for utilising ecofriendly organisms around them for beneficial purpose
- Equip with self employment opportunities with scientific knowledge to perform profitably and confidently

BA Economics

Program Outcome

PO1: Understand basic concepts in economics and apply economic principles in real world situations

PO2: Foster the economic way of thinking.

PO3: Ability to analyze historical and current events from an economic perspective

PO4: Ability to understand various social issues and economic problems.

PO5**:** Acquire skills in Critical Thinking, Quantitative Reasoning, Problem Solving and Communication

Programme Specific Outcomes

PSO1: Ability to apply knowledge of economics with powerful mathematical and statistical tools

- PSO2: Ability to identify, formulate and solve economic problems
- PSO3:Ability to conduct empirical studies for scientific social science researches as well as to analyse and interpret them
- PSO4: Knowledge of contemporary social, political and economic issues
- PSO5: Ability to perform as a successful economic analyst for industry, trade and commerce, banking and non-banking financial institutions
- PSO6: Ability to perform as economic advisors to government and policy makers
- PSO7: Acquiring knowledge, competency and confidence to take up career in Indian Economic Service

Course Outcomes

B A ECONOMICS-CORE COURSE

Course1- PERSPECTIVES AND METHODOLOGY OF ECONOMICS-

:- After the completion of Course , the student will be able to attain the following

CO1: Students will familiarise different branches of Social Sciences

CO2: Knowhow on Methodology of Social sciences
CO3: Know how to conduct Social and Economic Researches.
CO4: Understand various quantitative and qualitative economic models.

CO5: Learn to apply methods and theories of Social Sciences to contemporary Issues.

Course2- MICRO ECONOMIC ANALYSIS I

After the completion of Course, the student will be able to attain the following:-

CO1: It gives the foundation for economic analysis and problem solving.
CO2: Able to analyse consumer behaviour and consumer decisions.

CO3: A thorough understanding on firm's production processes and decisions.
CO4: Know how to solve basic micro economic problems.
CO5: Learn to apply micro economic tools and techniques in the operation of real economy

Course3-MICRO ECONOMIC ANALYSIS II

After the completion of Course, the student will be able to attain the following:-
CO1: Understand market and factor pricing patterns
CO2: Familiarise Welfare Economics
CO3: Provide an understanding of micro economic concepts and how to use that concept to solve specific questions
CO4: Helps to understand the behavioural pattern of consumers in various market situations
CO5: Enable the students to use economic tools and principles in the analysis of economic policies

Course4-ECONOMICS OF GROWTH AND DEVELOPMENT

After the completion of Course, the student will be able to attain the following:-
CO1: Student acquaint with the basic concepts and issues of growth and development.
CO2: Provide an insight into the modern approaches to economic development.
CO3: Know how to measure National Income.
CO4: An insight into the need for sustainable economic development.

CO5: Study about Human Development Indicators and their role in designing development programmes.

Course5- MACRO ECONOMICS-I

After the completion of Course, the student will be able to attain the following:-

CO1: Provides a thorough understanding of economic issues and how treat them in macro perspectives

CO2: Provides an understanding of system of accounts of Government of India

CO3: Helps to understand and compare a closed economy and open economy adjustment mechanism

CO4: Helps to understand the difference between NI accounting and Green accounting

CO5: Provide an insight for sustainable future

Course 6- PUBLIC ECONOMICS

After the completion of Course, the student will be able to attain the following:-

CO1: Know about the budget and fiscal policies.

CO2: To analyse various issues between centre and state governments

CO3: give an understanding of the impact of public policies on allocation of resources and distribution of income

CO4: To know about the working of the public finance system

CO5: Provide a theoretical understanding of state activities

Course7- MACRO ECONOMICS-II

After the completion of Course, the student will be able to attain the following:-

CO1: Provide a theoretical understanding of aggregate economy

CO2: Compare and contrast classical and Keynesian approaches

CO3: To know about the various factors contributing to inflationary and deflationary pressures

CO4: Helps to understand the role of monetary and fiscal policies to address economic issues

CO5: Thorough understanding of post Keynesian schools of thought

Course 8- ENVIRONMETAL ECONOMICS

After the completion of Course, the student will be able to attain the following:-

CO1: Achieve a mission of sustainable society.

CO2: How to protect the environment while promoting development

CO3: Acquire the skills of solving environmental problems.

CO4: Provide an understanding of renewable and non renewable resources

CO5: An understanding of civil, political, economic and social rights

Course 9- INTRODUCTORY ECONOMETRICS

After the completion of Course, the student will be able to attain the following:-

CO1: Learn how to estimate a general class of parametric models or semi- parametric models

CO2: Gain knowledge regarding hypothesis testing and model selection

CO3: Know how of Econometric techniques

CO4: Acquire Estimation and analysing skills

CO5: Study to interpret computer output to solving economic issues

Course10- INTERNATIONAL ECONOMICS

After the completion of Course, the student will be able to attain the following:-

CO1: Thorough understanding on International Economic System.
CO2: Learn global economic issues and role of international institutions in tackling them.

CO3: Study fundamental theories in International Economics and examine the relative economic problems in the light of models and theories.

CO4: To understand the mechanism of devaluation and depreciation of currencies and its impact on nations BOP

CO5: Know how about the functioning of foreign exchange markets and exchange rate systems

Course11- MONEY AND FINANCIAL MARKET

After the completion of Course, the student will be able to attain the following:-

CO1: understand basic concepts about financial institutions and markets.

CO2: Know the changing role of financial sector of the economy

CO3: Understand the role of financial institutions and markets in the modern economies.

CO4: To know about the developmental and stabilising services of financial products

CO5: Awareness and Practice of e-banking services

Course12- INDIAN ECONOMY

After the completion of Course, the student will be able to attain the following:-

CO1: A thorough understanding on Indian Economic System.

CO2: Know about the policy issues relating to economy of India.

CO3: To know about the structural adjustment programme and the transformation of the Indian economy

CO4: To know about the sectoral contributions to the growth of the Indian economy

CO5: Throws light on magnitude of poverty and inequality and aware the students about the need for social concern

Course 13- Elective. MATHEMATICS FOR ECONOMIC ANALYSIS

After the completion of Course, the student will be able to attain the following:-

CO1: Enable to solve optimisation problems of goal equilibrium of a household, business firm or policy makers.

CO2: Enables to analyse a static equilibrium in which the economic unit or system is modelled as stationary.

CO3: Learn to analyse quantitative methods to describe an economic phenomenon.

CO4: Study to analyse and interpret economic policies in the light of mathematical tool of analysis.

CO5: Permits the student to conduct quantifiable test and create models to predict future economic activities

OPEN COURSE

FUNDAMENTALS OF ECONOMICS

After the completion of Course, the student will be able to attain the following:-

CO1: To know about basic economic problems.

CO2: To understand public expenditure and public revenue and its impacts on Indian economy.

CO3: To know about Banking and non-Banking institutions.

CO4: A thorough understanding on foreign exchange and BOP.

CO5: To provide an understanding of Economic Planning in India and to know about LPG.

COMPLEMENTARY-SOCIAL FORMATIONS IN PRE-MODERN INDIA

After the completion of Course, the student will be able to attain the following:-

CO1: Students would enable to get a faire idea about the social formation of ancient Indian civilisation.

CO2: Help to gain a thorough understanding of the emergence of feudal order in India. And also helps to know about the south Indian and North Indian Bhakti movement.

CO3: Expected to get an eye view on political economy of the Delhi Sultanate

CO4: Provide a thorough understanding of the social formation of the Mughal India.

CO5: Enables the learner to understand the technological innovations in pre-modern Indian society.

COMPLEMENTARY COURSE –AN ITRODUCTION TO POLITICAL SCIENCE

After the completion of Course, the student will be able to attain the following:-

CO1: Students are expected to understand nature and scope of the discipline

CO2: Students are enabling to compare and contrast different approaches to political science

CO3 Students are expected to analyse critically the functions of modern states in a globalised era

CO4: Students are expected to gain an insight on political ideologies and their role in the evaluation of various political systems

CO5: Students are expected to understand the various forms of government and its working in different democracies.

BA English Literature & Communication Studies

Program Outcomes

Students seeking admission for B.A. programme are expected to imbue with following qualities which help them in their future life to achieve the expected goals.

- Demonstrate, in oral and written form, the ability to read and evaluate primary documents according to the rubrics of various literary critical approaches
- Demonstrate curiosity, humility and courage reflecting a commitment to reading and critical inquiry
- Realization of human values.
- Sense of social service.
- Responsible and dutiful citizen.
- Critical temper
- Creative ability

Program Specific Outcomes

The course provides the learner with immense opportunities to plunge into the pool of Language, Literature, Communication and Journalism which ultimately makes him/her competent enough to perform well in the global arena. Learning linguistics provide him/her the wisdom for the accurate expression of ideas. Literature steers him through models of umpteen life situations and makes him/her emotionally and intellectually solid.

PSO1: Performance oriented language learning bestows him with the mastery of adept language use coupled with remarkable interpersonal skills.

PSO2: The student shall possess a testable knowledge on the various fields and branches of knowledge in accordance with the syllabus prescribed highlighting language, literature, and communicative studies.

PSO3: By the completion of the course students attain competence in the functional use of English during both academic and non-academic life situations.

PSO4: The study of literature polishes their literary/artistic/imaginative skills and make them better thinkers and good critics and moreover responsible social beings.

PSO5: The course also provides with an ample room for the students to know about the principles and practices of Journalism. By unleashing the relatively obscure world of print and broadcast journalism, students will awaken into the new world opened in front of them. It is considered as the applied field of Literature, where one can find immense opportunities for the application of their linguistic abilities. It equips the learner as a journalist who could persuade, influence, and motivate the society.

PSO6: The course will also bestow the learners with a tremendous vocabulary which will allow him/her to strike the right note while reporting an event or writing articles in a newspaper.

In this way the course provides with ample opportunities for the student to learn language through literature and apply that learning through journalism. Press, being the fourth estate of

democracy enjoys a considerable part in the proper functioning of the government machinery. The course builds good journalists who think, speak and act in a more humane way.

COURSE OUTCOMES

SEMESTER I

1. **COURSE: Fine Tune Your English**

   COURSE CODE: EN1CC01

   Hours : 5 Credits: 4

The course is intended to introduce the students to the basics of grammar, usage and effective communication. On completion of the course, the student should be able to:

CO1: Confidently use English in both written and spoken forms.
CO2: Use English for formal communication effectively.
CO3: Have practical and humorous approach to language learning
CO4: Get equipped with current trends in grammar and usage

2. **COURSE: An Introduction to Sociology**

   COURSE CODE: SO1CMT01

   Hours : 6 Credits: 4

A graduate will possess a testable knowledge on:

CO1: Their sound understanding of the society.
CO2: Develop sociological knowledge and skills that enable them to think critically and imaginatively about society and social issues.
CO3: Basic concepts of sociology like society, culture, socialization, social change etc.
CO4: The primary institutions of family, education, religion, politics etc.
CO5: The link between individual and society and to understand how both of them shape each other.
CO6: Different sociological perspectives, the Micro sociological foundation and the mechanism of Social Dynamics
CO9: The interpretations and analysis of the principles of deviance.

3. COURSE : Methodology of Humanities and Literature

COURSE CODE: EN1CR01

Hours : 6 Credits: 4

CO1: Methodology of Humanities and Literature is intended to introduce the student to the inter relationship between paradigms of social formation.

CO2: On completion of the course, the student should be able to know and appreciate the location of literature within humanities.

CO3: Establish connections across frontiers of disciplines.

CO4: Critically engage with culture, gender and marginality.

CO5: Get acquainted with narration and representation.

CO6: Familiarise with the culture and identity, class, race and gender and the history of language as a whole.

CO7: The student should be well versed in narration and representation, narrative modes of thinking, narration in literature, philosophy and historical reading.

4. COURSE : Conversational Skills in English

COURSE CODE: EN1CS02

Hours : 4 Credits: 4

CO1: Students are sensitized to the nuances of spoken forms of English.

CO2: Familiarized with speech sounds and phonological aspects of the language.

CO3: Develop a neutral accent and improve the general standard of pronunciation.

CO4: Develop the conversational skills in various situations.

5. COURSE: English in Informal Situations

COURSE CODE: EN1CS01

Hours : 4 Credits: 4

The student will be able to:

CO1: Able to speak English with a high degree of confidence, accuracy and fluency.

CO2: Capable of answering questions of a conversational nature.

CO3: Have a command of a range of questions to elicit information from other people with an awareness of contextual appropriateness.

CO4: Take part with confidence in conversations, to initiate, sustain and close a conversation.

SEMESTER II

1. **COURSE: Issues that Matter**

   COURSE CODE: EN2CC03

   Hours : 5 Credits: 4

   By the completion of the course, the learner should be able to:

   CO1: Identify the major issues of contemporary significance
   CO2: Respond rationally and positively to the issues raised
   CO3: Internalise the values imparted through the selections.
   CO4: Be sensitized to contemporary issues of concern.

2. **COURSE: Development of Sociological theories**

   COURSE CODE: SO2CMT01

   Hours :6 Credits: 4

The graduate is acquainted with:

CO1: The fundamentals of sociology as a relatively new branch of knowledge and the trajectory of social thinking.

CO2: An epistemological know-how of celebrated social philosophies of the world.

CO3: A historical awareness on the factors that triggered the development of sociological theories.

CO4: The pioneers of sociological thought like Auguste Comte, Herbert Spencer, Emile Durkheim and Max Weber.

CO5: Comtean Sociology with his Positivism, Law of Three Stages and Hierarchy of Sciences.

CO6: Herbert Spencer through his theories like Social Darwinism, Social Evolution and Organic Analogy.

CO7: The contributions of Emile Durkheim like Social facts, Social Solidarity and Theory of suicide.

CO8: An understanding of the theories of Max Weber like Social Action and Protestant Ethics and Spirit of Capitalism.

3. **COURSE: Introduction to communication**

   COURSE CODE: EN2CS03

   Hours : 6 Credits: 4

CO1: Become conversant with key terms, models, concepts and a range of theories about communication.

CO2: Deliver effective messages based on audience and context.

CO3: Demonstrate elementary knowledge of the key forms of communication and media platforms.

CO4: Demonstrate a general sense of how communication theory relates to the practice of communication.

4. **COURSE: Business Communication**

   COURSE CODE: EN2CS04

   Hours : 4 Credits: 4

CO1: Use current technology related to the communication field.

CO2: The effective use of various types of oral, written and digital communication modes geared to a range of business audiences

CO3: Effective business writing

CO4: Provide examples of experiential learning opportunities that you have participated in that have helped develop your communication skills in a professional environment

5. COURSE: Introducing Language and Literature

COURSE CODE: EN2CR02

Hours : 4 Credits: 4

CO1: The students are introduced to the evolution and the different traits of the English language till the present time which includes Language families, Periods in the history of English language and Language verities.

CO2: A comprehensive awareness on the evolution of literature from antiquity to postmodern times.

CO3: Understanding the diversity of genres and techniques of representation and narration.

CO4: Identify the link between literature and films as two methods of narrative expression.

CO5: Get aquainted with the emergence of British and American Literature through diverse periods.

SEMESTER III

1. **COURSE: Print Media Journalism I**

   COURSE CODE: EN3CS05

   Hours : 5 Credits: 4

   The student is able to demonstrate his/her understanding on

CO1: The history of journalism from its inception.

CO2: The history of Indian journalism and its pioneers.

CO3: The role of journalism in Indian freedom struggle.

CO4: The context of the imposition of press censorship in India

CO5: Legislative interferences on Indian press

CO6: Journalism in Kerala

CO7: The role of Christian Missionaries in Indian Journalism.

CO8: Modern trends in Journalism

2. **COURSE: Symphony of Verse**
   COURSE CODE: EN3CR04
   Hours : 4 Credits: 4

The course shall facilitate the students to:

CO1: Get an introduction of a carefully selected representation of the English poetic tradition

CO2: Provide an awareness of the emerging cultural and aesthetic expressions that make poetry possible

CO3: Give a glimpse of the range and variety of poetry in English and an experience of its rich texture

CO4: Get a brief biographical sketch of the authors to introduce their and style to the readers

CO5: Get a critical commentary to familiarize with the poems

3. **COURSE: Harmony of Prose**

   COURSE CODE: EN3CR03

   Hours : 5 Credits: 4

   Students learning Harmony of Prose will be able to:

   CO1: Get inspired to delve deeper into the treasures of English literature

   CO2: Have a touching base on the comprehensive collection of English Essays from the greatest masters of English prose

   CO3: Provoke students to probe and gain further knowledge about the writers and the topics

   CO4: Familiarize students with the masters of classical English prose as well as introduce them to modern masters

4. **Evolution of Literary Movements - The Shapers of Destiny**

   COURSE CODE: EN3CM03

   Hours: 6 Credits: 4

   CO1: Gain a comprehensive overview of the history of Britain including the major wars, invasions and dynasties from the Early settlers till the end of seventeeth century

   CO2: Possess a thorough knowledge on the major geographical and scientific innovations, momentous movements, universities etc

   CO3: Understand English literature in the light of historical events including

   a. Language – growth and development of East Midland dialect into standard English
   b. Literary ages and major writers of each age

   CO4: Analyse the manner in which people and society are moulded by historical events

5. **COURSE: Indian Writing in English**

   COURSE CODE: EN3CR05

   Hours : 5 Credits: 4

The course is intended to:

CO1: Sensitize students to the various ways in which Literature written in English, in the Indian sub-continent serves as a platform for forming, consolidating, critiquing and reworking the issue of national 'identity' at various levels.

On completion of the course, the student should be aware of the following:

CO2: The subtle flavours that distinguish the 'Indian' quotient in English writings from India.

CO3: The different concerns that Indian English writers share, cutting across sub-nationalities and regionalities.

CO4: The *locus standi* of diasporic 'Indian' writers

SEMESTER IV

1. **COURSE: Print Media Journalism II**

   COURSE CODE: EN4CS06

   Hours : 5 Credits: 4

The graduate is able to

CO1: Identify himself as a member of the global community of journalists by knowing the various qualities, responsibilities and work profiles of them.

CO2: Draft a news story sticking on to the inverted pyramid style of news writing.

CO3: Identify various types of news story based on its theme and content.

CO4: Have a know-how on the making of a newspaper.

CO5: See the importance of editing and the role of the editor and his crew in the flawless publication of a newspaper.

CO6: Differentiate between magazine and newspaper journalism.

CO7: Possess a thorough knowledge on the page setting and layout of a typical tabloid and broadsheet newspaper.

CO8: Develop a know-how of the editorial and journalistic practices used in gathering and publishing articles for print media

CO9: Complete publishable assignments for newspapers

CO10: Acquire entry level positions as professionals within communication related fields.

2. **COURSE: Evolution of Literary Movements – The Crosscurrents of Change**

   COURSE CODE: EN4CM04

   Hours : 6 Credits: 4

CO1: Possess an awareness of alternatively defined traditions and/or genres, such as women's literature, postcolonial literature, Third world literature etc.

CO2: Have a notion of the evolution of literature and perceive the interplay of social processes and literature

CO3: Understand literature against the backdrop of history and inspire students to contribute dynamically to historical and literary processes

CO4: Figure out the interaction between the French Revolution, the Russian Revolution and the literature of the age

CO5: Impart a subtle idea that black writing is a struggle in disguise

CO6: The social context of the burgeoning of literature in Latin America

CO7: Recognize the main elements of different literary movements and assess their significance.

CO8: A student identifies the immense potential of literature to influence the mass, like

- Feminist literature steers the marginalised women to the mainstream
- Dalit literature, navigating the domain of the downtrodden, bringing them up to the forefront

3. COURSE: Acts on the Stage

COURSE CODE: EN4CR07

Hours : 5 Credits: 4

CO1: The course seeks to introduce the student to selected theatre texts that form the canon of English Drama.

The course shall provide a comprehensive information on:

CO2: The works of various playwrights included in the course.

CO3: The broad genre-based nuances in the realm of drama.

CO4: The appreciation and criticism of drama as an art form.

CO5: A representative study of William Shakespeare through the play King Lear shall provide an understanding of the renowned playwright and his way of expression.

4. COURSE: Modes of Fiction

COURSE CODE: EN4CR05

Hours : 4 Credits: 4

CO1: The course acquaints students with some important British and Non British short stories and a Novel.

CO2: Students are introduced to different kinds of fiction so that they develop critical thinking and imagination through long and short fictions.

CO3: They are familiarized with cultural diversity through a detailed study of different representative samples of fiction.

CO4: On completion of the course, the student will have comprehended the categories of British and Non- British short fiction and also the novel as a form of literary expression

5. COURSE: Language and Linguistics

COURSE CODE: EN4CR06

Hours : 5 Credits: 4

The graduate will have the ability to demonstrate his/her understanding on:

CO1: The science of linguistics.

CO2: Various concepts of linguistics and linguistic analysis.

CO3: Various notions pertaining to articulatory and acoustic phonetics.

CO4: International Phonetic Alphabet and transcription using it

CO5: The process involved in the generation of meaning

CO6: Their awareness that natural language is stricture dependent and generative.

CO7: Observing and describing various grammatical processes and phenomena.

SEMESTER V

1. **COURSE: Creative Writing and Translation Studies**

   COURSE CODE: EN5CS07

   Hours : 6 Credits: 4

With the completion of the course a student gains reasonable competency in:

CO1: Communication in all situations with emphasis on figurative uses of words, idioms and phrases, culture-bound idioms and rhetorical devices.

CO2: Proficiency in sentence constructions, use of figures of speech etc.

CO3: Know-how in various types of formal and informal writing (Letter writing, paraphrasing, critical appreciation, types of essays and report writing)

CO4: Translation studies enable the students with nuances of translation such as

a. Aids and tools of translation
b. Text analysis, transfer and restructuring
c. Word for word translation and sense for sense translation.
d. Types of Equivalence
e. Decoding and recoding
f. Transliteration
g. Types of translation

CO5: Achieve improvement in Creativity in translation

2. **COURSE: Mass Communication and Broadcasting Media – Radio**

   COURSE CODE: EN5CS08

   Hours : 5 Credits: 4

Mass media have become an indispensable part in our daily life. So it is worth learning about the texture and terrain and the modus operandi of various mass media. A student who had undergone this course is informed of /possess;

CO1: Principles of broadcasting and will identify himself as part of the journalism community

CO2: A practical understanding of the underlying principles of Mass Communication and Journalism Industry.

CO3: The skill to write a variety of mass media products, including news stories, TV/Radio news scripts and press releases, following accepted journalistic standards.

CO4: A hands-on experience on radio programme production.

CO5: A thorough knowledge about the history comprising the origin, development and future of mass media, in a global as well as in an Indian perspective.

CO6: An understanding on the necessity of practicing ethical journalism.

CO7: The history of cinema in global and Indian perspectives.

CO8: Different genres of cinema.

CO9: The process of film production with its various steps.

CO10: A skill to appreciate a movie based on its various factors like its genre, action, screenplay and technical parameters.

3. COURSE: Public Relations I

COURSE CODE: EN5CS09

Hours : 5 Credits: 4

The graduate is able to:

CO1: Demonstrate the understanding of the fundamentals of public relations.

CO2: Possess a thorough understanding on the history of PR in a global as well as in an Indian perspective.

CO3: Identify the various tools for facilitating PR activity in different situations.

CO4: Identify the roles and responsibilities of PR department in an establishment and to plot its organisational structure.

CO5: Pinpoint the desirable professional qualifications required to become a PR practitioner.

CO6: Enumerate the various qualities and soft skills deemed desirable for a PR practitioner.

4. **COURSE: English for careers(OPEN COURSE)**

   COURSE CODE: EN5CROPG03

   Hours : 4 Credits: 3

CO1: Students will demonstrate the skills needed to participate in a conversation that builds knowledge collaboratively: listening carefully and respectfully to others' viewpoints; articulating their own ideas and questions clearly; and situating their own ideas in relation to other voices and ideas. Students will be able to prepare, organize, and deliver an engaging oral presentation.

CO2: Develop communicative skills, which will enable them to prepare for a career and function effectively in it.

CO3: Equip themselves in oral and written communication to enhance their academic and professional use of language.

CO4: Train themselves in making effective presentations

CO5: Make the students competent in their job-seeking, job-getting, and job-holding needs.

CO6: Equip the students in Comprehensive Language Enhancement

5. **COURSE: Environmental Science and Human Rights**

   COURSE CODE: EN5CREN01

   Hours : 5 Credits: 4

On completion of the course the graduate will be able to demonstrate his/her understanding on:

CO1: Various human rights.

CO2: How their decisions and actions affect the environment.

CO3: Making a point of view regarding how and why things happen and about complex environmental issues.

CO4: Developing a critical and creative thinking skill towards environment related ideas.

CO5: The urgency of identifying himself/herself one with nature.

SEMESTER VI

1. COURSE: Visual Media: Television and Cinema

COURSE CODE: EN6CS11

Hours : 5 Credits: 4

This course focuses exclusively on visual media and sheds light on the technical dimensions of TV ad cinema production. The course makes the student competent enough to perform in the visual media arena through its detailed fashion of instruction. A student after the completion of this course is informed of/possess wisdom on:

CO1: The characteristics, principles and functions of visual media.

CO2: The history of visual media, both in a Global as well as in an Indian perspective.

CO3: Doordarshan and its contributions.

CO4: The persuasive power of visual media and how it sways public opinion.

CO5: Identifying various genres of TV programmes based on the several elements at play in their formats.

CO6: The structure and operation of a TV studio, control rooms and the paraphernalia for broadcast video production.

CO7: The fundamentals of motion picture editing such as Cut, Fade, Mix, Dissolve, Wipe and Superimpose.

CO8: The creative side of broadcast video production comprising script and storyboard preparation.

CO9: An inventory of jargons exclusive to broadcast journalism.

C10: History of Indian cinema and various types of cinema in India.

CO11: Film censorship and its criteria.

CO12: Theoretical and practical knowledge about the various steps and processes involved in film making.

CO13: The elasticity of the subject and the need for constant learning to keep him/herself from obsolescence.

2. COURSE: Public Relations II

COURSE CODE: EN6CS12

Hours : 5 Credits: 4

After the course the graduate is able to:

CO1: Apply basic public relations concepts into practice.

CO2: Have a hands-on experience on organizing PR campaigns

CO3: Coordinate and contribute to the planning of public relations activities like campaigns, exhibitions and trade fairs, and selection of tools and resources to achieve organisational objectives.

CO4: Take PR interventions by producing effective and timely print, digital and multimedia communications to manage specific issues.

CO5: Demonstrate an understanding on managing various organizational emergencies based on their practical knowledge.

CO6: Comply with relevant public relations professional standards and code of ethics.

3. COURSE: Entrepreneurship Development

COURSE CODE: EN6CS10

Hours : 5 Credits: 4

The graduate is able to demonstrate his/her understanding on the fundamental aspects of Entrepreneurship such as:

CO1: Role of an Entrepreneur in Economic development

CO2: Difference between an Entrepreneur and self-employed person.

CO3: Characteristics of an Entrepreneur.

CO4: State financial corporations and Small scale and Export industries.

CO5: Activities and functions of District Industries Centers.

CO6: Project feasibility study, Project selection, classification and appraisal.

4. COURSE: Office Administration and Human Resource Management

COURSE CODE: EN6CS13

Hours : 5 Credits: 4

Student gets an idea on:

CO1: The notion of HR and its various dimensions.

CO2: The role of HR in a company/organisation

CO3: The student acquires the capability to overcome crisis situations in organisations.

CO4: He will learn how to handle employees and to cope up with the fellow beings.

CO5: The layout and function of different corporate offices.

CO6: The roles and methods of communication employed in offices.

CO7: The importance of nurturing a healthy office atmosphere and the tips for it

CO8: The financial planning, record keeping, billing, personnel distribution and logistics within an organization.

5.COURSE: Comparative Literature

COURSE CODE: EN6CB01

Hours : 4 Credits: 3

The graduate will be able to demonstrate his/her understanding on:

CO1: The methodology of analyzing various literatures having parallel notions.

CO2: Methodological investigation of problems involving more than one literature.

CO3: Literary history and tradition.

CO4: Various literary traditions both in their specificity and interrelation.

CO5: A complex understanding and appreciation of literary texts, cultural artifacts, and diverse media in their wide political and social contexts.

CO6: Analyzing literary texts in a border perspective of world literature.

6. PROJECT

COURSE CODE: EN6PR01

Hours: 1 Credits: 2

The student will be able to:

CO1: Find a unique subject that is worth studying.

CO2: Formulate a hypothesis that could divulge the trajectory of the study.

CO3: Collect data using the ways of research.

CO4: Analyze the data collected to arrive at logical corollary.

CO5: Enhance the analytical capability of the students.

CO6: Study deeply on a particular topic to find its various dimensions.

CO7: Present the facts found in a systematic and academic fashion

CO8: Defend their studies from questions of various degrees pertaining to the subject.

CO9: Contribute to the larger mass of knowledge.

BA HINDI

PROGRAM OUTCOMES

At the completion of BA Hindi Degree Program the student will able to accomplish the following outcomes:

GPO 1. Realization of Human Values.
GPO 2. Socially Responsible Citizen.
GPO 3. Effective Communication.
GPO 4. Critical Thinking.
GPO 5. Creativity.
GPO 6. Cultural consciousness.
GPO 7. Environmental Consciousness

PROGRAM SPECIFIC OUTCOMES

PSO-1. Understand the history of Hindi Literature in the context of the present scenario and develop a futuristic outlook.
PSO-2. Understand the different streams of poetry of different eras ,like freedom struggle, developing feelings of patriotism and different issues regarding society.
PSO-3. Understand literary criticism and theoretical perspectives of Hindi Literature and become capable of literary writing.
PSO-4. Understand and define correctly different issues in Indian society (poverty, illiteracy, capitalism,gender issues and caste & class issues) by studying stories,novels,dramas and other prose.
PSO-5. Concept of communication and mass media ,its history,types,importance and uses in the present era,along with the ability to develop writing skills in regard to this and build a career oppurtunities in this field.
PSO-6. Be a thoughtful,skilled,independent,worthy and competent citizen of the society,nation and world.

COURSE OUTCOMES

At the completion of this course the student will able to accomplish the following outcomes :-

BA I SEM HINDI

1. **Course Title -METHODOLOGY AND DEVELOPMENT OF HINDI LANGUAGE**

Course code - HN1CRT01
No of credits – 3
No of contact hrs - 72

- Understand the development of Hindi Language in various periods.
- Understand the history of Literature.
- Develop Language Skills.
- Develop an outlook in social supportive nature of Hindi Language

2. **Course Title - FUNCTIONAL ASPECTS OF HINDI LANGUAGE**

Course code - HN1CMT01
No of credits – 3
No of contact hrs - 72

- Understand the importance of Functional Hindi in its new role.
- Understand the various forms of functional Hindi in its area of application.
- Familiarize the scope of functional Hindi.
- Practical implementation of functional Hindi in its application level.

3. **Course Title - AN INTRODUCTION TO JOURNALISM**
   Course code - HN1CMT02
   No of credits – 3
   No of contact hrs - 72

- Develop the skill of journalism.
- Creation of a sense of social service.
- Application of journalism in its practical area.
- Understand the origin and development of journalism in India.

4. **Course Title - PROSE AND ONE ACT PLAYS**
   Course code - HN1CCT01
   No of credits – 4
   No of contact hrs - 90

- Introducing various forms of hindi literature.
- Implementing social and cultural consciousness.
- Familiarize the areas of drama.
- Develop critical thinking.

BA II SEM HINDI

1. **Course Title- HINDI GRAMMAR AND SHORT STORIES**
   Course code - HN2CRT02
   No of credits – 3
   No of contact hrs - 72

- Understand the structure of Hindi grammar.
- Develop an ability to correct the usage of language without errors.
- Developing communication skill.
- Understand social and cultural aspects.

2. **Course Title - ADMINISTRATIVE, NOTING AND DRAFTING**

Course code - HN2CMT01
No of credits – 3
No of contact hrs - 72

- Familiarize with the administrative levels.
- Helpful in practical implementation in office work.
- Usage of Hindi language in various aspects.
- Implementation in official fields.

3. **Course Title - THE ART OF EDITING**
   Course code - HN2CMT02
   No of credits – 3
   No of contact hrs - 72

- Familiarize with the importance of editing.
- Implementation of editing in its practical level.
- Develop skills to prepare page setup in newspaper.
- Understand importance of Newspaper and duties of editorial board.

4. **Course Title - SHORT STORIES AND NOVELS**
   Course code - HN2CCT02
   No of credits – 4
   No of contact hrs - 90

- Introducing prose forms of hindi literature.
- Understanding different aspects of society.
- Development of ethnic values in the marketized world.
- Develop creative skills.

BA III SEM HINDI

1. **Course Title- HISTORY OF HINDI LITERATURE UP TO RITIKAAL**
   Course code - HN3CRT03
   No of credits – 4
   No of contact hrs - 90
- Understand the origin and development of hindi literature.
- Understand the social,political,cultural background of each period.
- Understand various trends of hindi literature.
- Familiarize with great poets and their thoughts.

2. **Course Title- FUNCTIONAL HINDI AND TRANSLATION**
   Course code - HN3CMT01
   No of credits – 4
   No of contact hrs - 90

- Usage of functional Hindi in its application levels.
- Develops communicative skills in various language.
- Familiarize the theory and practical implementation of translation.
- Understand the scope of translation.

3. **Course Title - JOURNALISM AND ART OF ADVERTISING**
   Course code - HN3CMT03
   No of credits – 4
   No of contact hrs – 90

- Understand the various dimensions of journalism.
- Developing social consciousness.
- Develop skill of advertising.
- Develop creative skills.

4. **Course Title- POETRY,GRAMMAR AND TRANSLATION**
   Course code - HN3CCT03
   No of credits – 4
   No of contact hrs - 90

- Understand various forms of literature.
- Developing communicative skills.
- Develop language skills.
- Develop translation skill.

BA IV SEM HINDI

1. **Course Title- ANCIENT POETRY**
   Course code - HN4CRT04
   No of credits – 4
   No of contact hrs - 90

- Familiarize with ancient poetry.
- Understand social, political,cultural background of ancient period.
- Familiarize with great poets and their views.
- Differentiating ancient poetry with other trends.

2. **Course Title - FUNCTIONAL HINDI AND INFORMATION TECHNOLOGY**
   Course code - HN4CMT01
   No of credits – 4
   No of contact hrs - 90

- Understand various forms regarding Hindi language in social media.
- Relevance of functional Hindi in the modern period.
- Expansion of competence skills in language.
- Understand IT and various forms of social media.

