# NADAR SARASWATHI COLLEGE OF ARTS AND SCIENCE,

## THENI, TAMILNADU

*Service to Humanity*

# Programme Outcome

**IQAC**

NADAR SARASWATHI COLLEGE
OF ARTS & SCIENCE, THENI

www.nscollege.org.in

## PROGRAMME OUTCOMES (POs)

Programme Outcomes are prescribed format which describes the ability of the students are expected to have by the point of graduation. The students of NSCAS are getting enormous knowledge with skills while completing M.Phil, Post Graduate and Under Graduate through the following Progamme outcomes (POs):

**The students those who completing their under graduate courses in NSCAS give a platform:**

- To accomplish intellectual competency in academics and make an interpretation of it into significant advances.
- To develop adequate knowledge and logical thinking in their disciplines.
- To demonstrate their proficiency in the practice of scientific laboratory techniques, computing knowledge, communication skills, accounting principles and historical approach.
- To gain knowledge of modern technology in their disciplines within realistic constraints such as safety, security and applicability.
- To know the responsibility of their needs to the society and the environment.
- To develop the ability of the students to utilize modern library searching and retrieval methods to obtain statistics of the current scenario with updated knowledge to take up employment with employability skills.
- To make them to attain various competitive exams.
- To enrich idealistic goals and the values to tackle the societal challenges through various extension activities.
- To become mentally matured, socially accountable, psychologically balanced and morally upright, spiritually well-grown.

**The students those who completing their post graduate courses in NSCAS give a platform:**

- To attain expertise in their own disciplines.
- To identify, invent, execute research literature survey and analyze multifaceted problems in their disciplines.
- To make the students to sustain multi disciplinary activities.
- To emerge with significant terminations using principles of all branches of Sciences, Arts, Commerce, Computer based studies and Management studies.
- To able to devise and carry out advanced experiments, interpret data to draw the relevant conclusions with specific skills.
- To encourage the students to analyze the critical problems of the environment in their research and contribute to the developmental needs of the society.
- To make the students to get awareness in the Green principles.
- To able to take up challenging carrier options in Science, Literature, Technology and Management.

**The students those who completing their M.Phil courses in NSCAS give a platform:**

- To proceed effectively and efficiently towards research studies to attain PhD and Postdoctoral studies.
- To discover their positions in higher education sectors and R&D firms
- To become knowledge transfer representatives to the society.
- To find practical solutions for accessible problems of the humanity.
- To carry on advanced professional activities like seminars/conferences, workshop participations, publications to start up research projects.

Theni Melapettai Hindu Nadargal Uravinmurai

# NADAR SARASWATHI COLLEGE OF ARTS & SCIENCE, THENI

Accredited by NAAC with 'A' Grade

Approved under 2(f) and 12(B) Status of UGC

Permanently Affiliated to Mother Teresa Women's University, Kodaikanal

An ISO 9001:2015 Certified Institution

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## M.PHIL COMMERCE

### PROGRAMME SPECIFIC OUTCOMES

**On successful completion of M.Phil Commerce graduates would be able to,** **PSO1:** Acquire abilities with experience in the field of commerce

**PSO2:** Recoginize human values to carryout focused research

**PSO3:** Demonstrate originality in the application of knowledge with practical understanding

**PSO4:** Understand the emerging changes in the field of Foreign Trade and Commerce

**PSO5:** Obtain the knowledge on financial management to face the competitive world

**PSO6:** Know the Social responsibilities of business

### COURSE OUTCOMES

| S.NO | NAME OF THE SUBJECT | DESCRIPTION |
|---|---|---|
| 1 | **RESEARCH METHODOLOGY** | • To design the Research Proposal and decide the sample techniques and size.<br>• To understand the mode of collecting data and do the interpretation of the same.<br>• To expose the scholars to statistical tools and packages, imperative for researches<br>• To learn the art of writing the reports and to be cautious of plagiarism. |

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| 2 | **RESEARCH FOR BUSINESS DECISIONS** | • To understand the scope for research in functional and strategic areas of businesses. • To expand the horizon of knowledge of research students in upcoming research problems and new thrust areas of research in the contemporary world in various aspects of business and business management. • To familiarise learners in formulating research problems and carrying out the research projects in various areas of business. |
| 3 | **CONSUMER BEHAVIOUR** | • Identify the major influences in consumer behaviour. • Distinguish between different consumer behaviour influences and their relationships • Establish the relevance of consumer behaviour theories and concepts to marketing decisions • Implement appropriate combinations of theories and concepts • Recognise social and ethical implications of marketing actions on consumer behavior |
| 4 | **PROFESSIONAL SKILLS** | • To listen to different texts and comprehend them. • To train students to use appropriate language for public speaking and to encourage students to make writing habit • To make the students understand the importance of working in teams in the present day scenario • Enable students to understand different aspects of leadership and evaluate in their own strengths and to survive more organized and disciplined. |

## M.COM

## PROGRAMME SPECIFIC OUTCOMES

**On successful completion of M.Com graduates would be able to,**

**PSO1:**
**Acquire the knowledge of accounting principles and practice.**
**PSO2: Import**
**the knowledge in the field of banking and insurance activities**
**PSO3: Equip the students to face the competitive world**
**PSO4: Take up challenging carrier option in Commerce**
**PSO5: Develop the computer skill in the Business environment**

## COURSE OUTCOMES

| S.NO | NAME OF THE SUBJECT | DESCRIPTION |
|---|---|---|

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|---|---|---|
| 1. | **MARKETING MANAGEMENT** | • To understand the trends in, marketing management .<br>• To make aware of regulations of foreign trade practices in the era of globalization.<br>• To know the elements of marketing management<br>• To know the types of marketing.<br>• The student will understand the overview of marketing management. |
| 2. | **INTERNATIONAL TRADE AND PRACTICES** | • To make aware of regulations of foreign trade practices in the era of globalization. • To understand the global trends in business, marketing and trade.<br>• To get awareness about international business environment.<br>• To know the foreign exchange and foreign institutions.The student will get knowledge in global level business. |
| 3. | **ADVANCED FINANCIAL MANAGEMENT** | • To gain knowledge on the fundamental concepts on financial management.<br>• To know the valuation of securities.<br>• To understand the theories of capital structure and working capital management.<br>• The student will able to understand an overview of financial management. |
| 4. | **COMPUTERIZED ACCOUNTING WITH TALLY** | • To basic knowledge of computerized accounting to deserving students under self learning mode.<br>• To know the of budget and vouchers.<br>• To prepare the final accounts and fund flow statement.<br>• The student will get employment after learning the paper. |
| 5. | **MANAGERIAL ECONOMICS** | • To develop managerial perspective to economic principle as an aid for decision making under given environmental constraints.<br>• To understand the concepts of demand analysis and cost of production analysis.<br>• To know types of competition, pricing decision and profits management.<br>• The student will understand the concepts of managerial economics. |
| 6. | **MODERN BANKING AND INSURANCE** | • To enable the students to obtain knowledge on the important areas that help in banking and its services.<br>• To know the types of banking, e-banking and its services.<br>• To understand the basic concept of insurance.<br>• The student will able to operate online banking and to know the banking and operations. |

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| 7. | **ADVANCED COST ACCOUNTING** | • To enable to obtain knowledge on the important areas that help in decision making.<br>• To understand the basic concept of cost accounting.<br>• To know the element of costing and types of costing.<br>• The student will get an idea to prepare cost sheet and various types of costing. |
| 8. | **QUANTITATIVE TECHNIQUE FOR BUSINESS DECISION** | • To make the student to understand the various concept in quantitative techniques.<br>• To enable the students how various techniques of statistics used in business for taking decision.<br>• To provide practical knowledge on quantitative techniques.<br>• The student will gain sound theory as well as practical knowledge in quantitative technique. |
| 9. | **BUSINESS RESEARCH METHODS** | • To enable students to know the concept and process of research and the methods of presenting research report.<br>• To understand the concept of various steps and techniques and producers in research.<br>• To enable the student to gain the knowledge of analysis and interpretation.<br>• The student will get an idea to prepare report. |
| 10. | **BUSINESS ENVIRONMENT** | • As the environment in which an executive in taking business decisions are keep changing from time to time the managers are expected to know about that she guess of situation and takes the wise managerial decisions<br>• To enables student to know the concept of Business Environment<br>• To enable the student to understand the importance and significance of business environment<br>• The student will gain whole information about business environment at national and international level. |
| 11. | **ORGANIZATIONAL BEHAVIOR** | • To enables the student to understand an organization and its behavior<br>• To enable the student to know needs and ways of human beings at works<br>• To enable the students to understand the importance of organization behavior and conflict and relationship management<br>• The students will gain the knowledge to survive in the changing organization environment |
| 12. | **MANAGEMENT ACCOUNTING** | • Develop on insight of principles and techniques of management accounting<br>• Familiarize the utilization of accounting information for planning and decision making<br>• Effective control of business ventures<br>• The student will get the knowledge to prepare financial statement, other analysis and evaluation themselves. |

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| 13. | **FINANCIAL MARKETING AND SERVICES** | • To enables the student to understand the concepts of Indian financial system • To provide knowledge on various financial services and financial markets<br>• To familiarize the various functions offinancial markets<br>• The student will gain thorough knowledge about financial markets and financial services • To provide knowledge on various financial services and financial markets<br>• To familiarize the various functions offinancial markets<br>• The student will gain thorough knowledge about financial markets and financial services |
| 14. | **ADVANCED CORPORATE ACCOUNTING** | • To impart knowledge on corporate accounting methods<br>• To enables the students to understand the procedures of accounting<br>• To enables to develop skills in preparation of accounting statements and their analysis<br>• The students will gain the knowledge about accounting standards and companies accounts |
| 15. | **INDIRECT TAXATION** | • To make the students gain knowledge on indirect taxes and legal provisions<br>• To enable the students to understand the applications of indirect taxes and its importance<br>• To make the students to understand about goods and service tax<br>• The student will gain the knowledge about all type of indirect taxes which are levied by government |
| 16. | **LOGISTICS MANAGEMENT** | • Develop an understanding of the role of logistics in a market oriented society.<br>• Examine the major functions of logistics<br>• Provide an opportunities for comprehensive analysis and discussion of key contemporary issues and problems in logistics management<br>• Examine the details of planning and control processes in logistics management. |
| 17. | **HUMAN RESOURCE MANAGEMENT** | • To provide a sound understanding on the concept of human resource management<br>• To enable the student to understand the principles of human resource management and its application in the business and industry<br>• To make understand the students about the importance of human resource management<br>• The student will gain the knowledge of every aspect of human resource management |
| 18. | **INCOME TAX AND TAX PLANNING** | • To provide understanding on income tax including rules pertaining various aspects<br>• To make understand the students about the procedures followed by income tax authorities in concern with income tax<br>• To enable the student to know the procedure of file income tax writtens<br>• The student will gain the knowledge on procedures of income tax, payment of tax and tax planning. |

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| 19. | **STRATEGIC MANAGEMENT** | • To make the students well aware about the concept of strategic management.<br>• To help the students to understand the analysis and formulation of management strategies<br>• To enable the student to know the procedure for implementation and evaluation of management strategies<br>• The student will get the knowledge to identify the strength and weakness of the firm. |

## M.COM (CA)

### PROGRAMME SPECIFIC OUTCOMES

**On successful completion of M.Com (CA) graduates would be able to,**

**PSO1: Gain knowledge in different areas of Commerce and Computer Application courses.**

**PSO2: Pursue higher education and take-up jobs in the field of Commerce and Computer Applications.**

**PSO3: Develop an attitude for working effectively and efficiently in a business environment.**

**PSO4: Able to take up challenging career options in Commerce.**

**PSO5: Motivate to pursue higher education.**

**PSO6: Gain updated knowledge to take up employment.**

**PSO7: Become ethically and socially responsible commerce graduates.**

### COURSE OUTCOMES

| S.NO | NAME OF THE SUBJECT | DESCRIPTION |
|---|---|---|
| 1. | **MARKETING MANAGEMENT** | • To understand the trends in, marketing management<br>• To make aware of regulations of foreign trade practices in the era of globalization<br>• To know the elements of marketing management<br>• To know the types of marketing<br>• The student will understand the overview of marketing management |
| 2. | **INTERNATIONAL TRADE AND PRACTICES** | • To understand the global trends in business, marketing and trade<br>• To make aware of regulations of foreign trade practices in the era of globalization<br>• To get awareness about international business environment<br>• To know the foreign exchange and foreign institutions<br>• The student will get knowledge in global level business |

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| 3. | **ADVANCED FINANCIAL MANAGEMENT** | • To gain knowledge on the fundamental concepts on financial management<br>• To know the valuation of securities<br>• To understand the theories of capital structure and working capital management. The student will able to understand an overview of financial management |
| 4. | **COMPUTERIZED ACCOUNTING WITH TALLY** | • To basic knowledge of computerized accounting to deserving students under self learning mode<br>• To know the of budget and vouchers<br>• To prepare the final accounts and fund flow statement<br>• The student will get employment after learning the paper |
| 5. | **MANAGERIAL ECONOMICS** | • To develop managerial perspective to economic principle as an aid for decision making under given environmental constraints<br>• To understand the concepts of demand analysis and cost of production analysis<br>• To know types of competition, pricing decision and profits management<br>• The student will understand the concepts of managerial economics |
| 6. | **MODERN BANKING AND INSURANCE** | • To enable the students to obtain knowledge on the important areas that help in banking and its services<br>• To know the types of banking, e-banking and its services<br>• To understand the basic concept of insurance<br>• The student will able to operate online banking and to know the banking and operations |
| 7. | **ADVANCED COST ACCOUNTING** | • To enable to obtain knowledge on the important areas that help in decision making<br>• To understand the basic concept of cost accounting<br>• To know the element of costing and types of costing<br>• The student will get an idea to prepare cost sheet and various types of costing |
| 8. | **VISUAL BASIC PROGRAMMING (PRACTICAL)** | • Design, formulate, and construct applications with VB.NET<br>• Integrate variables and constants into calculations applying VB.NET<br>• Determine logical alternatives with VB.NET decision structures<br>• Implement lists and loops with VB.NET controls and iteration<br>• Separate operations into appropriate VB.NET procedures and functions<br>• Assemble multiple forms, modules, and menus into working VB.NET solutions. • Create VB.NET programs using multiple array techniques |

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| 9. | **BUSINESS RESEARCH METHODS** | • To enable students to know the concept and process of research and the methods of presenting research report<br>• To understand the concept of various steps and techniques and producers in research<br>• To enable the student to gain the knowledge of analysis and interpretation<br>• The student will get an idea to prepare report |
| 10. | **BUSINESS ENVIRONMENT** | • As the environment in which an executive in taking business decisions are keep changing from time to time the managers are expected to know about that she guess of situation and takes the wise managerial decisions<br>• To enables student to know the concept of Business Environment<br>• To enable the student to understand the importance and significance of business environment<br>• The student will gain whole information about business environment at national and international level |
| 11. | **ORGANIZATIONAL BEHAVIOR** | • To enables the student to understand an organization and its behavior<br>• To enable the student to know needs and ways of human beings at works<br>• To enable the students to understand the importance of organization behavior and conflict and relationship management<br>• The students will gain the knowledge to survive in the changing organization environment |
| 12. | **PROGRAMMING IN JAVA (PRACTICAL)** | • Knowledge of the structure and model of theJava programming language<br>• Use the Java programming language for various programming technologies<br>• Develop software in the Java programming language<br>• Evaluate user requirements for software functionality required to decide whether the Java programming language can meet user requirements<br>• Propose the use of certain technologies by implementing them in the Java programming language to solve the given problem<br>• Choose an engineering approach to solving problems, starting from the acquired knowledgeof programming and knowledge of operating systems. |

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| 13. | **FINANCIAL MARKETING AND SERVICES** | • To enables the student to understand the concepts of Indian financial system<br>• To provide knowledge on various financial services and financial markets<br>• To familiarize the various functions offinancial markets<br>• The student will gain thorough knowledge about financial markets and financial services |
| 14. | **ADVANCED CORPORATE ACCOUNTING** | • To impart knowledge on corporate accounting methods<br>• To enables the students to understand the procedures of accounting<br>• To enables to develop skills in preparation of accounting statements and their analysis<br>• The students will gain the knowledge about accounting standards and companies accounts |
| 15. | **INDIRECT TAXATION** | • To make the students gain knowledge on indirect taxes and legal provisions<br>• To enable the students to understand the applications of indirect taxes and its importance<br>• To make the students to understand about goods and service tax •<br>The student will gain the knowledge about all type of indirect taxes which are levied by government |
| 16. | **LOGISTICS MANAGEMENT** | • Develop an understanding of the role of logistics in a market oriented society.<br>• Examine the major functions of logistics<br>• Provide an opportunities for comprehensive analysis and discussion of key contemporary issues and problems in logistics management<br>• Examine the details of planning and control processes in logistics management. |
| 17. | **HUMAN RESOURCE MANAGEMENT** | • To provide a sound understanding on the concept of human resource management<br>• To enable the student to understand the principles of human resource management and its application in the business and industry<br>• To make understand the students about the importance of human resource management<br>• The student will gain the knowledge of every aspect of human resource management |
| 18. | **INCOME TAX AND TAX PLANNING** | • To provide understanding on income tax including rules pertaining various aspects<br>• To make understand the students about the procedures followed by income tax authorities inconcern with income tax<br>• To enable the student to know the procedure of file income tax writtens<br>• The student will gain the knowledge on procedures of income tax, payment of tax and tax planning. |

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| 19. | **PHP LAB (PRACTICAL)** | • Design and implement a user login form<br>• Implement an online shopping cart<br>• Implement an online exam system<br>• Implement an interactive and effective student progress monitoring system<br>• Design, develop and host a user friendly website.Know the usage of APIs.<br>• Layout management in line with current trend |

## B.COM

## PROGRAMME SPECIFIC OUTCOMES

**On successful completion of B.Com graduates would be able to,** **PSO1:**
**Gain knowledge on accounting principles and practice** **PSO2:**
**Import the knowledge in the field of Banking and Insurance**
**PSO3: Develop an attitude for working effectively and efficiently in a business environment.**
**PSO4: Able to take up challenging career options in Commerce.**
**PSO5: Motivated to pursue higher education.**

## COURSE OUTCOMES

| S.NO | NAME OF THE SUBJECT | DESCRIPTION |
|---|---|---|
| 1. | **FINANCIAL ACCOUNTING I** | • State the uses and users of accounting information.<br>• Explain and apply accounting concepts, principles and conventions.<br>• Record basic accounting transactions and prepare annual financial statements.<br>• Analyze, interpret and communicate the information<br>contained in basic financial statements and explain the limitations of such statements. |
| 2. | **BUSINESS ORGANISATION** | • To Make the students to get acquainted with the types of Business Organization.<br>• On successful completion of this course, the students will get an opportunity.<br>• To know about the legal requisites in forming the various types of business. |

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| 3. | **INDIAN ECONOMY** | • The fundamental concept of Indian economy and will be able to correlate these concepts to real life situation to markets in particular and the economy in general.<br>• To know the Causes of Poverty and Unemployment and Measures to remove the same.<br>• The concepts of LPG and WTO.<br>• To enable the students to prepare different kinds of Financial Statements.<br>• Have a glimpse of specialized business.<br>• Ascertain the financial position of specialized business. |
| 4. | **BUSINESS ECONOMICS** | • Apply the concept of opportunity cost.<br>• Employ marginal analysis for decision making.<br>• Analyze operations of markets under varying competitive conditions.<br>• Analyze causes and consequences of unemployment, inflation and economic growth. |
| 5. | **BUSINESS ETHICS** | • To acquire a basic and clear understanding of philosophical ethics.<br>• To understand the principles of moral decision-making in global business<br>• To identify the trade-offs that face an ethical manager<br>• To understand the concept of corporate social responsibility<br>• To understand how competitive advantage maps on to corporate social responsibility |
| 6. | **MARKETING** | • Formulate a marketing plan including marketing objectives, marketing mix, strategies, budgetary considerations and evaluation criteria.<br>• Develop pricing strategies that take into account perceived value, competitive pressures and corporate objectives.<br>• Develop strategies for the efficient distribution of products and services.<br>• Determine strategies for developing new products and services that are consistent with evolving market needs.<br>• Evaluate the viability of marketing a product or service in an international market or markets. |
| 7. | **BUSINESS STATISTICS** | • Produce appropriate graphical and numerical descriptive statistics for different types of data.<br>• Apply probability rules and concepts relating to discrete and continuous random variables to answer questions within a business context.<br>• Use simple/multiple regression models to analyse the underlying relationships between the variables through hypothesis testing. |