3. **Course Title - JOURNALISM AND MASS COMMUNICATION**

Course code - HN4CMT02
No of credits – 4
No of contact hrs - 90

- Relevance of journalism in the period of globalization.
- Understand the importance of mass media.
- Understand the impact of social media in society.
- Understanding relationship between journalism and mass media .

4. **Course Title- DRAMA AND LONG POEM**
   Course code - HN4CCT04
   No of credits – 4
   No of contact hrs - 90

- Understand the various forms of literature.
- Understanding the peculiarities of drama and long poem.
- Develop creative skills.
- Develop language skills.

BA V SEM HINDI

1. **Course Title - ECOLOGY AND HUMAN RIGHTS IN HINDI**
   Course code - HN5CRT05
   No of credits – 4
   No of contact hrs - 90

- Understanding the problems regarding environment in the period of globalization.
- Develop critical and analytical skills.
- Relevance of human rights in contemporary period.
- Developing harmony with environment.

2. **Course Title- DEVELOPMENT OF MODERN HINDI LITERATURE**
   Course code - HN5CRT06
   No of credits – 4
   No of contact hrs - 90

- Understand the development of modern hindi literature.
- Understanding contemporary forms of literature.
- Social and cultural aspects of modern society.
- Develop critical thinking.

3. **Course Title- MODERN HINDI FICTION**
   Course code - HN5CRT07
   No of credits – 4
   No of contact hrs - 90

- Familiarize with modern Hindi fiction.
- Social and cultural consciousness.
- Develop creative skills.

- Understand various forms of fiction in modern period.

4. **Course Title - MODERN POETRY IN HINDI**
   Course code - HN5CRT08
   No of credits – 4
   No of contact hrs – 90

- Understand the modern poetry in hindi.
- Develop writing skills.
- Introducing great poets and their outlook.
- Familiarize with latest trends in poetry.

5. **Course Title- FILM STUDIES**
   Course code - HN5OPT01
   No of credits – 3
   No of contact hrs - 72

- Knowing film world.
- Developing creativity.
- Introducing various techniques regarding film.
- Familiarize with Indian and western actors and their outlook.

BA VI SEM HINDI

1. **Course Title - LITERARY CRITICISM**
   Course code - HN6CRT09
   No of credits – 4
   No of contact hrs - 90

- Understand relevance of eastern and western criticism.
- Increases the interest in it.
- Develop analytical thinking.
- Introducing various theories regarding great scholars.

2. **Course Title- FEMINIST LITERATURE IN HINDI**
   Course code - HN6CRT10
   No of credits – 4
   No of contact hrs - 90

- Familiarize with the feminist literature in hindi.
- Understand the issues regarding women in society.
- Major reforms by great women leaders.
- Understand the theory of feminism and introducing great women writers.

3. **Course Title- DIFFERENT FORMS OF HINDI PROSE**

Course code - HN6CRT11
No of credits – 4
No of contact hrs - 90

- Able to write in different forms of Hindi prose.
- Develop creative skills.
- Understanding society in various periods.
- Develop critical thinking.

4. **Course Title- DRAMA AND ONE ACT PLAYS IN HINDI**
   Course code - HN6CRT12
   No of credits – 4
   No of contact hrs – 90

- Familiarize with drama field.
- Develop language skills.
- Develop creative skills.
- Familiarize with the different features of drama and one act play.

5. **Course Title- SATIRE**
   Course code - HN6CBT01
   No of credits – 3
   No of contact hrs - 72

- Familiarize with satire forms.
- Develop critical and analytical thinking.
- Initiate changes in society.
- Understand the role of satires in society.

B.COM MODEL I

SEM I

1. **Course Title- PROSE AND MASS MEDIA**
   Course code - HN1CCT01
   No of credits – 4
   No of contact hrs - 90

- Understand various forms of literature.
- Develop social and cultural consciousness.
- Relevance of mass media in society.
- Understanding relationship of mass media in literature.

SEM II

1. **Course Title- POETRY, COMMERCIAL CORRESPONDENCE AND TRANSLATION**
   Course code - HN2CCT02
   No of credits – 4
   No of contact hrs - 90

- Familiarize with poetry.
- Relevance of translation in modern period.
- Introducing with official correspondence in hindi.
- Develop language skills.

B.SC MODEL II

SEM I

1. **Course Title- POETRY AND ONE ACT PLAY**
   Course code - HN2CCT01
   No of credits – 4
   No of contact hrs - 90

- Knowing poetry and one act play.
- Developing creative skills.
- Social and cultural consciousness.
- Knowing great writers and their outlook.

SEM II

1. **Course Title- PROSE AND SHORT STORIES**
   Course code - HNCCT02
   No of credits – 4
   No of contact hrs - 90

- Understand various prose forms.
- Developing creativity.
- Understanding society in various aspects.
- Knowing eminent writers in the field short stories.

B.A. Malayalam

Programme Outcomes

PO1 The Syllabi designed for B.A. Program is intended to train the imagination and capacity to think critically and creatively about the world and their own country through the study of poetry, prose, dramatic, linguistics, narratology, and aesthetics in Malayalam Language and Literature.

PO2B. A. Malayalam program tries to make the student community to study Post Colonial Theories of Literature as well as Cultural Studies, World Poetry, Epistemology, Sanskrit Language and Literature, and Eco-Criticism.

PO3 In the First Year student sample a wide variety of literature and cultural theory

PO4 The varied fact in curriculum encourage engagement with significant range of literacy –non literacy genres, including firm, theatre and popular art form which may lead our students towards universal concept.

PO5 The character making and responsibility making syllabi develops student power of critically or analytical thinking alongside

Programme Specific Outcomes

PSO1 Appreciation of crafting of written utterances and enabling them to carry the quality of response into future reading.

PSO2 The program employs a variety of forms of assessment and includes unseen and revealed written course work essay, seminars, workshops, research reports, oral presentations.

PSO3 The program can develop skill for employment future study both discipline related and transformable.

PSO4 To develop a solid basis of knowledge and skill which they then build on in years of two and three.

PO5 The character making and responsibility making syllabi develops student

power of critically or analytical thinking alongside

Course Outcomes

U G SEMESTER I

ML1CCT01 Kadhasahithyam

CO1 Identifying the post-modern Malayalam Short stories as a champion in the rise against inequality with an awareness of marginal life and environmental issues.

CO2 Students get ideas about first phase of Malayalam prose and the history of Malayalam novel with some social realities

CO3 To know how the exile life is depicted in Malayalam Short stories

CO4 To know contemporary Malayalam writers and their themes and vision of the society

CO 5 Critical reading and appreciation of Malayalam Short stories

ML1CRT01 Naveenakavitha

CO 1 Students become able to understand and create some ideas about Malayalam poems with Dalit writings

CO 2 To know the Modern poets and their poetic style and vision about the society, culture & nation

CO 3 Realized the social and political reality behind modernity in India

CO 4 Realised the Changes in taste of Poetry

CO 5 Understood the subaltern literature

ML1CMT01Malayala padanathinte reethisasthram

CO1 To know the history of Malayalam language

CO2 To analyzes the origin and development of Malayalam

CO 3 Gaining knowledge of oriental Eastern literature and its literary genres .

CO 4 To know about meter, rhythm and its scope and limitations

CO5 Understanding contemporary Malayalam

ML1CMT02 Nadakavum Cinemayum

CO1 Impressions on world cinema ,Indian Cinema and the social space of cinema

CO2 Lead the students to the history of theatre

CO3 Helped to know the various streams of drama and acting

CO4 Identifies the possibilities of stage and acting

CO5 Understanding the social relevance of acting

U G SEMESTER II

ML2CCT02 Kavitha

CO 1 Students become able to understand and create some ideas about Malayalam poems with Dalit writings

CO 2 To know the Modern poets and their poetic style and vision about the society, culture & nation

CO 3 Realized the social and political reality behind modernity in India

CO 4 Realised the Changes in taste of Poetry

CO 5 Understood the subaltern literature

ML2CRT02 Malayala KavithaEzhuthachan Muthal Kavithrayam Vare

CO 1 It provided deep knowledge how romanticism came to Malayalam

CO 2 To know the Historical and cultural changes of Kerala Society and how contemporary poets present these realities in their poems.

CO 3 Could resitate Poetry

CO 4 Realised the Changes in taste of Poetry

CO 5 To know about new trends in Malayalam poetry

ML2CMT03 Adhunika Lokakavitha

CO1 The course is designed in a way to know the poetic history of mal.

CO2 Literature from the time of Ancient to modern great poets.

CO3 It provided deep knowledge how romanticism came to Malayalam

CO4 The course help to know the present day world poetry and the main thrusts behind the writing such as alithism, feminism and environmentalism

CO5 Understood the subaltern literature

ML2CMT04 Folklore Vinjanam

CO1 Helped to identify the culture of the ethnic groups and of the place

CO2 Learned the traditions and the practices of various folks

CO3 Could value them and how they contribute to the diversity and pluralism

CO4 Know various folklore theories

CO5The course was helpful in knowing the compositional writing and its methods.

U G SEMESTER III

ML3CCT03 Drisyakalashithyam

CO 1 At the end of the course the student will be able to recognise the strengths and potentials beyond mere entertainment and commerce

CO 2 Get acquainted with the ancient visual arts of Kerala

CO 3 Gain knowledge of the field of theatre and understand different trends and its social relevance

CO 4 Shape the attitude of enjoying and preserving them

CO 5 Students become aware about different form of folk dances of land with its history and characteristics.

ML3CRT03 Keralasamskaram –Poorvaghattam

CO 1 The evolution of the culture of Kerala and also the establishing of the identity of Malayalam as a language distinct from Tamil

CO 2 Students become aware about their own history of land in connectionwith British rule and its various effects

CO 3 The role of land lordism, Monarchy and the dominations form the west.

CO4 The renaissance of Kerala, introduction of printing, universalisation of education, social reformation and political initiatives

CO5 Formation of unified Kerala on linguistics basis, land reforms gulf boom, leftist movements environment issues

ML3CMT05 Oru Ezhuthukaran /Ezhuthukari -Madhavikkutty

CO1 The course envisages an in-depth study of a known literary figure of Malayalam language- Madhavikkutty, who was a versatile genius.

CO2 Being lived at a time of patriarchy where upper caste women are given little freedom, she is a person worth studying. It's a study of the role of women culture and history

CO3 To know how the exile life is depicted in Malayalam Short stories

CO4 To know contemporary Malayalam writers and their themes and vision of the society

CO 5 Critical reading and appreciation of Malayalam Short stories

SC3CMT01 Sanskrit- Poetry,Rhetorics & Basics of Grammar

CO1 This course aims an advanced study of Sanskrit language and literature and to compare how much Malayalam is indebted to Sanskrit literature

CO2 Literature from the time of Ancient to modern great poets.

CO3 It provided deep knowledge how romanticism came to Malayalam

CO4 The course help to know the present day world poetry and the main thrusts behind the writing such as alithism, feminism and environmentalism

CO 5 Critical reading and appreciation of Sanskrit poems

U G SEMESTER IV

ML4CCT04 Malayala Gadhyarachanakal

CO1 The course is designed to train students in creative writing such as News for dailies' and Essays

CO2 The course also Deals the features of languages in E-media.

CO 3 To know contemporary Malayalam short story writers and their themes and vision of the society

CO 4 To learn the history of Malayalamshort story.

CO 5 Critical reading and appreciation of Malayalam short stories

ML4CRT04 Keralasamskaram –Utharaghattam

CO 1 The evolution of the culture of Kerala and also the establishing of the identity of Malayalam as a language distinct from Tamil

CO 2 Students become aware about their own history of land in connectionwith British rule and its various effects

CO 3 The role of land lordism, Monarchy and the dominations form the west.

CO4 The renaissance of Kerala, introduction of printing, universalisation of education, social

reformation and political initiatives

CO5 Formation of unified Kerala on linguistics basis, land reforms gulf boom, leftist movements environment issues

ML4CMT06 Adhunika Malayalabhasha

CO 1 To learn about the famous prose writers and their style of writing

CO 2 Understanding new trends in the literature

CO 3 Develops critical thinking

CO4 Gain the ability to make reviews

CO5 Understanding the evolution of Malayalam prose

SC3CMT02 Sanskrit-Prose,Vrutha, Alankara,Theories of Poetics &Grammar

CO1 Students become aware about Sanskrit language and literature

CO2 To compare how much Malayalam is indebted to Sanskrit literature.

CO 3 To know the classic literature of India in its original language

CO 4 Developing language skills

CO 5 Helped the students to know the literary theories of Sanskrit literature and to make literary criticism based on the theories

U G SEMESTER V

ML5CRT05 Paristhithivinjanavum Manushyavakasapadanavum

CO1 Help to know the present day world poetry and the main thrusts behind the writing such as dalithism, feminism and environmentalism

CO2 The feminine theories and its history along with Novel, Story and Poems are dealt here in view women rights

CO3 It will enable to understand the rights of the unnature and to make better living

CO4 A deeper understanding of post modern schools of thought

CO5 Recognizing that literature is not limited to the main stream

ML5CRT06 Sahithyameemamsa

CO1 To know the literary theories of Sanskrit literature and to make literary criticism based on the theories

CO2 To Know the literary devices that determines poetry and to read and interpret poems in a better way

CO 3 Gaining knowledge of oriental Eastern literature and its literary genres .

CO4 Understanding the role of western literary theories in the modern development of Malayalam literature

CO5 Understanding the historical context in which western literary theories were formed

CO 6 To know modern Theories about creativity and comprehension

ML5CRT07 Cherukadha ,Novel

CO 1 Students get clear ideas about post modernism with its various dimensions and its influences in Malayalam short stories and Novels with social realities

CO 2 To know contemporary Malayalam writers and their themes and vision of the society

CO 3 To know contemporary Malayalam short story writers and their themes and vision of the society

CO 4 To learn the history of Malayalam short story.

CO 5 Critical reading and appreciation of Malayalam short stories and Novel

ML5CRT08 Bhashasasthram

On the completion of the courses, the students achieve awareness about: -

CO 1 The formative aspects of language, synchronic, diachronic and historical aspects of language.

CO 2 Categorization of phonemes and allophones and clear awareness about morphology.

CO 3 Syntax and transformation in generative grammar and the science of building.

CO 4 Denotative, connotative and pragmatic approaches in deriving meaning.

CO 5 Socio linguistics language family, dialects

CO 6 Gives the students the scientific knowledge of the language.

ML5OPT02 Madhyamapadanam

CO 1 To learn about the famous prose writers and their style of writing

CO 2 Understanding new trends in the literature

CO 3 Develops critical thinking

CO4 Gain the ability to make reviews

CO5 Understanding the evolution of Malayalam prose

U G SEMESTER VI

ML6CRT09 Keraleeyadrissyakala

CO 1 At the end of the course the student will be able to recognise the strengths and potentials beyond mere entertainment and commerce

CO 2 Get acquainted with the ancient visual arts of Kerala

CO 3 Gain knowledge of the field of theatre and understand different trends and its social relevance

CO 4 Shape the attitude of enjoying and preserving them

CO 5 Students become aware about different form of folk dances of land with its history and characteristics.

ML6CRT10 Pracheenasahithyam

CO 1 Recognizing and enjoying folk songs as the first rays of Malayalam poetry

CO 2 Identifying the possibilities of oral literature

CO 3 To know the poetic history of Malayalam

CO 4 To know the literature from the time of Ancient to modern great poets.

CO 5 It provided deep knowledge how romanticism came to Malayalam

ML6CRT11 Gadhyasahithyam Niroopanam

CO 1 To learn about the famous prose writers and their style of writing

CO 2 Understanding new trends in the literature

CO 3 Develops critical thinking

CO4 Gain the ability to make reviews

CO5 Understanding the evolution of Malayalam prose

ML6CRT12 Vyakaranam Bhashacharithram

CO1 To analyzes the origin and development of Malayalam

CO2 Understand the evolution in language with the Renaissance

CO3 Identify the relationship between culture and language

CO4 Gain the ability to assess and explain the languages application potential

CO5 Understanding new methods of grammer

ML6CBT01 Malayalathile Sthreerachanakal

CO1 Help to know the present day world poetry and the main thrusts behind the writing such as dalithism, feminism and environmentalism

CO2 The feminine theories and its history along with Novel, Story and Poems are dealt here in view women rights

CO3 It will enable to understand the rights of the unnature and to make better living

CO4 A deeper understanding of post modern schools of thought

CO5 Recognizing that literature is not limited to the main stream

BACHELOR OF COMPUTER APPLICATION (BCA)

PROGRAMME OUTCOME

At the end of the three year BCA programme the students will be able to:

- Understand, analyze and develop computer programs in the areas related to algorithm, web design and networking for efficient design of computer based system.
- Work in the IT sector as system engineer, software tester, junior programmer, web developer, system administrator, software developer etc.
- 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.

PROGRAM SPECIFIC OUTCOMES

- Equip themselves to potentially rich & employable field ofcomputer applications.
- Puruse higher studies in the area of Computer Science/Applications.
- Take up self-employment in Indian & global software market.
- Meet the requirements of the Industrial standards.

COURSE OUTCOMES

SYLLABUS FROM 2009 ONWARDDS

SEMESTER I

BCA 101 ENGLISH- COMMUNICATION SKILLS IN ENGLISH (Common Course)

On completion of the course the student should be able to:

- Develop the student's ability to use English language accurately and effectively by enhancing their communication skills
- Mastering the art of a professional business presentation
- Distinguish different communication process and its practical application
- More effective written communication

BCA102 MATHEMATICS - MATRICES, CALCULUS AND LAPLACE TRANSFORMS (Complementary)

On completion of the course the student should be able to:

- Reason mathematically about basic discrete structures such as numbers, sets, used in computer science.
- Familiar with Determinant and Matrices.
- Formulate Limit, Continuity and Differentiability.
- Demonstrate a working knowledge Definite and Indefinite Integrals.

BCA 103 BASIC STATISTICS (Complementary)

On completion of the course the student should be able to:

- Learn about Sampling Methods.
- Know the basic idea of Permutations and Combinations, and Probability Concepts.
- Familiar with Measures of Central Tendency and Measures of Dispersion Range.
- Apply knowledge of mathematics, science, and engineering.
- Design and conduct experiments, as well as to analyze and interpret data.
- Evaluate the probabilities and conditional probabilities.
- Evaluate expectations and conditional expectations of random variables.
- Approximate the distribution of sum of random variables using CLT.
- Construct point estimators using the method of maximum likelihood.
- Calculate the number of samples needed to construct confidence levels on the mean and variance of a normal distribution.
- Use linear regression analysis to develop an empirical model of experimental data.

BCA104: INTRODUCTION TO COMPUTERS (CORE)

On completion of the course the student should be able to:

- Familiar with parts of computer
- Understand the input and output devices.
- Basic ideas of storage devices, computer Networks and Operating System

BCA105: METHODOLOGY OF PROGRAMMING AND PROGRAMMING IN C (CORE)

On completion of the course the student should be able to:

- Analyze a given problem and develop an algorithm to solve the problem
- Improve upon a solution to a problem
- Use the 'C' language constructs in the right way
- Design, develop and test programs written in 'C'
- Use different data types in a computer program.
- Design programs involving decision structures, loops and functions.
- Understand the dynamics of memory by the use of pointers and Structures.

BCA106 SOFTWARE LAB I (CORE)

Upon successful completion of the course, a student will be able to:

- Understand the basic terminology used in computer programming.
- Write, compile and debug programs in Language.
- Create programs involving decision structures, loops, strings and functions.
- Design programs involving structures and pointers.

SEMESTER II

BCA 201: ENGLISH – READING LITERATURE IN ENGLISH (Common)

Upon successful completion of the course, a student will be able:

- To sensitize students to the aesthetic, cultural and social aspects of literature.
- To develop in the learners an appreciation of the subtle nuances of literary expression.
- To enable the learners to revalue literature as cultural and communicative events.
- To improve the learners' use of language as a means of subjective expression.

BCA 202: MATHEMATICS (Complementary)

Upon successful completion of the course, a student will be able to:

- Master the basic set theory.
- Familiar with propositional calculus.
- Know about Graphs and algorithms.

BCA203: ACCOUNTING AND PROGRAMMING IN COBOL (CORE)

Upon successful completion of the course, a student will be able to:

- Understand basic concepts of Accounting.
- Knowledge regarding how to create ledgers, journals and balance sheet.
- To create programs in COBOL.
- Knowledge about different type of files and file programs**.**

BCA204 : DATA STRUCTURES (CORE)

Upon successful completion of the course, a student will be able to:

- To access how the choices of data structure & algorithm methods impact the performance of program.
- To Solve problems based upon different data structure & also write programs.
- Choose an appropriate data structure for a particular problem.

BCA205 : FUNDAMENTALS OF DIGITAL SYSTEMS (CORE)

Upon successful completion of the course, a student will be able to:

- Perform conversions among different number systems, became familiar with basic logic gates and understand Boolean algebra and simplify simple Boolean functions by using basic Boolean properties & design of combinational circuits such as MUX, DEMUX, Encoder and Decoder etc.
- Understand the design of sequential Circuits such as Flip-Flops, Registers, and Counters.
- Obtain a basic level of Digital Electronics knowledge and set the stage to perform the analysis and design of Complex Digital electronic Circuits

BCA206 : SOFTWARE LAB II (CORE)

Upon successful completion of the course, a student will be able to:

- Know about the basic concepts of Function, Array and Link-list.
- Understand how several fundamental algorithms work particularly those concerned with Stack, Queues, Trees and various Sorting algorithms.
- Create basic COBOL Programs and File programs.

SEMESTER III

BCA301 : ADVANCED STATISTICAL METHODS (COMPLEMENTARY)

On successful completion of the course, a student will be able to:

- Know about different types of distributions.
- Estimate different distributions
- Learn about how to conduct hypothesis Testing.

BCA302 : DESIGN AND ANALYSIS OF ALGORITHMS (CORE)

On successful completion of the course, a student will be able to:

- Design and analyze the time and space efficiency of the data structure
- Design an algorithm by selecting appropriate design strategies.
- Identity the appropriate data structure for given problem
- Have practical knowledge on the application of data structures
- Apply graph and tree traverse technique to various applications.
- Implement dijkstra‘s algorithm, binary trees, travelling Sales person Problem.

BCA303: COMPUTER ORGANIZATION AND ARCHITECTURE (CORE)

On successful completion of the course, a student will be able to:

- Understand the fundamentals of different instruction set architectures and their relationship to the CPU design.
- Understand the principles and the implementation of computer arithmetic.
- Learn about Primary and Secondary storage System.
- Learn about parallel computer structure and Pipelining.

BCA304: COMPUTER GRAPHICS (CORE)

On successful completion of the course, a student will be able to:

- Provide comprehensive introduction about computer graphics system, design algorithms and two dimensional transformations.
- Make the students familiar with techniques of clipping, three dimensional graphics and three dimensional transformations.

BCA305 :OBJECT ORIENTED PROGRAMMING AND C++ (CORE)

On successful completion of the course, a student will be able to:

- Understand the difference between object oriented programming and procedural oriented language and data types in C++.
- Program using C++ features such as composition of objects, Operator overloading, inheritance, Polymorphism etc.
- Simulate the problem in the subjects like Operating system, Computer networks and real world problems

BCA306 : SOFTWARE LAB III (CORE)

On successful completion of the course, a student will be able to:

- Familiar with the students with OOPs concept
- create programs for various real world problems.

SEMESTER IV

BCA401: OPERATIONAL RESEARCH (COMPLEMENTARY)

On successful completion of the course, a student will be able to:

- Formulate a real-world problem as a mathematical programming model
- Understand the theoretical workings of the simplex method for linear programming and perform iterations of it by hand
- Understand the relationship between a linear program and its dual, including strong duality and complementary slackness
- Solve specialized linear programming problems like the transportation and assignment problems

BCA402 : MICROPROCESSORS AND PC HARDWARE (CORE)

On successful completion of the course, a student will be able to:

- Learn about the architecture and programming of the microprocessor 8085 and 8086.
- Know the basic concepts of Motherboard and hard disk.

BCA403 : SYSTEM ANALYSIS AND DESIGN (CORE)

On successful completion of the course, a student will be able to:

- Understand the steps in software development.
- Know the tools for System Analysis and design**.**

BCA404 : DATA BASE MANAGEMENT SYSTEM (CORE)

On successful completion of the course, a student will be able to:

- Gain a good understanding of the architecture and functioning of database management systems as well as associated tools and techniques, principles of data modeling using entity relationship and develop a good database design and normalization techniques to normalize a database.
- Understand the use of structured query language and its syntax, transactions, database recovery and techniques for query optimization.
- Acquire a good understanding of database systems concepts and to be in a position

to use and design databases for different applications.

BCA405 : VISUAL PROGRAMMING TECHNIQUES (CORE)

On successful completion of the course, a student will be able to:

- Design, create, build, and debug Visual Basic applications.
- Explore Visual Basic‘s Integrated Development Environment(IDE).
- Implement syntax rules in Visual Basic programs.
- Explain variables and data types used in program development.
- Apply arithmetic operations for displaying numeric output.
- Write and apply decision structures for determining different operations.
- Write and apply loop structures to perform repetitive tasks.
- Write and apply procedures, sub-procedures, and functions to create manageable code.

BCA406: SOFTWARE LAB IV (CORE)

On successful completion of the course, a student will be able to:

- Design, create, build, and debug Visual Basic applications.
- Apply arithmetic operations for displaying numeric output.
- Apply decision structures and loop structures for determining different operations.
- Write and apply procedures, sub-procedures, and functions to create manageable code.
- Create one and two dimensional arrays for sorting, calculating, and displaying of data.
- Write Visual Basic programs using object-oriented programming techniques including classes, objects, methods, instance variables, composition, and inheritance, and polymorphism.
- Write Windows applications using forms, controls, and events
- Write SQL Queries in DDL, DML and DC commands for complex applications.

SEMESTER V

BCA501 : COMPUTER NETWORKS

On successful completion of the course, a student will be able to:

- Explain how communication works in computer networks and to understand the basic terminology of computer networks
- Explain the role of protocols in networking and to analyze the services and features

of the various layers in the protocol stack.

- Understand design issues in network security and to understand security threats, security services and mechanisms to counter.

BCA 502 : OPERATING SYSTEMS

On successful completion of the course, a student will be able to:

- Learn different types of operating systems along with concept of file systems and CPU scheduling algorithms used in operating system.
- Provide students knowledge of memory management and deadlock handling algorithms.
- Implement various algorithms required for management, scheduling, allocation and communication used in Operating System.

BCA 503: JAVA PROGRAMMING

On successful completion of the course, a student will be able to:

- Understand the principles and practice of object oriented analysis and design in the construction of robust, maintainable programs which satisfy their requirements;
- Implement, compile, test and run Java programs comprising more than one class, to address a particular software problem.
- Demonstrate the principles of object oriented programming;
- Demonstrate simple data structures like arrays in a Java program.
- Understand the concept of package, interface, multithreading and File handling in java.
- Make use of members of classes found in the Java API (such as the Math class).

BCA504: OPEN COURSE -INTERNET, WEB DESIGNING and CYBER LAWS

On successful completion of the course, a student will be able to:

- Understand the basic working of Internet and its main services.
- Create web pages using HTML.
- Acquire knowledge about Cyber Crime and the facilities for secure communication.

BCA505: SOFTWARE LAB V

On successful completion of the course, a student will be able to create programs of the

following types:

- Programs using classes and methods
- Programs using one dimensional and two dimensional arrays.
- Programs using strings and inheritance.
- Programs using interfaces and Packages.
- Programs to implement the exception handling mechanism
- Programs using multithreading

BCA506: SOFTWARE DEVELOPMENT LAB I (Mini Project)

- To make the student confident in designing a system based on **System Analysis & Design** course, using **VB** and **SQL Server/ORACLE**

SEMESTER VI

BCA601: WEB TECHNOLOGY

On successful completion of the course, a student will be able to:

- Understand, analyze and apply the role of languages like HTML, DHTML,CSS, XML, JavaScript, VBScript, ASP, PHP and protocols in the workings of the web and web applications. Analyze a web project and identify its elements and attributes in comparison to traditional projects.
- Understand, analyze and create web pages using HTML, DHTML and Cascading Styles Sheets.
- Understand, analyze and build dynamic web pages using JavaScript and VB Script (client side programming).
- Understand, analyze and build interactive web applications.
- Understand, analyze and build web applications using PHP.
- Understand, analyze and create XML documents and XML Schema.

BCA602: SOFTWARE ENGINEERING

On successful completion of the course, a student will be able to:

- Select and implement different software development process models.
- Extract and analyze software requirements specifications for different projects.

- Develop some basic level of software architecture/design.
- Apply standard coding practices.
- Define the basic concepts and importance of Software project management concepts like cost estimation, scheduling and reviewing the progress.
- Identify and implement of the software metrics.
- Apply different testing and debugging techniques and analyzing their effectiveness.

ELECTIVE - BCA603 (B): LINUX OPERATING SYSTEM

On successful completion of the course, a student will be able to:

- To know the basic concepts of Linux Operating System.
- Familiar with Linux commands.
- Understand shell programming
- Familiar with system administration
- Understand various types of servers

BCA 604 : SEMINAR

While preparing for the general seminar, it provides opportunity for students to

- Develop skills in presentation and discussion of research topics in a public forum.
- Exposure to a variety of research projects and activities in order to enrich their academic experience

BCA 605: SOFTWARE DEVELOPMENT LAB II (MAIN PROJECT)

While doing a project:

- It makes the student confident in designing an Online Project
- Students are trained to meet the requirements of the Industry.

REVISED SYLLABUS – FROM 2017 ONWARDS

SEMESTER I

EN1CCT01 ENGLISH I – FINE TUNE YOUR ENGLISH (Common Course)

The course is intended to introduce the students to the basics of grammar, usage and effective communication. On completion of the course the student should be able to:

- Confidently use English in both written and spoken forms
- Use English for formal communication effectively
- Have a practical and humorous approach to language learning
- Get equipped with current trends in grammar and usage

MM1CMT31 DISCRETE MATHEMATICS (I) (Complementary)

After completion of course students are expected to be able to:

- Understand, analyze and create mathematical arguments.
- Understand sets, perform operations and algebra on sets, describe sequences and summations.
- Understand basic concepts of number theory and familiarize public and private key cryptosystems.
- Determine properties of relations, identify equivalence and partial order relations, sketch relations.

ST1CMT31 – BASIC STATISTICS AND INTRODUCTORY PROBABILITY THEORY (Complementary)

On completion of the course the student should be able to:

- Learn about sampling theory.
- Learn to draw Graphs and Diagrams
- Understand basic Idea of Permutations and Combinations and Probability concepts
- Familiarity with Measures of Central tendency and Measures of Dispersion
- Analyse data using correlation and regression concepts
- Evaluate the Probabilities and Conditional probabilities
- Learn about random variables and its types
- Evaluate expectations of random variables

CS1CRT01 -COMPUTER FUNDAMENTALS AND DIGITAL PRINCIPLES (Core)

Upon successful completion of the course, a student will be able to:

- Understand Theory Of Digital Design And Computer Organization To Provide An Insight Of How Basic Computer Components Are Specified.
- Understand The Functions Of Various Hardware Components And Their Building Blocks
- Understand And Appreciate Boolean Algebraic expressions to digital design
- An in depth understanding of sequential! Combinational circuits

- An in depth understanding of realization of different combinational/sequential circuits
- An in depth understanding of different stages of an instruction execution
- An in depth understanding of how different hardware components are related and work in coordination
- An ability to understand computer buses and input/output peripherals

CS1CRT02-METHODOLOGY OF PROGRAMMING AND C LANGUAGE (Core)

Upon successful completion of the course, a student will be able to:

- Analyze a given problem and develop an algorithm to solve the problem
- Improve upon a solution to a problem
- Use the 'C' language constructs in the right way
- Design, develop and test programs written in 'C'
- Understand the basic terminology used in computer programming
- Write, compile and debug programs in C language.
- Use different data types in a computer program.
- Design programs involving decision structures, loops and functions.
- Explain the difference between call by value and call by reference
- Understand the dynamics of memory by the use of pointers and Structures.
- Use different data structures and create/update basic data files.

CS1CRP01-SOFTWARE LAB I (Core)

Upon successful completion of the course, a student will be able to:

- Demonstrate use of data types, simple operators(expressions)
- Demonstrate decision making statements (if and if-else, nested structures)
- Demonstrate decision making statements (switch case)
- Demonstrate use of simple loops
- Demonstrate use of nested loops
- Demonstrate menu driven programs and use of standard library functions.
- Demonstrate writing c programs in modular way (use of user defined functions)
- Demonstrate recursive functions.
- Demonstrate use of arrays (1-d arrays) and functions

- Demonstrate use of multidimensional array(2-d arrays) and functions
- Demonstrate use of pointers
- Demonstrate concept of strings (strings and pointers)
- Demonstrate array of strings.
- Demonstrate structures (using array and functions)
- Demonstrate nested structures and unions
- Demonstrate file handling (text files)

SEMESTER II

EN2CCT03 – ENGLISH II – ISSUES THAT MATTER (Common)

By the completion of the course the learner should be able to:

- Identify the major issues of contemporary significance
- Respond rationally and positively to the issues raised
- Internalize the values imparted through the selections
- Be sensitized to contemporary issues of concern

MM2CMT03 - DISCRETE MATHEMATICS (II) (Complementary)

After completion of course students are expected to be able to:

- Define graphs, trees and their properties.
- Define fundamental logic operations and relate Boolean expressions to truth tables and logic diagrams.
- Solve systems of linear equations in matrix form.
- Acquire ability to describe computer programs in a formal mathematical manner

CS2CRT04 -DATA BASE MANAGEMENT SYSTEMS (Core)

On completion of the course, the student will be able to:

- Master the basic concepts and understand the applications of database systems.
- Construct an Entity-Relationship (E-R) model from specifications and to transform to relational model.
- Construct unary/binary/set/aggregate queries in relational algebra.
- Understand and apply database normalization principles.
- Construct SQL queries to perform CRUD operations on database. (Create, Retrieve, Update, Delete)
- Understand principles of database transaction management, database recovery, security.
- Analyze Data Base design methodology.
- Acquire knowledge in fundamentals of Data Base management system.
- Analyze the difference between traditional file system and dbms.