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| 8. | **COMPUTER APPLICATION IN BUSINESS (THEORY)** | • To provide basic knowledge about the basics of computers and windows operating system.<br>• To know how to work on MS-Office and application of internet in business<br>• To understand the concept of World Wide Web and Internet and its uses<br>• To inculcate the knowledge regarding Application of E- Commerce and M-Commerce in business. |
| 9. | **FUNDAMENTALS OF INSURANCE** | • To impart theoretical base on fundamental principles of insurance business<br>• To understand the basic terminology used in Insurance<br>• To know the underlying Principles regarding various types of insurance claim and requisites |
| 10. | **FUNDAMENTALS OF INVESTMENT** | • Different investment alternatives introduce them to the framework of their analysis and valuation and highlight the role of investor protection. • Understand different investment alternatives in the market.<br>• Understand how securities are traded in the market.<br>• Be able to analyze and price different securities<br>• Be able to manage a portfolio.<br>• Understand basics in derivatives. |
| 11. | **BUSINESS FINANCE** | • To Understand the concept of business finance.<br>• To know the short term and long term source of finance.<br>• To inculcate knowledge in working capital management and cash management. |
| 12. | **AUDITING** | • Familiarize with the principles of auditing.<br>• Get knowledge about the audit procedure.<br>• Get knowledge about the audit rules and regulations. |
| 13. | **COMPANY SECRETARIAL PRACTICE** | • Summarize Procedure for incorporation of the company.<br>• Analyze Sources of raising capital.<br>• Evaluate Role and importance of Company Secretary and key managerial personnel.<br>• Discuss Matters to be stated in the prospectus.<br>• Define De-mat and Re-mat of securities. |
| 14. | **BUSINESS MATHEMATICS** | • Get the mathematical skill for business.<br>• Appear confidently to the competitive examination.<br>• Understanding basic terms in the areas of business calculate and financial mathematics. • Independently solving of business problems.<br>• Define basic terms in the areas of business calculates and financial mathematics |

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| 15. | **ACCOUNTING FUNDAMENTALS WITH TALLY (PRACTICAL)** | • To introduce the students to the Basic of Accounts and the usage of Tally for accounting purpose.<br>• To Know the basic key components used in tally<br>• Applications of accounting by using accounting software.<br>• To make the students to learn about the application of computers in accounting. |
| 16. | **CREATIVE ADVERTISING (PRACTICAL)** | • To highlight the importance of advertising as a business strategy.<br>• To explain how creativity can be incorporated in an advertisement.<br>• To understand the communication process that takes place while advertising.<br>• To analyze it from the view point of a customer |
| 17. | **COST ACCOUNTING** | • Explain Elements of cost and preparation of cost sheet and tenders.<br>• Describe Procedure for preparation of Stores ledger<br>• Illustrate Calculation of wages<br>• Demonstrate Classification and apportionment of overheads<br>• Explain Unit costing, Job costing, Process costing, Operation and Operating costing. |
| 18. | **CORPORATE ACCOUNTING** | • To Impact Company Accounts to understand and appreciate the Provisions of the companies act 1956.<br>• To give them an exposure to calculate the value of Goodwill and shares.<br>• To understand the concept of companies from formation to liquidation.<br>• Develop the skills in preparing accounts of Joint Stock Companies. |
| 19. | **TALLY ERP (PRACTICAL)** | • Helps students to work with well-known accounting software i.e. Tally ERP.9.<br>• Student will learn to create company, enter accounting voucher entries including advance voucher entries, do reconcile bank statement, do accrual adjustments, and also print financial statements, GST etc. in Tally ERP software.<br>• To make students ready with required skill for employability in the job market. |
| 20. | **BANKING THEORY LAW AND PRACTICE** | • Be aware of the law and practice governing the day to day operations of commercial banks.<br>• Become familiar with the various forms used in day to day banking.<br>• To know about rules and regulations.<br>• To get knowledge about banking law and practice. |

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| 21. | **INCOME TAX** | • To know the basic concepts of income tax.<br>• Acquire knowledge on various heads of income<br>• Acquire the complete knowledge of basic concepts of income tax.<br>• Understand the concept of exempted incomes. •<br>Understand the provisions of agricultural income.<br>• Calculate Residential status of a person.<br>• Identify and comply with the relevant provisions of the Income Tax Act as it relates to the income tax of individuals. |
| 22. | **BUSINESS ENVIRONMENT** | • Discuss the supply and demand theory and its impact on insurance.<br>• Explain the effects of government policy on the economic environment and insurance industry.<br>• Outline how an entity operates in a business environment.<br>• Describe how financial information is utilized in business.<br>• Explain the legal framework that regulates the insurance industry. |
| 23. | **COMMERCE PRACTICAL** | • To provide practical knowledge to fill forms like insurance, bank, loan application, membership form, income tax return forms etc.<br>• To know the procedures of General meeting.<br>• To know about the advertisement copy. |
| 24. | **BUSINESS MANAGEMENT** | • Apply conceptual learning skills in today's business environment.<br>• Analyze financial performance of an organization.<br>• Evaluate organizational decisions with consideration of the political, legal and ethical aspects of business.<br>• Assess strengths, weaknesses, opportunities and threats of the business environment. |
| 25. | **MANAGEMENT ACCOUNTING** | • To develop an understanding of the conceptual frame work of management accounting.<br>• To acquaint the students, the management accounting techniques that facilitates managerial decision making.<br>• Perform cost variance analysis and demonstrate the use of standard costs in flexible budgeting.<br>• Outline and apply management tools and techniques such as the balanced scorecard, operational performance measures, quality, and environmental cost management.<br>• Prepare analyses of various special decisions, using relevant costing and benefits. |

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| 26. | **E-COMMERCE** | • Analyze the impact of E-commerce on business models and strategy.<br>• Describe Internet trading relationships including. Business to Consumer, Business-to-Business, Intra-organizational.<br>• Describe the key features of Internet, Intranets and Extranets and explain how they relate to each other.<br>• Discuss legal issues and privacy in E-Commerce<br>• Assess electronic payment systems<br>• Recognize and discuss global E-commerce issues |
| 27. | **BUSINESS TAX** | • Evaluate and synthesize information and existing knowledge from a number of sources.<br>• Identify legal issues and apply the law to arrive at reasoned solutions to legal problems.<br>• Communicate ideas effectively in informal group discussions.<br>• The course will focus on topical taxation issues affecting businesses in Australia.<br>• The course will aim to provide opportunities for the practical implementation of the main concepts. covered.<br>• The course is also designed to allow students to appreciate the importance of lifelong learning in the ever-changing field of taxation law. |
| 28. | **EDP** | • To enable the student to learn the concept of entrepreneurship.<br>• To instill ideas on identification, selection and preparation of projects.<br>• To have awareness on the institutions promoting entrepreneurship. |
| 29. | **BUSINESS LAW** | • To Demonstrate recognition of the requirements of the contract agreement.<br>• To cultivate understanding of the various trade laws of land with an expert knowledge of Indian Contract Act, Sale of Goods Act.<br>• To provide comprehensive understanding of rights, duties and responsibilities of the parties entering into business dealings.<br>• To know the various aspects in Consumer protection Act. |
| 30. | **BUSINESS COMMUNICATION** | • To develop better written and oral business communication skills among the students<br>• To know the effective media of communication. • To enhance their writing skills in various forms of business letters and reports<br>• To know about the Modern communication methods. |
| **B.COM (CA)** | | |
| **PROGRAMME SPECIFIC OUTCOMES** | | |

**On successful completion of B.Com (CA) graduates would be able to,** **PSO1: Graduates will gain a strong foundation of knowledge in different areas of Commerce and Computer Application courses.** **PSO2: Graduates will be able to do pursue higher education and take-up jobs in the field of Commerce and Computer Applications.**
**PSO3: To develop an attitude for working effectively and efficiently in a business environment. Able to take up challenging career options in Commerce and IT sector.**
**PSO4: Motivated to pursue higher education.**
**PSO5: Gain updated knowledge to take up employment.**
**PSO6: Become ethically and socially responsible commerce graduates with computer application knowledge.**

## COURSE OUTCOMES

| S.NO | NAME OF THE SUBJECT | DESCRIPTION |
|---|---|---|
| 1. | **FINANCIAL ACCOUNTING I.** | • State the uses and users of accounting information.<br>• Explain and apply accounting concepts, principles and conventions.<br>• Record basic accounting transactions and prepare annual financial statements.<br>• Analyse, interpret and communicate the information contained in basic financial statements and explain the limitations of such statements. |
| 2. | **BUSINESS APPLICATIONS OF MS OFFICE (PRACTICAL)** | • Give students an in-depth understanding of why computers are essential components in business, education and society.<br>• Introduce the fundamentals of computing devices and reinforce computer vocabulary, particularly with respect to personal use of computer.<br>• Provide hands-on use of Microsoft Office 2013 applications Word, Excel, Access and PowerPoint. Completion of the assignments will result in MS Office applications knowledge and skills. |
| 3. | **INDIAN ECONOMY** | • The fundamental concept of Indian economy and will be able to correlate these concepts to real life situation to markets in particular and the economy in general.<br>• To know the Causes of Poverty and Unemployment and Measures to remove the same<br>• The concepts of LPG and WTO. |

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| 4. | **FINANCIAL ACCOUNTING II** | • To enable the students to prepare different kinds of Financial Statements.<br>• Have a glimpse of specialized business.<br>• Ascertain the financial position of specialized business. |
| 5. | **WEB DESIGNING USING HTML (PRATICAL)** | • Will discover how does web works really, what makes web sites work. Simple and impressive design techniques, from basics till advanced to focus on goal oriented and to create web elements like buttons, banners & Bars and of course complete UI designs. •<br>Forms and validations for your website. •<br>Setting up page layout, color schemes, contract, typography in the designs.<br>• Writing valid and concise code for webpages. |
| 6. | **BUSINESS ETHICS** | • To acquire a basic and clear understanding of philosophical ethics.<br>• To understand the principles of moral decision- making in global business.<br>• To identify the trade-offs that face an ethical manager.<br>• To understand the concept of corporate social responsibility.<br>• To understand how competitive advantage maps on to corporate social responsibility. |
| 7. | **VISUAL BASIC PROGRAMMING (PRACTICAL)** | • Design, formulate, and construct applications with VB.NET.<br>• Integrate variables and constants into calculations applying VB.NET.<br>• Determine logical alternatives with VB.NET decision structures.<br>• Implement lists and loops with VB.NET controls and iteration.<br>• Separate operations into appropriate VB.NET procedures and functions.<br>• Assemble multiple forms, modules, and menus into working VB.NET solutions.<br>• Create VB.NET programs using multiple array techniques |
| 8. | **BUSINESS STATISTICS** | • Produce appropriate graphical and numerical descriptive statistics for different types of data. Apply probability rules and concepts relating to discrete and continuous random variables to answer questions within a business context.<br>• Use simple/multiple regression models to analyse the underlying relationships between the variables through hypothesis testing. |

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| 9. | **COMPUTER APPLICATION IN BUSINESS (THEORY)** | • To provide basic knowledge about the basics of computers and windows operating system.<br>• To know how to work on MS-Office and application of internet in business.<br>• To understand the concept of World Wide Web and Internet and its uses.<br>• To inculcate the knowledge regarding Application of E-Commerce and M-Commerce in business. |
| 10. | **FUNDAMENTALS OF INSURANCE** | • To impart theoretical base on fundamental principles of insurance business.<br>• To understand the basic terminology used in Insurance. •<br>To know the underlying Principles regarding various types of insurance claim and requisites. |
| 11. | **FUNDAMENTALS OF INVESTMENT** | • Different investment alternatives introduce them to the framework of their analysis and valuation and highlight the role of investor protection.<br>• Understand different investment alternatives in the market.<br>• Understand how securities are traded in the market.<br>• Be able to analyze and price different securities.<br>• Be able to manage a portfolio.<br>• Understand basics in derivatives. |
| 12. | **BUSINESS FINANCE** | • To Understand the concept of business finance.<br>• To know the short term and long term source of finance.<br>• To inculcate knowledge in working capital management and cash management. |
| 13. | **FUNDAMENTALS OF 'C' (THEORY)** | • The course is designed to provide complete knowledge of C language.<br>• Will be able to develop logics which will help them to create programs, applications in C.<br>• Also by learning the basic programming constructs they can easily switch over to any other language in future. |
| 14. | **COMPANY SECRETARIAL PRACTICE** | • Summarize Procedure for incorporation of the company.<br>• Analyze Sources of raising capital.<br>• Evaluate Role and importance of Company Secretary and key managerial personnel.<br>• Discuss Matters to be stated in the prospectus.<br>• Define De-mat and Re-mat of securities. |

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| 15. | **BUSINESS MATHEMATICS** | • Get the mathematical skill for business.<br>• Appear confidently to the competitive examination.<br>• understanding basic terms in the areas of business calculate and financial mathematics.<br>• Independently solving of business problems.<br>• Define basic terms in the areas of business calculates and financial mathematics. |
| 16. | **ACCOUNTING FUNDAMENTALS WITH TALLY (PRACTICAL)** | • To introduce the students to the Basic of Accounts and the usage of Tally for accounting purpose.<br>• To Know the basic key components used in tally<br>• Applications of accounting by using accounting software<br>• To make the students to learn about the application of computers in accounting. |
| 17. | **CREATIVE ADVERTISING (PRACTICAL)** | • To highlight the importance of advertising as a business strategy.<br>• To explain how creativity can be incorporated in an advertisement.<br>• To understand the communication process that takes place while advertising.<br>• To analyze it from the view point of a customer. |
| 18. | **COST ACCOUNTING** | • Explain Elements of cost and preparation of cost sheet and tenders.<br>• Describe Procedure for preparation of Stores ledger.<br>• Illustrate Calculation of wages.<br>• Demonstrate Classification and apportionment of overheads.<br>• Explain Unit costing, Job costing, Process costing, Operation and Operating costing. |
| 19. | **CORPORATE ACCOUNTING** | • To Impact Company Accounts to understand and appreciate the Provisions of the companies act 1956.<br>• To give them an exposure to calculate the value of Goodwill and shares.<br>• To understand the concept of companies from formation to liquidation.<br>• Develop the skills in preparing accounts of Joint Stock Companies. |
| 20. | **TALLY ERP (PRACTICAL)** | • Helps students to work with well-known accounting software i.e. Tally ERP.9.<br>• Student will learn to create company, enter accounting voucher entries including advance voucher entries, do reconcile bank statement, do accrual adjustments, and also print financial statements, GST etc. in Tally ERP software.<br>• To make students ready with required skill for employability in the job market. |

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| 21. | **PROGRAMMING IN 'C' (PRACTICAL)** | • Identify situations where computational methods and computers would be useful.<br>• Given a computational problem, identify and abstractthe programming task involved.<br>• Approach the programming tasks using techniques learned and write pseudo-code.<br>• Choose the right data representation formats based on the requirements of the problem.<br>• Use the comparisons and limitations of the various programming constructs and choose the right one for the task in hand.<br>• Write the program on a computer, edit, compile, debug, correct, recompile and run it. |
| 22. | **INCOME TAX** | • To know the basic concepts of income tax.<br>• Acquire knowledge on various heads of income. •<br>Acquire the complete knowledge of basic concepts of income tax.<br>• Understand the concept of exempted incomes.<br>• Understand the provisions of agricultural income.<br>• Calculate Residential status of a person.<br>• Identify and comply with the relevant provisions of the Income Tax Act as it relates to the income tax of individuals. |
| 23. | **BUSINESS ENVIRONMENT** | • Discuss the supply and demand theory and its impact on insurance.<br>• Explain the effects of government policy on the economic environment and insurance industry.<br>• Outline how an entity operates in a business environment.<br>• Describe how financial information is utilized in business.<br>• Explain the legal framework that regulates the insurance industry. |
| 24. | **COMMERCE PRACTICAL** | • To provide practical knowledge to fill forms like insurance, bank, loan application, membership form, income tax return forms etc.<br>• To know the procedures of General meeting.<br>• To know about the advertisement copy. |
| 25. | **BUSINESS MANAGEMENT** | • Apply conceptual learning skills in today's business environment.<br>• Analyze financial performance of an organization.<br>• Evaluate organizational decisions with consideration of the political, legal and ethical aspects of business.<br>• Assess strengths, weaknesses, opportunities and threats of the business environment. |

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| 26. | **MANAGEMENT ACCOUNTING** | • To develop an understanding of the conceptual frame work of management accounting.<br>• To acquaint the students, the management accounting techniques that facilitates managerial decision making.<br>• Perform cost variance analysis and demonstrate the use of standard costs in flexible budgeting.<br>• Outline and apply management tools and techniques such as the balanced scorecard, operational performance measures, quality, and environmental cost management.<br>• Prepare analyses of various special decisions, using relevant costing and benefits. |
| 27. | **E-COMMERCE** | • Analyze the impact of E-commerce on business models and strategy. • Describe Internet trading relationships including Business to Consumer, Business-to-Business, Intra-organizational.<br>• Describe the key features of Internet, Intranets and Extranets and explain how they relate to each other.<br>• Discuss legal issues and privacy in E- Commerce.<br>• Assess electronic payment systems.<br>• Recognize and discuss global E-commerce issues. |
| 28. | **BUSINESS TAX** | • Evaluate and synthesize information and existing knowledge from a number of sources.<br>• Identify legal issues and apply the law to arrive at reasoned solutions to legal problems.<br>• Communicate ideas effectively in informal group discussions.<br>• The course will focus on topical taxation issues affecting businesses in Australia.<br>• The course will aim to provide opportunities for the practical implementation of the main concepts covered.<br>• The course is also designed to allow students to appreciate the importance of lifelong learning in the ever-changing field of taxation law. |
| 29. | **PROGRAMMING IN C++ (PRACTICAL)** | • To learn how to write inline functions for efficiency and performance.<br>• To learn the syntax and semantics of the C++ programming language.<br>• To learn how to design C++ classes for code reuse.<br>• To learn how to implement copy constructors and class member functions.<br>• To understand the concept of data abstraction and encapsulation.<br>• To learn how to overload functions and operators in C++.<br>• To learn how containment and inheritance promote code reuse in C++ |

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| 30. | **BUSINESS LAW** | • To Demonstrate recognition of the requirements of the contract agreement<br>• To cultivate understanding of the various trade laws of land with an expert knowledge of Indian Contract Act, Sale of Goods Act.<br>• To provide comprehensive understanding of rights, duties and responsibilities of the parties entering into business dealings<br>• To know the various aspects in Consumer protection Act. |
| 31. | **BUSINESS COMMUNICATION** | • To develop better written and oral business communication skills among the students.<br>• To know the effective media of communication.<br>• To enhance their writing skills in various forms of business letters and reports.<br>• To know about the Modern communication methods. |

## M.PHIL., TAMIL

### PROGRAMME SPECIFIC OUTCOMES

**PSO1:** இலக்கியத்தில் பல்வேறு இயல்போக்கு அமைந்துள்ள விதம் ஆகியவற்றை அறிய இயலும். தமிழ் இலக்கியத்தின் ஆழ,அகலங்களை அறிய இயலும். ஒவ்வொரு இலக்கியத்தையும் இயற்றிய படைப்பாளனின் படைப்பு கண்ணோட்டம் வாசிப்பாளன் உணர்ந்து பயில இக்கல்வி ஒரு வாய்ப்பாக அமையும். **PSO2**: சிறந்த ஆசிரியர் பயிற்சியைக் கற்க அடிப்படையான கல்வியாகும். அத்துடன் ஆய்வு கண்ணோட்டத்துடன் எதனையும் ஆராயும் பாங்குமாணவியர்களுக்கு ஏற்படுகிறது.