- Handle with different Data Base languages. Draw various data models for Data Base and write queries mathematically.
-

CS2CRT05-COMPUTER ORGANIZATION AND ARCHITECTURE (Core)

On completion of the course, the student will be able to:

- Understand the fundamentals of different instruction set architectures and their relationship to the CPU design.
- Understand the principles and the implementation of computer arithmetic.
- Understand the Primary and Secondary storage System.
- Learn about parallel computer structure and Pipelining.

CS2CRT06-OBJECT ORIENTED PROGRAMMING USING C++ (Core)

On completion of the course, the student will be able to:

- Understand fundamental constructs of OOP.
- Get the knowledge of UML with skills to draw UML diagrams.
- Get the knowledge of different forms of OO Implementation.
- Apply object oriented programming concepts in problem solving through C++.
- Gain the basic knowledge on Object Oriented concepts.
- Develop applications using Object Oriented Programming Concepts
- To demonstrate the differences between traditional imperative design and object- oriented design
- To explain class structures as fundamental, modular building blocks
- To understand the role of inheritance, polymorphism, dynamic binding and generic structures in building reusable code.
- To write small/medium scale C++ programs with simple graphical user interface
- Understand the file handling and error handling mechanisms in C++

CS2CRP02-SOFTWARE LAB- II (Core)

OOPS LAB

On completion of the course, the student will be able to:

- Programs using Control Structures
- Programs using Functions
- Programs using Arrays
- Programs using Inline Functions
- Programs using Classes
- Programs using Constructors and Destructors

- Programs using Friend Functions
- Programs using Operator Overloading\
- Programs using Inheritance
- Programs using Virtual Functions
- Programs using Files
- Programs using Strings

DBMS LAB

On completion of the course, the student will be able to:

- Understand about SQL Fundamentals.
- Understand about Unary & Binary table operations.
- Understand about Handle with different Data Base languages.
- Understand about table View, Log &Triggers.
- Understand different database packages (Oracle/ mysql/ DB2/ etc) Commit& Rollback.
- Understand about handling online Transactions.
- Handle database connectivity with front-end.
- Learn about Queries Using DDL- DML commands
- Learn about Queries using AND- OR- NOT operation, Union- Intersection and Projection, Join Operation
- Learn about Sorting and Grouping
- Learn about Nested queries using SQL
- Learn about Built-in functions of SQL
- Learn about Update operations using SQL
- Learn about Use of SQL forms

SEMESTER III

ST3CMT32 – ADVANCED STATISTICAL METHODS (Complementary)

On completion of the course, the student will be able to:

- Learn about different types of distributions
- Estimate different distributions
- Construct point estimators using the method maximum likelihood
- Learn about how to conduct hypothesis testing

CS3CRT07-COMPUTER GRAPHICS (Core)

On completion of the course, the student will be able to:

- Provide comprehensive introduction about computer graphics system

- Design algorithms to generate the basic primitives
- Understand 2d transformations.
- Familiar with techniques of clipping, three dimensional graphics and three dimensional transformations.
- Familiar with animations

CA3CRT01-MICROPROCESSOR AND PC HARDWARE (Core)

On completion of the course, the student will be able to:

- Learn about the architecture and programming of the microprocessor 8085
- Learn about the basic concepts of Motherboard different buses and hard disk.
- Learn about the basic of different types of memory and memory modules

CA3CRT02-OPERATING SYSTEMS (Core)

On completion of the course, the student will be able to:

- Learn about operating systems, functions of operating systems, system calls.
- Learn about process coordination and process scheduling algorithms
- Learn about memory management, critical section and deadlock handling algorithms.
- Learn about file management and disk scheduling algorithms
- At the end of the course, students will be able to implement various algorithms required for management, scheduling, allocation and communication used in Operating System.

CS3CRT08-DATA STRUCTURE USING C++ (Core)

On completion of the course, the student will be able to:

- To understand different types of data structures and its basic operations.
- Implement appropriate searching and sorting techniques for a given problem.
- Ability to describe basic operations and its applications of stack, queue and linked list.
- To understand operations of Tree and its variations.
- Ability to understand file and its organization.
- To understand Hashing and Collision Resolution Technique.

CA3CRP03-SOFTWARE LAB III (Core)

On completion of the course, the student will be able to:

- Demonstrate array operations such as insertion, deletion, searching, sorting etc.
- Demonstrate stack operations and its applications.

- Demonstrate queue and circular queue operations.
- Demonstrate the operations of linked list and its different types.
- Demonstrate the operations of binary search tree.

SEMESTER IV

MM4CMT03 - OPERATIONS RESEARCH (Complementary)

On completion of the course, the student will be able to:

- Formulate a real-world problem as a mathematical programming model
- Understand the theoretical workings of the simplex method for linear programming and perform iterations of it by hand
- Solve specialized linear programming problems like the transportation and assignment Problems
- An idea about game theory and its applications

CS4CRT09-DESIGN AND ANALYSIS OF ALGORITHMS (Core)

On completion of the course, the student will be able to:

- Analyze the performance of algorithms using time and space complexity.
- Understand different algorithm design techniques and to choose appropriate algorithm design techniques for solving problems.
- Describe the divide-and-conquer paradigm and explain how the problems can be solved using it and then analyze the complexity of the algorithms.
- Understand the greedy paradigm and can study the basic problems that can be solved by greedy approach, then analyze the complexity of the algorithms.
- Understand the dynamic paradigm and can study the basic problems that can be solved by dynamic approach, then analyze the complexity of the algorithms.
- Explain the basic traversal and searching techniques (BFS and DFS).
- Describe the backtracking techniques and explain the problems solved by backtracking approach.

CA4CRT03- SYSTEM ANALYSIS & SOFTWARE ENGINEERING (Core)

On completion of the course, the student will be able to:

- Understand the steps in Software Development.
- Select and implement different software development process models.
- Extract and analyze software requirements specifications for different projects.
- Develop some basic level of software architecture/design.
- Apply standard coding practices.

- Define the basic concepts and importance of Software project management concepts like cost estimation, scheduling and reviewing the progress.
- Identify and implement of the software metrics.
- Apply different testing and debugging techniques and analyzing their effectiveness.

CS4CRT10-LINUX ADMINISTRATION (Core)

On completion of the course, the student will be able to:

- To know the basic concepts of Linux Operating System.
- Familiar with Linux commands.
- Understand shell programming
- Familiar with system administration
- Understand various types of servers

CS4CRT11-WEB PROGRAMMING USING PHP (Core)

On completion of the course, the student will be able to:

- Understand the fundamentals of web
- Develop basic WebPages
- Use different styles to the webpage elements
- Create, modify and format the contents of webpage with CSS
- Create dynamic., Interactive WebPages using JavaScript
- Apply basic controls of elements with JavaScript
- Use JavaScript to validate form entries
- Study the server side scripting language, PHP
- Understand the PHP Get and Post methods working difference
- Develop knowledge of MySQL commands
- Use PHP to access a MySQL database

CS4CRP04-SOFTWARE LAB IV (Core)

On completion of the course, the student will be able to:

- Design a basic website using HTML and CSS to demonstrate responsive web design
- Implement dynamic WebPages with validation using JavaScript objects by applying different event handling mechanism
- Use PHP scripts to handle html forms
- Create PHP programs that use various PHP library functions
- Develop PHP programs to understand the difference between GET & POST Methods
- Implement PHP programs of cookie and session
- Develop simple web application using server side PHP and database connectivity using MySQL

SEMESTER V

CS5CRT12-COMPUTER NETWORKS (Core)

On completion of the course, the student will be able to:

- Explain how communication works in computer networks and to understand the basic terminology of computer networks
- Explain the role of protocols in networking and to analyze the services and features of the various layers in the protocol stack.
- Understand design issues in Network Security and to understand security threats, security services and mechanisms to counter.
- Familiar with basic devices like repeaters, bridges, gateways and quality of service
- Understand the network security, common threats, firewalls, and cryptography

CS5CRT13-IT AND ENVIRONMENT (Core)

On completion of the course, the student will be able to:

- Familiar with Internet
- Understand the multidisciplinary nature of environmental studies
- Familiar with Learning Management System (LMS), MOODLE,INFLIBNET,NPTEL etc
- Understand the impact of IT on society in terms of language and culture
- Understand new threats and new opportunities in IT
- To know about E-Waste, its impact and management of E-waste in India.
- To understand Green Computing and its scope.
- To know about Human Right and basic international Human Right Document.
- To understand the Coordination of United Nations in Human Right.
- Understand the monitoring mechanism of Human Right in UN.
- To know the Human Rights in Indian Constitution.
- Awareness of Human rights of Women, Children, Minorities and Prisoners.

CS5CRT14-JAVA PROGRAMMING USING LINUX (Core)

On completion of the course, the student will be able to:

- Understand the principles and practice of object oriented analysis and design in the construction of robust, maintainable programs which satisfy their requirements;
- Implement, compile, test and run Java programs comprising more than one class, to address a particular software problem.
- Demonstrate the principles of object oriented programming;
- Demonstrate the ability to use simple data structures like arrays in a Java program.
- Understand the concept of package, interface, multithreading and File handling in java.
- Make use of members of classes found in the Java API (such as the Math class).
- Familiar with JDBC connection

CS5OPT01-- OPEN COURSE – INFROMATICS AND CYBER SECURITY (Core)

On completion of the course, the student will be able to:

- Understand the basic working of Internet and its main services.
- Know various features, advantages and disadvantages of internet.
- Learn to create blogs.
- Understand how internet can be used in teaching and learning.
- Acquire knowledge about Cyber Crime and the facilities for secure use of computers.
- Learn the causes, symptoms and prevention of cyber addiction.

CS5CRP05 -SOFTWARE LAB V (Core)

On completion of the course students will be able to create programs of the following types

- Programs using classes and methods
- Programs using one dimensional and two dimensional arrays.
- Programs using strings and inheritance.
- Programs using interfaces and Packages.
- Programs to implement the exception handling mechanism
- Programs using multithreading
- Program using JDBC

C5CRP01-SOFTWARE DEVELOPMENT LAB I (MINI PROJECT IN PHP) (Core)

On completion of the course, the student will be able to:

- To make the student confident in designing a system based on System Analysis

& Software Engineering course, using PHP and MySQL

SEMESTER VI

CA6CRT04 -CLOUD COMPUTING (Core)

On completion of the course, the student will be able to:

- Understand the basic about cloud computing
- Learn about cloud computing architecture and types
- Learn about cloud application platforms

CS6CRT15 – MOBILE APPLICATION DEVELOPMENT – ANDROID (Core)

On completion of the course, the student will be able to:

- Understand about the architecture and features of Android
- Understand about the Android user interface
- Learn to use SQLite Database in Android
- Introduction and use of to JSON and XML

CS6CBT02 – Elective – DATA MINING (Core)

On completion of the course, the student will be able to:

- Understand the basic about data mining, classification and major issues
- Learn about Data Warehouse and OLAP technology
- Learn about cluster Analysis and major clustering methods

CA6SMP01 – SOFTWARE LAB VI& SEMINAR (Core)

SOFTWARE LAB VI

On completion of the course students will be able to create programs of the following types

- Installation and configuration of Eclipse and Development Tools
- Creating simple apps using Interface Tools
- Creating Andoid Apps using SQLite
- Familiarizing with JSON and XML

SEMINAR

While preparing for the general seminar, it provides opportunity for students to

- Develop skills in presentation and discussion of research topics in a public forum.
- Exposure to a variety of research projects and activities in order to enrich their academic experience

CA6PRP02 – SOFTWARE DEVELOPMENT LAB II (MAIN PROJECT)

(Core)

While doing a project:

- It makes the student confident in designing an Online Project with advanced technologies on their choice
- Students are trained to meet the requirements of the Industry.

BACHELOR OF TOURISM AND TRAVEL MANAGEMENT (BTTM)

PROGRAME OUTCOMES

After the completion, Students will be able to accomplish the following outcomes :

- PO1 :Understand the theory and practice gap in the field of general management and
- PO2:Students will develop professional skills that will prepare them to perform effectively as employee and also as an entrepreneur.
- PO3: Students will understand ethical, legal, financial, marketing, human resources and social issues and responsibilities
- PO4: Able to solve real problems through effective teamwork, communication and critical thinking
- PO5: Able to adapt to the ever changing environment and will be receptive to new skills and new competencies.
- PO6: Students will be given assignments and seminars which will mould their leadership capabilities, professional ethics and subject insights.
- PO7: Able to effectively communicate both in written and oral business communication.

PROGRAME SPECIFIC OUTCOMES

- POS1:one will be familiar with basic definitions and with the travel and tourism cluster,
- PSO2: To prepare students for managerial positions in Destination planning, Consultancies, Policymaking, Tour operations, Travel agencies, Small and Medium Enterprises (SME), Hospitality and Aviation.
- PSO3: After completing the program, the students should be able to work in, travel and tourism related organizations, at various capacities in government levels, Event and Entertainment industry, Hotels, Food & Beverage services etc.
- PSO4:The programme also bestows entrepreneurial skills among the students to start new businesses in the above areas.
- PSO5: To develop hospitality culture and behavior and to enhance student competencies.
- PSO6: To create an industry awareness.

SCHEME OF BTTM (BACHELOR OF TOURISM AND TRAVEL MANAGEMENT)

Course Code	Title of Courses
SEMESTER –I	
	Common Course English I
TTICRT01	**Methodology for tourism**
TTICRT02	**Cultural Heritage of India**
TTICRT03	**Principles of Management**
TTICRT04	**Economics and Banking for Tourism**
SEMESTER –II	
	Common Course English II
TT2CRT05	**Tourism Principles and Practices**
TT2CRT06	**Geography for Tourism**
TT2CRT07	**Accounting and Finance for Tourism**
TT2CRT08	**Tourism resources of Kerala**

Semester-III

TT3CRT09	**Tourism Products**
TT3CRT10	**Tourism policy and Planning**
TT3CRT11	**Transportation Management**
TT3CRT12	**Management Information System for Tourism**
TT3CRT13	**Strategic Tourism Management &Entrepreneurial Development**

Semester-IV

TT4CRT14	**Guiding Skills for Tourism**
TT5CRT15	**Travel Agency & Tour Operations**
TTICRT16	**Computerized Office Management for Tourism**
TTICRT17	**Basics of Business Communication**
TTICRT18	**Human Resource Management**
TT4OJP01	**Industrial training & Report**

Semester-V

TT5CRT19	**Indian Constitution & Civic Consciousness**
TT5CRT20	**E-Tourism**
TT5CRT21	**Airfares and Ticketing**
TT5CRT22	**Environmental Studies and Eco-Tourism**
TT5OPT01	**Public Relations & Tourism Journalism**
TT5OPT02	**Front Office Management**
TT5OPT03	**Introduction to Principles of Tourism**

Semester-VI

TT6CRT23	**Tourism Marketing**
TT6CRT24	**Principles of International Business for Tourism**
TT6CRT25	**Hospitality Management**
TT6CRT26	**Web Designing and Online Business for Tourism**
TT6CRT27	**MICE Tourism**
TT6STP02	**Study Tour/Case Study & Report**
TT6PRP01	**Project/Dissertation**

SEMESTER I

TT1CRT01: METHODOLOGY FOR TOURISM

CO1: To enriches the students about various concepts used in tourism industry.

CO2: To understands the tourism phenomena and the distribution of the components of tourism.

CO3: To educates the pupil about the general problems of measurement.

CO4: To learns the concepts and importance of tourism in different sectors.

CO5: To learns about International & National Tourism Organizations.

TT1CRT02: CULTURAL HERITAGE OF INDIA

CO1: To know about different Cultural diversity of India**.**

CO2: To familiarize the culture set up in India and its contribution to Tourism.

- Understanding of various dynasties who ruled in India.

CO3: To learn about Muslim Invasions in India.

CO4: To familiarize with art, architecture and temples under Mughals, painting and music, Fairs and Festivals, cultural synthesis etc.

TT1CRT03: PRINCIPLES OF MANAGEMENT

CO1: To provide basic knowledge about the various concepts of management.

CO2: To learn about Planning Process, types, and steps.

CO3: To learn about different organizing process, Staffing, recruitment, Selection, training and span of management.

CO4: To learn about Directing process.

CO5: Understanding the process of controlling – Nature –Steps – Management by Exception

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TT1CRT04: ECONOMICS AND BANKING FOR TOURISM

CO1: To know about the basics of economics

CO2: To analyse the economic impact of tourism and the economic changes in India.

CO3: To familiarize with cost analysis , cost Concept and Reduction

CO4: To familiarize with bank and banking activities

CO5: Understanding of modern Technologies used in banking

SEMESTER II

TT2CRT05 : TOURISM PRINCIPLES AND PRACTICES

CO1: To learn about the historic development of tourism industry in different periods

CO2: To learn about personal traits which affect travel an tourism.

CO3: To understand the dynamics of tourism businesses and its impacts.

CO4: To elucidate the application of tourism theories to the pragmatic developmental• agenda in world.

CO5: To familiarize with present profile of Indian Tourism.

- To examine the role of organizations in promoting travel and tourism industry in India.

TT2CRT06: GEOGRAPHY FOR TOURISM

CO1: To learn about geographical nature of tourism

CO2: To understand about various geographical factors which promote the tourism.

CO3: To familiarize with geography of India including different natural attractions. physical features, topography and drainage, forest wealth etc

CO4: To understand about different technologies used in finding a destination in travel and tourism**.**

TT2CRT07: ACCOUNTING AND FINANCE FOR TOURISM

CO1: To know the basic concept of accountancy and finance and its relation to tourism.

- To know about the application of financial management in tourism industry

CO2: To integrate and use the concept of accounting and financial management in tourism.

- Understanding of classification of accounting and importance of accounting in tourism industry

CO3: To be able to prepare financial accounts of a business.

CO4: To be able to understand the key facts of financial management.

TT2CRT08: TOURISM RESOURCES OF KERALA

CO1: To learn about mythological origin of Kerala in different periods.

CO2: To study in brief important Tourist destinations in Kerala as well as the rich cultural heritage of the state.

CO3: To know about the geographical advantage of Kerala.

CO4: To know about Rituals, customs and Traditions of Kerala.

CO5: To learn about basic details of Kerala with Tourist attractions of each Districts

SEMESTER III

TT3CRT09: TOURISM PRODUCTS

CO1: To learn about Concept, types and characteristics of tourism products, elements of tourism products.

CO2: To familiarize different types of tourism resources of India.

CO3: To learn about religions and its impact in Tourism in India

CO4: Understanding of various performing arts and fairs and festivals in India.

CO5: Understanding of natural Tourist resources in India.

TT3CRT10: TOURISM POLICY AND PLANNING

CO1: To learn about policy making and planning in tourism.

CO2 :To understand about tourism Planning Process and its importance of planning, in International Level, National Level, Regional Level

CO3: Understanding of planning in economic, social and cultural, environmental Political sectors.

- To learn about the importance of Private Sector Investment in Tourism Industry (Travel Agency, Airlines, Hotels)

CO4: To know about Tourism & Five Year Plans(from 10^{th} plan onwards) and introduction of Neethi ayog in India.

TT3CRT11: TRANSPORTATION MANAGEMENT

CO1: To learn about different means of transport and its development

CO2: Understanding of various surface Transportation system in India such as road and rail.

- Understanding of general information about Indian Railways with brief history.

CO3: To familiarize with Airport Layout.

- To examine role of air transportation in promoting tourism in India.

CO4: To understand about water Transportation with brief history.

- To examine role of water transport in promoting tourism in India.

CO5: To familiarize with the term logistics management and its Origin.

- Understanding of Importance and the need of Supply Chain in tourism.

TT3CRT12 MANAGEMENT INFORMATION SYSTEM FOR TOURISM

CO1: To introduce the students about management information system.

- To know about the scope of MIS in this era.

CO2: To learn the structure and classification of MIS

- To familiarize with financial marketing and human resource information system

CO3: To know about the elements of a system and other system concepts.

- To understand the term information, Types , kinds of system – Boundary.

CO4: To know about data base.

- Get an idea on how to manage the database system.

TT3CRT13: STRATEGIC TOURISM MANAGEMENT AND ENTREPRENEURIAL DEVELOPMENT

CO1: To know about who is a n Types of entrepreneur

- To know about the competencies required for a successful entrepreneur –

CO2: To learn about Small scale entrepreneur and its characteristics and relevance

To understand about the role of entrepreneurships in SSE and economic development .

CO3: Understanding of financial management issues in SSE

- To know how to manage asset and liabilities
- To introduce the concept of family enterprise – definition, issues and problems, strategies

CO4: To learn about the concept nature and characteristics of strategic decision

- To know about the benefits of strategic management

CO5: Understanding of strategic management process

To learn about BCCS model and SWOT analysis.

SEMESTERIV

TT4CRT14: GUIDING SKILLS FOR TOURISM

CO1: To acquire an in-depth knowledge about the profession of tour guiding and escorting.

- Students get an idea about how to organize a guiding business

CO2: Understanding of various skills required for a good guide.

- To learn about professional ethics in guiding industry.

CO3: To introduce the guest relationship management and how to manage a contingency situation while travel.

- To learn about personal discipline of guide and code of conduct.

CO4: To examine the basics of conducting tours.

TT4CRT15: TRAVEL AGENCY AND TOUR OPERATION BUSINESS

CO1: To learn about history and development of travel agency and its functions.

- Understanding of basic requirement for setting up of, travel agency.

CO2: To differentiate between travel agency and tour operations

- To learn about various travel intermediaries in tourism.

CO3; To familiarize with organization structure of a travel agency

- To acquire knowledge about activities that takes place in travel agency.

CO4: Understanding of tour operation business and different activities

CO5: Understand the types and components of tour packages and itineraries.

- Prepare domestic and international tour itineraries.

TT4CRT16: COMPUTERIZED OFFICE MANAGEMENT FOR TOURISM

CO1: To learn about basis of computer and its historical development.

- To learn about different computer generation

CO2: To know about word processing and its procedures.

CO3: To understand about spread sheet

- Understanding the work book window and its process.

CO4: Understanding of MS PowerPoint and its working principles.

TT4CRT17: BASICS OF BUSINESS COMMUNICATION

CO1: To learn about the various means of business Communication

- To familiarize with 7 C's of communication
- To learn about , business Etiquette, Technology of Business Communication

CO2: To improve the writing skill of the student.

- Students make written material regarding common subjects.
- To learn about the various method of written communication.

CO3: To learn about the different non-verbal communication and its etiquettes.

CO4: To learn about Social behavior and group behavior of a person working in tourism industry.

TT4CRT18: HUMAN RESOURCE MANAGEMENT

CO1: To understand basic concepts of human resource management;

- To know the human resource management practices and requirement of HRM in tourism

CO2: To learn the students about human resource planning

- To know about the process of HRP and requisites for successful HRP .

CO3: The students get knowledge about recruitment, selection, induction, and placement.

CO4: To learn the students about the procedures and practices for the r training and development process.

CO5: Understanding of various issues and challenges found in organizations related to labour aspects.

- To familiarize with different strategies used to manage it.

SEMESTER V

TT5CRT19: INDIAN CONSTITUTION AND CIVIC CONSCIOUSNESS

CO1: Student get an opportunity to know about the different aspects of Indian Constitution and its features.

- Enable the students to understand the various provision of Indian constitution.
- To impart civic consciousness among students.

CO2: To know about the Indian Administration system, Judiciary, Indian Parliament

- To familiarize with the significance of Indian President's Powers and functions

CO3: To understand the Indian Citizenship Act ,its provisions and it describe how to become a Indian citizen..

CO4: Under standing of fundamental Rights, Fundamental Duties, and Directive Principles of State Policy.

CO5: To learn about Constitutional Amendment and its Procedure and Important Amendments.

TT5CRT20: E – TOURISM

CO1: To familiarize with the concept world wide web.

- To learn about the legislation regarding for IT.

CO2: To give insights into E-business and its strategies.

- To learn how modern technology has revolutionized the travel and tourism industry.

CO3: To understand about search Engine, desktop, Laptop, Tablets, Mobile, Video, Social Media.

CO4: To know about the history and development of CRS.

- To learn about the use of internet as a tool for tourism promotion

TT5CRT21 : AIR FARES AND TICKETING

CO1: To understand about Airline Terminology and abbreviations used in airlines.

CO2: To study about Air Geography, Time calculation

CO3: To understands about the different types of passenger ticket.

CO4: Familiarization with Three letter city and airport code, airline designated code, minimum connecting time.

- Familiarization with Air tariff: currency regulation, NUC conversion factors, general rules.

- Familiarization with TIM: Passport, Visa, Custom Regulations, Health Regulations and Airport Tax, Passenger needing special attention.

CO5: Introduction to fare construction in Airlines,Air fare-types, basic elements of airfare.

- To understand about fare construction formula and basic steps using mileage principles for One Way (OW), Return Trip (RT) and Circle trip journey (CT).

TT5CRT22: ENVIRONMENTAL STUDIES AND ECO TOURISM

CO1: To enrich the students on the basic concepts of eco systems and its types.

CO2: Identifying and analyzing the various causes and effects of environment pollution.

CO3: To familiarize the students on eco tourism ,its principles and various resources in India.

CO4: To identifying and analyzing the measures to mitigate the environmental issues.

CO5: To educate the students on various aspects of human rights its dimension in the society.

TT5OPT01: PUBLIC RELATIONS AND TOURISM JOURNALISM

CO1: Students get an in-depth knowledge about PR and PR Ethics

- To learn about how to do PR

CO2: To get knowledge about advertising

- To study about the importance of PR in Tourism Industry

CO3: To learn about the basics of Journalism and its different technical sectors.

- To find out the various Tourism press in India.
- To know the role of TV, Radio in journalism

CO4: To get a knowledge about web Journalism and its different aspects.

- To learn how to become a journalist and their qualities.

CO5: To learn about the qualities required as a reporter

- To familiarize with different terms related to jonalism and its role in promoting tourism.

TT5OPT02: FRONT OFFICE MANAGEMENT

CO1: To know about the types of Hotels.

- To acquire knowledge about front office department

CO2: To learn about various operations that take place in front office department.

- To know about the technologies used in front office.

CO3: To familirise with basic skill required to perform various function.

CO4: To study about organization chart.of different types of hotels.

CO5: To familirise with various function performed by service personnels in ahotel.

- To learn about how to manage customer loyalty.
- To familirise with Laws governing Food service Establishment.

TT5OPT03: AN INTRODUCTION TO PRINCIPLES OF TOURISM

CO1: To learn about the concept of tourism

To examine the origin and growth of tourism and development in India

To describe about the factors affecting growth of modern tourism

CO2: To know about the components of tourism and elements of tourism.

To learn about various travel industry network .

CO3: To familiarize with basic travel motivators

To acquire knowledge about Social, environmental, political, economic, Negative impacts of tourism

CO4: To learn about forms and types of tourism

To describe the termcarrying capacity and factors affecting carrying capacity,

CO5: To familiarize with tourism Products of India (Major Cultural, Natural and Manmade), UNESCO World heritage sites in India.

SEMESTER VI

TT6CRT23: TOURISM MARKETING

CO1: Understanding of tourism Marketing and its evolution

CO2: To familiarize with the need of marketing research

CO3 To know about how to segment market segmentation on the basis of customer perception.

- To understand the concept of marketing mix -7 Ps of marketing

CO4: To in depth knowledge about product and its development cycle.

CO5: To describe the promotional strategies used for marketing

TT6CRT24: PRINCIPLES OF INTERNATIONAL BUSINESS FOR TOURISM

CO1: To know about foreign exchange and forex in India.

- Understanding of India's Balance of Payments Problems.

CO2: To learn about the rate of exchange ,determination of rate of exchange and Purchasing Power and Parity Theory

CO3: Underatanding of Exchange Control

- To learn about floating and fluctuations in Rate of Exchange .
- To familirise with important provisions of FEMA

CO4: To learn about the globalization of markets–

- To know about export import Procedures

CO5: To understand various international Financial Institutions world wide.

TT6CRT25: HOSPITALITY MANAGEMENT

CO5: Understanding of accommodation types and forms ,Hotel concept and classification.

CO2: To learn about categorization of hotel on the basis of facilities provided (star system) and approval

CO3: To know about the important departments of hotel and its operation .

CO4: To examine the process of guest entry in a hotel and management of customer handling process.

CO5: Understanding of leading multinational and public sector hotel chains in India.

TT6CRT26: WEB DESIGNING AND ONLINE BUSINESS FOR TOURISM

CO1: To give an introduction to windows.

CO2: To learn about the history of internet

- To learn about different operating systems and software and hardware systems in computer.

CO3: To familirise with computer Networks.

- To learn how to sent an information from one place to another.

CO4: To understand about HTML , Frames, Tables, list and links

- To familirise with web page designing process.

TT6CRT27: MICE TOURISM

CO1: To familiarize with (MICE)

- Understanding of different types of events and characteristics of conferences / conventions

CO2: To find out economic and social significance of conventions

- To learn how to conduct a professional meeting in tourism industry.

CO3: To know about the convention/exhibition facilities required to conduct an event.

CO4: To learn about role, responsibilities of meeting planner/ convention manager

- To know about the skill required to conduct successful events.

CO5: Understanding of various travel Industry fairs and organizations .

TT6STP02: STUDY TOUR REPOR T

Study Tour Report\Case study Report

Each student has to submit a Study Tour Report or a Case Study Report of any tourist destination in Kerala during the sixth semester for evaluation. The evaluation is for 100 marks and should be internal only. Preparation of study tour report include two parts: pre tour phase and post tour phase. Pre tour phase involves itinerary preparation, costing etc. Post tour phase involves detailed report on the tour.

TT6PRP01: PROJECT/DESSERTATION

All students are to do a project as a group consisting a maximum of five students. The projects are to be identified during the 5th semester of the programme with the help of the supervising teacher. The report of the project in duplicate is to be submitted to the department at the 6^{th} semester and are to be produced before the examiners appointed by the University. External project evaluation and Viva/ Presentation are compulsory and will be conducted at the end of the programme during the sixth semester. 20 % of marks are awarded through internal assessment.

The project is treated as a separate course. The course will have a credit of 2 and is compulsory for completion of the programme.

COMMON COURSES- U.G PROGRAMMES (2017 ADMISSION ONWARDS)

COURSE OUTCOMES

COURSE 1- EN1CC01- Fine Tune Your English

The course is intended to introduce the students to the basics of grammar usage and effective communication.

CO1: Confidently use English in both written and spoken forms.

CO2: Use English for formal communication effectively.

CO3: The nuances of tense forms, voices and reported speech and the contexts of its usage are imparted.

CO4: Made aware of the common errors made by the speakers of English as a second language. The students are introduced to the idioms and phrases commonly used by native speakers.

CO5: Effective business of formal communication in English is facilitated through exercises.

COURSE 2- EN1CC02- Pearls from the Deep

On completion of this course, the students will be able to,

CO1: Be aware of literature of various genres including novel, one-act plays, short stories and poems.

CO2: Appreciate and enjoy works of literature.

CO3: Appreciate the aesthetic and structural elements of literature.

CO4: Comprehend the warmth of human relations and the terror of war.

CO5: Widen the literary and cultural perspectives.

COURSE 3- EN2CC03- Issues that Matter

By the end of this course, the students are made aware of the contemporary issues of concern and are able to:

CO1: Identify the major issues of contemporary significance.

CO2: Respond rationally and positively to the issues raised.

CO3: Internalize the values imparted through the selections.

COURSE 4- EN2CC04- Savouring the Classics

Students are introduced to the taste of time-tested world classics.

On completion of the course, the student should:

CO1: Become familiar with the classics from various lands.

CO2: Understand the features that go into the making of a classic.

C03: Appreciate and enjoy the works of literature.

CO4: Appreciate the aesthetic and structural elements of literature.

COURSE 5- EN3CC05- Literature and/as Identity

At the end of this course the students are able to

CO1: Familiarize with how literature represents, discusses and problematises identity.

CO2: Get an awareness about the ambivalent identities of minority groups based on caste, ethnicity and race

CO3: Accelerate discussion on various problems faced by the subaltern communities

CO4: Identify whether there is essentialist, unchanging identities

CO5: Reflect about their own identities and the identities of others.

COURSE 6- EN4CC06- Illuminations

At the end of this course the students are able to

CO1: Maintain a positive attitude to life.

CO2: Evaluate and overcome setbacks based on the insights that these texts provide.

CO3: Revert and redefine traditional ideas of failures.

CO4: Overcome obstacles in real life situations.

CO5: Question the conventional understanding of happiness and courage.

COURSE 7- EN3CC07- Gems of Imagination

On completion of this course, the students will be able to,

CO1: Be aware of literature of various genres including novel, one-act plays, short stories and poems.

CO2: Appreciate and enjoy works of literature.

CO3: Appreciate the aesthetic and structural elements of literature.

CO4: Comprehend the warmth of human relations and the terror of war.

CO5: Widen the literary and cultural perspectives.

COURSE 8-EN4CC08- Revisiting the Classics

Students are introduced to the taste of time-tested world classics.

On completion of the course, the student should:

CO1: Become familiar with the classics from various lands.

CO2: Understand the features that go into the making of a classic.

C03: Appreciate and enjoy the works of literature.

CO4: Appreciate the aesthetic and structural elements of literature.

Course 111: CRITICAL THIKING, ACADEMIC WRITING AND ORESENTATION

At the end of this course the students are able to

CO1: Foster critical thinking with theoretical and practical training with special focus on clarity, accuracy, rhetoric etc. and to overcome barriers and fallacies.

CO2: Comprehend and practise effectively the various processes involved in academic research.

CO3: Write exactly and precisely with linguistic expertise.

CO4: Produce effective business and formal communication.

CO5: Present academic topics to an audience with skill efficacy.

M SC. MATHEMATICS

Programme Outcomes

After the successful completion of this course, the student will be able

- To motivate for research in mathematical sciences.
- To train computational scientists who can work on real life challenging problem
- To have an in-depth knowledge of a broad range of methods and techniques for analysing and solving problems within applicable fields.
- To have a Good theoretical insight and the ability to apply theory to the development of methods and techniques for solving a problem.
- To have an in-depth knowledge within a specific mathematical primary field.

Programme Specific Outcomes

- To tackle complex problems, reveal structures and clarify problems, discover suitable analytical and/or numerical methods and interpret solutions.
- To communicate clearly in writing and orally knowledge, ideas and conclusions about mathematics, including formulating complex mathematical arguments, using abstract mathematical thinking synthesising intuition about mathematical ideas and their applications.
- To demonstrate an advanced knowledge and fundamental understanding of a number of specialist mathematical topics, including the ability to solve problems related to those topics using appropriate tools and techniques.
- To produce a mature oral presentation of a non-trivial mathematical topic
- To apply rigorous, analytic, highly numerate approach to analyze, execute tasks and solve problems in daily life and at work.

Course Outcomes

Semester – 1

MT01C01 LINEAR ALGEBRA

Upon the completion of the course the students will be able to:

- Analyze finite and infinite dimensional vector spaces and subspaces over a field and their properties, including the basis structure of vector spaces,
- Use the definition and properties of linear transformations and matrices of linear transformations and change of basis, including kernel, range and isomorphism,
- To describe the properties of determinants and its relation to matrix transpose,inverse etc
- Compute with the characteristic polynomial, eigenvectors, eigenvalues and Eigen spaces,
- Compute inner products and determine orthogonality on vector spaces, including Gram-Schmidt orthogonalization
- Identify self-adjoint transformations and apply the spectral theorem and orthogonal decomposition of inner product spaces, the Jordan canonical form to solving systems of ordinary differential equations.

MT01C02 BASIC TOPOLOGY

Upon completion of this course, students should be able to:

- Define and illustrate the concept of topological spaces and continuous functions,
- Define and illustrate the concept of product topology and quotient topology,
- Prove a selection of theorems concerning topological spaces, continuous functions, product topologies, and quotient topologies,
- Define and illustrate the concepts of the separation axioms,
- Define connectedness and compactness, and prove a selection of related theorems, and
- Describe different examples distinguishing general, geometric, and algebraic topology.

MT01C03 MEASURE THEORY AND INTEGRATION

Upon completion of this course, students should be able to:

- To understand the fundamental concepts of Mathematical Analysis.
- To state some of the classical theorems in of Advanced Real Analysis.
- To be familiar with measurable sets and functions.
- To integrate a measurable function.

- To understand the properties of Classical Banach Spaces.

MT01C04 GRAPH THEORY

Upon completion of this course, students should be able to:

- Students will understand the language of graphs and trees.
- Students will understand the use of graphs as modes
- Students will understand various types of trees and methods for traversing trees
- Solve problems using basic graph theory
- Identify induced subgraphs, cliques, matchings, covers in graphs
- Determine whether graphs are Hamiltonian and/or Eulerian
- Solve problems involving vertex and edge connectivity, planarity and crossing numbers
- Solve problems involving vertex and edge coloring
- Model real world problems using graph theory

MT01C05 COMPLEX ANALYSIS

Upon completion of this course, students should be able to:

- Represent complex numbers algebraically and geometrically,
- Define and analyze limits and continuity for complex functions as well as consequences of continuity,
- Apply the concept and consequences of analyticity and the Cauchy-Riemann equations and of results on harmonic and entire functions including the fundamental theorem of algebra,
- Analyze sequences and series of analytic functions and types of convergence,
- Evaluate complex contour integrals directly and by the fundamental theorem, apply the Cauchy integral theorem in its various versions, and the Cauchy integral formula, and
- Represent functions as Taylor, power and Laurent series, classify singularities and poles, find residues and evaluate complex integrals using the residue theorem.

SEMESTER 2

MT02C05 ABSTRACT ALGEBRA

Upon completion of this course, students should be able to:

- Demonstrate knowledge of group homomorphism, isomorphism and automorphisim.
- Derive and apply the First Isomorphism Theorem.
- Demonstrate knowledge of conjugates, the Class Equation and Sylow theorems.
- Derive and apply Sylow Theorems.
- Solvable groups and associated properties, finite abelian groups.
- Demonstrate knowledge of polynomial rings and associated properties.
- Derive and apply Gauss Lemma, Eisenstein criterion for irreducibility of rationals.
- Understand the characteristic of a field and the prime subfield.
- Understand Factorization and ideal theory in the polynomial ring; the structure of a primitive polynomials
- Understand Field extensions and characterization of finite normal extensions as splitting fields.
- Understand the structure and construction of finite fields.
- Understand radical field extensions.
- Understand Galois group and Galois theory.

MT02C07 ADVANCED TOPOLOGY

Upon completion of this course, students should be able to:

- Understand product topology
- Understand Tietze Characterisation of Normality.
- Able to Evaluate Functions in to Products
- Use The Urysohn Metrisation Theorem.
- Familiar with Nets and Filters
- Familiar with compactness
- Students will understand the concept of derivative in n dimensions and the implicit and inverse function theorems which give a bridge between suitably nondegenerate infinitesimal information about mappings and local information.
- They will understand the concept of manifold and see some examples such as matrix groups.

MT02C08 ADVANCED COMPLEX ANALYSIS

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

- Manipulate complex numbers in various representations, define fundamental topological concepts in the context of the complex plane, and define and calculate limits and derivatives of functions of a complex variable.
- Use fundamental results, including: Cauchy's Theorem and Cauchy's Integral Formula, the Fundamental Theorem of Algebra, Morera's Theorem and Liouville's Theorem.
- Represent analytic functions as power series on their domains and verify that they are well-defined.
- Define a branch of the complex logarithm.Classify singularities and find Laurent series for meromorphic functions

MT02C09 PARTIAL DIFFERENTIAL EQUATIONS

Upon completion of this course, students should be able to:

- Classify PDE and transform into canonical form
- Solve linear PDE of both first and second order
- Derive heat and wave equations in 2D and 3D
- Apply technique of separation of variables to solve PDEs and analyse the behaviour of solutions in terms of eigen function expansion
- Find the solutions of PDE determined by conditions at the boundary of the spatial domain and initial conditions at time zero.

MT02C10 REAL ANALYSIS

On completion of this unit successful students will be able to:

- evaluate the limits of a wide class of real sequences;
- determine whether or not real series are convergent by comparison with standard series or using the Ratio Test;
- understand the concept of continuity and be familiar with the statements and some proofs of the standard results about continuous real functions;
- understand the concept of the differentiability of a real valued function and be familiar with the statements of the standard results about differentiable real functions.

MT03C11 MULTIVARIATE CALCULUS AND INTEGRAL TRANSFORMS

On completion of this unit successful students will be able to:

- Understand the basic results in the analysis of functions of several variables.
- Understand the fundamental transforms,convolutions.
- Recognise vector valued functions and relate directional derivatives and partial derivatives to total derivative.
- Understand implicit functions and extremum problems.
- Recognise primitive mappings and differential forms.

MT03C12 FUNCTIONAL ANALYSIS

On completion of this unit successful students will be able to:

- Discuss various problems in different space: vector space, inner product space and Hilbert Spaces.
- Explain the fundamental concepts of functional analysis.
- Understand the approximation of continuous functions.
- Understand concepts of Hilbert and Banach spaces with l2 and lp spaces serving as examples.
- Understand the definitions of linear functional and prove the Hahn-Banach theorem, open mapping theorem, uniform boundedness theorem, etc.
- Define linear operators, self adjoint, isometric and unitary operators on Hilbert spaces.

MT03C13 DIFFERENTIAL GEOMETRY

On satisfying the requirements of this course, students will have the knowledge and skills to

- Explain the concepts and language of differential geometry and its role in modern mathematics
- Analyze and solve complex problems using appropriate techniques from differential geometry
- Apply problem-solving with differential geometry to diverse situations in physics, engineering or other mathematical contexts
- Apply differential geometry techniques to specific research problems in mathematics or other fields

- To obtain sound knowledge in understanding the basic concepts in geometry of curves and surfaces in Euclidean space, especially.
- To acquire mastery in solving typical problems associated with the theory.
- To gain sufficient knowledge for generalizing these concepts to higher dimensions.

MT03C14 NUMBER THEORY AND CRYPTOGRAPHY

On completion of this unit successful students will be able to:

- Learn the foundational Number Theory required for encryption and decryption.
- Encrypt and Decrypt message.
- Know the difference between private key and public key cryptographies.
- Understand a number of privacy mechanisms.

MT03C15 OPTIMIZATION TECHNIQUES

On completion of this unit successful students will be able to:

- Formulate optimization problems;
- Understand the importance of linear programming problems in which the variables are being restricted to integers;
- Solve integer programming problems as well as mixed integer linear programming problems;
- Apply the methods of optimization in real life situation.
- Identify strategic situations and represent them as games
- Solve simple games using various techniques
- Identify the methods and solve programming problems when the objective function or constraints are non linear.

Semester – 4

MT04C16 SPECTRAL THEORY

On satisfying the requirements of this course, students will have the knowledge and skills to:

- Explain the fundamental concepts of functional analysis and their role in modern mathematics and applied contexts.
- Demonstrate accurate and efficient use of functional analysis techniques.

- Demonstrate capacity for mathematical reasoning through analyzing, proving and explaining concepts from functional analysis.
- Apply problem-solving using functional analysis techniques applied to diverse situations in physics, engineering and other mathematical contexts.

MT04E01ANALYTIC NUMBER THEORY

- The aim of this course is to study the prime numbers using the famous Riemann ζ-function. In particular, we will study the connection between the primes and the zeros of the ζ-function.
- In addition to the highlights mentioned above, students will gain experience with different types of Fourier transform.
- The course aims to introduce students to the theory of prime numbers, showing how the irregularities in this elusive sequence can be tamed by the power of complex analysis.
- Students will learn to handle multiplicative functions, to deal with Dirichlet series as functions of a complex variable, and to prove the Prime Number Theorem and simple variants.

MT04E05 MATHEMATICAL ECONOMICS

On completion of this unit successful students will be able to:

- Possess a solid grasp of essential mathematical tools required for the further studies in economic theory.
- Use and explain the underlying principles, terminology, methods, techniques and conventions used in the subject.
- Develop an understanding of optimization techniques used in economic theory.
- Encourage students to think about applying these mathematical tools in their own research, if necessary, with suitable modifications.
- Solve economic problems using the mathematical methods described in the course.
- Use the mathematical methods described in the course to analyze and solve problems in tutorials in a group discovery setting.

MT04E07 OPERATIONS RESEARCH

On completion of this unit successful students will be able to:

- To apply the notions of linear programming in solving transportation problems.

- To understand the theory of games for solving simple games.
- To acquire knowledge in formulating Tax planning problem and use goal programming algorithms.
- To use linear programming in the formulation of shortest route problem and use algorithmic approach in solving various types of network problem.
- To know the use of dynamic programming in various applications.

MT04E14 CODING THEORY

After the completion of this course, students will able to

- Comprehend various error control code properties, error detection and correction.
- Understand various methods of generating and detecting different types of error correcting codes
- Understands the fundamentals of coding theory
- The student has knowledge of properties of and algorithms for coding and decoding of linear block codes, cyclic codes and convolution codes. The student has an overview of arithmetic in finite fields, linear algebra over finite fields, and rings of power series.
- Apply various algorithms and techniques for coding
- Understands binary symmetric channel

PROJECT

- Engage in the study or research of a topic that is beyond the regular math department offerings in both rigor and content, and
- Produce a document (paper or thesis) that exhibits both the background and the conclusions reached as a result such study or research

PROGRAMME: M.A ENGLISH

Programme Outcomes

- Develops students' competence with reference to Literatures/Narratives in English.
- Creates awareness regarding the historicity and contemporaneity of 'language/communication' and its interdisciplinary and global cultural aftermaths.
- Prepares students to reflect on the social and ethical dimensions of research.
- Prepares students for careers in secondary and higher education, content development, creative visualisations, publishing and translation.

Programme Specific Outcomes

- Inculcates research aptitude in the students.
- Equips them for content development, creative writing and soft skill enhancement
- Enables the students to qualify state and national level competitive exams.
- Makes them capable of comprehending the subtle nuances and methods in English Language teaching from a global perspective.
- Students gain awareness about subalternity and marginalisation in the caste-ridden Indian society.

COURSE OUTCOMES

FIRST SEMESTER

EN010101 : Up Until Chaucer: Early Literatures in English

At the end of this course, the student will be able to:

CO1: Get a bird's eye view of the Anglo-Saxon culture over a Millenia through the extant works from that period and comprehend the roots of early English literature.

CO2: Acquaint with Old English prose and drama and its ties with Anglo Saxon religious framework.

CO3: Wade through extracts from the first epic *Beowulf* and the iconic Romance *Le Morte D' Arthur,* along with a choice sequence of the early English lyric.

CO4: Familiarize with the varied oeuvre of Geoffrey Chaucer.

CO5: Get a feel of literature by Chaucer's peers which can enable the critical evaluation of the ingenuity of Chaucer and his peers.

EN010102: Literatures of The English Renaissance

At the end of this course, the student will be able to,

CO 1 - Appreciate renaissance literature

CO 2 - Evaluate the radical transformation in culture and outlook in England during renaissance period

CO 3 - Appreciate contemporaries of Shakespeare and genres other than drama of renaissance period

CO 4 - Enhance critical competence by purveying renaissance literary and cultural forms and structures from contemporary theoretical perspectives

CO 5 - Imbibe a sense of historical and political development of England and its art

EN010103: Literatures of the English Revolution/ Enlightenment

CO1: Familiarizes the learner with the English literary texts which reflect the austere puritan ideals of the late 17th century

CO2: Receives a comprehensive account of the late 17th and early 20th century scenario drawing upon the significant social and political developments of the times.

CO3: Introduction to an in-depth critique of the philosophy of the Enlightenment

CO4: Acquaints the learners with the poetry of John Milton, the epic poet of the late 17th century, the Neo-classical satirists such as John Dryden, Alexander Pope and Aphra Ben and the transitional poetry of Thomas Gray

CO5: Appreciation of the drama written during this span of time and the acclaimed Fiction and the groundbreaking non- fictional works of the period

EN010104: 19th Century English Literatures

CO1: Familiarizes the students with the fundamental premises of the Romantic movement and Victorian Literature

CO2: Introduction to the theoretical and ideological framework and the major trends and offshoots across various genres

CO3: Enunciation of the historical significance of the Ode as a poetic form and the role of subjective and individualistic imagination

CO4: Knowledge of the Victorian sensibility with increased attention being paid to the growth of reason, ascent of materialism etc.

CO5: Introduction to the best novels, prose and drama of the period.

EN010105: Literary Criticism

At the end of this course, students will be able to,

CO1: Trace the evolution of Western Literary critical tradition and literary theory.

CO2: Comprehend the foundations of classical western criticism as rooted in the culture of ancient civilizations and evaluate the indebtedness of contemporary theory to the classics.

CO3: Trace the development of English literary criticism across centuries and movements and thus develop a critical outlook.

CO4: Enhance critical acumen with exposure to the critical traditions of 20^{th} century like practical archetypal and new critical approaches.

CO5: Discern the confluence of diverse perspectives in critical practice by sampling author centric, text centric, language centric and reader centric approaches to interpretation.

SECOND SEMESTER

EN010201: Modernity and Modernisms

CO1: Familiarizes the students with the literary trends of the early twentieth century in the context of the sensibility of literary modernism in the wake of the World War.

CO2: Able to comprehend the nature of Modernism

CO3: Familiarizes the experimentation in writing in all genres.

CO4: Comprehend the Critical Concepts in Literary and Cultural Studies in 1900s

CO5: Familiarize movements like the Avant Garde, and the Pink Decade

EN010202: Postmodernism and Beyond

CO1: Aims to acquaint the learners with the postmodern works of literature which defy categorisation and prove to be experimental in nature, subverting what is conventionally revered as the norm.

CO2: Familiarises the learners with the theoretical concepts of postmodernism

CO3: To comprehend diverse postmodern poetry by Frank O'Hara, John Ashberry, Tony Harrison, Michael Palmer, Allen Ginsberg, Carol Ann Duffy and Adrienne Rich.

CO4: facilitate the learners to trace the evolution of postmodern fiction over the decades with its culmination in the cyberpunk

CO5: To familiarize postmodern plays by Edward Bond, Sam Shepard and Tom Stoppard, which employ significant themes and novel techniques.

EN010203: American Literatures

At the end of the course, students are familiarized with;

CO1: The efforts to establish the cultural and political identity of America and American English Literatures.

CO2: The profundity and vastness of American poetry of the 19th and 20th centuries.

CO3: The portrayal of American life on the stage.

C04: The vibrance and vitality of American short fiction and novel.

CO5: The transcendentalist movement of the 19th century and the social revolution of the 20th century American life.

EN010204: English Language History and Contemporary Linguistics

At the end of this course, the students will attain:

CO1: A detailed knowledge of the nature and function of language

CO2: An understanding of different language families and the evolution of English language

CO3: A knowledge of the phonetic, morphological, semantic and syntactic structure of language

CO4: A comprehension of the major linguistic theories.

CO5: Knowledge of the scope of linguistics

EN010205: Thinking Theory

CO1: Familiarizes the students core aspects of what is currently designated as 'literary theory'

CO2: Familiarizes Jonathan Culler's 'over-view essay' on the emergence of 'Theory', Levis-Strauss' application of Saussurean Theory, and Derrida's critique of Levis-Strauss.

CO3: Able to understand the theoretical ruminations on Authorship and Discourse

CO4: To frame a reference wherein Psychoanalysis tackles issues pertaining to the Unconscious and Cognition

CO5: Able to comprehend the postcolonial turn in Literary theory.

SEMESTER THREE

EN010301: Reading India

At the end of the course, the students are made aware of:

CO1: The Pre-Colonial and Post-Colonial tradition of India and how they are represented in Indian English Literature.

CO2: The socio-cultural aspects of the Indian heterogeneity through translated works.

CO3: The Indian sensibility, aesthetics and unifying undercurrent of the classic tradition of India.

C04: The rich heritage of Indian English poetry and the stalwarts who shaped it.

CO5: The fusion of Indian theatrical traditions and the Western patterns effected by the master writers of Indian theatre.

EN010302: Post-Colonial Fiction

At the end of this course, the students will be able to:

CO1: Introduce seminal writings in the field of Post Colonialism and Post Coloniality.

C02: Conceptualize colonial/Post-Colonial subjects and their characteristics from linguists and cultural contexts of India.

C03: Contextualize Arab sensibility with the ambit of post-colonial literary and cultural studies.

C04: Familiarize oneself with psychological nuances of path breaking African post-colonial theoreticians, writers and movements.

C05: Trace literary and critical praxis of displaced populations with special reference to South American and Caribbean Islands.

EN010303: Body, Text and Performance

At the end of this course, the student will be able to:

CO1: Comprehend and critically evaluate the influences and relationships between texts, social performative roles, body and power structures.

C02: Explore gender and power concepts in Literary practice especially through examples of expressionism, Epic Theatre, musical opera, etc.

CO3: Gather an overview of multiple sexualities across a spacio- temporal frame and thereby sensitising them about gender perspectives on homo sexuality, rape and trauma.

C04: Aesthetically and critically appreciate the representations from multiple narrative perspectives of gender, sexuality and power.

CO5: Theorize on the involvement of binaries, marginalization, race, class, ethnicity, gender and sexuality in shaping contemporary cultural products focusing especially on the praxis, cinema and underlying ideologies.

EN010304: Literature and Gender

At the end of this course, the student will be able to:

CO1: Trace the history of theoretical approaches towards gender equality and its representations.

C02: Grasp diversity and depth of female experiences across time and cultures.

CO3: Conceptualize and analyse the processes of gendered community, identities via contemporary representations.

CO4: Evaluate the concepts of gender fluidity , performativity and multiple sexualities in the context of Black identities and thus internalize the plurality of identities.

CO5: Understand the history of patriarchal oppression recorded across decades in Indian languages.

EN010305: Ethics in/ as Literature

CO1: Major theoretical interpretations of the narrative and narrative modes across centuries, continents and languages are introduced.

CO2: A grasp of the origin of novels and its progress between fictional and narrative realism is imparted.

CO3: Concepts of inclusivity is fostered through classic and contemporary representations of disability.

CO4: The environment, the natural, human and the intersectionality between them in representations are familiarised.

C05: Made aware of issues of otherness as it has been tackled by narrative fiction.

SEMESTER FOUR

EN010401: Cultural Studies

At the end of the course the student shall be able to

CO 1 - Interpret strategies that are commonly employed in Cultural Studies

CO 2 - Identify diverse cultural texts extending from Nationalism to Sports and evaluate the political processes related to it

CO 3 - Locate and process the role of ideology in cultural practices

CO 4 - Develop flair for multidisciplinary research by drawing attention to signifying patterns stretching across diverse realms of life and representation

CO 5 - Form a deeper understanding of the popular cultures

EN010402: Post Colonial Poetry

At the end of the course the student shall be able to

CO 1 – Appreciate the poetries in the field of post colonialism and key concepts of post coloniality

CO 2 – Conceptualize colonial/post-colonial characteristics of South Asian and Australasian poetry

CO 3 – Contextualize sensibility with the ambit of post-colonial poetry of West and East Asia

CO 4 – Evaluate oneself with the psychological nuances of path breaking post-colonial writers of Africa

CO 5 – Trace literary and cultural practices of the populations of South American and Caribbean.

Electives: Cluster 3

EN820401: Modern European Fiction

At the end of this course, the student will be able to:

CO1: Acquaint the students with the historical and theoretical contexts of European fiction across the movements of Realism, Modernism and Post modernism.

CO2: Introduce Russian and French classical authors and to sample the masterpieces of Naturalism and Psychological Realism.

CO3: Savour iconic fictional works from vastly diverse temporal, spatial and cultural sensibilities from across Europe.

CO4: Comprehend the grip and legacy of Existentialist Philosophy across European life and literature through the works of master craftsmen.

CO5: Grasp the nuances of Post-modern experimentation with fiction across Europe.

EN820402: Modern European Drama

At the end of this course, the student will be able to:

CO1: Acquaint with the theoretical and political contexts of European drama across Modernism and Postmodernism.

CO2: Savour revolutionary playwrights from the last century and locate their literary and political concerns in the context of their popularity.

CO3: Survey the interface of contemporaneous schemes with major philosophic landscapes of Europe in experimental plays of European masters.

CO4: Traverse through European drama, the entwining of past and present in the synergy of history and philosophy.

EN820403: Indian Poetics: Theories and Texts

At the end of this course, the student will be able to:

CO1: Acquaint with the Rasa, Dhwani and strands of Classical Indian aesthetics along with the Geo-political facets of classical Tamil literature.

CO2: Explore Indian epics from ideological and historical perspectives.

C03: Read and re-read classical Sanskrit drama in contemporary contexts.

CO4: Explore counter discursive aspects of classical drama and poetry.

CO5: Explore Tamil epics from political, cultural and feminist contexts.

M.Com Aided and Self Financing

PROGRAMME OUTCOME

M.Com degree programme offered by University is outcome based and the outcomes expected are as follows:

PO1- Enhancing the horizon of knowledge so as to enable the learners to carry out qualitative research and pursue academic or professional careers.

PO2- Developing problem analysis skills and knowledge and applying the same in real life situation.

PO3- Using research knowledge and aptitude acquired in the course of study for solving socially relevant problems

PO4 Understanding the role and applicability of knowledge acquired in the context of society, environment and sustainable development sticking on to the ethics and values.

PO5- Developing effective communication skills and ability to work in teams by strengthening group dynamics

PO6- Fostering ability to engage in lifelong learning, demonstrating empathetic social concern, contributing to the development of nation, by making sure of awareness gained on various issues.

PROGRAMME SPECIFIC OUTCOME

PSO1- Inculcating managerial skills and theoretical knowledge for managing business units with special focus on functional areas of business and management.

PSO2- Imparting advanced accounting knowledge and skills and provide awareness regarding latest developments in the field of accounting.

PSO3- Enabling learners to acquire advanced theoretical knowledge on research methods and techniques and also developing capabilities in the application of research in solving business related problems

PSO4- Acquisition of expertise in specialized fields like finance, taxation, marketing, management and information technology

PSO5- Development of quantitative aptitude and analytical skills of the learner.

PSO6- Facilitating learner to pursue career in professional areas of commerce and

management such as taxation, financial services, consultancy etc.

COURSE OUTCOME

SEMESTER 1

CORE COURSE: SPECIALISED ACCOUNTIING

CO1- Providing an in depth understanding about theoretical and practical aspects of major Accounting Standards to apply the same in different practical situations

CO2- Ascertain the value of goodwill and value of companies based on the value of shares and compare the real value of shares and with the market prices and identify the mispricing.

CO3- In-depth understanding about the determination of purchase consideration in the event of amalgamation and to prepare post amalgamation financial statements

CO4- Develop a clear understanding about different types of NBFCs, their provisioning norms and to understand the concept of NAV of mutual funds through its computation

CO5- Acquaint with the theoretical aspects of emerging areas in accounting

CORE COURSE: ORGANISATIONAL BEHAVIOUR

CO1- Basic understanding about the concepts of organization behavior

CO2- A very good understanding about individual behavior, personality and motivation

CO3- Imparting deep understanding about group behavior and leadership related to organizational behavior

CO4- Add the knowledge base of the leaner regarding change management and deal with stress.

CO5- Impart knowledge about the role of organizational culture and conflict on organizational behavior

CORE COURSE: MARKETING MANAGEMENT

CO1- The learner should have a basic understanding about concepts like customer centricity, CRM, value chain and customers delight

CO2- The learner should get a clear understanding about the market segmentation process and its applications in marketing strategies

CO3- Develop an idea about consumer behavior and its impact

CO4- Good understanding about product line, product mix, brand equity, brand identity, brand personality and brand image

CO5- Develop sound ideas regarding services marketing and service quality.

CORE COURSE: MANAGEMENT OPTIMISATION TECHNIQUES

CO1- Develop theoretical understanding about various business optimisation models.

CO2- Ability to develop Linear Programming Models for business problems and solve the same.

CO3- Application of Linear Programming in the areas of transportation and assignment

CO4- Develop decision making skills under uncertainty, risk and replacement of assets

CO5- Understand and apply network analysis techniques for project implementation

CORE COURSE: METHODOLOGY FOR SOCIAL SCIENCE RESEARCHES

CO1- Develop a thorough understanding about the basic concepts of social science research

CO2- After completing this course, the learner should be able to formulate a research design

CO3- After studying the theoretical aspects of sampling design, the learner should be able to draw a sampling design.

CO4- Detailed knowledge about the instrument development, its validation and different forms of scaling.

CO5- Understand the technique of research reporting.

SEMESTER 2

CORE COURSE: ADVANCED CORPORATE ACCOUNTING

CO1- The learner should be able to prepare consolidated financial statements of group companies.

CO2- Preparation of the financial statements of public utility companies and deal with the disposal of surplus.

CO3- Develop and awareness on the procedure of bankruptcy under the recent Bankruptcy Procedure Code.

CO4- Familiarizing the learner with the accounting procedures of liquidation of companies and preparation of various statements required as per the Companies Act.

CO5- Basic understanding about the preparation of accounts of some special lines of

businesses like shipping, hospitals and hotels.

CORE COURSE: HUMAN RESOURCE MANGEMENT

CO1- Acquaintance with basic concepts of HRM and performance appraisal.

CO2- Understanding about human resource development, stress management and work life management.

CO3- High level knowledge about various aspects of training.

CO4- Understanding about variousaspects of industrial relations so as to evaluate the real cases of industrial relations.

CO5- Understanding about HR outsourcing HR accounting and HR audit.

CORE COURSE: INTERNATIONAL BUSINESS AND FINANCE

CO1- Familiarization with globalization, internationalization of business and the international business environment.

CO2- Understanding about theories of international trade, trade barriers and trade blocks.

CO3- Imparting idea about various economic institutions related to international trade.

CO4- Achieve high level knowledge about various aspects of international monetary system.

CO5- Develop an understanding about the international investment environment.

CORE COURSE: QUANTITATIVE TECHNIQUES

CO1- This course intends to give understanding about the applications of quantitative techniques

CO2- This course intends to give understanding about the applications of quantitative techniques

CO3- After learning this course, the student should be in a position to identify appropriate parametric test for testing the hypotheses

CO4- The learner should be equipped with the skills to identify the most suitable non parametric test for testing a hypothesis

CO5- The learner should be equipped with the skills to apply the principles of SQC

CORE COURSE: STRATEGIC MANAGEMENT

CO1- Strong understanding about the theoretical foundations of strategic management.

CO2- Clear understanding about various models of environmental and internal analysis.

CO3- Development of an idea about the strategy formulation process at the corporate level.

CO4- Familiarization with various tools strategic planning and evaluation.

CO5- Understanding about the modes of implementation and control of strategies.

SEMESTER 3

CORE COURSE: STRATEGIC FINANCIAL MANAGEMENT

CO1- Learn the theoretical foundations of financial management and financial management decisions.

CO2- Evaluate the feasibility of different options regarding discount, credit period, storage cost etc related to current assets and current liabilities and estimate working capital requirements

CO3- Evaluate long term proposals and evaluate the risk associated with long term investment.

CO4- Evaluate the decisions regarding leasing of capital assets.

CO5- Evaluate and Compare the performance of business entities.

CORE COURSE: INCOME TAX – LAW AND PRACTICE

CO1- Acquire knowledge regarding the basic concepts of Income Tax

CO2- Able to compute the income from salary and house property

CO3- Determine taxable profit of a business or profession

CO4- Able to compute capital gain and income from other sources

CO5- Able to calculate Gross Total Income of an individual

CO6- Learner shall be able to determine eligible deductions and compute Taxable Income and tax liability of an individual

CORE COURSE: SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT

CO1- Able to understand the concepts of investments, different types of investments, views of investment and process of investment and apply the theoretical knowledge in investment information for selecting the securities.

CO2- Understanding the types of risk in security market and applying various tools for the valuation of bonds as well as economic indicators to predict the market.

CO3- Understand the tools of technical analysis, analyse the patterns and trends in the market by using various tools and enable to take investment decisions after understanding market efficiency level also.

CO4- Applying Modern portfolio theories and construct optimum portfolios.

CO5- Revising constructed portfolios as per risk and return association by using different strategies.

CORE - ELECTIVE: INDIRECT TAX LAWS

CO1- Understand the basic concepts of the Goods and Services Tax

CO2- Develop a clear ideaabout the levy and collection of tax and tax credit

CO3- Develop the knowledge about the provisions regarding registration, preparations of books of accounts and filing of returns under the Act

CO4 - Understand about the powers of GST authorities regarding inspection, search and seizure

CO5- Basic understanding about the Customs Law in India.

SEMESTER 4

CORE COURSE: ADVANCED COST AND MANAGEMENT ACCOUNTING

CO1- Apply activity based absorption methods instead of conventional absorption method.

CO2- Apply the marginal costing principles in decision making situations of businesses.

CO3- Dealing with practical cases of pricing decisions in different situations

CO4 -Understand the concepts of standard costing, and the process of cost control through it.

CO5- Deal with the practical issues related to transfer pricing

CORE COURSE: INCOME TAX – ASSESSMENT AND PROCEDURES

CO1- Compute the total income and tax liability of firms and Association of Persons

CO2 –Carry out assessment of companies and determine their tax liability

CO3- Make the assessment of co operative societies and trusts.

CO4- Understanding about the assessment procedures, TDS and advance payment of tax and application in various situations

CO5-Learn tax planning concepts and apply the same

CORE – ELECTIVE: DERIVATIVES AND RISK MANAGEMENT

CO1- Knowledge about the derivative market in
India, its evolution, types, players, risks involved and basic quantitative foundations
CO2- Analyze the implications of Risk in the perception of individuals and Institutions and measurement of risks
CO3- Understand and explain the concept of forward market and its function ,
CO4- Analyze the operation and pricing of various types of futures
CO5- Understand the concepts and methodology of option trading and apply the models of pricing the option contracts
CO6- Develop an idea of exchanges through swaps

CORE COURSE: PERSONAL INVESTMENT AND BEHAVIOURAL FINANCE

CO1- Understand the meaning and significance of Financial literacy, Financial Discipline & Financial Competency, the role of family and parents in financial socialisation
CO2- Understand and Evaluate the Significance of savings on financial destiny and it relationship with Consumerism and to understand the different elements/steps in Personal Financial Planning to attain Financial Well Being and Evaluate the different retail investment avenues.
CO3- Know the meaning of Behavioral Finance, its evolution and related theories
CO4- To understand different Heuristics, Biases and other Irrational Investment Behaviours
CO5- Understand the relationship between biases and to adopt techniques to lower the impact of biases.

MSc CHEMISTRY

Programme Outcome

- To give students a comprehensive understanding of the principles of Chemistry
- To gain the skill to design and carry out scientific experiments and interpret the data
- To understand the interdisciplinary nature of Chemistry and to be aware of the emerging fields in Chemistry
- To build a scientific temper and to learn the necessary skills to succeed in research or industrial field.
- To be able to define and resolve new problems in Chemistry and participate in the future development of Chemistry

COURSE OUTCOME

SEMESTER 1

CH500101 Organometallics and Nuclear chemistry

- To study the structure, synthesis and reactions of commonly known organometallic compounds
- To know the important applications of organometallic compounds in catalysis
- To study the important aspects of organometallic polymers
- To understand the functions and applications of bioorganic compounds
- To have a basic idea about nuclear Chemistry and its applications

CH500102 Structural and Molecular Organic chemistry

- To understand the basic concepts and mechanism in organic chemistry
- To get an idea about the various kinetic and thermodynamic factors which control the organic reactions
- To know stereochemistry and various possible conformations of organic compounds and how it affects the reaction outcome
- To be familiarise with the important photochemical reactions in Organic Chemistry

CH500103 Quantum chemistry and Group Theory

- To study the basic postulates of quantum mechanics
- To enable the students to solve the simple quantum mechanical models such as simple harmonic oscillator, particle in a 1D- box, rigid rotor, H atom etc.
- To understand the quantum mechanical aspect of angular momentum and spin.

- Enable the students to predict the point group of important molecules and to know how they are classified
- To understand the idea of space groups and to learn the theory of molecular symmetry.
- To gain skill to apply group theory to vibrational and electronic spectroscopy

CH500104 Thermodynamics, Kinetic Theory and Statistical Thermodynamics

- To know the basic concepts in classical thermodynamics and to learn the thermodynamic aspects of various processes and reactions
- To understand the different aspects of statistical thermodynamics and its applications.