**PSO3:** உயரிய கருதுகோளை உருவாக்கி ஆய்வு மேற்கொள்ளும் போது தெளிவான ஆய்வுமுடிவு கிடைக்கும். அத்துடன் இலக்கியங்களை மீட்டுருவாக்க கண்ணோட்டத்தோடு அணுக வாய்ப்பு ஏற்படும். இத்தகைய கண்ணோட்டத்தால் தமிழ்மொழியில் படைக்கப்பட்ட இலக்கியங்கள் அகில இந்திய அளவில் சிறப்பிடம் பெறவாய்ப்பு உள்ளது.

### COURSE OUTCOMES

| S.NO | NAME OF THE SUBJECT | DESCRIPTION |
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| 1 | **ஆராய்ச்சி நெறிமுறைகள்** | • ஆய்வுக் களத்தின் வரையறை பற்றியும், மாணவர் தேர்ந்தெடுக்கும் ஆய்வுக் களம் பற்றியும், ஆய்வுத் களத்தை தேர்ந்தெடுத்த பின்னர் அதற்கான தரவுகளை சேகரிப்பது பற்றியும் அறியமுடிந்தது. ஆய்வை ஒப்பிட்டுப் பார்க்கும் ஒப்பீட்டு ஆய்வின் தன்மை பற்றியும் மொழியியல் ஆய்வு பற்றியும், அறிய முடிந்தது.<br>• ஆய்வுத் தலைப்பைத் தேர்ந்தெடுத்த பின்னர், அதற்கான தரவுகளை எவ்வாறெல்லாம், சேகரிக்க வேண்டும் என்பது பற்றி அறியமுடிந்தது.<br>• முதன்மைத் தரவுகளை எவ்வாறு சேகரிக்க வேண்டும் என்றும், துணைமைச் சான்றுகளை எவ்வாறு சேகரிக்க வேண்டும் என்றும், சேகரிப்பு முறைகளைப் பற்றியும் அறியமுடிந்தது.<br>• கள ஆய்வின் மூலம் நேரடியாக களத்திற்கு சென்று தரவுகளை சேகரித்து அவற்றின் மூலம் சமூகச்சூழலையும் பண்பாட்டுக் கூறுகளைப் பற்றியும், நேர்காணல்,வினா - நிரல் தொடுக்கும் முறைப்பற்றியும், அறிய முடிந்தது.<br>• ஆய்வேட்டில் மேற்கோள் இடுதல் துணைநூற் பட்டியல் அகர வரிசையில் தயாரித்தல் பற்றியும் அறிய முடிந்தது.<br>• ஆய்வு என்பது முடிவு அல்ல. ஒவ்வொரு ஆய்வின் முடிவும் அடுத்த ஆய்வின் தொடக்கம் என்பதை ஆய்வாளர் நன்கு உணர வேண்டும். |
| 2 | **தமிழிலக்கியங்களின் வழி மகளிர் நிலை** | • ஆண், பெண் பண்பு நலன்களைக் குறிப்பிடும் தொல்காப்பியர் ஆணை வீரத்தின் அடையாளமாகவும், பெண்ணை மென்மையின் அடையாளமாகவும் குறிப்பிடுகிறார். இருப்பினும் மகளிர் பலர் புலவர்களாக இருந்து பாடல் பல இயற்றி உள்ளனர் என்பதை நமது சங்க இலக்கியங்கள் எடுத்துரைக்கின்றன. • சங்க காலத்தில் விருந்தோம்பல் பெண்ணுக்குரிய தலையாய கடனாக கருதப்பட்டது.<br>• தன் துன்பத்தைப் பொருட்படுத்தாமல் கணவனின் நன்மைக்காகவே தன்னை அர்ப்பணித்துக் கொள்பவளே கற்பில் சிறந்த பெண்ணாக கருதப்பட்டிருக்கிறாள்.<br>• மணிமேகலை என்னும் காப்பிய பெயரானது பிற காப்பியங்களைப் போலில்லாமல், தன்னகரில்லாத தலைவியை முன்னிலைப்படுத்தி தலைவியின் பெயரையே காப்பியப் பெயராகக் கொண்டிருப்பது சீர்திருத்தங்களின் உச்சமாகக் கருதமுடிகிறது.<br>• பெண்கள் தனியாக இருந்து பக்தி நெறியை உயர்த்தியுள்ளார்கள் குழுவாக இருந்தும் பக்திநெறியை உயர்த்தியுள்ளார்கள்.<br>• இறைவனான சிவனே தன் வாயால் அம்மையே என்ற அழைக்கப்பட்ட பெண் அடியவர் காரைக்கால் அம்மையார்.<br>• வேதநாயகர் கருவிலே திருவுடைய புலமையாளராய் இருந்தார். இளமையிலே செய்யுள் இயற்றத் தொடங்கினார்.பெண்கள் செய்ய வேண்டிய கடமைகளையும், கடைபிடிக்க வேண்டிய நீதிகளையும் கூறுகிறார்.<br>• பெண்மதிமாலையில் கல்வி கற்ற உயர்குடிப் பெண்கள் பலருக்கு இந்நூலிலுள்ள செய்யுள்கள் புதிய எழுச்சியைக் கொடுத்தனர். |

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| 3 | **பொதுத் திறன்கள்** | • கணினித்திரையில் தட்டச்சு செய்யும்முறை பற்றியும் அதனை சேமிக்கும் முறை பற்றியும் அறிய முடிந்தது.<br>• தகவல் தொடர்பு சாதனைகளை எவ்வாறு பயன்படுத்த வேண்டும்,தகவல் தொடர்பு சாதனங்கள் மூலம் நேரும் இடையூறுகள், கண்பாதிப்பு பற்றியும் அறிய முடிந்தது.<br>• கணினி பற்றியும் இணையதளம் எந்தளவிற்கு மேலும் நமக்கு வேண்டிய செய்திகள் அனைத்தும் தொகுத்தளிக்கிறது என்பது பற்றியும் அறிய முடிந்தது.<br>• கணினி உதவியுடன் பாடத்தாள் தவிர மற்ற தேவையான எல்லா செய்திகளையும் அறிந்து கொள்ள முடிகிறது.<br>• கணினியில் தெளிவாக பிழை இல்லாமலும், சுருக்கமாகவும், செய்தியோடு படத்தையும் ஒப்பிட்டுக் காட்டுவதை அறிய முடிந்தது. |
| 4 | **இக்கால இலக்கியக்களங்கள்** | • இக்காலஇலக்கியங்களானபுதுக்கவிதை,சிறுகதை,நாவல் மற்றும் நாடகம் ஆகியவற்றின் தோற்றம் வளர்ச்சிஆகியவற்றைமுழுமையாகஅறிந்துகொள்ளமுடிந்தது. •<br>இக்கால இலக்கியங்கள் ஒடுக்கப்பட்டமக்களின் சமூகவிடுதலை,பொருளாதாரவிடுதலை,அரசியல்விடுதலைமற்றும் ஆன்மீகவிடுதலைஆகியவற்றைஎடுத்துரைக்கும் களம் என்பதைஅறியமுடிந்தது<br>• இக்கால இலக்கியங்களானஉத்திமுறைகள், இலக்கியபுராணமேற்கோள்கள், இருமைச் சுவைமற்றும் மீட்டுருவாக்கம் ஆகியவற்றைஅறிந்துகொள்ளமுடிந்தது<br>• இக்கால இலக்கியங்களில் பயன்படுத்தப்படும் இலக்கிய இயக்கங்கள் மற்றும் ஒடுக்குமுறைக் கருத்தியலும்,மாற்றுப் பண்பாடுக் கருத்தியலும்'ஒடுக்கப்பட்டமகளிரின் வாழ்வியல் சிக்கலை'எவ்வாறுசெம்மைப்படுத்தியதுஎன்பதைஅறியமுடிந்தது<br>• ஆதிக்கச்சாதியிரின் மனமாற்றம் மற்றும் விளிம்புநிலைமனிதர்களின் மாற்றுவிழுமியகருத்துக்கள்,ஒடுக்கப்பட்டோரின் கலைகள்,எழுச்சிபோராட்டங்களில் இலக்கியங்களின் பங்களிப்பைப் பற்றிஅறியலாம். |

## M.A TAMIL

## PROGRAMME SPECIFIC OUTCOMES

**PSO1: தமிழக அரசால் நடத்தப்படும் பல்வேறு போட்டித் தேர்வுக்கான பாடத்திட்டம்,மற்றும் இலக்கியத்தில் பல்வேறு இயல் போக்கு அமைந்துள்ளவிதம் ஆகியவற்றை அறிய இயலும். தமிழ் இலக்கியத்தின் ஆழ,அகலங்களைஅறிய இயலும். PSO2: பல்வேறு படைப்பாளர்களின் படைப்புகளை தொடர்ந்து வாசிப்பதன் மூலம் கவிதை,கட்டுரைமற்றும் சிறுகதை எழுத தொடர்ந்து பயிற்சி அளிப்பதன் மூலம் மாவட்ட மற்றும் மாநில அளவில் நடைபெறும் போட்டிகளில் தொடர்ந்துசாதனை**

**PSO3: சிறந்த ஆசிரியர் பயிற்சியைக் கற்க அடிப்படையான கல்வியாகும். அத்துடன் ஆய்வுகண்ணோட்டத்துடன் எதனையும் ஆராயும் பாங்கு மாணவியர்களுக்கு ஏற்படுகிறது.**