SEMESTER 2

CH500201 Coordination chemistry

- To know the structure and bonding of important coordination compounds
- To understand the magnetic properties of complexes and to know how magnetic moments can be employed for the interpretation of their structure
- To get an overview about the stereochemistry of coordination compounds
- To study the reaction mechanisms of metal complexes.
- Enable the students to elucidate the structure of metal complexes using various spec troscopic methods
- To get an idea about the basic coordination chemistry of Lanthanides and Actinides

CH500202 Organic Reaction Mechanism

- To be familiarise with the mechanism of organic reactions and different factors which affect the reaction rate.
- To understand the role of various reaction intermediates like carbanion, carbocation, carbenes, radicals etc. in organic reactions
- To get insight into the chemistry of carbonyl compounds.
- To know the different types of concerted reactions in organic chemistry and orbital correlation approaches

CH500203 Chemical Bonding and Computational chemistry

- To understand the requirement of approximation methods in quantum mechanics
- To gain the knowledge to apply important approximation methods to problems in quantum mechanics
- To gain insight in to valance bond theory molecular orbital theory and the concept of hybridisation
- To know the applications of group theory in chemical bonding
- To get an exposure to the emerging world of computational chemistry
- To have a basic idea about computational chemistry calculations

CH5002C04 Molecular Spectroscopy

- To know the basics principle of different techniques employed in molecular spectroscopy
- To study the origin, instrumentation and important applications of Microwave, IR, Raman, UV, NMR, EPR and EQR techniques

SEMESTERS 1 & 2 PRACTICAL
CH500205 Inorganic chemistry Practical-1

- To be able to identify and separate less familiar ions such as Tl, W, Se, Mo, Ce, Th, Ti, Zr, V, U etc.
- To be able to estimate colorimetrically ions such as Fe, Cu, Ni, Mn, Cr etc.

CH500206 Organic chemistry Practical-1

- To learn the separation and purification of an organic mixture by chemical/solvent separation methods.
- To gain the knowledge to draw the structure of compounds using Chemdraw software

CH500207 Physical chemistry Practical-1

- To verify the some important principles in physical chemistry and to determine various physical properties
- To learn to carry out some simple computational chemistry calculations

SEMESTER 3

CH500301 Structural Inorganic chemistry

- To understand the structure and different properties of solids
- To learn the important aspects of inorganic chains, rings, cages and metal clusters.
- To understand the chemistry and applications of materials such as glasses, ceramics, composites, nanomaterials etc.

CH500302 Organic Syntheses

- To know the various methods employed for reactions like oxidation, reduction, carbocyclic and heterocyclic ring formation etc.
- To get insights into novel reactions and reagents in organic synthesis
- To know the utility of protecting group strategy in organic synthesis
- To be familiarise the students with the basic principles of retro syntheses, biosynthesis and biomimetic synthesis

CH010303 Chemical Kinetics, Surface chemistry and Crystallography

- To learn the different theories of reaction rates and factors affecting reaction rates
- To have an idea about the different types of catalysis and their mechanisms
- To study the chemistry of surfaces and different types of surface phenomena
- To get an idea about the various techniques employed for the characterisation of surfaces
- To know the general properties of colloids and macromolecules
- To have an idea about the important aspects of crystallography

CH500304 Spectroscopic Methods in chemistry

- To get a deep insight into the various spectroscopic methods used for the characterisation of organic compounds.
- Enable the students to elucidate the structure of compounds by analysing the spectral data

SEMESTER 4

ELECTIVE COURSES

CH800401 Advanced Inorganic chemistry

- To understand the applicability of group theory in coordination chemistry
- To know the utility of spectroscopic methods such as IR, Raman, EPR and Mossbauer techniques for the characterisation of inorganic complexes
- To understand the photochemistry of inorganic compounds
- Introduce the students the emerging field of nanochemistry and its fascinating aspects
- To study the acid –base concept in non-aqueous media and reactions in non-aqueous media

CH800402 Advanced Organic chemistry

- To get a brief idea about emerging branches in chemistry like supramolecular chemistry, nanochemistry, medicinal chemistry, polymer chemistry and its applications
- To learn the principles of green chemistry and to know the various green protocols in organic synthesis
- To study the important stereoselective transformations in organic synthesis
- To know the basic aspects of natural product chemistry.
- To get an overview about research process and to gain the ability to apply various research methods and techniques.

CH800403 Advanced Physical chemistry

- To get an overview about the structure and properties of of solid crystals and liquid crystals
- To know the characterisation of crystals using X-Ray diffraction
- To learn the important aspects of gaseous state and electrochemistry
- To study the principle, instrumentation and applications of diffraction method, fluorescence spectroscopy, atomic spectroscopy and electroanalytical techniques.

PRACTICAL- SEMESTERS 3 AND 4

CH010405 Inorganic chemistry practical-2

- Enable the students to estimate the binary mixtures of metallic ions by volumetric and gravimetric methods
- To acquire the skill to analyse some common alloys and ores.

CH010406 Organic chemistry practical-2

- To gain the skill to prepare organic compounds using greener protocols
- Enable the students to prepare organic compounds via two step synthetic sequences
- To know about enzyme/coenzyme catalysed reactions

CH010407 Physical chemistry practical-2

- Enable the students to determine the various physical properties using simple instrumental methods like polarimetry, refractometry etc.

MSc CHEMISTRY

Programme Outcome

- To give students a comprehensive understanding of the principles of Chemistry
- To gain the skill to design and carry out scientific experiments and interpret the data
- To understand the interdisciplinary nature of Chemistry and to be aware of the emerging fields in Chemistry
- To build a scientific temper and to learn the necessary skills to succeed in research or industrial field.
- To be able to define and resolve new problems in Chemistry and participate in the future development of Chemistry

COURSE OUTCOME

SEMESTER 1

CH1C01 Organometallics and Nuclear chemistry

- To study the structure, synthesis and reactions of commonly known organometallic compounds
- To know the important applications of organometallic compounds in catalysis
- To study the important aspects of organometallic polymers
- To understand the functions and applications of bioorganic compounds
- To have a basic idea about nuclear Chemistry and its applications

CH1C02 Structural and Molecular Organic chemistry

- To understand the basic concepts and mechanism in organic chemistry
- To get an idea about the various kinetic and thermodynamic factors which control the organic reactions
- To know stereochemistry and various possible conformations of organic compounds and how it affects the reaction outcome
- To be familiarise with the important photochemical reactions in Organic Chemistry

CH1C03 Quantum chemistry and Group Theory

- To study the basic postulates of quantum mechanics
- To enable the students to solve the simple quantum mechanical models such as simple harmonic oscillator, particle in a 1D- box, rigid rotor, H atom etc.
- To understand the quantum mechanical aspect of angular momentum and spin.

- Enable the students to predict the point group of important molecules and to know how they are classified
- To understand the idea of space groups and to learn the theory of molecular symmetry.
- To gain skill to apply group theory to vibrational and electronic spectroscopy

CH1C04 Classical and Statistical Thermodynamics

- To know the basic concepts in classical thermodynamics and to learn the thermodynamic aspects of various processes and reactions
- To understand the different aspects of statistical thermodynamics and its applications.

SEMESTER 2

CH2C05 Coordination chemistry

- To know the structure and bonding of important coordination compounds
- To understand the magnetic properties of complexes and to know how magnetic moments can be employed for the interpretation of their structure
- To get an overview about the stereochemistry of coordination compounds
- To study the reaction mechanisms of metal complexes.
- Enable the students to elucidate the structure of metal complexes using various spec troscopic methods
- To get an idea about the basic coordination chemistry of Lanthanides and Actinides

CH2C06 Organic Reaction Mechanism

- To be familiarise with the mechanism of organic reactions and different factors which affect the reaction rate.
- To understand the role of various reaction intermediates like carbanion, carbocation, carbenes, radicals etc. in organic reactions
- To get insight into the chemistry of carbonyl compounds.
- To know the different types of concerted reactions in organic chemistry and orbital correlation approaches

CH2C07 Chemical Bonding and Computational chemistry

- To understand the requirement of approximation methods in quantum mechanics
- To gain the knowledge to apply important approximation methods to problems in quantum mechanics
- To gain insight in to valance bond theory molecular orbital theory and the concept of hybridisation
- To know the applications of group theory in chemical bonding
- To get an exposure to the emerging world of computational chemistry
- To have a basic idea about computational chemistry calculations

CH2C08 Molecular Spectroscopy

- To know the basics principle of different techniques employed in molecular spectroscopy
- To study the origin, instrumentation and important applications of Microwave, IR, Raman, UV, NMR, EPR and EQR techniques

SEMESTERS 1 & 2 PRACTICAL
CH2P01 Inorganic chemistry Practical-1

- To be able to identify and separate less familiar ions such as Tl, W, Se, Mo, Ce, Th, Ti, Zr, V, U etc.
- To be able to estimate colorimetrically ions such as Fe, Cu, Ni, Mn, Cr etc.

CH2P02 Organic chemistry Practical-1

- To learn the separation and purification of an organic mixture by chemical/solvent separation methods.
- To gain the knowledge to draw the structure of compounds using Chemdraw software

CH2P03 Physical chemistry Practical-1

- To verify the some important principles in physical chemistry and to determine various physical properties
- To learn to carry out some simple computational chemistry calculations

SEMESTER 3

CH3C09 Structural Inorganic chemistry

- To understand the structure and different properties of solids
- To learn the important aspects of inorganic chains, rings, cages and metal clusters.
- To understand the chemistry and applications of materials such as glasses, ceramics, composites, nanomaterials etc.

CH3C10 Organic Syntheses

- To know the various methods employed for reactions like oxidation, reduction, carbocyclic and heterocyclic ring formation etc.
- To get insights into novel reactions and reagents in organic synthesis
- To know the utility of protecting group strategy in organic synthesis
- To be familiarise the students with the basic principles of retro syntheses, biosynthesis and biomimetic synthesis

CH3C11 Chemical Kinetics, Surface chemistry and Photochemistry

- To learn the different theories of reaction rates and factors affecting reaction rates
- To have an idea about the different types of catalysis and their mechanisms
- To study the chemistry of surfaces and different types of surface phenomena
- To get an idea about the various techniques employed for the characterisation of surfaces
- To know the general properties of colloids and macromolecules
- To have an idea about the important aspects of photochemistry

CH3C12 Spectroscopic Methods in chemistry

- To get a deep insight into the various spectroscopic methods used for the characterisation of organic compounds.
- Enable the students to elucidate the structure of compounds by analysing the spectral data

SEMESTER 4

ELECTIVE COURSES

CH4E01 Advanced Inorganic chemistry

- To understand the applicability of group theory in coordination chemistry
- To know the utility of spectroscopic methods such as IR, Raman, EPR and Mossbauer techniques for the characterisation of inorganic complexes
- To understand the photochemistry of inorganic compounds
- Introduce the students the emerging field of nanochemistry and its fascinating aspects
- To study the acid –base concept in non-aqueous media and reactions in non-aqueous media

CH4E02 Advanced Organic chemistry

- To get a brief idea about emerging branches in chemistry like supramolecular chemistry, nanochemistry, medicinal chemistry, polymer chemistry and its applications
- To learn the principles of green chemistry and to know the various green protocols in organic synthesis
- To study the important stereoselective transformations in organic synthesis
- To know the basic aspects of natural product chemistry.
- To get an overview about research process and to gain the ability to apply various research methods and techniques.

CH4E03 Advanced Physical chemistry

- To get an overview about the structure and properties of of solid crystals and liquid crystals
- To know the characterisation of crystals using X-Ray diffraction
- To learn the important aspects of gaseous state and electrochemistry
- To study the principle, instrumentation and applications of diffraction method, fluorescence spectroscopy, atomic spectroscopy and electroanalytical techniques.

PRACTICAL- SEMESTERS 3 AND 4

CH4P04 Inorganic chemistry practical-2

- Enable the students to estimate the binary mixtures of metallic ions by volumetric and gravimetric methods
- To acquire the skill to analyse some common alloys and ores.

CH4P05 Organic chemistry practical-2

- To gain the skill to prepare organic compounds using greener protocols
- Enable the students to prepare organic compounds via two step synthetic sequences
- To know about enzyme/coenzyme catalysed reactions

CH4P05 Physical chemistry practical-2

- Enable the students to determine the various physical properties using simple instrumental methods like polarimetry, refractometry etc.

M. SC. ZOOLOGY PROGRAMME

Programme outcome:

Candidates after completing the course can enter any field of Zoological and biomedical research. · They can become researchers, teachers and can be trained in any fields of Zoology with in a short duration. If their past learning outcome in excellent they are fit for doing any job in the field of Animal Science. · They have also job scopes in the media or the environmental and ecosystem management sector · They have also scopes of career in the environmental consulting firms in public or private sector.

Programme Specific Outcome:

To produce Post graduates of Zoology with in-depth knowledge of basic and advance areas in the subject. · That inculcates the deep knowledge of the Zoology and related fields · To develop the scientific temperament and problem solving attitude. · To promote the attitude to serve the society · To promote learning and research aptitude.

Course outcomes

Semester I

ZL010101- Animal Diversity : Phylogenetic and Taxonomic approaches

The student should:

- Develop a thorough understanding in the principles and practice of systematics·
- Acquire an in-depth knowledge on the diversity and relationships in animal world ·
- Develop an holistic appreciation on the phylogeny and adaptations in animals
- Know the latest trend in animal taxonomy and phylogenetic sysytematics.
- Be able to develop and construct various types of taxonomic keys and its proper application.

ZL010102- Evolutionary Biology and Ethology

The student should:

- Have an understanding on the process and theories in evolutionary biology ·
- Develop an interest in the debates and discussion taking place in the field of evolutionary biology ·
- Be equipped to critically evaluate the debates and take a stand based on science and reason ·
- Be exposed to the basics and advances in ethology, and generate an interest in the subject in order to understand the complexities of both animal and human behaviour
- Be able to apply the acquired knowledge to new information and data as well as the capacity to effectively communicate the principles of evolution and its application to human biology.

ZL010103-Biochemistry

The student should:

- Understand the chemical nature of life and life process·
- Have an idea on structure and functioning of biologically important molecules·
- Develop an interest in the subject and help students explore the new developments in biochemistry
- Understand the abnormal metabolism of biomolecules and the resultant diseases.
- Understand the importance of metabolism of bio macromolecules in normal physiology of a man.

ZL010104-Biostatistics and Research methodology

The student should:

- Develop concepts, generate enthusiasm and make awareness about the tools/gadgets and · accessories of biological research ·
- Be able to carry out original research in biology ·
- improve analytical and critical thinking skills through problem solving ·
- Learn various tools and techniques suggested in the course
- Be sensitized about the ethics involved in research and enable them to come up with innovative research designs.

Semester II

ZL010201- Field Ecology

The student should:

- Develop uderstanding on the basic theories and principles of ecology ·
- Explore various disciplines in ecology ·
- Learn current environmental issues based on ecological principles ·
- Gain critical understanding on human influence on environment.
- Learn the different aspects of population and its interaction.

ZL010202- Developmental Biology

The student should:

- Develop concepts and process in developmental biology ·
- Understand and appreciate the genetic mechanisms and the unfolding of the same during development ·
- Be exposed to the new developments in embryology and its relevance to Man
- Develop knowledge and attitude on ethics in Developmental biology research and how to use it for human welfare.

- Understand the developmental patterns and influence of genes in the ontogeny of vertebrates and invertebrates.

ZL010203- Genetics and Bioinformatics

The student should:

- Develop in-depth understanding on the principles and mechanisms of inheritance ·
- Study the fine structure and molecular aspects of genetic material ·
- Be provided with an opportunity to learn the importance of inheritance in Man ·
- Be exposed to the emerging field of bioinformatics and equip them to take up bioinformatics studies.
-

ZL010204- Microbiology and Biotechnology

The student should:

- Be provided with an over view of the microbial world, its structure and function ·
- Be familiarized with the applied aspects of microbiology ·
- Have intensive and in-depth learning in the field of biotechnology ·
- Understand the modern biotechnology practices and approaches with an emphasis in technology application, medical, industrial, environmental and agricultural areas ·
- Be familiarized with public policy, biosafety, and intellectual property rights issues related to biotechnology

Semester III

ZL010301- Animal Physiology

The student should:

- Study and compare the functioning of organ systems across the animal world ·
- Be given an over view of the comparative functioning of different systems in animals
- Learn more about human physiology
- Understand regulation of homeostasis in human body
- Have an understanding on the reproductive function of human body

ZL010302- Cell and Molecular Biology

The student should:

- Study the structural and functional details of the basic unit of life at the molecular level ·
- Be motivated to refresh and delve into the basics of cell biology ·

- Be introduced the new developments in molecular biology and its implications in human welfare
- Understand the basic properties, types and therapies in cancer
- Able to understand gene expression prokaryotes and eukaryotes

ZL010303- Biophysics, Instrumentation and Biological Techniques

The student should:

- Learn the biophysical properties and functioning of life processes ·
- Be introduced the tools and techniques available for studying biochemical and biophysical nature of life ·
- Be equipped to use the tools and techniques for project work/ research in biology
- Have theoretical knowledge about the functioning of major research equipment in life science
- Be prepared to handle tissue for histological studies

ZL010304 –Immunology

The student should:

- Be provided an intensive and in depth knowledge to the students in immunology ·
- Understand the role of immunology in human health and well-being
- Be familiarised with the students the new developments in immunology
- Be able to identify gap areas in existing knowledge base
- Develop curiosity for selecting fundamental and applied research in the field of immunology

Semester IV

ZL810401 -Environmental Science: Concepts and Approaches

The student should:

- Be provided a broad and deep understanding on environment and influence of man on environment ·
- Be equipped to use various tools and techniques for the study of environment ·
- Understand, think and evolve strategies for management and conservation of environment for sustaining life on earth ·
- Take up further studies and research in the field.
- Gain in depth knowledge in meteorology

ZL810402- Environmental Pollution and Toxicology

The student should:

- Be provided a broad and deep understanding on environment and influence of man on environment ·
- Be equipped to use various tools and techniques for the study of environment
- Acquire an indepth knowledge on various kinds of environmental pollution, quality standards and mitigation
- Develop an attitude on Waste reduction and recycle.
- Acquire an indepth knowledge on various bio monitoring of toxic chemical in the environment

ZL810403-Environmental Management and Development

The student should:

- Understand, think and evolve strategies for management and conservation of environment for sustaining life on earth ·
- Take up further studies and research in the field.
- Be able to understand, and derive solutions for various disasters
- Acquire knowledge about various developmental goals and strategies for a sustainable globe
- Able to apply the basic principles of GIS and GPS in environmental management

M.Sc. Statistics Program
Under Credit and Semester System (CSS) 2012 onwards

Course Code	Course Title	Credits	Teaching Hours/Week
	Semester-I (Total credits-20)		
ST1C01	Distribution Theory	4	5
ST1C02	Analytical Tools for Statistics	4	5
ST1C03	Probability Theory	4	5
ST1C04	Mathematical Methods for Statistics	4	5
ST1C05	Statistical Computational Techniques	4	5
	Semester-II (Total credits-20)		
ST2C06	Multivariate Distributions	4	5
ST2C07	Advanced Probability Theory	4	5
ST2C08	Statistical Estimation Theory	4	5
ST2C09	Stochastic Processes	4	5
ST2C10	Statistical Computing-1	4	5
	Semester-III (Total credits-20)		
ST3C11	Sampling Theory	4	5
ST3C12	Statistical Testing of Hypotheses	4	5
ST3C13	Design and Analysis of Experiments	4	5
ST3C14	Multivariate Analysis	4	5
ST3C15	Statistical Computing-2	4	5
	Semester-IV (Total credits-20)		
ST4C16	Statistical Quality Control	3	5
ST4 E01:	Econometric Methods	3	5
ST4 E02:	Operations Research	3	5
ST4 E05:	Statistical Decision Theory	3	5
ST4 E08:	Statistical Computing-3	3	5
ST4 CD	Dissertation/Project		3
ST4 CV	Viva-Voce		2

ST1C01 Distribution Theory

Our everyday lives, as well as economic and business activities, are full of uncertainties and probability and distribution theory offer useful techniques for quantifying these uncertainties. The course is heavily oriented towards the formulation of mathematical concepts on probability distributions and densities with practical applications.

Topics covered are: discrete random variables, moments, probability generating functions, standard discrete distributions; continuous random variables, uniform and chi-square distributions, transformations, marginal and conditional distributions, bivariate normal distribution. Power series, Binomial, Geometric, Poisson, Negative binomial and Hyper geometric and Continuous Distributions:- Rectangular, Exponential, Weibull, Beta, Gamma, Pareto, Normal, Lognormal, Cauchy, Laplace, Logistic.

At the end of the course students should be able to:

- How to derive the probability density function of transformations of random variables and use these techniques to generate data from various distributions.
- Apply selected probability distributions to solve problems.
- Present the analysis of derived statistics to all audiences.
- To apply all the discrete distributions for analysing the data.
- To use various continuous distributions whenever necessary.
- To describe the practical applications of truncated distribution.
- To apply order statistics for distribution theory.

ST1C02 Analytical Tools for Statistics

The course present

- Basic concepts of matrices and matrix algebra.
- Methods of solving systems of linear equations.
- Basic concepts of vector spaces.
- Concepts of linear transformations.
- The concept of and methods of computing determinants.
- Methods of computing and using eigenvalues and eigenvectors.

Students in this course will:

- Demonstrate ability to manipulate matrices and to do matrix algebra.
- Demonstrate ability to solve systems of linear equations.
- Demonstrate ability to work within vector spaces and to distil vector space properties.
- Demonstrate ability to manipulate linear transformations and to distil mapping properties.
- Demonstrate ability to manipulate and compute determinants.
- Demonstrate ability to compute eigenvalues and eigenvectors.

ST1C03 Probability Theory

Probability theory is the branch of mathematics that deals with modelling uncertainty. It is important because of its direct application in areas such as genetics, finance and telecommunications. It also forms the fundamental basis for many other areas in the mathematical sciences including statistics, modern optimisation methods and risk modelling.

This course provides an introduction to probability theory, random variables and Markov processes. Topics covered are: probability axioms, conditional probability; Bayes' theorem; discrete random variables, moments, bounding probabilities.

ST1C04 Mathematical Methods for Statistics

This course will give the students an idea regarding

- Sequences and series of functions convergence, continuity, uniform continuity, differentiability. Functions of several variables: maxima and minima, Method of Lagrangian multipliers, Riemann integration theory Laplace transform and its applications to differential equations.
- Different measures, measurable and measure space measurable set and its properties are discussed
- Lebesgue integration theory and general definition of integral and very important three theorem such as Fatou's lemma. monotone convergence theorem, Lebesgue dominated convergence theorem are covered in this course
- Basic ideas of complex numbers and complex functions are covered in this paper. Analytic functions, Cauchy-Riemann equations, contour integral, Cauchy's theorem Cauchy's integral formula, Liouville's theorem, Maximum modulus principle, Zeroes of a function, singular point, different types of singularities, residues at a pole.

This course helps the students to ensure a strong base to tackle the problems in probability theory.

ST1C05 Statistical Computational Techniques

The course in Statistical Computational Techniques consists of two major parts - topics on numerical analysis and basic concepts of the open source software R. It will develop numerical methods aided by technology to solve algebraic, transcendental, and differential equations, and to calculate derivatives and integrals. The course will also develop an understanding of the elements of error analysis for numerical methods and certain proofs. The course will further develop problem solving skills.

Course Objectives includes

- Derive appropriate numerical methods to solve algebraic and transcendental equations.
- Develop appropriate numerical methods to approximate a function.
- Develop appropriate numerical methods to solve a differential equation.
- Derive appropriate numerical methods to evaluate a derivative at a value.
- Derive appropriate numerical methods to solve a linear system of equations.
- Perform an error analysis for various numerical methods.
- Prove results for various numerical root finding methods.
- Derive appropriate numerical methods to calculate a definite integral.
- Code various numerical methods in a modern computer language.

After completion of the course students will be able to

- Solve an algebraic or transcendental equation using an appropriate numerical method.

- Approximate a function using an appropriate numerical method.
- Solve a differential equation using an appropriate numerical method.
- Evaluate a derivative at a value using an appropriate numerical method.
- Solve a linear system of equations using an appropriate numerical method.
- Perform an error analysis for a given numerical method.
- Prove results for numerical root finding methods.
- Calculate a definite integral using an appropriate numerical method.
- Code a numerical method in a modern computer language.

The course outcome will be a foundation for fluency in R programming, and an insight into the capabilities of the language as a productivity tool for data manipulation and statistical analyses.

ST2C06 Multivariate Distributions

The objective of the course is to introduce several useful multivariate techniques, making strong use of illustrative examples and a minimum of mathematics. The course will start with the extensions of univariate techniques to multivariate framework, such as multivariate normal distribution, hypothesis testing.

Multivariate analysis skills have been commonly recognized as part of the key requisites for analytics analysts. The complexity of most phenomena in the real world requires an investigator to collect and analyze observations on many different variables instead of a single variable. The desire for statistical techniques to elicit information from multivariate dimensional data thus becomes essential and crucial for data analysts. The course provides an insight of the notions of bivariate distributions such as Gumbel's bivariate exponential and bivariate normal distribution, multinomial distribution, multivariate normal and Wishart distribution and their properties.

ST2C07 Advanced Probability Theory

The course will give the student a deeper understanding of the foundations of probability theory, such as probability theory from a measure-theoretic perspective, convergences of distributions and probability measures, and conditional expectations. During the course, important theorems, such as Borell-Cantelli lemma, Radon-Nikodym theorem, Fubini theorem, and general central limit theorems, will be investigated. The syllabus also covers advanced topics in characteristic functions and its convergence properties.

Completing this course, the student must be able to know and understand

- A count of the foundations of probability theory from a measure-theoretic perspective.
- Define and relate different types of convergences of distributions, probability measures and characteristic functions.
- Describe theory for conditional distributions and expectation from a measure-theoretic perspective.
- Define and relate different types of martingales and its use in practical situations.

ST2C08 Statistical Estimation Theory

After completing this course, the students will be able to:

- Understand problem of statistical inference, problem of point estimation.
- Properties of point estimator such as Consistency, Unbiasedness, Sufficiency and Efficiency.
- Obtain minimum variance unbiased estimator.
- Obtain estimators using estimation methods such as Maximum likelihood, Minimum chi square, method of moments. Method of scoring, Properties of maximum likelihood estimator.
- Quantify information in statistic using Fisher Information.
- Construct minimal sufficient statistic and minimal sufficient statistic for exponential family.
- Understand concept of Rao-Blackwell theorem and complete family.
- Understand problem of statistical inference, problem of Interval estimation.
- Construction of Confidence Interval (one and two parameter case).

ST2C09 Stochastic Processes

Stochastic models are among the most widely used tools in operations research and management science. Stochastic processes and its applications can be used to analyse and solve a diverse range of problems arising in production and inventory control, resource planning, service systems, computer networks and many others. This course, with an emphasis on model building, covers inventory models, Markov chains, Poisson processes, queuing theory, branching process and renewal process. At the end of this Course Students will be able:

- To apply various inequalities in Mathematical as well as Statistical Analysis.
- To use birth and death Poisson processes whenever necessary.
- To study the applications of Gambler's Ruin problems.
- Elucidate the power of stochastic processes and their range of applications.
- Demonstrate essential stochastic modelling tools including Markov chains and queuing theory.
- Formulate and solve problems which involve setting up stochastic models.
- To apply stochastic models for different distributions.

ST2C10 Statistical Computing-1

This course covers the practical problems of Distribution theory, Estimation theory, Multivariate distributions and stochastic process. This course develops the computational skill and familiarity in data analysis techniques in real life situations using MS excel or R packages.

ST3C11 Sampling Theory

By the end of this course students are expected to be able to apply and use the basic concepts related to sampling techniques, to determine sample size so as the estimator will have a desired precision and to use appropriate sampling method and determine optimum sample

sizes. This course is concerned with the design of sample surveys and the statistical analysis of data collected from such surveys. Topics covered are: Simple random sampling with associated estimation and confidence interval methods, Selecting sample sizes, Estimating proportions, Unequal probability sampling, Ratio and regression estimation, Stratified sampling, Cluster and systematic sampling, Multistage designs and Double or Two-stage sampling. At the End of this Course Students will be able to:

- Various sampling inspection techniques.
- To apply various sampling methods for agricultural data.
- To explain and to compare various allocations using stratified random sampling.
- To draw a conclusion about the best sampling procedure.
- To use practical applications of ratio and regression method of estimation.

The aim of this course is to cover sampling design and analysis methods that would be useful for research and management in many fields. A well designed sampling procedure ensures that we can summarize and analyse data with a minimum of assumptions and complications.

ST3C12 Statistical Testing of Hypotheses

By the end of this course, the students will be able to:

- Understand problem of statistical inference, problem of testing of hypothesis.
- Explain critical regions, test functions, two kinds of errors, size function and power function.
- Construct Most Powerful test using NP Lemma.
- Understand situation when UMP test exists.
- Construct Uniformly Most Powerful testing one parameter exponential family and Pitman family.
- Understand the concept of Non-existence of UMP test.
- Explain Likelihood ratio test.
- Understand Sequential probability ratio test.
- Advantages and disadvantages of Non parametric tests (NPT).
- Various one sample and two sample NPT such as test of randomness, Sign test, Kolmogorov Smirnov (KS) test, Mann - Whitney U test, etc.

This course will help to solve the testing problems in real life situations.

ST3C13 Design and Analysis of Experiments

At the End of this Course Students will be able:

- Use statistics in experimentation.
- Understand the important role of experimentation in new product design, manufacturing process development, and process improvement.
- To apply various designs for agricultural data/agricultural field.
- To explain which design will give the maximum yield of a crop.
- To use factorial experiment for agriculture data.

- Become familiar methodologies that can be used in conjunction with experimental designs for robustness and optimization.
- To describe the concept of confounding for different experiment.

ST3C14 Multivariate Analysis

The central theme of the course is the multivariate general linear model, and statistical methods include multivariate hypothesis testing, principal component analysis, factor analysis, discriminant analysis, canonical correlation analysis, and multivariate analysis of variance and covariance and cluster analysis. The course covers theoretical, computational, and interpretative issues of multivariate techniques using computer solution.

Learning outcomes includes

- On a general level the students should be able to understand the concept of analyzing multivariate data.
- They should be familiar with a basic minimum level of matrix competency and with general aspects of handling multivariate data. On successful completion of the course the student.
- Will appreciate the range of multivariate techniques available.
- Will be able to summarize and interpret multivariate data.
- Will have an understanding of the link between multivariate techniques and corresponding univariate techniques.

At the end of this course, student will be able to use multivariate techniques appropriately, undertake multivariate hypothesis tests, and draw appropriate conclusions.

ST3C15 Statistical Computing-2

This course covers the practical problems of Sampling theory, Testing of Hypothesis, Multivariate distributions and Design of experiments. This course develops the computational skill and familiarity in data analysis techniques in real life situations. This practical awareness help the students to get familiarity with data sets and different techniques using MS excel or R packages.

ST4C16 Statistical Quality Control

The goal of the course is to introduce students to statistical quality control (SQC) emphasizing those aspects which are relevant for SQC's practical implementation. This course will present the theory and methods of quality monitoring including process capability, control charts, acceptance sampling, quality engineering, and quality design. The objectives include

- To understand the basic concepts of quality monitoring.
- To understand the statistical underpinnings of quality monitoring.
- To learn various available statistical tools of quality monitoring.
- To learn the statistical and economical design issues associated with the monitoring tools.
- To demonstrate the ability to design and implement these tools.

After completing the course on Statistical Quality Control, the student will understand the concepts of Quality Control and Statistical Process Control (SPC), Control Charts for Variables, Natural and assignable causes of variation, Setting Mean Chart Limits, Setting Range Chart Limits, Using Mean and Range Charts, Control Charts for Attributes, Managerial Issues and Control Charts, Process Capability, Producer's and consumer's risk, Acceptance Sampling, Operating Characteristic (OC) Curves and Average Outgoing Quality.

ST4 E01 Econometric Methods

Regression analysis is the most common statistical modelling approach used in data analysis and it is the basis for advanced statistical modelling. In this course, students will learn the use of different useful tools used in regression analysis. They will learn about simple and multiple linear regression, non-linear regression and Generalise linear models (GLM) including logistic regression

After learning this course, students will be able to

- Understand the concept of linear and multiple regressions.
- Check for the violations of model assumptions using residual analysis and other statistical tests.
- Understand the problems of multicollinearity, variable selection and how to deal with them.
- Interpretation and critical evaluation of the outcomes of empirical analysis.
- Elementary procedures for model validation in the single equation context.
- Theoretical background for the standard methods used in empirical analyses, like properties of least squares estimators and the statistical testing of hypothesis.

ST4 E02 Operations Research

Operations research (OR) have many applications in science, engineering, economics, and industry and thus the ability to solve OR problems are crucial for both researchers and practitioners. Being able to solve the real life problems and obtaining the right solution requires understanding and modelling the problem correctly and applying appropriate optimization tools and skills to solve the mathematical model.

In particular, we will cover linear programming, network flow problems, nonlinear programs, dynamic programming, solve specialized linear programming problems like the transportation and assignment problems, solve network models like the shortest path, minimum spanning tree, and maximum flow problems, understand how to model and solve problems using dynamic programming, learn optimality conditions for single- and multiple-variable unconstrained and constrained non-linear optimization problems and corresponding solution methodologies.

By the end of this course, the students will be able to:

- Understand basic concepts of inventory problems and solve various types of EOQ models.
- Gain knowledge about sequencing problems, travelling salesman problem and various methods to solve sequencing problems.

- Understand basic concepts of queuing models and will be able to write and solve the steady state equations for various queuing models.
- Understand different concepts of Network Analysis, Construct Network Diagrams, draw conclusion from Network using PERT analysis and CPM analysis.

The goal of this course is to teach the students to formulate, analyse, and solve mathematical models that represent real-world problems.

ST4 E05 Statistical Decision Theory

Learning Objectives/Outcomes: The students will familiarize with fundamental concepts of the statistical decision theory and Bayesian inference. At the end of the course, they are expected to be able to formulate a decision theoretic approach to the problem, evaluate a utility function, propose a conjugate family of prior distributions, evaluate Bayes and posterior risks and find the optimal solution. The students will be able to apply empirical and hierarchical Bayes approaches, will solve statistical games and find maximin and minimax strategies when playing against an intelligent opponent.

At the end of this course, the students will have knowledge of

- Decision Problem, Bayes Rules and minimax rules.
- Bayes' theorem for inference, prior and posterior densities.
- Conjugate priors, non-informative prior, discrete prior, single parameter models.
- Normal distribution with known variance and unknown mean, normal with known mean and unknown variance.
- Basic elements of game theory and the general techniques of solving games.

ST4 E08 Statistical Computing-3

This course covers the practical problems of Statistical Quality Control, Econometric Methods and Operations Research. This course develops the computational skill and familiarity in data analysis techniques using MS excel or R packages.

MA ECONOMICS

Post Graduate Programme

PO1: Critically appraise and apply advanced concepts in economics.

PO2: Ability to choose appropriate models and mathematical techniques to propose solutions to economic problems.

PO3: Critically evaluate relevant economic literature and identify the appropriate data to analyze economic problems.

PO4: Undertake social, theoretical and policy research

PROGRAMME SPECIFIC OUTCOMES

PSO1: Ability to apply knowledge of economics with powerful mathematical and statistical tools

- PSO2: Ability to identify, formulate and solve economic problems
- PSO3:Ability to conduct empirical studies for scientific social science researches as well as to analyse and interpret them
- PSO4: Knowledge of contemporary social, political and economic issues
- PSO5: Ability to perform as a successful economic analyst for industry, trade and commerce, banking and non-banking financial institutions
- PSO6: Ability to perform as economic advisors to government and policy makers
- PSO7: Acquiring knowledge, competency and confidence to take up career in Indian Economic Service

COURSE OUTCOME

-CORE COURSE

Course 1: MICROECONOMICS-1

After the completion of course, the student will be able to attain the following:

CO 1: Able to analyse consumer behaviour, market structure and game theory.

CO 2: A thorough understanding on firm's production processes and decisions.

CO 3: Study about the applications of theories in analysing current economic problems and to develop the ability to synthesize knowledge.

CO 4: Help to illustrate how microeconomic concepts can be applied to analyse real life situations.

CO 5: Will help to develop analytical skills for analysing the problems of economic policy.

CO 6: Equip the students about various aspects of the micro economic theory and the latest developments in the field.

CO 7: Students will be able to demonstrate an understanding of relevant microeconomic concepts.

CO 8: The learner will get the capacity to explain and evaluate critically theoretical arguments

Course 2: MACROECONOMICS-1

After the completion of course, the student will be able to attain the following:

CO1: Understanding about the aggregate economy in both the short run and the long run.

CO 2: Help to get an overview of modern macroeconomics and to show how this body of theory can be adapted to the characteristics of developing economies

CO 3: Help to familiarize the students with the contribution of various schools of thought in macroeconomics

CO 4: A thorough understanding of outstanding orthodoxies in macroeconomics

CO 5: Provides a wider vision on present discourses in macroeconomics

CO 6: Help to develop the aptitude to relate concepts with research and policy.

CO 7: Help to identify the major issues as they arise in the field of macroeconomics

CO 8: Enable to understand alternative approaches to modelling consumption and the investment

CO 9: Enables the student to critically evaluate the usefulness of macroeconomic techniques.

Course 3-DEVELOPMENT ECONOMICS

After the completion of this course, the student will be able to attain the following:

CO 1: Familiarize with the current theoretical literature and to understand economic growth and development across nations.
CO 2: Helps to understand the theoretical paradigms of economic development
CO 3: Familiarize the students with conceptual routes, theoretical dynamics and practical

strategies of growth and development capability to address the basic problems confronted by the society.

CO 4: Orient the students towards major themes of development, lead them towards more methodical probes and equip them with adequate analytical knowledge.

CO 5: Enable to understand and critically evaluate alternative theories of growth.

CO 6: Enable to understand recent literature both empirical and analytical on theories of underdevelopment and growth in developing countries

CO 7: Enables to evaluate critically some of the results in the literature particularly those related to development issues.

Course 4-INDIAN ECONOMY- I

After the completion of this course, the student will be able to attain the following:

CO 1: Offers an analytical introduction to the main aspects of Indian economic policy and performance in the post-independence period

CO 2: Enable to analyse Indian economic problems in the light of relevant economic theories and in a comparative perspective

CO 3: Enable the students to appreciate the evolution of the economy, its institutional framework, nuances in using statistical information for analysing public policy and to get familiar with the issues for research.

CO 4: Helps to understand the pre reform and post reform development experiences of the Indian economy.

CO 5: Provide the students with a thorough understanding of Indian economic policies

CO 6: To introduces the students to broad contours like the status, issues and policies of the Indian economy at the aggregated (macro) as well as sectoral levels.

Course 5: MICRO ECONOMICS-II

After the completion of this course, the student will be able to attain the following:

CO 1: Provide the students with a sound understanding of advanced microeconomic theory.

CO 2: Covers every aspects of microeconomic theory that is required to analyze contemporary economic issues.

CO 3: Equip the students with the ability to create new models to explain the behavior of individual firms and markets and to evaluate economic policies.

CO 4: Acquaint the students with decision making in the context of market interdependence, complexity, uncertainty and informational asymmetry.

CO 5: Give insights into the developments in the areas of general equilibrium and welfare economics.

CO 6: Enable the student to apply microeconomic principles in the areas of industrial

organization exchange and welfare.
CO 7: Helps to identify the reasons behind inefficiencies and social costs in imperfect markets.

Course 6: MACRO ECONOMICS –II

After the completion of this course, the students will be able to attain the following:

CO 1: Enrich the students with a firm grounding in modern macroeconomic thoughts.
CO 2: Enable the student to get a better understanding about the major developments in classical and Keynesian orthodoxy with clear historical perspectives by emphasising both on competing hypotheses and analytical technique.
CO 3: Provide the students with intuitive understanding of both the sources of controversies and how debates have led to the development of modern macroeconomics.
CO 4: Provides an insight into the strength and weaknesses of main macroeconomic tools and models used in modern macroeconomics.
CO 5: Helps to evaluate and critically compare results in alternative macroeconomic models.
CO 6: The learner can easily comprehend the scope and limitations of modelling assumptions for macroeconomic policy.

Course 7: PUBLIC ECONOMICS

After the completion of this course, the students will be able to attain the following:

CO 1: Teach the leading current tools and methods of public finance enabling optimal design of this policy.

CO 2: Familiarize the students about the rationale for and role of government intervention in economic activities and how the government makes economic decisions.

CO 3: Develop the competence of the students to identify major issues in public finance for a critical evaluation of policies.

CO 4: Enable the learner to use their skills in finding complete or partial solutions to the identified issues and also enable them to demonstrate it through their presentations.

CO 5: Contribute to the debate and policies in public finance.

CO 6: Provides a better understanding of established concepts and theoretical results on collective choice optimal income taxation and the effects of income redistribution on the provision of public goods.

CO 7: Assist the students to build their carriers in government sector, policy analysis, business and journalism

Course 8: INDIAN ECONOMY-II

After the completion of this course, the students will be able to attain the following:

CO 1: A detailed exposure to the various aspects of Indian economic development.

CO 2: Give an insight into the changes and problems of Indian labour market, analyse the issues of poverty and inequality and enquires about the performance of the financial sector of the economy.

CO 3: Equip the students with the basic idea for further learning and help them to analyse the sectoral development that has taken place in India.

CO 4: Helps to know about the principles governing fiscal federalism, to learn the provisions enshrined in Indian constitution relating to fiscal federalism and also to appreciate the role of finance commission.

CO 5: Helps to critically examine the various recommendations of finance commissions.

CO 6: Enables to analyse various dimensions and issues involved in contemporary economic situation prevailing in the country.

Course 9:INTERNATIONAL TRADE THEORY AND POLICY

After the completion of this course, the students will be able to attain the following:

CO 1: Enable to understand various theories of international trade and their applications in current trade problems.

CO 2: Provide an understanding of the broad principles and theories that governed the free flow of international trade with empirical evidence.

CO 3: Provide an exposure to the theoretical underpinnings and empirical evidence of major trade policies followed both at national and international level.

CO 4: The theoretical knowledge of international trade and policy imparted in the course would help the students to solve real world problems.

CO 5: Enable to prepare the students to become trade policy makers and key strategist on trade issues.

CO 6: Learn global economic issues and role of international institutions in tackling them.

Course 10: PUBLIC ECONOMICS

After the completion of this course, the students will be able to attain the following:

CO 1: The students acquaint with the issues relating to the role of Government in the changing era and the justification for Government intervention.
CO 2: The students shall be informed with the nature and theories of Public Goods.
CO 3: Familiarize the students with the various aspects of the theory of Public Choice
CO 4: The students shall be aware about of the recent trends in taxations and budgetary policy.

Course 11: RESEARCH METHODS IN ECONOMICS

After the completion of this course, the students will be able to attain the following:

CO 1: Helps to understand the social science research and its relevance in tackling real issues.

CO 2: Provide an insight into the research issues and to develop scientific approach in the analysis of social problems.

CO 3: Familiarize with the methods of collection analysis and interpretation of data.

CO 4: Acquire the ability to derive and organize conclusions from empirical works

CO 5: Provides concrete solutions to various socio economic problems.

Course 12: ECONOMICS OF ENVIRONMENT AND SOCIAL SECTOR

After the completion of this course, the students will be able to attain the following:

CO 1: Helps to examines the economics behind environment issues and problems

CO 2: Valuation of non market goods, cost benefit approach and correcting market approach.

CO 3: Helps to assess the environmental impacts and the economics of policies and institutions

CO 4: Provide the tools to understand the market inefficiencies and its solutions.

CO 5: Helps to equip the students with the analytical skills that would enable the evaluation of environmental and economic issues.

CO 6: Understand the economics of the relationship between economic activities and environmental impacts

Course 13: MONETARY THEORY AND POLICY (Elective Paper: Group A)

After the completion of this course, the student will be able to attain the following:

CO 1:Understand the basic concepts regarding money and functioning of a pecuniary economy

CO 2:Capable to understand theoretical approaches to the determinants and measures of money supply and its role in causing the business cycles

CO 3:Get insight in to the different schools of thought regarding the demand for money.

CO 4:Get awareness of the monetary policy formulations, its targets and objectives and to create an interest in the recent monetary reforms initiated in India

CO 5: Helps to provide an insight into the present global financial crisis.

Course 14: GLOBAL TRADING AND MONETARY SYSTEM

After the completion of this course, the student will be able to attain the following:

CO 1: Provides a deep understanding about the broad principles and theories which tend to govern the free flow of trade in goods, services and capital

CO 2: Helps to examine the impact of trade policies followed both at national and international level.

CO 3: Enables the student to critically evaluate the effects of various trade policies on international trade

CO 4: Familiarize the students about the working and relevance of various international financial institutions and their role in upbringing the backward countries

CO 5: Acquaint the students with the effect of international trade on economic development.

Course 15: INDIAN PUBLIC FINANCE

After the completion of this course, the student will be able to attain the following:

CO 1:To make the students aware of the emerging trends in public expenditure and the criteria for Public Investment

CO 2:To familiarize the students with the various processes involved in the preparation and execution of the Budget and the problems and trends in Public Debt in India.

CO 3:To make the students aware of the Economics of Public Enterprises and the current concepts like Public Private Participation (PPP).

CO 4:To enable the students to have a thorough understanding of the Key Issues centering around Fiscal, Federal relations in India

Co 5: Impart an advanced level knowledge of the emerging trends in local self Government Institutions in the backdrop of the LPG process

COURSE 16: MANAGEMENT THEORY AND PRACTICE(ELECTIVE-GROUP –B)

After the completion of this course, the student will be able to attain the following:

CO 1: Familiarize the students with management techniques that prevail in the corporate world

CO 2:Exposes the students to a variety of skills and concepts in management.

CO 3:Helps to study the process of planning, organisation and controlling of different resources of a company

CO 4:Provide sufficient knowledge to students regarding various aspects of business management

CO 5:Enrich the talents of students to take up the challenges of business management.

COURSE 17:CAPITAL MARKET (ELECTIVE PAPER: GROUP B)

After the completion of this course, the student will be able to attain the following:

CO 1: Provides an overview of capital market in market economy

CO 2: Understand the basics of savings and investment.

CO 3: Calculate the Risk, Return and Liquidity of various investment instruments.

C0 4: Provides a thorough understanding about the working and functioning of capital market

CO 5: Enables to familiarize with the balance sheet of a company

COURSE 18:SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT(ELECTIVE PAPER: GROUP B)

After the completion of this course, the student will be able to attain the following:

CO 1:Aware about the risk- return trade-off in investment decisions.

CO 2:Get theoretical knowledge about stock market investment.

CO 3:Methods of maintaining a diversified portfolio.

CO 4: Familiarize with the money management practices of financial market

CO 5:Impart basic knowledge on fundamental and technical analysis

MONETARY THEORY AND POLICY

(Elective Paper: Group A)

1. Understand the basic concepts regarding money and functioning of a pecuniary economy
2. Capable to understand theoretical approaches to the determinants and measures of money supply and its role in causing the business cycles
3. Get insight in to the different schools of thought regarding the demand for money.
4. Get awareness of the monetary policy formulations, its targets and objectives and to create an interest in the recent monetary reforms initiated in India

CAPITAL MARKET

(Elective Paper: Group B)

1. Acquire Comprehensive knowledge of capital markets

2. Understand the basics of savings and investment.

3. Calculate the Risk, Return and Liquidity of various investment instruments.

SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT

(Elective Paper: Group B)

1. Aware about the risk- return trade-off in investment decisions.
2. Get theoretical knowledge about stock market investment.
3. Methods of maintaining a diversified portfolio.

MANAGEMENT THEORY AND PRACTICE

(Elective Paper: Group B)

1. To get a variety of skills and concepts in management.

1. Know about management techniques that prevail in the corporate world.
2. Understand the process of planning, organizing and controlling different resources

ECONOMICS OF ENVIRONMENT AND SOCIAL SECTOR

1. Get knowledge about economy environment interrelationships.
2. To achieve a mission of sustainable society.
3. How to protect the environment while promoting development

Public Economics

1. The students acquaint with the issues relating to the role of Government in the changing era and the justification for Government intervention.
2. The students shall be informed with the nature and theories of Public Goods.
3. Familiarize the students with the various aspects of the theory of Public Choice
4. The students shall be aware about of the recent trends in taxations and budgetary policy.

Indian Public Finance

1. To make the students aware of the emerging trends in public expenditure and the criteria forPublic Investment

2. To familiarize the students with the various processes involved in the preparation and execution of the Budget and the problems and trends in Public Debt in India.

3. To make the students aware of the Economics of Public Enterprises and the current concepts like Public Private Participation (PPP).

4. To enable the students to have a thorough understanding of the Key Issues centering around Fiscal, Federal relations in India and to impart an advanced level knowledge of the emerging trends in local self Government Institutions in the backdrop of the LPG process

POST GRADUATE PROGRAM OUTCOMES

A student who has taken admission into this program is to be always aware of the following outcomes:

PGPO 1.Entire study of discipline.
PGPO 2. Mastery of subject knowledge.
PGPO 3. Mature personality for employability.
PGPO 4. Skills of employment.
PGPO 5. Ability to work/serve.
PGPO 6. Critical Thinking.
PGPO 7. Sense of creativity.
PGPO 8. Language skills.
PGPO 9. Research talent/sprit.
PGPO 10. Interview technique and team spirit.

PROGRAM SPECIFIC OUTCOMES

1. Develop reading,writing,speaking and listening skills.
2. Availing the job opportunities in translation.
3. Increasing the critical attitude about literary writing.
4. Creating an interest in literature.
5. Imbuing the literary research attitude.

COURSE OUTCOMES

At the completion of this course the student will able to accomplish the following outcomes :-

MA I SEM (OLD SYLLABUS)

1. **Course Title - ANCIENT POETRY 1**
   Course code - HN1PC01 PC-I
   No of credits – 4
   No of contact hrs - 90

- Understand ancient poetry in deep.
- Familiarize with social, political and cultural background.
- Familiarize with eminent poets and their outlook.
- Develop analytical and critical thinking.

2. **Course Title– PROSE**
   Course code - HN1PC02 PC-II
   No of credits – 4
   No of contact hrs – 90

- Understand prose in detail.

- Familiarize with social, political and cultural background.
- Familiarize with eminent writers and their outlook.
- Develop analytical and critical thinking.

3. **Course Title – HISTORY OF HINDI LITERATURE I**
   Course code - HN1PC03 PC-III
   No of credits – 4
   No of contact hrs - 90

- Understand the origin and development of hindi literature.
- Familiarize with various trends regarding various periods.
- Familiarize with social, political and cultural background of various periods.
- Knowing great writers and their styles.

4. **Course Title– BHASHA VIGYAN**
   Course code - HN1PC04 PC-IV
   No of credits – 4
   No of contact hrs – 90

- Understanding the relevance of Hindi language.
- Understand the origin and development of Hindi language.
- Familiarize the structure of Hindi Bhasha.
- Develop language skill.

5. **Course Title – DRAMA AND THEATRE**
   Course code - HN1PC05 PC-V
   No of credits – 4
   No of contact hrs - 90

- Introducing drama and theatre.
- Developing creative skills.
- Develop stage skills.
- Introducing various techniques related to drama.

MA II SEM

1. **Course Title- ANCIENT POETRY 2**
   Course code - HN2PC06 PC-VI
   No of credits – 4
   No of contact hrs – 90

- Understand ancient poetry in deep.
- Familiarize with social, political and cultural background.
- Familiarize with eminent poets and their outlook.
- Develop analytical and critical thinking.

2. **Course Title- FICTION UPTO 1950**
   Course code - HN2PC07 PC VII
   No of credits – 4
   No of contact hrs - 90

- Understand fiction forms up to 1950.
- Familiarize with social, political and cultural background.
- Familiarize with eminent writers and their outlook.
- Develop analytical and critical thinking.

3. **Course Title- HISTORY OF HINDI LITERATURE II**
   Course code - HN2PC08 PC VIII
   No of credits – 4
   No of contact hrs - 90

- Understand the development of hindi literature.
- Familiarize with various trends regarding various periods.
- Familiarize with social, political and cultural background of various periods.
- Introducing great writers and their styles.

4. **Course Title – HISTORY A**ND STRUCTURE OF HINDI LANGUAGE
   Course code - HN2PC09 PC IX
   No of credits – 4
   No of contact hrs – 90

- Understanding the relevance of Hindi language.
- Understand the origin and development of Hindi language.
- Familiarize the structure of Hindi bhasha.
- Develop language skill.

5. **Course Title – BHARATEEYA KAVYA SHASTRA AUR HINDI ALOCHANA**
   Course code - HN2PC10 PC X
   No of credits – 4
   No of contact hrs - 90

- Understand bharateeya kavyashastra and hindi alochana.
- Develop critical and analytical thinking.
- Introducing prominent philosophers and their outlook.
- Imbuing the literary research attitude.

MA III SEM

1. **Course Title – ADHUNIK KAVITHA**
   (MODERN POETRY UPTO PRAGATHIVAD)
   Course code - HN3PC11 PC – XI
   No of credits – 4
   No of contact hrs – 90

   - Understand modern poetry upto pragathivad.
   - Introducing prominent writers and their outlook.
   - Develop analytical thinking.
   - Develop creative skills.

2. **Course Title – FICTION 2 (ADHUNIK KATHA SAHITYA)**
   Course code - HN3PC12 PC – XII
   No of credits – 4
   No of contact hrs - 90

   - Understand modern fiction.
   - Introducing prominent writers and their outlook.
   - Develop analytical thinking.
   - Develop creative skills.

3. **Course Title- BHARATHIYA SAHITYA**
   Course code - HN3PC13 PC- XIII
   No of credits – 4
   No of contact hrs - 90

- Understand Bharatiya sahitya.
- Introducing prominent Indian writers and their outlook.
- Develop analytical thinking.
- Enable Socio-cultural consciousness in Indian aspect.

4. **Course Title - TRANSLATION STUDIES**
   Course code - HN3PC14 PC-XIV
   No of credits – 4
   No of contact hrs - 90

- Understand Translation and its theories.
- Practical implementation of translation.
- Develop language skills.
- Develop skills required to become professional translator.

5. **Course Title - PASCHATHYA KAVYA SHASTRA**
   Course code - HN3PC15 PC-XV
   No of credits – 4

No of contact hrs - 90

- Introduce key ideas of western literary criticism.
- Enable to implement ideas.
- Develop critical and analytical thinking.
- Familiarize with eminent philosophers and their ideologies.

MA IV SEM

1. **Course Title- CONTEMPORARY POETRY II**
   (ADHUNIK KAVITHA II)
   Course code - HN4PC16 PC – XVI
   No of credits – 3
   No of contact hrs - 72

- Understand contemporary poetry.
- Introducing prominent poets and their outlook.
- Develop analytical thinking.
- Develop creative skills.

2. **Course Title - PAPER ELECTIVE I- DALIT VIMARSH**
   Course code - HN4PE1
   No of credits – 3
   No of contact hrs - 72

- Understand major inequalities in society.
- Changing social consciousness.
- Major Dalit movements and ideologies in literature.
- Develop a wide outlook and critical skills.

3. **Course Title- PAPER ELECTIVE II- NARI VIMARSH AUR HINDI SAHITYA**
   Course code - HN4PE2
   No of credits – 3
   No of contact hrs - 72

- Understand gender inequalities in society.
- Develop social consciousness.
- Major movements and feminist ideologies in literature.
- Develop critical and analytical thinking.

4. **Course Title - PAPER ELECTIVE III- SPECIAL AUTHOR : NIRMAL VARMA**
   Course code - HN4PE3
   No of credits – 3
   No of contact hrs - 72

- Introducing eminent writer Nirmal Varma and his major works.
- Build critical thinking skills.
- Help to evaluate authors themes, characters and writing skills.
- Imbuing research aptitude.

5. **Course Tilt - PAPER ELECTIVE IV- SPECIAL AUTHOR : BHISMA SAHINI**
   Course code - HN4PE4
   No of credits – 3
   No of contact hrs - 72

- Introducing eminent writer Bhisma sahini and his major works.
- Build critical thinking skills.
- Evaluate authors themes, characters and writing skills.
- Imbuing research aptitude.

MA I SEM (NEW SYLLABUS)

1. **Course Title- HISTORY OF HINDI LITERATURE-I**
   Course code - HN010101
   No of credits – 4
   No of contact hrs - 90

- Understand the origin and development of Hindi literature.
- Familiarize with various trends regarding various periods.
- Familiarize with social, political and cultural background of various periods.
- Introducing great writers and their styles.

2. **Course Title- ANCIENT POETRY- I**
   Course code - HN010102
   No of credits – 4
   No of contact hrs - 90

- Understand ancient poetry in deep.
- Familiarize with social, political and cultural background.
- Familiarize with eminent poets like Kabir, Surdas, Bihari,and their outlook.
- Develop analytical and critical thinking.

3. **Course Title - PROSE- ESSAYS,SKETCHES, MEMOIRES AND OTHER PROSE FORMS**

Course code - HN010103
No of credits – 4
No of contact hrs - 90

- Understand prose forms in detail.
- Familiarize with social, political and cultural background.
- Familiarize with eminent writers and their outlook.
- Develop analytical and critical thinking.

4. **Course Title- DRAMA AND THEATRE**
   Course code - HN010104
   No of credits – 4
   No of contact hrs - 90

- Introducing drama and theater
- Develop creative skills.
- Develop stage skills.
- Introducing various techniques related to drama.

5. **Course Title- TRANSLATION THEORY AND PRACTICE**
   Course code - HN010105
   No of credits – 4
   No of contact hrs – 90

- Understand Translation and its theories.
- Practical implementation of translation.
- Develop language skills.
- Develop skills required to become professional translator.

MA II SEM

1. **Course Title- HISTORY OF HINDI LITERATURE- II**
   Course code - HN010201
   No of credits – 4
   No of contact hrs - 90

- Understand the development of Hindi literature.
- Familiarize with various trends regarding various periods.
- Familiarize with social, political and cultural background of various periods.
- Introducing great writers and their styles.

2. Course Title. - ANCIENT POETRY- II
Course code - HN010202

No of credits – 4
No of contact hrs - 90

- Develop creative skill in poetry writing.
- Familiarize with social, political and cultural background.
- Familiarize with eminent poets and their outlook.
- Develop analytical and critical thinking.

3. **Course Title - DEVELOPMENT AND STRUCTURE OF HINDI LANGUAGE**
Course code - HN010203
No of credits – 4
No of contact hrs - 90

- Understanding the relevance of hindi language.
- Understand the origin and development of hindi language.
- Familiarize the structure of hindi bhasha.
- Develop language skill.

4.**Course Title- HINDI SHORT STORY**
Course code - HN010204
No of credits – 4
No of contact hrs - 90

- Understand Hindi short story.
- Familiarize with social, political and cultural background.
- Familiarize with eminent story writers and their outlook.
- Develop analytical and critical thinking.

5.**Course Title- BHARATEEYA KAVYA SIDDHANT AUR HINDI ALOCHANA**

Course code - HN010205
No of credits – 4
No of contact hrs - 90

- Understand bharateeya kavya siddhant and hindi alochana.
- Develop critical and analytical thinking.
- Introducing prominent philosophers and their outlook.
- Imbuing the literary research attitude.

MA III SEM

1. **Course Title- MODERN POETRY- I**
   Course code - HN010301

No of credits – 4
No of contact hrs - 90

- Understand contemporary poetry.
- Introducing prominent poets and their outlook.
- Develop analytical thinking.
- Develop creative skills.

2. **Course Title- HINDI NOVEL**
   Course code - HN010302
   No of credits – 4
   No of contact hrs - 90

- Understand Hindi Novels.
- Introducing famous novelist and their outlook.
- Develop critical and analytical thinking.
- Develop creative skills.

3. **Course Title- WESTERN CRITICISM**
   Course code - HN010303
   No of credits – 4
   No of contact hrs - 90

- Implement key ideas of western literary criticism.
- Enable to implement ideas.
- Develop critical and analytical thinking.
- Familiarize with eminent philosophers and their ideologies.

4. **Course Title- INDIAN LITERATURE**
   Course code - HN010304
   No of credits – 4
   No of contact hrs - 90

- Understand Indian Literature.
- Introducing prominent Indian writers and their outlook.
- Develop analytical thinking.
- Enable Socio-cultural consciousness in Indian aspect.

5. **Common Course - BHASHA VIGYAN**
   Course code - HN010305
   No of credits – 4
   No of contact hrs - 90

- Understanding the relevance of Hindi language.
- Understand the origin and development of Hindi language.
- Familiarize the structure of Hindi bhasha.
- Develop language skill.

MA IV SEM

1. **Course Title - MODERN POETRY- I**
   Course code - HN010401
   No of credits – 3
   No of contact hrs - 72

- Understand modern poetry.
- Introducing prominent poets and their outlook.
- Develop analytical thinking.
- Develop creative skills.

2. **Course Title-SPECIAL AUTHOR- PREMCHAND**
   Course code - HN800401
   No of credits – 3
   No of contact hrs - 72

- Introducing eminent writer Premchand and his major works.
- Build critical thinking skills.
- Evaluate authors themes, characters and writing skills.
- Imbuing research aptitude.

3. **Course Title- FEMINIST DISCOURSE**
   Course code - HN800402
   No of credits – 3
   No of contact hrs - 72

- Understand gender inequalities in society.
- Major movements and feminist ideologies in literature.
- Develop critical and analytical thinking.
- Imbuing research aptitude.

4. **Course Title- ADIVASI DISCOURSE**
   Course code - HN800403
   No of credits – 3
   No of contact hrs - 72

- Make awareness about gender equality.
- Develop social consciousness.
- Major aadivasi movements and ideologies in literature.
- Develop critical and analytical thinking.

M. A. Malayalam

Programme Outcomes

The Syllabi of M.A. Malayalam Program aims at mastery in Malayalam Language and Literature. The students are inculcated to acquire the experiential knowledge about the pros and cons of issues in research activities according to the curriculum vitae. The learning process of books recommended in the program may enrich human mind with linguistic, cultural aesthetic, episteme.

The epistemology of Bhagavathgeetha Comparative literature mass and folklore Culture oriental and oxibental aesthetics are subjected to the study of P.G Program which lead the student community for strengthening their mental Faculty

The Syllabi designed for M.A. Program is intended to trains the imagination and capacity to think critically and creatively about the world and their own country through the study of poetry, prose, dramatic, linguistics, narratology, and aesthetics in Malayalam Language and Literature. B. A. Malayalam program tries to make the student community to study Post Colonial Theories of Literature as well as Cultural Studies, World Poetry, Epistemology, Sanskrit Language and Literature, and Eco-Criticism. In the First Year student sample a wide variety of literature and cultural theory and develop a solid basis of knowledge and skill which they then build on in years of two and three.

COURSE OUTCOMES

Semester I

1	PC 1 – Kavitha- Pracheenam, Madhyakalm	An indepth study of ancient Mal. Poem is done through the course. It gives clear knowledge about the poem of Medieval time of Mal. Literature and the language analysis is also done in relation to Tamil and Sanskrit
2	PC 2 –Malayalabhasha Charithravum Varthamanavum	This course learns the history of Malayalam language and its present trends to ensure a bright future for the language. The factors, historical, social and cultural, that affect the language and its expressions are also analysed here..
3	PC 3- Kathasahithyam	It's a study of the styles and trends in Malayalam short story right from the ancient to the postmodern era is done here. The well known short story writers and their works along with cultural and social background are dealt in this course. the language, narration techniques and style analysis are also done

4	PC 4- Sahithyacharithravijnjaniyam	The course is a deep study regarding the literary history and the factors that determine various forms of literature in Malayalam.
5	PC 5 –Sanskrit- Bhashayum Sahithyavum	Here the classical language and some great works n Sanskrit literature is taught. It's a learning about the culture and traditions of the great nation, India

SEMESTER II

6	PC6 Malayala Kavitha Adhunikam, Randam Ghattam	The Romantic period and its poetry of Malayalam al analysed here. Famous poets and their poems are d
7	PC 7 –Bhashasasthram	The course studies about the science of Language a regarding meaning and the structure. Pronunciation also analyzed in this course. Makes the students to components that constitute the language.
8	PC 8- Bharatheeya Sahithya Sindhanthangal	Helped the students to know the literary theories of literary criticism based on the theories. It's a course Eastern Aesthetics and its importance
9	PC 9 –Bharatheeyethara Sahithya Sindhanthangal	The course helped the students to know the Weste critical thinking and academic criticism. It helped th
10	PC 10 – Novel Sahithyam	The course is a deep study regarding the literary history all over the world. Novel and its style narration and the v along with well known Novels of all the time all over the

SEMESTER III & IV

1	PC 11 - Malayalakavitha- Adhunikam- Randam Ghattam	The course helps to learn the dynamism behind mo Malayalam literature and all over the world. Famou literature and their poems are dealt here
2	PC 12 – Malayala Bhashavyakaranam	The course studies about the origin of Malayalam a scientifically. Makes the students well aware of the language.
3	PC 13 – Malayala Niroopanam	The course is designed to know the history of Mal.P social factors behind the Academic criticism is clearl
4	PC 14- Drisyakalasahithyam	The history of performing Arts of Malayalam is expl forms are studied here in detail, in view of gatherin culture of Kerala
5	PC 15 –Keralasamskara Padanam	The cultural and historical study of Kerala is done along view of better understanding of Malayalam literature an developments.
6	PC16- Nadakavum Cinemayum	The history of theatre and its various trends and sty and cinema in a better way. The course helps to le all over the world. Famous films and drama are dea
7	PE 1 – Janasamskara Padanam	The cultural study and the factors that constitute culture thinking is well anaylsed here. It will enable to value an plurality and to find how much we are determined by th
8	PE 2 – Paribhasha – Sindhanthavum Prayogavum	The course is designed to know dynamics of translat The theories of translation and the practical ways ar
9	PE 3- Sthreepaksha Rachanakal	The feminine theories and its history along with we in Novel Story and Poems are are dealt here in vie w women rights.
10	PE 4- Puthusahithya Sameepangal	The Present day literary theories of Dalithism, Feminism course. It will enable to understand the rights of the un d nature and to make better living .

II MA 2013-14

1	Vyakaranam and Bhasha Charithram	The course studies about the origin of Malayalam a scientifically. Makes the students well aware of the language
2	Novel, Katha	The course is a deep study regarding the literary history and short storyall over the world. The style, narration an story are taught along with well known Novels and sho
3	Adhunikakavitha	The course helps to learn the dynamism behind mo Malayalam literature and all over the world. Famou literature and their poems are dealt here.
4	Nadodi Vinjaneeyam	Helped to identify the culture of the ethnic groups a Learned the traditions and the practices of various f contribute and shape the diversity and pluralism. H dealt here

5	Samskara Padanam	The cultural and historical study of Kerala is done along view of better understanding of Malayalam literature an social developments.
6	Tharathamya Sahithyam	The history and dynamics of comparison of literatur the various styles and trends in different languages
7	Lokaclassickukal -Paribhasha	It's a detailed study of well known classics of literat the literary expressions and its glory. And how and
8	Thakazhi Sivasankara PIllai	The course is designed to know the famous writer o influence in Mal. Literature. It enables to learn the c Kuttanadu
9	Feminism	The feminine theories and its history along with we in Novel Story and Poems are are dealt here in vie w women rights.
10	Theatre and Cinema	. The history of theatre and its various trends and st drama and cinema in a better way. The course hel theatre all over the world. Famous films and drama

Programme Outcomes (POs) - MCA

After completion of the programme, the students are able to

1. Computational Knowledge - Apply knowledge of computing, Mathematics, Principles of Accounting, Management and Fundamentals of Software Engineering appropriate to the discipline.
2. Problem Analysis – Identify and analyze problems and formulate the requirements appropriate to its solution.
3. Design Development of Solutions – Design, implement and evaluate a computer based system to meet the desired needs.
4. Conduct Investigations of Complex Computing Problems – Conduct investigations and experiments to analyze and interpret data of complex applications to find valid solutions.
5. Modern Tool Usage – Select and apply current trends, techniques and modern tools that suit the computing requirements like UML diagrams.
6. Professional Ethics - Understand professional, ethical, security and social issues, work with appropriate societal and environmental considerations
7. Lifelong learning - Build up the passion for continuing professional development.
8. Project Management and Finance - Incorporate scientific, financial and management principles for the development of feasible projects.
9. Communication Efficacy - Communicate effectively across multidisciplinary teams to accomplish a common goal.
10. Societal and Environmental concern - Develop systems that meets the desired solutions considering societal and environmental factors.
11. Individual and Team work -Work individually and in teams for the fulfilment of the desired task.
12. Innovation and Entrepreneurship - Create a culture that focus on Innovation and Entrepreneurship.

Course Outcomes

SEMESTER I

MCA101T Discrete Mathematics and Statistics
Expected Outcome

- The students will be capable of using the mathematical methods and algorithms learned for analyzing and solving problems related to Computer Science.
- The students will get an overall view of concepts in probability and statistics.