## COURSE OUTCOMES

| S.NO | NAME OF THE SUBJECT | DESCRIPTION |
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| 1 | **இக்கால இலக்கியம** | • பாரதியாரின் பாஞ்சாலி சபதம் மூலம் பாரதியின் நாட்டுப்பற்றை அறியலாம்.பாரதிதாசனின் வீரத்தாய் என்ற காவியத்தின் மூலம் பெண்களைப் பற்றிய செய்தியையும், முற்போக்குவாதியாகிய பாரதிதாசனின் கவித்திறனையும் அறிந்து கொள்ளடிமுடிகின்றது. • நாதன் உள் இருக்கையில், வெள்ளம் வந்தால் ஆகிய இது போன்ற புதினங்களின் வழி இலக்கியமும், ஒப்பீடும் ஆகிய துறையைப் பற்றிய அறிவு மற்றும் ஈடுபாடு மாணவியர்களுக்கு ஏற்படும்.<br>• எதனையும் எள்ளல் தன்மையுடன் எடுத்துரைக்கும் ராஜம் கிருஷ்ணன் சமூக மாற்றச்சிந்தனைகளை தனது படைப்பில் வெளிப்படுத்தியுள்ளார்.சாகித்திய அகாடமி விருது பெற்ற அகிலனின் படைப்பால் தமிழ் இலக்கிய உலகின் நடைப்போக்கு வளர்ச்சியடைந்த விதத்தை மாணவியர்களால் உணர இயலும்.<br>• நாட்டின் அகத்தே நிகழும் நிகழ்ச்சிகளைப் படம் பிடித்து காட்டுவது நாடகம். இதில் ஒரு வகையாக விளங்கும் இலக்கிய நாடகத்தின் வழி மறைமலையடிகளின் நுண்மாண்நுழைபுலத்தை அறிய முடிகிறது.<br>• பெண்ணயம், உளவியல், மார்க்சியம், சமூகவியல், அழகியல் மற்றும் வரலாற்றுக் கண்ணோட்டத்துடன் இலக்கியத்தை அணுகி, மேலும் பல்வேறு களங்களில் தமிழ்மொழி வளர்ச்சி மற்றும் ஆராய்ச்சிக்கு உதவும். |
| 2 | **தொல்காப்பியம் - எழுத்ததிகாரம்** | • நூன் மரபியலில் எழுத்துக்கள் ஒலிக்கின்ற மாத்திரைஇ மாத்திரையின் அளவீடு பற்றி அறியமுடிகின்றது. பிறப்பியலில் உயிரெழுத்துக்கள் பிறக்கும் இடம்இ புணரியலில் எழுத்துக்களின் புணர்ச்சி பற்றி அறியமுடிகின்றது.<br>• தொகை மரபியலில் உயிர் ஈறுஇ மெய் ஈறுகளின் பொது புணர்ச்சி - உயிர் மயங்கியல் புள்ளி மயங்கியலில் மெல்லொற்று ஈறுகள் பற்றி அறியமுடிகின்றது.<br>• குற்றியலுகரப் புணரியலில் குற்றியலுகரத்தின் இயல்புகள்.ஒலி பிறப்பியலில் உள்ள ஒலி, ஒலியன் என்பதன் விளக்கமும் மாற்றொலியன் பயன்பாடுகளையும் அறியமுடிகிறது.<br>• பெயர்களின் சிறப்புப் புணர்ச்சிஇ எண்ணுப் புணர்ச்சிஇ எண்ணுப் பெயர்களின் முழு அளவு நிறைப் புணர்ச்சி போன்றவை அறியமுடிகின்றது. •<br>தமிழ் மொழியின் இலக்கணத்தை நடைமுறை இலக்கியங்களில் பயன்படுத்த முயற்சி செய்ய அறிவுறுத்தல். |

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| 3 | **சிற்றிலக்கியம்** | • கம்பரின் சடகோபர் அந்தாதியில் திருமாலின் திருக்காட்சியையும் திருக்கைலாயஞான உலாவில் கைலாயநாதரின் அருட்பொலிவினையும் அறிந்து கொள்ளமுடிகின்றது. •<br>சேரமான் பெருமாள் நாயனார்இ கைலாயநாதராகிய சிவன் மீது கொண்ட பற்றினைத் தெரிந்து கொள்ளமுடிகின்றது.பதினெட்டு வகையான கலம்பக உறுப்புகளை அறிந்து கொள்ளமுடிகின்றது.<br>• மீனாட்சியம்மைப் பிள்ளைத் தமிழில் மீனாட்சியின் அருட்சிறப்பை அறிந்து கொள்ளமுடிகின்றது.<br>சிவபொருமானின் சிறப்புஇ திரிகூடமலையின் வளம்இ குறவர் குறத்தியர் வாழ்வாதாரம் ஆகியவற்றைப் பற்றி அறியமுடிகின்றது. குறத்தி குறி கூறுதல்இ பொன் அணிகளின்களை அணிந்த சிங்கியை சிங்கன் கண்டு எள்ளல்இ நகையாடல் என்பன வற்றையும் அறியமுடிகின்றது.<br>• சிவபெருமானின் திருத்தலங்களைப் பற்றி அறிந்து கொள்ளமுடிகின்றது.<br>• சைவமரபுகளைப் பற்றியும் சிவதிருத்தலங்களைப் பற்றியும் அறியலாம்.<br>• குறவஞ்சி மூலம் மலைவாழ் மக்களின் வாழ்வியலைஅறியலாம்.<br>• பள்ளர்களின் வாழ்வியலை அறிந்து கொள்ள முடிகிறது. தமிழகத்தை ஆட்சி செய்த சேர, சோழ பாண்டியர்களுடைய வீரம், கொடை மற்றும் வெற்றிச்சிறப்புகளை பற்றி அறிய முடிகிறது. |
| 4 | **தமிழ்க் கணினி இணையப் பயன்பாடுகள்** | • கணிணியை அறிமுகம் செய்தல்,கணித் தமிழ் அச்சு செய்தலும், அஞ்சல் பரிமாற்றமும் செய்யும் முறைகளை அறிந்து கொள்ள இயலும். •<br>கணினித்தமிழ் இணைய இதழ்களை அறிமுகம் செய்து, அதில் வரும் படைப்புகளை வாசித்து மகிழ்வதோடு மட்டுமின்றி நாமும் படைப்புகளை முயற்சி செய்ய வழிகாட்டுகிறது.<br>• இணையப் பயன்பாட்டினை வழிதமிழ் இலக்கியத்தை வளர்க்கும் முறைகளை அறிண முடிகிறது.<br>• இணையத் தமிழ்ப் பயன்பாட்டைக் கற்றுத் தேர்ந்து கொள்ள வழிகாட்டியாக அமைகிறது<br>• தமிழ் இணையக் கல்விக் கழகமும் தமிழ்க் கல்விப் பணிகளும் அறிந்து, நாமும் அதற்கு பயன்படும் விதத்தில் எவ்வாறு செயலாற்றுவது என்பது பற்றி அறிய முடிகிறது<br>• கணினித்தமிழ் இணைய இதழ்கள். அறிந்து பதிவிறக்கம் செய்து கற்பதன் மூலம் தற்கால தமிழ் இலக்கிய ஆராய்ச்சி போக்கினை அறிந்து கொள்ள இயலும். |

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| 5 | **இக்காலத் திறனாய்வும், இலக்கிய கொள்கைகளும் பெண்ணிய ஆய்வுகளும்** | • பெண்ணியம் தோன்றிய வரலாறுஇ அதன் காலம்இபெண்ணியத்தின் நோக்கம் பற்றியும் மேலைநாட்டுப் பெண்ணியவாதிகள்இ தமிழ்நாட்டுப் பெண்ணியவாதிகள் பற்றியும் அவர்களால் பெண்களுக்கு கிடைத்த உரிமைகள் பற்றியும் அறிந்து கொள்ளமுடிகின்றது. • மூன்று வகைப் பெண்ணியங்கள் பற்றியும்பிறவகைப் பெண்ணியங்கள் பற்றியும் அறிந்து கொள்ளமுடிகின்றது. தமிழ் ஆய்வுகளில் காணப்படும் பெண்ணியத்தின் வளர்ச்சி பற்றியும் அதன் வரலாறும் பற்றியும் அறிந்து கொள்ளமுடிகின்றது.<br>• இலக்கியங்களில் பெண்களின் நிலைஇ பெண்களை மையப்படுத்தி பெண்ணியம் பேசுகின்ற சிறுகதைகளைப் பற்றி அறிந்து கொள்ளமுடிகின்றது. பாலினம் பற்றியும் பாலின வேறுபாடு பற்றியும் அறிந்து கொள்ளமுடிகின்றது.<br>• பெண்ணியத் திறனாய்வின் அவசியத்தைஉணர்ந்தனார்.<br>• பெண்ணியப் படைப்பாளர்களையும் படைப்புகளையும் அறிந்துகொண்டனர்.<br>• இலக்கியத் திறனாய்வு பற்றி அறிவுறுத்தல்<br>• திறனாய்வின் இன்றியமையாமை<br>• தமிழ்த் திறனாய்வு – மேலைத் திறனாய்வு ஒப்புமை காட்டல்<br>• படைப்புக்களைத் திறன் ஆயும் ஆற்றல் பெறுதல். |
| 6 | **பக்தி இலக்கியம்** | • சைவ வைணவ இலக்கியங்களை அறிமுகம் செய்து பக்தி இலக்கிய செழுமையை நுகர வழி வகை செய்கிறது.<br>• பா அமைப்புக்களை அறிவதோடு இசையோடு கலந்த தமிழால், விருத்தப்பாவால்<br>• (பெரும்பாலும் இலக்கியங்களைப் படைத்தளித்துள்ளார்கள் என்பதை அறிய முடிகிறது<br>• பக்திநெறி காணல், நாயகன், நாயகி பாவத்தோடு இறைவனை அணுகும் முறை பற்றி அறிதல், தாயன்போடு இறைவனை அணுகும் முறை, ஆண்டான் அடிமையாக இறைவனை எண்ணுதல்<br>• சைவசித்தாந்த தத்துவத்தின் படி இறைவனை அணுகும் முறைகளை அறிய முடிகிறது. வைணவ ஆச்சார முறைகளையும் அறிந்து அரியும், சிவனும் ஒன்று என்ற அரிய கருத்தினை அறிய முடிகிறது.<br>• பக்தியின் மொழி தமிழ் என்பதனை ஒவ்வொரு இலக்கியத்தின் வழி எடுத்துரைக்க முற்படுகிறது .சமயமும் தமிழும் பற்றிய உணர்வு பெறுதல். |

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| 7 | **தொல்காப்பியம் - சொல் அதிகாரம்** | • தமிழ்ச் சொற்கள், சொற்களின் வகைபாடு, தொடரில் சொற்கள் அமையும் விதம் குறித்து விளக்குகிறது. இதன் வழி மரபு, மரபு வழுவமைதி, மரபு வழாநிலை போன்றவைகளை நுட்பமாக அறிய முடிகிறது.<br>• தமிழ்ச்சொல் இலக்கணம் அறிதல்,சொற்களின் வகை உணர்தல்,தொடர்கள் பற்றி அறிதல் மற்றும் பழந்தமிழ்ச் சொல்லிலக்கணத்தின் சிறப்பு உணர்தல்<br>• பெயரியலில்வகைகள்,உயர்திணை, அ.ஃறிணை என்ற இரண்டு திணைகளும் ஆண்பால், பெண்பால், பலர் பால், ஒன்றன் பால் பலவின் பால் என்ற ஐம்பால்களும் தன்மை, முன்னிலை, படர்க்கை என்ற மூவிடங்களும் கூறப்பட்டுள்ளன.<br>• வினையியல் மூலமாக செய்பவன், கருவி, நிலம், செயல், காலம், செய்பொருள் என்ற ஆறையும் தருவது வினைச்சொல் என இலக்கணத்தைக் கூறுகின்றது.<br>• முன் வந்த பெயருக்கும் வினைக்கும் பின் வரும் இடைக்கும் உரிக்கும் பொது இலக்கணங்களைப் பொதுவியல் என்ற இயல் கூறுகின்றது.<br>• உரியியலில் ஓரறிவுயிர்,ஈரறிவுயிர், மூவறிவுயிர், நான்கறிவுயிர் என்ற அறிவின் அடிப்படையில் உயிர்களின் பாகுபாட்டை எடுத்துரைக்கின்றது.<br>• ஒருகுணம் தழுவிய உரிச்சொற்கள்இ பலகுணம் தழுவிய உரிச்சொற்கள் என்பனவற்றைக் குறிப்பிடுகின்றது.<br>• பெயர்ச்சொல், வினைச்சொல் பற்றி தற்போதுள்ள மாற்றங்களைக் கண்டறிய இயலும். |
| 8 | **இலக்கிய உரையாசிரியர்கள** | • உரையாசிரியர்களை அறிமுகம் செய்து, காலங்கடந்து நமது இலக்கியம் நிலைத்து இருப்பதற்கு இந்த உரையாசிரியர்களே காரணம் என்பதை அறிய முடிகிறது. •<br>காலந்தோறும் இலக்கிய உரைமரபுகளில் அடைந்துள்ள மாற்றங்களை அறிய முடிகிறது.<br>• ஒவ்வொரு படைப்பாளருக்கும் ஒரு நோக்கும், போக்கும் உள்ளது போல, ஒவ்வொரு உரையாசிரியருக்கும் ஒரு நோக்கும், போக்கும் உள்ளது என்பதனை அறிய முடிகிறது.<br>• உரையாசிரியர்களின் உரைத்திறன் உணர்ந்து, இலக்கியத்தை எவ்வாறு நுகர்ந்து கற்பது என்பதை அறிய முடிகிறது.<br>• உரையாசிரியர்கள் மிகச் சிறந்த திறனாய்வாளர்களாகத் திகழ்ந்துள்ளமையை அளிதல்<br>• தமிழ் இலக்கிய வரலாற்றில் இடம்பெறும் உரையாசிரிகள் மிகச் சிறந்த திறனாய்வாளர்களாகவும் செயற்பட்டுள்ளார்கள் என்பது உணர்த்தப்பட வேண்டும். |

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| 9 | **ஊடகத் தமிழ** | • ஊடகங்களின் தேவையையும் பயன்பாட்டையும் அறியச் செய்தல். • வட்டார வழக்குகளை அறிந்து கொள்ள முடிகிறது.<br>• செய்தி எழுதும் முறையையும் வாசிக்கும் விதத்தையும் அறிந்து கொண்டனர்.<br>• பகுதி நேரப் பணியாளராகப் பணிபுரிய வகை செய்கின்றது.<br>• கணினிஇ இணையத்தைக் கையாள உதவுகின்றது.<br>• நிகழ்ச்சிகளைத் தயாரிக்கவும் தொகுத்து வழங்கவும் பயன்படுகின்றது.<br>• இதழ்கள், ஊடகங்கள் நடத்தும் முறைகளை அறிதல் மற்றும் செய்தி கட்டமைப்பு, தலைப்பு, முதல் பத்தி, உடல் பகுதி, தலையங்கம் ஆகியனவற்றை வடிவமைக்கும் முறை பற்றி அறிய முடிகிறது.<br>• இதழியல் சட்டங்கள் மற்றும் சுதந்திரம் பற்றி அறிய வழிவகுக்கிறது.<br>• செய்தி மூலங்கள், செய்தி சேகரித்தல், செய்தி நிறுவனங்களின் வழி செய்தி பெறும் முறைகள் ஆகியவை பற்றி அறிய இயலும். |
| 10 | **மொழியியல்** | • மொழியியல் பற்றிய அறிமுகத்துடன் மொழியியல் கோட்பாடுகள் கற்பிக்கப்பட வேண்டும்.<br>• மொழியியல் ஒலியனியல் கொள்கைகள் - ஒலியன் சேர்க்கைகள் - ஒலியன் அசைகள் பற்றி அறிமுகம் செய்தல்<br>• வேர்ச்சொல் - அடிச்சொல் - ஒட்டுகள் - உருபு வகைகள் - உருபொலியனியல் மாற்றம்மற்றும் மொழியியல் கோட்பாடுகளை அறிதல்மாற்றிலக்கணக் கோட்பாடு- மாற்றிலக்கண விதிகள் மொழி இலக்கணம் உணர்தல்<br>• மொழியியல் கோட்பாட்டாளராக உருவாகுதல்மற்றும் பொருள் மாற்றம் - மயக்கம் - பொருண்மை மாற்றம். |
| 11 | **தமிழ்க் காப்பியங்கள்** | • காப்பியங்களின் வரலாற்றினை அறிந்து கொள்ள முடிகிறது.<br>• சமயக் காப்பியங்களின் சிறப்பு மற்றும் சமய பொறையுடைய காப்பியங்களின் தன்மையை உணர்ந்து கொள்ள வழிகாட்டுகிறது<br>• காப்பியங்கள் வழி புராண நிகழ்வுகளை அறிந்து கொள்ள முடிகின்றது.<br>• சமயக் காப்பியங்களின் மூலம் அறுசமயக் கோட்பாட்டையும் இறைத் தன்மையையும் அறிய முடிகின்றது.<br>• மக்களுக்கும் மன்னனுக்குமான உறவு நிலையை அறிந்து கொள்ள முடிகிறது. மக்களும், பாமரர்களும் காப்பிய தலைவர்களாக மாற்றியமைக்கப்பட்டுள்ள சமுதாய மாறுபாட்டினையும் உணரலாம்<br>• சமூகத்தில் சமய ஒற்றுமையை பல்வேறு களங்களில் வலியுறுத்தியுள்ள பாங்கினை உணர முடிகிறது<br>• காப்பிய அறங்களைப் பின் பற்றி வாழ்வை நல்வழிப்படுத்த நெறிப்படுத்துகிறது.<br>• பெண்களுக்கான உரிமையும் சுதந்திரமும் கொடுக்கப்பட்டது என்பதை அறிந்து கொள்ள முடிகிறது. |