MCA102T Fundamentals of Data Structures
Expected Outcome

- The students will be able to choose appropriate data structure for solving problems considering resource constraints such as time and space.

MCA103T Paradigms of Programming Languages
Expected Outcome

- The students will be able to understand paradigms of programming languages.

MCA104T Digital Systems & Computer Architecture

Expected Outcome

The students will

i. get a thorough knowledge of Digital electronics

ii. be able to design simple logic circuits

iii. The students will acquire knowledge about the design and organization of components in computing systems**.**

MCA105T Problem Solving and Programming in C

Expected Outcome

The students will be able to

i. Solve problems systematically and to implement the solution in C language.

ii. Develop programming skills

iii. Develop the knowledge of how to learn a programming language, which will help in learning other Computer Languages in the curriculum

MCA106P C Practicals

Expected Outcome

- The students will develop adequate programming skills

MCA107P Data Structures through C – Practicals

Expected Outcome

- The students will be able to solve applications using appropriate data structures

MCA108T English for Professional Communication

Expected Outcome

The students will be able to

- Master the art of a professional business presentation
- Distinguish different communication process and its practical application
- More effective in written communication

SEMESTER II

MCA201T Optimization Techniques & Numerical Methods

Expected Outcome

The students will be able to

i. Construct a mathematical model of a real world problem which has many alternative solutions which makes the decision maker unable to take a decision.

ii. Learn about various optimization methods that are employed to solve these mathematical models to find a solution which is in the best interest of the decision maker.

MCA202T Operating Systems

Expected Outcome

- The students will understand Operating System concepts and design Operating Systems

MCA203T Database Management Systems

Expected outcome

The students will

i. Understand the fundamentals of relational, object-oriented, and distributed database systems including: data models, database architectures, and database manipulations.

ii. Understand the theories and techniques in developing database applications and be able to demonstrate the ability to build databases

MCA204T Data Communications & Networks

Expected Outcome

- The students will gain proficiency in various network protocols and models.

MCA205T Web Technologies

Expected Outcome

The students will

i. Acquire knowledge about functionalities of world wide web

ii. Explore markup languages features and create interactive web pages using them
iii. Learn and design Client side validation using scripting languages
iv. Acquire knowledge about Open source JavaScript libraries
v. Be able to design front end web page and connect to the back end databases
vi. Be able to do Client-side & Server-side scripting

MCA206P DBMS Practicals
Expected Outcome
The student will be able to:
i. Understand, appreciate and effectively explain the underlying concepts of database technologies.
ii. Design and implement a database schema for a given problem-domain.
iii. Normalize a database.
iv. Populate and query a database using SQL DML/DDL commands.
v. Use any popular RDBMS for data access and updating.

MCA207P Web Technologies Practicals
Expected Outcome
The students will be able to:
i. Explore markup languages features and create interactive web pages using them.
ii. Learn and design Client side validation using scripting languages.
iii. Acquire knowledge about Open source JavaScript libraries.
iv. Design front end web page and connect to the back end databases.
v. Do Client-side & Server-side scripting
vi. Develop Web Applications

SEMESTER III

MCA301T Principles of Management & Accounting
Expected Outcome
The students will be able to
i. understand management as a process
ii. critically analyse and evaluate management theories and practices
iii. plan and make decisions for organisations
iv. do staffing and related HRD functions
v. be aware about quality standards
vi. understand the marketing basics

MCA302T Analysis & Design of Algorithms
Expected Outcome
i. Given a problem, the student will be able to design algorithms.
ii. Given an algorithm, he/she will be able to analyse it and produce an estimate of its time and space requirements.

MCA303T Object Oriented Programming through Java
Expected Outcome
The students will
i. Design the classes needed, given a problem specification.
ii. Implement the designed classes using the object oriented programming language.
iii. Learn how to test, verify, and debug object-oriented programs and create programs using object oriented principles.

MCA304T Software Engineering & Project Management
Expected Outcome
At the end of the course, students will
i. Learn the theory and foundations of software engineering.
ii. Learn the different process models and choose the best model for their project
iii. Be able to construct requirement models
iv. Be able to Understand the different development practices and its advantages
v. Be able to create test cases and implement different testing strategies

vi. Understand the environment and work culture in a software organization

MCA305T Object Oriented Analysis & Design

Expected Outcome

- The students will be able to model the software systems through UML diagrams

MCA306P PHP Programming Practicals

Expected Outcome

- The students will be able to develop client-server programs using PHP.

MCA307P OOPS through Java Practicals

Expected Outcome

- The students will be able to develop programs using object oriented programming concepts.

SEMESTER IV

MCA401T System Software

Expected Outcome

At the end of the course, students will be able to

- Understand lexical rules and grammars for a programming language
- Identify and develop code optimization techniques to improve the performance of a program in terms of speed & space.

MCA402T Data Mining

Expected Outcome

At the end of the course, students will be able to

- Understand theoretical and practical aspects of information and data mining
- Understand the quantitative evaluation methods for the IR systems and data mining techniques

MCA403T TCP/IP Protocols

Expected Outcome

At the end of the course, students will be able to

- Understand protocols in different layers in TCP/IP protocol suite.

MCA404T Linux OS and Shell programming

Expected Outcome

At the end of the course, students will be able to

- get a basic idea of shell programming and administrative tasks in Linux.

MCA405E [Elective- I] Microprocessor and Embedded Systems (E41)

Expected Outcome

At the end of the course, students will be able to

- get a basic idea of 8086 microprocessor
- understand instructions of 8086 microprocessor and embedded systems

MCA406P Linux OS & Shell programming Practical

Expected Outcome

At the end of the course, students will be able to

- get a knowledge of various Linux commands and Shell programs.

MCA407D Mini Project-Application Development

Course Objectives

- To apply the software engineering principles on a real software project
- Develop a software product using the Agile methodology.

SEMESTER V

MCA501T User Interface Design

Expected Outcome

- Understand basic concepts of Usability Engineering
- Understand the fundamental aspects of interaction and designing the interaction
- Understand basic concepts of Dialog Designing aspects in Human Computer Interaction
- Understand the aspect of Rich Context Modelling

MCA502T Knowledge Management & Business Intelligence

Expected Outcome

- Understand Knowledge Management Life cycle.

- Understand Knowledge creation and Business Intelligence

MCA503T Enterprise Resource Planning

Expected Outcome

The students will be able to get

- an awareness on ERP solutions, functional modules and implementation
- an exposure on Case studies based on ERP systems used in industries.

MCA504T Advanced Java Programming

Expected Outcome

The students will

i. Get knowledge about JVM architecture
ii. Be able to write advanced Java Programs
iii. Be able to develop Spring based applications

MCA505E [Elective – II] Computer Graphics with Open GL (E56)

Expected Outcome

At the end of the course, Students will be able to

1. Describe underlying graphic hardware, architecture, graphic primitives and their attributes and apply algorithms for implementing (drawing) these primitives.
2. Develop applications applying mathematical concepts of geometric transformations, polygon filling and clipping in 2 dimensions.
3. Compare the different types of projections of 3D objects and the methods to identify visible surfaces of those projected images, rendering them using illumination models.

MCA506P Advanced Java Programming Practicals

Expected Outcome

- Ability to develop dynamic website algorithmic solution to problems.
- Ability to create Java bean and JSP

MCA507P Python Programming - Practicals

Expected Outcome

- Ability to design algorithmic solution to problems.
- Ability to convert algorithms to Python programs.
- Ability to design modular Python programs using functions.

MCA508S Main Seminar – Current Trends

Course Objectives

- To enable the students to gain knowledge in any of the technically relevant current topics on computer science/information technology/research, and acquire the confidence in presenting the topic and preparing a report.

SEMESTER VI

MCA601D Project & MCA602V Viva-voce

Course Objectives

- To apply the software engineering principles on a real software project
- Develop a software product using the Agile methodology.

Program outcomes, Program specific outcomes and Course outcomes

PROGRAM: MHRM

Programme Outcome (PO)

PO1 :- To understand human resource issues and management trends in a competitive global economy as well as a broad spectrum of state and federal employment legislation.

PO2:- To equip students with the tools necessary to effectively meet the challenges of an ever-changing business climate.

PO3:- To inculcatespecialized knowledge and skills required by managers who are responsible primarily of managing human resources and improving industrial relations

PO4 :- To develop a sound theoretical base in the domain of Human Resource Management.

PO5:- To develop communication, interpersonal skills and leadership qualities to work in and with teams in organisations.

Programme Specific Outcomes (PSO)

PSO1:- Understand the basic concepts of Human resources management and its applications in the individual, team and organizational levels

PSO2 :- Theoretical Knowledge in Enterprise Resource Planning, Innovation and Change Management, Organisational Behavior, Labour Laws, Knowlegde and Talent Management, Marketing Management, MIS etc.

PSO3:- Practical knowledge and training in various areas of HR such a recruitment, selection, induction, communication, peformance appraisal, stress etc

PSO4 :- Practical exposure to the real life organisational situations and opportunities of Human resources management through the two practical project studies Internship and a Problem centered study

Course Outcome (CO)

COURSE OUTCOMES

Course Code CC 01:- Principles and Practices of Management

CO1:- To study about the concept and evolution of management

CO2:- To know about the meaning and importance of planning

CO3:- To understand the various forms of organisational structure and the concept of Staffing function

CO4:- To undertand the emerging trends and challenges in management

CO5:- To study about various control techniques

Course Code CC 02:- Indian Ethos in Management

CO1:- To introduce students to the ethical principles of society, general moral issues and principles engulfing society

CO2:- To understand the management concepts from Indian Ethos Perspective

CO3:- To study about the relevance of ethical values in management

CO4:-To get an insight about CSR activities of an organisation

CO5:- To know about the ethics related to various functional ares of management

Course Code CC 03: Organizational Behavior

CO1 :- To familiarize the students about the concept of organisational behaviour and its applications

CO2 :- To understand the concept of Personality and Perception

CO3:- To study the various theories governing leadership and motivation

CO4:- To get an insight about group behaviour

CO5 :- To know about the organisational culture and management of stress

Course Code CC 04:- Introduction to Human Resource Management

CO1:- To provide the students a synthesized framework theory and practice

CO2:- To impart fundamentals of HR practices in organisations

CO3:-To study the challenges and constraints of recruitment and selection process

CO4:- To study the importance of imparting training and dvelopment programmes

CO5:- To convey the concept of rewarding an employee

Course Code CC 05:- Application of Quantitative Techniques in Business

CO1:- To acquaint the students to formulate problems, solving them using Statistical analysis of data and interpreting the results.

CO2:- To acquaint the students to formulate problems, solving them using Statistical analysis of data and interpreting the results.

CO3:- To provide an knowledge about the basic (Optimization) programming techniques models commonly used in business decision-making.

CO4:- To inculcate in the students 'situation oriented –application thinking' approach towards a number of areas of Operations Research .

CO5:- To study the applications, methods, and interpretations to various business and management related situations.

Course Code CC 06:- Accounting for Managers

CO1:- To familiarize the students with financial statements, principles of accounting and develop their skills in reading annual reports.

CO2:- To provide foundations for developing the skills in interpreting financial statements for managerial decisions.

CO3:- To acquaint the students with the intricacies of Financial Accounting and Management Accounting

CO4:- To study about Financial Statement Analysis

CO5:- To learn about Budget Forecasting

Course Code CC 07:- Business Law

CO1:- To provide a basic understanding to the students about the relevant provisions of various laws

CO2:- To familiarise the students various laws, which are to be observed in performing the day -to-day business.

CO3:- To study about the formation, incorporation and working of a company

CO4:- To know about different latest provisions of the law relating to negotiable instruments

CO5:- To know about Consumer Protection Act and various IPR

Course Code CC 08 :- Business Communication

CO1:- To equip the students with the necessary skills and techniques of communication to inform

CO2:- To inspire students and enlist their activity and willing cooperation in the performance of their jobs.

CO3:- It aims to make student aware about the importance, the role and the content of soft skills through instruction, knowledge acquisition, and practice

CO4:- To develop and nurture the soft skills that help develop student as a team member, leader, and all round professional.

CO5:- To learn about employment communication

Course Code CC 09:- Enviornmental Management and Sustainable Development

CO1:- To make the students aware of the general environmental issues surrounding business

CO2:- To familiarize with the concept of sustainable global development and issues affecting ecological equilibrium

CO3:- To gain knowledge into environment pollution, its prevention, recycling technology, waste management etc

CO4:- To study about green marketing and sustainable development

CO5:- To study about various enviornment legislations

Course Code CC 10:- Managerial Economics and Global Business

CO1:- To familiarize the concepts and techniques of economics and global business environment

CO2:- To sensitate the students about how economic and business environment affects organisation

CO3:- To study about various market structure

CO4:- To study about international trade

CO5:- To know about the various and motives of foreign investment

Course Code CC 11 :- Financial Management

CO1:- To familiarize students with fundamentals of Financial Management in an Organization

CO2:- To provide the participants various techniques in Financial Management

CO3:- To study about various financial decisions and theories of capital structure

CO4:- To study about policy and types dividend decisions

CO5:- To study about the concept of working capital management

Course Code CC 12 :- Marketing Management

CO1:- To facilitate understanding of the conceptual framework of

marketing and its applications in decision making under various environmental constraints

CO2:- To study about product and pricing policies in market

CO3:- To know about the various tools and techniques in product disribution and promotion

CO4:- To know about the concpet and importance of marketing research

CO5:- To study about service marketing

Course Code CC 13:- Operations Management

CO1:- To provide basic understanding of the Production / Operations Management function in Organizations.

CO2:- To study the role of production planning & control in operations management

CO3:- To know about Selection & Design of Material Handling and Vendor management system

CO4:- To learn about Work Study & Maintenance management

CO5:- To understand about Supply Chain Management & Lean Systems

Course Code CC 14:- Innovation and Change Management

CO1:- To familiarize the various concept, dimenstions and types of innovation

CO2:- To study about applications of innovation

CO3:- To learn about process, role and dynamics to organizational change

CO4:- To study about the evolution, concept and techniques of Organisational development

CO5:- To learn about emerging OD approaches and techniques

Course Code CC 15:- MIS and Cyber Security

CO1:- To understand the importance of Information System in business

CO2:- To make the participants familiarize with the technologies and methods used for effective decision making in an organization.

CO3:- To learn to use Information Technology to gain competitive advantage in business.

CO4:- To learn about business change models

CO5:- To study about cyber security

Course Code CC 16 :- Internship

CO1:- To apply and update the knowledge gained from theories into practice.

CO2:- To understand how core HR functions are being carried out in an organization.

CO3:- To help interns appreciate the importance of the human factor in the success and growth of businesses

CO4:- To put trainees in the dynamic world of business organization and there by maximize human productivity in manifold sectors.

CO5:- To learn how to take skills she or he may have acquired in college related to his or her particular areas of interest, and apply them in a professional setting

Course Code CC 17 :- Research Methodology

CO1:- To familiarize the participants with concepts and process of research

CO2:- To make the participants understand the application of research in business decision making

CO3:- To expose the participants to the tools and techniques in business research
CO4:- To study about various measurement scales & preparation of research data

CO5:- To learn about the format of Research Report

Course Code CC 18:- Knowledge and Talent Management

CO1:- To define talent management and discuss the process of linking talent management to organizational strategy and other HR practices.

CO2:- To Examine the process for identifying high potential talent and developing a pipeline of talent to serve organizational present and future needs.

CO3:- To examine the processes for talent development and succession planning

CO4:- To study about future directions in talent management practice and

research
CO5:- Individual vs organizational perspective of managing career

Course Code CC 19:- Industrial Relations

CO1:- To familiarize students with the basic concepts of industrial relations, its philosophy, origin and development

CO2:- To develop knowledge on trade unions and its formation, structure, functions and legal framework

CO3:- To gain insight into the process of collectivebargaining, its origin and development

CO4:- To gain understanding on industrial disputes,its causes, manifestation and effects

CO5:- To study the statutory and non statutory measures of industrial disclipline

Course Code CC 20:- Training and Development

CO1:- To make students learn how to design a training environment to maximize learning at workplace

CO2:- To enable students to be aware of the field of learning and development and its rolen in optimizing performance.

CO3:- To make students understand how assessment, relationships, courses, and job experiences can be used for development.

CO4:- To learn about various techniques of MDP programme

CO5:- To learn about various models and framework for evaluating a training programme

Course Code CC 21:- Leadership Development

CO1:- To know about role and dynamics to organizational change

CO2:- To study the need, phases and conditions for successful organizational development

CO3:- To know about different leadership models

CO4:- To learn about Organisational development

CO5:- To study the various approaches and techniques of OD

Course Code CC 22:- Compensation Management and Reward System

CO1:- To study about components of pay structure in India

CO2:- To study about the various statutory provisions relating to wage policy in India

CO3:- To learn about various methods of wage payment

CO4:- To understand the concept and elemts of Reward

CO5:- To study about various exit policies

Course Code CC 23:- Enterprise Resource Planning

CO1:- To get an insight of fundamentals of ERP system

CO2:- To grasp the activities of ERP project management cycle.

CO3:- To understand the emerging trends in ERP developments

CO4:- To learn about the succes and failure factors of ERP implementation

CO5:- To learn about an overview of ERP network solution

Course Code CC 24:- Labour Law

CO1:- The students will be acquainted with Social Security Frame-work prevailing in our Country

CO2:- . To know the concept of social security, its importance and also constitutional basis in India.
CO3:- To know about the importance of ensuring the health, safety and welfare of the workmen
CO4:- To learn about various labour welfare legislations

CO5:- To study about labour policy

Course Code CC 25:- Strategic Human Resource Management

CO1:- To impart to the students the basic concepts of strategic management process.

CO2:- To focus on how firms formulate, implement and evaluate corporate business strategies

CO3:- To promote skills of evaluating and implementing strategies to sustain a firms competitive advantage

CO4:-To study role of HR in strategic formulation

CO5:- To learn about strategic hr issues in global assignments

Course Code CC 26:- Entrepreneurship Development

CO1:- To familiarize the participants with the concept and overview of entrepreneurship with a view to enhance entrepreneurial talent.

CO2:- To impart knowledge on the basics of entrepreneurial skills and competencies to provide the participants with necessary inputs for creation of new ventures.

CO3:- To explore new vistas of entrepreneurship in 21st century environment to generate innovative business ideas.

CO4:- To get an insight into creativity and entreprenuership

CO5:- To learn about new generation trends in entreprenuership

Course Code EC 01:- HRM in service sector

CO1:- To give a theoretical framework for budding HR professionals.

CO2:- To understand the importance of territory sector in developing human resources

CO3:- To equip future HR professionals industry ready with the required skill sets.

CO4:- To get an insight about competency building and development in service sector

CO5:- To know about various softwares used in service sector

Course Code EC 02:- Conflict and Negotiation Management

CO1:- To understand the nature of various dimensions of conflict

CO2:- To learn various strategies and techniques to manage conflicts

CO3:- To understand the importance and role of negotiation in conflict resolution

CO4:- To understand the importance of cross-cultural and gender dimensions of negotiation

CO5:- To learn about levels and sources of conflict

Course Code EC 03:- Project Management for HR Managers

CO1:- To learn about the basic concepts of project management

CO2:- To improve the skill set of HR Learners with respect to project management knowledge relevant for business.

CO3:-To know about project planning and implementation

CO4:- To learn about project report preparation

CO5:- To enhance the students the insight to project management which stimulate entrepreneurial desires of learners

Course Code EC 04:- Manpower Sourcing

CO1:- To learn the concept of Human Resource Planning, its objectives, different approaches to HRP and HRP process

CO2:- To develop deep knowledge on the importance of job analysis, job description, job specification and job designing in Human Resources Management

CO3:- To understand the issues relating to manpower sourcing in organizations

CO4:- To gain knowledge on the legal aspects related to manpower sourcing

CO5:- To study about employment offers

Course Code EC 05:- Counselling Skills for Managers

CO1:- To aid the students in having a clear understanding about the concepts, methods, techniques and issues involved in counselling

CO2:- To learn about various strategies and skills in counselling to deal with employees

CO3:- To introduce students to the various approaches to deal with human problems at work place

CO4:- To gain an understanding on the basics of employee counseling, its need and goals.

CO5:- To provide knowledge on the application of counseling in organizational situations

Course Code EC 06:- Human Resource Accounting and Auditing

CO1:- To introduce the concept of Human resource accounting, its objectives, approaches to accounting process

CO2:- To make the students understand the importance of investment in human resources and the need for accounting of human capital

CO3:- To provide information on responsibility accounting and management control

CO4:- To provide knowledge on human resource auditing, balanced score card, HRD score card, accounting and financial statements

CO5:- To learn about organisational climate

Course Code EC 07:- Diversity Management at Workplace

CO1:- To discuss diversity and its importance in the emerging economy.

CO2:- To Understand the internal factors contribute to conflict in diverse environments
CO3:- To Identify how to thrive in a diverse environment.
CO4:- To undertand the various organisational strategies for workforce diversity

CO5:- To know about socio-economic transitions of global workforce \

Course Code EC 08:- Human Resource Analytics

CO1:- To provide basic insights into application of HR Analytics to HR Management.

CO2:- To introduce HR Analytics as a tool for HR Decision Making.

CO3:-To know about the key components of HR planning analytics

CO4:- To get an insight about talent sourcing, acquisition and engagement analytics

CO5:- To study about analytical performane management

Course Code CC 27:- Problem Centered Project

CO1:- To undertake a problem centered study at a reputed organization on any of the HR topics learned

CO2:- To prepare a research report based on the collection, analysis and interpretation of the data and present the findings and suggestions

Course Code CC 28:- Comprehensive viva voce

CO1:- To test the level of practical knowledge gained out of completing the problem centered study

CO2:- To check the level of knowledge on the various topics studied in human resources throughout the course

MASTER OF TOURISM AND TRAVEL MANAGEMENT (MTTM)

DEGREE PROGRAMME

(Mahatma Gandhi University Regulations PGCSS2019 from 2019 – 20 Academic Year)

SEMESTER ONE

COURSE CODE	TITLE
TR020101	Introduction to tourism administration and management
TR020102	Tourism products of India
TR020103	Entrepreneurship for Tourism Business
TR020104	Hospitality Operations and Management
TR020105	Communicative English for tourism and hospitality

SEMESTER TWO

COURSE CODE	TITLE
TR020201	World Tourism Geography
TR020202	Destination Planning and Development
TR020203	Travel agency and tour operations
TR020204	Organizational behavior and management process.
TR020205	Information technology and E- Tourism

SEMESTER THREE

COURSE CODE	TITLE
TR020301	Sustainable Tourism and Eco Tourism
TR020302	MICE and Event management
TR020303	Tourism marketing and Public relations
TR020304	Management Concepts and Basics of Accounting
TR020305	Research applications in Tourism.

SEMESTER FOUR

COURSE CODE	TITLE
TR020401	Human Resource Management for Tourism
	Elective - Group A: Aviation
TR840401	Aviation Management
TR840402	Cargo Management
TR840403	Airline Ticketing

Elective - Group B: Special Interest Tourism

TR850401 Heritage Tourism

TR850402 Health Tourism

TR850403 Leisure and Recreation Management

TR020402 Project work

TR020403 Evaluation of Study Tour and Internship Report along with Comprehensive VivaVoce.

There are two elective groups with three courses each for the MTTM programme. The colleges can select any one elective group. All the three courses in the group have to be taken and each one has the same credit. The elective courses are offered in the fourth semester. The two groups as mentioned above are:

- Elective - Group A: Aviation
- Elective - Group B: Special Interest Tourism

PROGRMAMME OUTCOMES

Upon completion of the programme , graduates will be able t :

PO1: Analyze the various components of Tourism and to describe how they coincide each other.

PO2: Depicts the interrelationship between travel, tourism and hospitality industries.

PO3: Develop leadership skills and to provide necessary Managerial, Communicative, IT, product and Resource skills to effectively handle Tourism activities.

PO4: Mould career paths and equip students to face professional challenges.

PO5: Chalk out a research oriented approach.

PO6: Enhance the ability and skills to build long lasting business relationships.

PO7: Be able to target and position the tourism resources.

PO8: Be able to frame a better and viable marketing and product innovation strategies to increase the profitability and stability of an organization.

PROGRAME SPECIFIC OUTCOMES

On completing Master of Tourism and Travel Management (MTTM), students will attain:

PO1: Understand multi-form character of travel and tourism business.

PO2: Explain the diverse nature of tourism, including culture and place, global/local perspectives, and experience design and provision.

PO3: Apply relevant technology for the production and management of tourism experiences.

PO4: Plan, lead, organize and control resources for effective and efficient tourism operations.

PO5: Create, apply, and evaluate marketing strategies for tourism destinations and organizations.

PO6: Practice empathy and respect for diversity and multicultural perspectives.

PO7: Apply principles of sustainability to the practice of tourism in the local and global context.

PO8: Propose and conduct a research project to inform tourism practice.

PO9: Assess, evaluate, and employ appropriate communication tools for discussions within and between teams and members, various audiences, decision-making teams, and corporate communication tasks.

PO10: Apply problem solving and critical analysis within diverse contexts.

PO11: Work collaboratively in groups, both as a leader and a team member, in diverse environments, learning from and contributing to the learning of others.

COURSE OUTCOMES OF MTTM PROGRAMME

SEMESTER 1

TR020101: INTRODUCTION TO TOURISM ADMINISTRATION AND MANAGEMENT

CO1: Familiarizing student with the fundamental concept, growth and development of tourism.

- To realize the potential of tourism industry in India and world.
- To understand the basic concepts of tourism.

CO2: To understand the various elements of Tourism.

- To understand the measurement of tourism and impact of tourism.
- To study the system, elements and motivational factors of tourism.

CO3: To familiarize with travel formalities and documents required for international travel.

CO4: To familiarize with the role and functions of important organizations of tourism

- Imparting knowledge to the students about the organizations in tourism industry.

CO5: Understand the importance of tourism legislation and its usage in the current scenario.

TR020102: TOURISM PRODUCTS OF INDIA

CO1: Educating students about the concept of tourism product.

- To understand the nature of different tourism products.
- To understand the geographical features of India and religions of India.

CO2: To familiarize the social and cultural set up in India and its contribution to tourism.

- Imparting knowledge about cultural tourism resources of India.

CO3: To acquire knowledge about archaeological sites in India such as monuments , Temples , Pilgrim Centres, Forts ,Palaces and Museums , Buddhist heritage sites etc

CO4: Familiarizing the important natural tourism products of India such as Hill stations, Beaches, etc.

- To identify and manage emerging tourist destinations and circuits

CO5: The module gives information of countries major wildlife sanctuaries, national parks, biosphere reserves, community reserves, Adventure and ecotourism destinations in India

TR020103: ENTREPRENEURSHIP FOR TOURISM BUSINESS

CO1: To familiarize the students with the concept of entrepreneur main functions.

- To identify the role of entrepreneur in economic level.

CO2: To identify the various aspects in entrepreneurship

- To learn about the role of women entrepreneur in tourism sector.

CO3: To learn about the concept of EDP.

- To understand the reason for starting an enterprises.
- To familiarize with special agencies for entrepreneurial development and training.

CO4: Understanding of forms of ownership and the problems faced by a new entrepreneur

- To understand the pre requisites to start enterprise, its registration, license and other requirements.

CO5: To learn about project and its classification

- Understanding of phases of project management, its format of feasibility report
- To identify the SWOT SWOT analysis of business
- To familiarize with subsidies and incentives offered to entrepreneurs.

TR020104: **HOSPITALITY OPERATIONS AND MANAGEMENT**

CO1: Understanding the classification of hospitality industry and its function.

- Educating students on the evolution of hospitality industry.

CO2: This Module is prescribed to appraise students about the important departments of a classified hotel and to teach various aspects related to accommodation Industry.

- To familiarize the students with various hotel operations and to enhance the skill level of them to perform various duties and responsibilities in a hotel environment.

CO3: To impart a comprehensive idea about the operations of hotel, Resort and other catering out lets of a hotel.

CO4: To learn about the changing scenario of hotel industry in terms of technology.

- To examine the role of organizations and its functions in hotel industry.

TR020105: **COMMUNICATIVE ENGLISH FOR TOURISM AND HOSPITALITY**

CO1: To enable students to have analytical, critical and communicative mind.

- To familiarize with different methods of communication.
- To identify the barriers of communication.

CO2: To analyze the listerning comprehension.

- To identify the interpersonal problems in listerning and feedback.

CO3: To learn about speaking skill through group Discussion and evaluation, Mock interview

- To learn about telephoning skills/ telephone etiquette.

- To learn about how to dealing with difficult people.

CO4: To identify the principles of communicative writing

- To understand about writing aspects.

SEMESTER 2

TR020201 WORLD TOURISM GEOGRAPHY

CO1: To gain basic knowledge about world tourism attraction.

- To study about the role and importance of geography in tourism development.
- To understand about the different aspects of geography.

CO2: To learn about natural based Geographical wonders of the world and UNESCO's natural heritage sites of the world.

- To understand its distribution in different continents, famed attractions in Asian continent.

CO3: To learn about global position system, global information system.

- To understand about satellite mapping of tourism resources.

CO4: To familiarize with maps & map Study and Globe.

- To study about various aspects of maps.
- To identify major tourist attractions and cities on maps.

CO5: To analyze case study on unique geographical attractions of South Asia.

TR020202: DESTINATION PLANNING AND DEVELOPMENT

CO1: To acquaint students with different destination.

- To enable students to plan and develop destination.
- To learn about the concept of destination.

CO2: To study about tourism destination planning and other aspects.

- To know about planning approaches and indicators, design and innovations.

CO3: To know about tangible and intangible attributes of destination.

- To learn about how to measure destination image.

CO4: To learn about product development and packaging.

- To identify the culture and nature based development in destination.

CO5: To study about public and private policy, Partnership.

- To identify the role of urban civic body, town planning, urban development.

TR020203: TRAVEL AGENCY AND TOUR OPERATIONS

CO1: To learn about the history and development of travel agencies.

- To understand the various activities of travel agency and tour operation business.
- To study the linkages of travel agency with related organizations.

CO2: To know about the functions of travel agency and tour operator.

- To learn about the tips and steps for itinerary planning, limitation and constraints

CO3: To identify itinerary preparation for inbound, outbound and domestic tours.

- To analyze the sample tour itinerary of Thomas Cook, Cox & Kings, and SITA Travels

CO4: To understand with the concept of tour package and other aspects.

CO5 : To familiarize with Govt. rules for getting approval in this sector.

- To analyze the IATA rules and regulations for accreditation, documentation.
- To identify the entrepreneurial skill for travel, tourism and problems of entrepreneurship in travel trade.

TR020204: **ORGANIZATIONAL BEHAVIOUR AND MANAGEMENT PROCESS**

CO1: To learn with the concept of organization behavior.

- To understand the role of organizational behavior and its challenges & opportunities of organizational behavior in tourism industry.

CO2: To study about the organizational Development and Change.

- To identify the benefit of organizational development

CO3: To learn about personality, Attitudes & Values

- To study about Psycho analytical social theory, Trait theories of personality.
- To learn about factors influencing attitude nature and dimension.

CO4: To learn about perception and Managerial implications of perception.

To familiarize with different Learning approaches

CO5: To study about stress & stress management

- To learn about emotions and emotional intelligence
- To learn about need & importance of TQM in tourism industry.

TR020205: **INFORMATION TECHNOLOGY AND E - TOURISM**

CO1: To learn how the advances in information technology in tourism business.

- To understand the basics computer Basics .

CO2: To analyze the relationship between information technology and the Tourism Industry Components.

- To learn about online development of package tours.

CO3: To study about technology used in tourism and marketing.

- To learn about the several multimedia aspects.

CO4: To learn about electronic Commerce and E- Business in tourism.

- To understand the history Of Ecommerce.

CO5: To give an in-depth of role of media in tourism industry.

- To analyses a case study on Kerala tourism website.

SEMESTER 3

TR020301: SUSTAINABLE TOURISM AND ECOTOURISM

CO1: To study about the concept of ecology and other concepts in environment.

- To familiarize the students with the theoretical input as well as practical issues of sustainable tourism development.

CO2: To learn about ecotourism and ecotourism principles.

- To identify major Eco tourism resources of India.
- To study about Ecotourism Summit (Quebec Declaration 2002 and Oslo Convention 2008) Kyoto Protocol, Agenda 21

CO3: To know about the principles of sustainability, tools of sustainability.

- To learn about the approaches in sustainable tourism and its development

CO4: To learn about responsible Tourism, Community based and Pro-poor tourism (PPT) including community participation, eco-friendly Practices and Energy waste Management

CO5: To learn about Natural Hazards and Disasters and the Causes and results of hazards and disasters.

- To learn about how to manage disasters in destinations.

TR020302: MICE AND EVENT MANAGEMENT

CO1: To provide basic knowledge about the concept of event management in tourism.

- To develop the skill needed to manage events related to tourism business.
- To give a brief introduction to business tourism.

CO2: To study about MICE Tourism.

- To learn about features, criteria's required for a mice destination.
- Understanding of major MICE destinations in the world & in India.
- To identify the major players in event business.

CO3: To learn about how to do a event management program.

- To familiarize with several aspects in event management.
- To learn about resources & logistics required for conducting events.

CO4: To study the relationship between events and tourism industry.

- To identify the relevance & applications of Information technology in events.

CO5: To learn about the relevance of travel marts in tourism industry with examples.

TR020303: TOURISM MARKETING AND PUBLIC RELATIONS

CO1: To get the concept and components of marketing.

- To study about marketing Management Philosophies and uniqueness of Tourism Marketing.

CO2: To understand about how to manage Product in tourism business.

- To learn about the new product development processes.

CO3: To develop the right marketing mix for tourism.

- To learn about the market Targeting and market segmentation and positioning of product.

CO4: To understand about the pricing & promotion of tourism products

- To know the various distribution Channel in Travel and Tourism.
- To learn about various product promotion mix.

CO5: To analyze the relationship between Public Relations & Marketing

- To understand the major decisions in marketing PR and tools in marketing
- To familiarize with recent trends in public relations.

TR020304 : MANAGEMENT CONCEPTS AND BASICS OF ACCOUNTING

CO1: To equip the students' first-hand knowledge of principals of managements.

CO2: To study about financial Management concept.

- To learn the role of financial manager & his functions.

CO3: To learn the basics of accounting for a business.

- To study about various accounting principles.

CO4: To learns about how to record a transaction.

CO5: To know about how to prepare final accounts.

TR020305: RESEARCH APPLICATIONS FOR TOURISM

CO1: To learn about the role of tourism Research

- To know the various research methods for tourism.

CO2: This module examine how to do a research Process

- To familiarize with the qualities of a good research & researcher

CO3: To learn the terms and concepts data collection, types of data, methods and tools for data collection

- Familiarize with the terms - observation ,interview,questionnaire,schedule , Survey Research
- To learn the different Sampling and its techniques.

CO4: Understanding the use of qualitative and quantitative Research in Tourism.

CO5: Understanding the techniques of analyzing Data, Report writing, Different steps in Report writing,

- To learn the prerequisites for writing report
- To understand the application of SPSS (Statistical Package for Social Science).

SEMESTER IV

TR020401: HUMAN RESOURCE MANAGEMENT FOR TOURISM

CO1: To give in depth knowledge about growth and development of HRM and HRD

- To provide basic knowledge about the concepts of Human Resource Management.

CO2: Understanding of man power planning and its problems.

CO3: Educating the students with responsibilities of HR Department in an organization.

- To give a conceptual understanding of human resource practices in organizations.

CO4: To learn about training and Development process

- Special skills required for human resources working in Hotels, Resorts, Home Stays, Tour Operations, Travel Agency, Airlines.
- To study the role and importance of Human Resources in Tourism Industry

CO5: To know about the trends and issues in HRM

- Major challenges faced by them in 21st century
- To learn about duties and responsibilities of HR manager.

TR840401: AVIATION MANAGEMENT

No. of credits: 3 (Elective Group A Aviation Course 1)

CO1: To learn about the history of airline industry.

- To understand the structure and dynamics of airline industry
- To learn the role and function of different organizations in Civil Aviation.

CO2: This module give a brief introduction to types of Aircrafts and in flight services Passengers requiring special handling.

- To understand about Aviation Safety, Baggage Rules, Piece and Weight Concept, special facilities available.

CO3: Understanding of evolution of the Airport design and Structure

- To familiarize students on different formalities in airport for arrival and departure

CO4: To study various airline terminologies like airport-airline codes, IATA TC areas etc.

- To learn about Global Distribution Systems (GDS) and acquire skills in airline reservation system.
- To know about basics of flight principles such as Frequent Flyer Programme (FFP)
- To examine the future of airline marketing and airport marketing

TR840402: CARGO MANAGEMENT

CO1: To learn about Cargo History, Concepts and Common terms used in Cargo handling, Rules governing acceptance of Cargo.

- To know about Chargeable weight rating-Specific commodity rates, class rates, general cargo rates, valuation charges.

CO2: To introduce the term air cargo and Air Cargo Terminology

- To get knowledge about IATA Cargo agent and agency Operation and ABC Air cargo Guidebook Air Cargo Guides
- To learn about The Air Cargo Tariff and Rules (TACT Rules), TACT Tariff etc.

CO3: Understanding of documents in Air cargo; Airway Bill.

- To learn about the terms Cargo manifesto.
- Understanding of Small /Medium Transportation Programme (SMTP), Import General Manifest(IGM), Shipped On Board(SOB), LOC, Full Container Load cargo(FCL).

CO5: To know the procedure of Cargo Handling – its regulations

- Understanding of Some important Cargo companies
- To know the legislation regarding Export Insurance and Finance, Cargo Liability & Insurance, Foreign Trade License Activity, Export-Import Documentation

TR840403: **AIRLINE TICKETING**

No. of credits: 3 (Elective Group A- Aviation Course 3)

CO1: To familiarize with airline geography, IATA geographical areas , freedom of air ,city codes ,airport codes and airline codes .

- To examine the major international airlines in the world.

CO2: To learn about international and domestic airfare calculation and ticketing procedures.

- Understanding of different type of journey and class of services.

CO3: To give in-depth knowledge about special fare using mileage system ,excess Mileage Allowance –,extra Mileage Surcharge etc.

CO4: Transitional Automated Ticketed format – fare calculation box – general limitations of international travel

CO5: Understanding of usage of CRS in air ticketing.

TR850401: HERITAGE TOURISM

CO1: To provide basic concept about Heritage

- To examine the difference between culture, Heritage and civilization
- To provide knowledge about World Heritage day - purpose

CO2: To familiarize with World Heritage sites in India (updates)

- To understand the selection procedure of a heritage site.

CO3: To learn about the rule and regulations regarding heritage management in India.

CO4: To know about the heritage management schemes in India.

- Understanding of promotion and marketing strategies for heritage sites in India.
- To examine the term Heritage Interpretation and Interpretive Communication.

TR850402: HEALTH TOURISM

CO1: To elucidate the origin and development of health tourism

- To understand about forms of health tourism-

CO2: To analyze the relation between Health, wellbeing and environment

- To examine the various tools used for wellness

CO3: This module gives a brief overview of Medical systems in India

CO4: SPA and Naturopathy: concepts, principles and benefits.

- A brief overview of Treatments in -Naturopathy: hydrotherapy, mud therapy, Massage therapy, diet therapy etc
- Understanding about SPA, its benefits and spa destinations.

CO5: This module examine the Medical Tourism, Major hospitals in India, latest trends in Medical Tourism, accreditation

TR850403: LEISURE AND RECREATION MANAGEMENT

No. of credits: 3 (Elective Group B Special Interest Tourism Course 3)

CO1: To understand the dynamics of recreation products and their significance for tourism industry.

- Define the term Special interest tourism and its issues and considerations

CO2: This module gives an overview of Recreation Businesses.

CO3: To learn about Resorts, classification, history and its profile.

- Understanding of Concept of Amusement and Theme Parks; Classification; Mall Management.

CO4: To acquire knowledge about water ocean transport system that is responsible for promoting tourism.

- Importance of sports Tourism and major sports events of the World.

CO5: To understand about trends in the recreation industry and marketing of Recreation services &facilities.

TR020402: PROJECT WORK

Project work shall be completed by each student individually under the supervision of a teacher in the concerned department. A candidate may, however, in certain cases be permitted to work on the project in an industrial / Research Organization/ Institute on the recommendation of the Supervisor. There should be an internal assessment and external assessment for the project work.

TR020403: EVALUATION OF STUDY TOUR AND INTERNSHIP REPORT ALONG WITH COMPREHENSIVE VIVA VOCE

Study tour / Destination study and field work report

Students will have to submit a report of their study tour which will be evaluated externally at the end of the fourth semester. Students should undertake visits to important national or international tourist destinations during their programme for up to a maximum of fifteen days. The purpose is:

- To experience travel and to understand the linkages between tourism and other service sectors.
- To familiarize some of the important tourist destinations in India or abroad.
- To learn how to organize and manage tours.

Preparation of study tour report include two parts: pre tour phase and post tour phase. Pre tour phase involves itinerary preparation, costing etc. Post tour phase involves detailed report on the tour.If a student(s) is not able to take part in the National/ International Tour because of genuine /unavoidable reasons, those student(s) shall be permitted to carry out a Destination study/ Case study/ Research study and field work report. In such cases, the onus will on the student(s) and mustmake sure that prior sanction for exception is accorded for the study concerned by the Faculty in charge/Head of the Department.

Internship training report

There shall be internship placements for not less than thirty days in a relevant industrial setting during the programme. Students can take up their internship either in airport or aviation sector, hospitality establishments (hotels or resorts), travel agency or tour operation firm and public sector destination management offices. This is a supervised internship within the tourism and hospitality industry. This allows students to undertake experiential learning by working with the sponsoring tourism or hospitality organization to critically examine a major aspect of their operation. The students shall submit a written report of their internship study during the fourth semester. The purpose is:

- To understand the professional setting and work culture of tourism related organization.
- To get a firsthand experience of the career opportunities in travel and tourism industry.
- To get on the job training and skill enhancement in travel and tourism sector.

Viva – Voice

The Viva-Voce examination will be conducted on the basis of the Dissertation report, Practical Tourism and other theory papers taught.

MASTER OF TURISM AND TRAVEL MANAGEMENT

(For admissions from 2012- 13 Academic years onwards)

SEMESTER ONE

COURSE NUMBER	COURSE NAME
MTA 01	Introduction to tourism administration and management
MTA 02	Tourism products of India
MTA 03	Hospitality Operations and Management
MTA 04	Research applications in tourism
MTA 05	Communicative English for tourism and hospitality
MTA 06	Project internship in hotel/resort and viva

SEMESTER TWO

COURSE NUMBER	COURSE NAME
MTA 07	Heritage Tourism
MTA 08	World Tourism Geography
MTA 09	Human Resource management for tourism
MTA 10	Travel agency and tour operation business
MTA 11	Information technology for Tourism
MTA 12	Project internship in travel agency/Tour operation company and Viva.

SEMESTER THREE

COURSE NUMBER	COURSE NAME
MTA 13	Eco Tourism and Environment Management
MTA 14	Organizational behavior and management process
MTA 15	Tourism marketing and Public relations
MTA 16	Accounting and Finance for Tourism
MTA 17	French/German
MTA 18	Project: Study tour and Viva.

SEMESTER THREE

COURSE NUMBER	COURSE NAME
MTA 19	Event Management
MTA 20	Customer relationship and service Management
MTA 21	Entrepreneurship for Tourism and Hospitality business
MTA 22	Destination planning and Development
MTA 23	Airfares and Ticketing(Elective)
MTA24	Cargo Management(Elective)
MTA 25	Project Report and Viva.

SEMESTER I

MTAO1: INTRODUCTION TO TOURISM ADMINISTRATION AND MANAGEMENT

CO1: To learn about the basics of tourism and its components and elements.

- To learn about growth and development of tourism industry
- To understand about various systems, types and forms in tourism industry.

CO2: To understand the tourism organizations and its functions.

CO3: To learn about events and reasons behind the growth of tourism industry.

- To learn about the rules and regulation regarding international travel in tourism industry

CO4: To understand about documentation process in international travel and travel formalities.

- To learn about International travel regulations.

CO5: To acquire knowledge about role of government in promoting travel and tourism.

- To learn about government policies regarding travel and tourism management in national level.

MTA 02 : TOURISM PRODUCTS OF INDIA

CO1: To understand the nature and concept of different tourism products.

- To learn about Geography of India – Physical and Political features.
- Educating the students about Astrology, Ayurveda, Yoga and Meditation, Languages and literature and Religions of India.

CO2: Understand the interrelatedness of culture and tourism.

- Understand the importance of culture in tourism and to analyze how they are interconnected.
- Understanding different cultural tourism product of India.
- Understand about the performing arts of India.

CO3: To learn about archeological sites in India such as forts,palace,temples.historical monuments ,historical sites etc.

- To know about various facilities and aminities available in tourist destinations.

CO4: To acquire knowledge about Major tourism circuits and emerging tourism Destinations of India.

- To learn about the promotional measures initiated by Ministry of Tourism, Govt. of India, State Governments and Private Tourism Agencies

CO5: To learn about different nature based manmade tourist attraction such as major wildlife sanctuaries, national parks and biological reserves.

- Understanding of different types of tourism

MTA 03 : HOSPITALITY OPERATIONS AND MANAGEMENT

CO1: To learn about history, Growth and development of hospitality and hotel industry..

- To understand the classification of hotels and classification criteria..
- Unde standing of the term owner ship

CO2: To learn about the different departments in hotel.

- To understand various department of hotels.
- To understand various hotel operations

CO4: Understanding of marketing strategies used in hotel industry.

- Understanding the concept of 7 marketing mix.

CO5: To learns about different types food services available in hotel industry.

CO6: To learns about new trends in lodging and food services.

- Understanding the associations & institutions in hospitality industry and its role.

MTA 04 : RESEARCH APPLICATIONS FOR TOURISM

CO1: To know the role of research as means to more effective decision –making.

- To familiarize the student with the fundamental concepts and various techniques of research that can be used in business and management.

CO2: To assist students to develop an understanding of the research process and to conduct research leading to successful completion of their dissertation..

CO3: To learn about the types of research.

CO4: To understated the various research methods.

MTA 05 : COMMUNICATIVE ENGLISH FOR TOURISM AND HOSPITALITY

CO1: Understanding Communication process and its different methods.

- To learn about challenges of communication.

CO2: Understanding the scope and opportunities of Listening and effective Reading.

- To improve the listening and reading communication skills of tourism administrators.
- To examine how to become a good listener and reading comprehensions

CO3: To improve the speaking skill by debate Extempore- Mock Interview and role play .

CO4: Business Writing- Write persuasive business messages and letters

CO5: Functional Grammar and Business Vocabulary

MTAO6 : PROJECT INTERNSHIP IN HOTEL/ RESORT AND VIVA VOCE

There shall be internship placements for not less than 20 days in a relevant industrial setting during first semester. This is a supervised internship within the tourism and hospitality industry. This allows students to undertake experiential learning by working with the sponsoring tourism or hospitality organization to critically examine a major aspect of their operation.

The internal evaluation of the project can be done at the department level based on viva and written report. The evaluation shall be done by a team of teachers in the department which shall necessarily consist of the head of the department and the supervising teacher. One spiral bound hard copy and a soft copy of the report should be submitted to the department for evaluation.

SEMESTER II

MTA 07 : HERITAGE TOURISM

CO1: Acquire knowledge and demonstrate an understanding of a relationship between culture and tourism.

- Understanding of a relationship between culture and tourism.
- Define the terms heritage, culture and civilization.

CO2: Under standing of UNESCO World Heritage site in India.

- To learn about world Heritage committee and world Heritage convention and criteria for selection of properties

CO3: To learn about Heritage Tourism destinations of South India including Historicity-Important Monuments Star attraction

CO4: Analyze how heritage tourism works in India.

- Understand the larger forces behind the shaping of Indian cultural Heritage.
- To learn about government policies and regulation regarding heritage management in India

CO5: Understanding new trends in Heritage Tourism (Indian Context).

- Understanding the term heritage conservation.

MTA 08 : WORLD TOURISM GEOGRAPHY

CO1: Understanding the term geography and its classification.

- To learn about the role of geography in tourism.
- To gain basic knowledge about world tourism attraction.
- To study about the role and importance of geography in tourism development

CO2: Understanding of Natural based Geographical wonders of the world, UNESCO's natural heritage sites of the world .

- Distribution of tourism attractions in different continents, famed attractions in Asian continent.

CO3: To learn about facts and figures regarding tourist flow .

- Significance of GPS,Remoote sensing satellite mapping in tourism

CO4: Understanding Maps, globes, & different geographical aspects in the earth..

- Under standing Identification of tourist attractions & cities on maps

CO5: To analyse th case study on unique geographical attractions of the world

MTA 09: HUMAN RESOURCE MANAGEMENT FOR TOURISM

CO1: To provide basic knowledge about the concepts of human resource management.

- To study the role and importance of hum resources in tourism industry.

- Understanding of problems of managing HR in tourism industry

CO2: Understand the recruitment and selection mythologies and its strategies setting .

CO3: Recognize and understand importance of performance management system and its process.

CO4: To learn about special skills required for human resources working in tourism industry.

- Understand and an analyze the various motivational theories that affect the people productivity

CO5: Examine the labor relations issues and, its management.

- Understanding major challenges faced by HR managers of 21st century

MTA 10: TRAVEL AGENCY AND TOUR OPERATION BUSINESS

CO1: Under standing of History and growth of travel agency business.

- To learn about major travel agents and tour operators in India.
- To gain knowledge to define the relationship between travel agencies and tour operators

CO2: Understanding of function of a travel agency and tour operator.

- To learn how prepare an Itinerary .
- Define different types of Tour, tour formulation and designing process, group tour planning and component etc

CO3: Under standing of procedure for Itinerary preparation and its related activities

CO4: Under standing the term of tour package with related activities.

CO5: Understand the operations and regulations governing travel agency and tour operation business

MTA 11 : INFORMATION TECHNOLOGY FOR TOURISM

CO1:Under standing the relationship between tourism industry and IT.

CO2: To have an overview of the innovative technologies used in different sectors of tourism industry

CO3: To appreciate the role of e-commerce in tourism in relation with tourism industry components.

- To know the electronic payment system in tourism and hospitality industry

CO4 : Under standing of relationship between tourism industry component and Media.

- To learn about the role of websites and Internet in promoting tourism.
- To examine a Case study of Kerala Tourism Website

CO5: To learn about the role of information technology in destination Management System.

- Importance of Internet-E Business models and programmes-E marketing and new methods of accessing the information.

CO6: E- Tourism business in Kerala .

- E-tourism initiatives in India and world.

MTA12: PROJECT INTERNSHIP IN TRAVEL AGENCY/ TOUR OPERATION COMPANY AND VIVA VOCE

There shall be internship placements for not less than 20 days in a relevant industrial setting during first and second semesters. This is a supervised internship within the tourism and hospitality industry. This allows students to undertake experiential learning by working with the sponsoring tourism or hospitality organization to critically examine a major aspect of their operation.

The internal evaluation of the project can be done at the department level based onviva and written report. The evaluation shall be done by a team of teachers in thedepartment which shall necessarily consist of the head of the department and the supervising teacher. One spiral bound hard copy and a soft copy of the report should be submitted to the department for evaluation.

SEMESTER III

MTA 13: ECOTOURISM AND ENVIRONMENT MANAGEMENT

CO1: The students will learn the basic principles of ecotourism.

- The students will familiarize about responsible Tourism and related events.

CO2: The students will be enriched on the initiatives for environment protection on a global scale.

- Awareness about the Cape Town and Kerala Declaration on Tourism and its effects on the societal level will be imparted to the students.

CO3: The students will be educated on the significance of Ecotourism planning and its various processes.

- Imparting an understanding of community participation in tourism planning to the students.

CO4: To impart knowledge about major wildlife sanctuaries, bird sanctuaries, national parks, biological reserves and community reserves.

- The students will assess and analyse the various aspects behind Kadalundy Community project and its relevance.

CO5: The students will idendify and understand the various elements related to pollution and its interim effects on tourism.

- Imparting knowledge on modern waste management practices and its positive aspects.

MTA 14: ORGANIZATIONAL BEHAVIOUR AND MANAGEMENT PROCESS

CO1: To provide basic knowledge about the concept of OB

CO2: Understanding of basic concept about Organizational development.

Personality traits.

CO3: To develop the skill and traits needed for hospitality management.

CO4: To know the importance of perception to identify the behaviors of employees in an organization

CO5: Understanding about TQM in tourism industry.

MTA 15: TOURISM MARKETING AND PUBLIC RELATIONS

CO1: Understanding Marketing and Marketing Process.

- Examine the role of marketing in tourism management

- Discuss the role of marketing in the tourism industry

CO2: Demonstrate a clear understanding of market segmentation and targeting processes.

- Analyze the importance of the marketing and service mix in travel and tourism industry .

CO3: To learn about product life cycle ,branding and Packaging .

CO4: To analyse the Pricing of Tourism Products including pricing Strategies and Methods.

- Understanding of distribution Channel in Travel and Tourism
- To analyze the importance of c cooperation and conflict Management.

CO5: To learn about different promotional strategies used in travel and tourism industry.

MTA 16 : ACCOUNTING AND FINANCE FOR TOURISM

CO1: To give an idea about business and business activities

CO2: To understand application of fundamental concept of finance and revenue management in the tourism industry.

- Students can make a bill, invoice, quotation etc.

CO3: Understanding of final accounts , Capital and revenue items ,Manufacturing, trading and profit and loss account, Balance sheet , adjustment entries ,closing entries etc

CO4: To get an knowledge about Online Commerce Options.

- Understanding functions and Features of different payment Systems

CO5: To read and understand the components of income statement andbalance sheet.

- To perform various financial statement analysis.
- To prepare budgets and implement forecasting techniques.

MTA 17: GERMAN

- To equip the student to interact with a foreigner in tourism
- industry.
- To familiarize the students with the German language and culture
- To comprehend, converse and write simple day to day activities in German with an emphasis to tourism related situations.
- The students get an opportunity to write ,read and speak in German

MTA18 PROJECT: - STUDY TOUR AND VIVA VOCE

During the third semester, students will have to submit a report of their study tour. Students should undertake visits to important national or international tourist destinations during their programme. The purpose is To experience travel and to understand the linkages between tourism and other service sectors.

- To familiarize some of the important tourist destinations in India or abroad.
- To learn how to organize and manage tours.

The students shall submit a written report of their tour experiences. This report shall be submitted in the third semester before the commencement of their university examination. The external evaluation of the project work is followed by Viva-Voce and shall be done by one external and one internal examiner duly appointed by the university.

SEMESTER 4

MTA 19: EVENT MANAGEMENT

CO1: To analyze the concept of business tourism and its importance in tourism industry.

- Able to learn about growth and different aspects of business tourism

CO2: To learn about MICE tourism

- Understanding of MICE destinations India
- To explain the term event

CO3: Acquire knowledge about management of an event and its process

- To develop the basic skills for conducting Events
- Create,plan,and implement effective programming for events

CO4: To learn about relationship between events & tourism industry and its relevance.

- To acquire knowledge about applications of Information technology in events.

MTA20: CUSTOMER RELATIONSHIP AND SERVICES MANAGEMENT

CO1: Understanding of conceptual and theoretical foundations of relationship marketing.

- To learn about the role of Relationship marketing in tourism business.

CO2: To create insight and new learning in the area of customer relationship management.

- To learn about model of buyer-seller relationship.

CO3: Understanding the role of communication in building relationship.

CO4: To understand about marketing of Services and its characteristics

CO5: To discuss the conceptual foundations of service Delivery – Types and Causes .

MTA 21 -ENTREPRENEURSHIP FOR TOURISM AND HOSPITALITY BUSINESS

CO1: Demonstrate an understanding of entrepreneurship/ intra preneurship and the role played in the hospitality industry.

CO2: Develop work place skills ,knowledge, and attitudes that may lead to successful employment

CO3:Gain a knowledge of preparation and service within the food industry in order to fulfill the requirements of an entry level employee within the industry.

CO4: Provide service excellence within a business setting .

MTA 22: DESTINATION PLANNING AND DEVELOPMENT

CO1: Define and explain key concepts and issues concerning sustainable tourism planning, tourism public policy and tourism management.

CO2: Critically evaluate several important tourism planning approaches and models

- To learn about Planning for Sustainable Tourism Development.
- Understanding of economic impact, social impact, cultural impact, environmental impact.

CO3: To analyze the development of image formation of a destination and its different attributes.

CO4: To learn about development and packaging of a destination .

CO5: Assess government and industry roles and responsibilities in tourism planning and policy marketing.

- Identify key stake holders involved in tourism panning and policy

MTA 23: AIRFARES AND TICKETING

CO1: Understanding of airfare terms and definitions

- Application of IATA fare rules and restrictions

CO2: To learn about construction of fares for journeys that include more than one class

CO3: Construction of fares for journeys that are via a city .

CO4: Under standing of special fares using the mileage system and rules and regulations.

CO5: To learn about Backhaul and Circle trip minimum checks ,One-way backhaul check rule (OWB or BHC) , higher intermediate fare check (HIP)

- To learn about the application of the circle trip minimum fare check rule (CTM)

CO6: To learn about fares using various breakpoints Journeys including surcharges: construct fares in NUCs for one way and return journeys using the principles of the mileage system.

MTA 24 : CARGO MANAGEMENT

CO1: To provide an outline history of air cargo industry.

CO2: To identify the key developments in the field concerned.

CO3: To learn about the documents in Air cargo.

- To know about the relevant regulatory frame works and the roles of governmental air cargo security regulations to a range of industry factor perspectives.
- Explain the term Airway Bill

CO4: To understand about apply ground handling principles of air cargo cargo

CO5: To learn about regulation regarding Export Insurance and Finance related to cargo.

MTA 25: PROJECT REPORT AND VIVA

Project work shall be completed working outside the teaching hours.

- It shall be carried out under the supervision of a teacher in the concerned department.
- The project report must be in between 100- 120 pages.
- The external evaluation of the project work (MTA 25 of 4th semester) is followed by
- Viva-Voce and shall be done by one external and one internal examiner.
- Comprehensive Viva-voce shall be conducted at the end semester of the program.
- Students should submit a report highlighting the learning experiences. The report
- should be submitted before the commencement of the University examinations.

M.A. Economics

EC 01 01 05 Mathematical Methods for Economic Analysis

Course Objectives

This is a course on the basic mathematical methods necessary for understanding modern economics literature. Mathematics provides a logical, systematic framework within which quantitative relationships may be explored, and an objective picture of the reality may be generated. The deductive reasoning about social and economic phenomena naturally invites the use of mathematics. Among the social sciences, economics has been in a privileged position to respond to that invitation, since two of its central concepts, commodity, and price, are quantified in a unique manner. Thus, a good understanding of mathematics is indispensable for better cognizance of almost all fields of economics, both applied and theoretical. The goal of the course is to make students understand, assimilate and thus capable of using the mathematics required for studying economics at the master's level. This course will focus on developing the mathematical tools that are used extensively in Microeconomics, Macroeconomics, and Econometrics. Students should be given an introduction to the Linear algebra, Differential Calculus, Integral Calculus, etc. These mathematical methods would help students in their understanding of advanced and core courses in Economics. The aim of this course is to: (i) introduce the students to several mathematical tools used in modern economics; (ii) illustrate the use of these tools by applying them to various well-known economic models; and (iii) complement the core postgraduate microeconomic and macroeconomic theory courses. Learning outcomes: On completion of this unit, successful students should be able to demonstrate understanding of static optimization and dynamic systems applicable to economics.

EC 01 02 05 Statistical Methods for Economic Analysis

Course Objectives

This course is designed to cover the statistical tools required for entry into Econometrics. It begins with some basic concepts and terminology that are fundamental to Inferential Statistics. It then develops the notion of probability, followed by probability distributions of discrete and continuous random variables and of joint distributions. This is followed by a discussion on sampling techniques used to collect survey data. The objective of this course is to train students in the use of the most common statistical tools and techniques encountered in economics for analysis of data with valid logical inferences. At the end of the course,

students are expected to gain a clear understanding of the inferential statistics as well as the interpretation of data.

Programme Specific Outcomes of M. Sc. Statistics

- M. Sc. Statistics programme is accepted as being highly desirable for starting and developing a career in Statistics.
- After the completion of the programme, students can serve as a Statistical Consultant/ Data Analyst in the public or private sector.
- The programme is also an excellent preparation for embarking on a Doctoral programme in Statistics.
- The programme enables the type of quantitative reasoning necessary for making important advances in the sciences such as Medicine & Genetics, for making important decisions in business & public policy etc.
- A wide choice of career opportunities exists for well qualified statisticians for example in Banking, Insurance, Share Markets, Pharmaceutical industry and various Government bodies.

Course Outcomes

ST 01 01 01 Probability and Measure Theory

Probability theory is the branch of mathematics that deals with modelling uncertainty. It is important because of its direct application in areas such as genetics, finance and telecommunications. It also forms the fundamental basis for many other areas in the mathematical sciences including statistics, modern optimisation methods and risk modelling. This course provides an introduction to probability theory and random variables. The course explores the basic concepts of modern probability theory and its applications for decision-making in economics, business, and other fields of social sciences.

Topics covered are: probability axioms, conditional probability; Bayes' theorem; discrete random variables, moments, bounding probabilities, independence, covariance and correlation, sequences of independent random variables.

Students who successfully complete this course should be able to demonstrate understanding of:

- Basic probability axioms and rules of discrete and continuous random variables.

- How to calculate probabilities, and derive the marginal and conditional distributions of bivariate random variables.
- How to calculate probabilities of absorption and expected hitting times for discrete time Markov chains with absorbing states.
- How to translate real-world problems into probability models.
- How to read and annotate an outline of a proof and be able to write a logical proof of a statement.
- Develop problem-solving techniques needed to accurately calculate probabilities.
- Apply problem-solving techniques to solving real-world events.
- The different probability measures and the distribution functions and its properties.

ST 50 01 01 Distribution Theory

Our everyday lives, as well as economic and business activities, are full of uncertainties and probability and distribution theory offer useful techniques for quantifying these uncertainties. The course is heavily oriented towards the formulation of mathematical concepts on probability distributions and densities with practical applications.

Topics covered are: discrete random variables, moments, probability generating functions, standard discrete distributions; continuous random variables, uniform and chi-square distributions, transformations, marginal and conditional distributions, bivariate normal distribution. Power series, Binomial, Geometric, Poisson, Negative binomial and Hyper geometric and Continuous Distributions:- Rectangular, Exponential, Weibull, Beta, Gamma, Pareto, Normal, Lognormal, Cauchy, Laplace, Logistic.

At the end of the course students should be able to:

- How to derive the probability density function of transformations of random variables and use these techniques to generate data from various distributions.
- Apply selected probability distributions to solve problems.
- Present the analysis of derived statistics to all audiences.
- To apply all the discrete distributions for analysing the data.
- To use various continuous distributions whenever necessary.
- To describe the practical applications of truncated distribution.
- To apply order statistics for distribution theory.
- To get an awareness of exponential and Pearson family.

ST 50 01 02 Analytical Tools for Statistics

The course present

- Basic concepts of matrices and matrix algebra.
- Methods of solving systems of linear equations.
- Basic concepts of vector spaces.
- Concepts of linear transformations.
- The concept of and methods of computing determinants.
- Methods of computing and using eigenvalues and eigenvectors.

Students in this course will:

- Demonstrate ability to manipulate matrices and to do matrix algebra.
- Demonstrate ability to solve systems of linear equations.
- Demonstrate ability to work within vector spaces and to distil vector space properties.
- Demonstrate ability to manipulate linear transformations and to distil mapping properties.
- Demonstrate ability to manipulate and compute determinants.
- Demonstrate ability to compute eigenvalues and eigenvectors.

ST 50 01 03 Sampling Theory

This course is concerned with the design of sample surveys and the statistical analysis of data collected from such surveys. Topics covered are: Simple random sampling with associated estimation and confidence interval methods, Selecting sample sizes, Estimating proportions, Unequal probability sampling, Ratio and regression estimation, Stratified sampling, Cluster and systematic sampling, Multistage designs and Double or Two-stage sampling. At the End of this Course Students will be able to:

- Awareness of Official Statistical Systems in India, Role of NSSO and CSO and their activities
- Various sampling inspection techniques.
- To apply various sampling methods for agricultural data.
- To explain and to compare various allocations using stratified random sampling.
- To draw a conclusion about the best sampling procedure.
- To use practical applications of ratio and regression method of estimation.

The aim of this course is to cover sampling design and analysis methods that would be useful for research and management in many fields. A well designed sampling procedure ensures that we can summarize and analyse data with a minimum of assumptions and complications.

ST 01 01 02 Statistical Computing I using R

Students are expected to learn the basics in R programming and complete the practical by the R software. The course provides an introduction to statistical software R including Data objects in R, Manipulating vectors, matrices, lists, importing of files, data frame, and computations of descriptive statistics measures. It also provides R Graphics such as Histogram, Box-plot, Stem and leaf plot, Scatter plot, Plot options. Multiple plots in a single graphic window, frequency table, Controlling Loops, lm and glm functions and analysis of variance using lm function, etc are also included in this course. The course mainly deals with the implementation of numerical problems in distribution theory, matrix theory and sampling theory using R.

ST 50 02 01 Estimation Theory

After completing this course, the students will be able to:

- Understand problem of statistical inference, problem of point estimation.
- Properties of point estimator such as Consistency, Unbiasedness, Sufficiency and Efficiency.
- Obtain minimum variance unbiased estimator.
- Obtain estimators using estimation methods such as Maximum likelihood, Minimum chi square, method of moments. Method of scoring, Properties of maximum likelihood estimator.
- Quantify information in statistic using Fisher Information.
- Construct minimal sufficient statistic and minimal sufficient statistic for exponential family.
- Understand concept of Rao-Blackwell theorem and complete family.
- Familiarize the well-known theorems like Rao-Blackwell theorem, Cramer-Huzurbazar theorem and Basu's theorem.
- Understand problem of statistical inference, problem of Interval estimation.
- Construction of Confidence Interval (one and two parameter case).

ST 50 02 02 Stochastic Processes

Stochastic models are among the most widely used tools in operations research and management science. Stochastic processes and its applications can be used to analyse and solve a diverse range of problems arising in production and inventory control, resource planning, service systems, computer networks and many others. This course, with an emphasis on model building, covers inventory models, Markov chains, Poisson processes, queuing theory, branching process and renewal process. At the end of this Course Students will be able:

- To apply various inequalities in Mathematical as well as Statistical Analysis.
- To use birth and death Poisson processes whenever necessary.
- To study the applications of Gambler's Ruin problems.
- Elucidate the power of stochastic processes and their range of applications.
- Demonstrate essential stochastic modelling tools including Markov chains and queuing theory.
- Formulate and solve problems which involve setting up stochastic models.
- To apply stochastic models for different distributions.

ST 50 02 03 Multivariate Distributions

The objective of the course is to introduce several useful multivariate techniques, making strong use of illustrative examples and a minimum of mathematics. The course will start with the extensions of univariate techniques to multivariate framework, such as multivariate normal distribution, hypothesis testing.

Multivariate analysis skills have been commonly recognized as part of the key requisites for analytics analysts. The complexity of most phenomena in the real world requires an investigator to collect and analyze observations on many different variables instead of a single variable. The desire for statistical techniques to elicit information from multivariate dimensional data thus becomes essential and crucial for data analysts. The course provides an insight of the notions of bivariate distributions such as Gumbel's bivariate exponential and bivariate normal distribution, multinomial distribution, multivariate normal and Wishart distribution and their properties.

ST 01 02 01 Advanced Probability Theory

The course will give the student a deeper understanding of the foundations of probability theory, such as probability theory from a measure-theoretic perspective, convergences of distributions and probability measures, and conditional expectations. During the course, important theorems, such as Borell-Cantelli lemma, Radon-Nikodym theorem, Fubini theorem, and general central limit theorems, will be investigated. The syllabus also covers advanced topics in characteristic functions and its convergence properties.

Completing this course, the student must be able to know and understand

- A count of the foundations of probability theory from a measure-theoretic perspective.
- Define and relate different types of convergences of distributions, probability measures and characteristic functions.
- Describe theory for conditional distributions and expectation from a measure-theoretic perspective.
- Define and relate different types of martingales and its use in practical situations.

ST 01 02 02 Statistical Computing II Using R

To make the student capable to do practical problems in more advanced area of Statistics using R software. The course mainly deals with the implementation of numerical problems in Estimation Theory, Stochastic Processes and Multivariate Distributions.