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| 12 | **தொல்காப்பியம் - பொருளதிகாரம்** | • அகஇ புற மரபுகளை அறிய செய்கிறது. •<br>செய்யுள் இயற்றும் முறையை அறிய செய்கிறது<br>• நற்றாய், செவிலித்தாய், தலைவன், தலைவி, பாங்கன், பாங்சி கூற்றுகள் அமையும் விதத்தை அறிந்து கொள்ள வழிகாட்டுகிறது<br>• வரைவு கடாதல்,வாயில் மறுத்தல், பகற்குறி, இரவு குறி, அல்லகுறி, உடன்போக்கு மற்றும் அறத்தோடு நிற்றல் போன்ற இல்வாழ்க்கையின் நெறிமுறையை தெரிந்து கொள்ள ஆவண செய்கிறது.<br>• திணை வகைகளைப் பற்றியும்இ ஏழுவகைத்துறை பகுப்புகளை அறிந்து கொள்ள உதவுகிறது<br>• இலக்கணத்தின் அடிப்படையில் இலக்கியங்களை உருவாக்கும் படைப்பாளராக உருவாக நெறிப்படுத்துகிறது. |
| 13 | **பதினெண் கீழ்க்கணக்கு – அற இலக்கியம் -**<br>**core - IX** | • ஒரு அரசன் வினை மேற்கொள்ளும் போது தெரிந்து கொள்வகை, வலிஅறிதல், காலம் அறிதல், இடன் அறிதல், தெரிந்து தெளிதல் முதலியனவற்றைக் கருத்தில் கொண்டு செயலாற்ற வேண்டும் என்று திருக்குறள் குறிப்பிடுகின்றது. அறிவுடையார், கல்வி, கல்லாமை, கேள்வி என்பது போன்ற பல கருத்துக்கள் கூறப்படுகின்றன.<br>• காரியாசான் எழுதியுள்ள சிறுபஞ்சமூலம் கண்டங்கத்திரி, சிறுவழுதுணை, சிறுமல்லி, பெருமல்லி, நெருஞ்சி ஆகிய ஐந்தின் வேர்களைச் சேர்த்து மருந்தாக்குவது போல ஐந்து விடயங்கள் மூலம் நீதியைப் போதித்து ஒழுக்கக் கேட்டிற்கு மருந்தாகின்றது.<br>• நான்மணிக்கடிகை கல்வியறிவு இல்லாதவனுக்கு அவன் வாயிலிருந்து வரும் சொற்கள் இயமன் செய்ய தகாதவற்றைச் செய்பவர்களுக்கு அறமே இயமன் ஒரு குடும்பத்திற்கு தீய ஒழுக்கம் கொண்ட பெண் இயமனாவாள் என்ற பல கருத்துக்களை எடுத்துரைக்கின்றது.<br>• ஒரு நாட்டின் பண்பாட்டை உணர்த்துவதற்கு அந்நாட்டின் பழமொழிகள் பெரிதும் பயன்படுகின்றன. ஞாயிற்றை கை மறைப்பார் இல், திங்களை நாய் குரைத்தன்று முதலிய நானூறு பழமொழிகள் மக்களின் இலக்கணத்தைக் கூறுகின்றன.<br>• இளமைப் பருவத்தில் கற்பதும், தந்தைத் தாயைப் போற்றி வணங்குதல், பெரியோரைச் சேர்தல், சுற்றத்தாரைக் காத்தல் போன்ற அற வாழ்க்கையைப் பின்பற்ற வேண்டும் என்று திரிகடுகம் கூறுகின்றது.<br>• பெரியாரைத் துணை கொண்டுஇ சிறிய எண்ணம் கொண்ட மனிதர்களோடு சேரக்கூடாது என்ற அறத்தின் சிறப்பு விளக்கமாக எடுத்துரைக்கப்படுகின்றது.<br>• உறவுகளின் மதிப்பையும் அவர்களின் தொடர்பினால் உண்டாகும் நன்மையையும் அறிந்து செயல்பட வழிவகை செய்கின்றது. |

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| 14 | **படைப்புக்கலை (Practical)- III** | • கவிதையின் இலக்கணம் மரபுக்கவிதை மற்றும் கருத்துக்கள் தங்களை தாங்களே ஆள கற்றுக்கொண்ட புதிய மக்களாட்சி முறையான புதுக்கவிதையின் இலக்கணத்தைத் தெரிந்து கொள்ளமுடிகின்றது.<br>• சிறுகதையின் இலக்கணம்இ சிறுகதை ஆசிரியர்கள் பற்றியும் சிறுகதை எழுதுவதற்கான களம் பற்றறியும் அறியமுடிகின்றது.<br>• ஓரங்க நாடகம் பற்றியும் நாடகத்திற்கும் ஓரங்க நாடகத்திற்குமான வேறுபாடு பற்றி அறிந்து கொள்ளமுடிகின்றது.<br>• கவிதை, சிறுகதை, நாடகம் மற்றும் புதினத்தின் வழி சமகால பிரச்சனைகளை யதார்த்தமாக கவிஞர்கள் எடுத்துரைக்கும் திறத்தை இதன் வழி அறியலாம்<br>• மரபுக்கவிதை சிறுகதை மற்றும் ஓரங்க நாடகம் எழுத பயிற்சி அளிப்பதன் வழி படைப்பாளர்கள் உருப்பெற வாய்ப்பு உள்ளது<br>• உள்ளத்தில் உள்ளது இலக்கியமாக வெளிப்படும் போது படைப்பாற்றல் வெளிப்படுவதோடு மட்டுமல்லாது திறனாய்வு கண்ணோட்டமும் வளர்வதால் சிறந்த படைப்பாளர்கள் உருவாக வாய்ப்பு உள்ளது. |
| 15 | **இலக்கண உரையாசிரியர்கள** | • இலக்கண உரையாசிரியர்களை அறிமுகம் செய்கிறது. முதலில் தோன்றிய இறையனார் அகப்பொருள் உரையில் அமைந்துள்ள களவு, கற்பு நெறிகளை பற்றி அறிந்து கொள்ள முடிகிறது. வாழ்வியலுக்கு இலக்கண உரை அமைந்துள்ள விதத்தை உணர முடிகிறது. •<br>தொல்காப்பியத்தில் அமைந்துள்ள ஒவ்வொரு அதிகாரத்திற்கும் ஒவ்வொரு உரையாசிரியர்களின் உரை சிறப்பாக அமைந்துள்ளது என்ற கருத்தினால் அன்றைய காலக்கட்டத்திலே ஒப்பீட்டு நோக்கும் பாங்கு அமைந்துள்ள திறனை அறிய முடிகிறது.<br>• இலக்கண உரைகளின் திறன் உணர்ந்து மரபு வழுவாமல் படைக்கப்படும் இலக்கியங்களே சிறப்புடையது என்பதை உணர முடிகிறது.<br>• உரை மரபுகளை அறிந்து கொள்ளவதன் மூலம் அதனை அடுத்து உருவாக கூடிய உரையாசிரியர்கள் அதன் வழி பல்வேறு உரைகளை படைக்க வழி காட்டியாக அமைகிறது.<br>• இலக்கண உரைப் போக்குகளை உணர்ந்து, மூல உரைகளைக் கற்று தமிழ் இலக்கண மரபுகளை ஐயமின்றி கற்ற வழி வகுக்கிறது. |
| 16 | **சங்க இலக்கியம்** | • சங்ககால இலக்கியங்களின் வழி திணை இலக்கிய கோட்பாடுகளை அறிய முடிகிறது. • முதல் பொருள், கருப்பொருள் மற்றும் உரிப்பொருள் இலக்கியங்களில் அமைந்துள்ள விதம் மற்றும் இலக்கியங்களின் சிறப்பை உணர்த்த முடிகிறது.<br>• சங்ககால மக்களின் வாழ்க்கை நெறிமுறைகளை பற்றி தெளிவுபடுத்த முடிகிறது.<br>• அக்காலப் போர் முறையினையும் மன்னர்களது சிறப்புகளையும் தெரிந்துகொள்ள முடிகிறது<br>• கூற்றுகள் வழி மக்களது உளநிலையை அறிந்து கொள்ள வழி வகுக்கிறது.<br>• வரைவு கடாதல், அறத்தோடு நிற்றல், உடன்போக்கு ஆகிய இது போன்ற வாழ்க்கை நடத்திய பாங்கினை அறிந்தனர். பாடாண்திணை, பொருண்மொழிக்காஞ்சித்துறை மற்றும் செவியறிவுறூ பாடல்கள் வழி மக்களின் வாழ்வியல் விழுமியங்களை அறிந்து கொள்ள முடியும். |

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| 17 | **தொல்காப்பியம் - பொருளதிகாரம்** | • யாப்பிலக்கணம் அறிந்து கொள்ள வழிகாட்டுகிறது. பாவினங்கள் உருவாக வழிகாட்டுகிறது. செய்யுள் வகைகளுள் தளையை உரைக்காத தன்மையை அறிய முடிகிறது. • அணி இலக்கணம் அறிதல் கொள்ள முடிகிறது. உவமை அணி அனைத்து அணிகளுக்கும் அடிப்படை என்பதை உணர முடிகிறது.<br>• மரபிலக்கணம் அறிந்து, அந்த மரபு மாறாமல் இன்று வரை இலக்கியங்கள் படைக்கப்படும் விதம் பற்றியும், அனைத்து இலக்கண, இலக்கிய படைப்பாளர்களுக்கும் இந்நூல் வழி காட்டியாக அமைந்துள்ளது என்பதையும் அறிய முடிகிறது.<br>• பண்டைத் தமிழரின் யாப்பு, அணி, மரபு. நாட்டிய இலக்கணம் ஆகியவற்றின் பெருமை உணர ஆவண செய்கிறது. |
| 18 | **நாட்டுப்புற இலக்கியம்** | • நாட்டுப்புறக் கூறுகள் இலக்கியங்களில் விரவி கிடப்பதை அறிதல்.<br>• நாட்டுப்புறப் பாடல்களின் தொன்மையினையும் சிறப்பினையும் அறிதல்.<br>• கூத்து வகையினையும் கூத்தாடும் முறையினையும் அறிந்து கொண்டனர்.<br>• பழங்கால மகளிர் விளையாட்டுகளையும் பழக்க வழக்கங்களையும் அறிந்து கொண்டனர். வாழ்விற்குத் தேவையான நற்கருத்துக்களும் ஒழுக்கங்களும் இதன் மூலம் கிடைக்கின்றது.<br>• தன் மதிப்புகளைப் பெறவும் தன்னம்பிக்கை உடையவராக மாற்ற பயன்படுகின்றது. வாழ்க்கையில் வரும் பிரச்சனைகளை எதிர்கொள்வதற்கான நெறிமுறைகளை எளிமையாக எடுத்துரைக்கிறது. |

## B.A TAMIL

## PROGRAMME SPECIFIC OUTCOMES

**PSO1: தமிழகஅரசால் நடத்தப்படும் பல்வேறுபோட்டித் தேர்வுகள் இளங்கலைதமிழ் பாடத்திட்டத்தை அடியொற்றியே அமைக்கப்பட்டுள்ளது. (TNPSE group II , IV, VAO, Police Selection) இதில் தேர்ச்சிபெற இப்பாடத்திட்டம் பெரிதும் துணைநிற்கும்.**

**PSO2: கவிதை,கட்டுரைமற்றும் சிறுகதைஎழுததொடர்ந்துபயிற்சஅளிப்பதன் மூலம் மாவட்டமற்றும் மாநிலஅளவில் நடைபெறும் போட்டிகளில் தொடர்ந்துசாதனை.**

**PSO3: சிறந்தஆசிரியர்பயிற்சியைக் கற்கஅடிப்படையானகல்வியாகும்.**

## COURSE OUTCOMES

| S.NO | NAME OF THE SUBJECT | DESCRIPTION |
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| 1 | **இக்கால இலக்கியம் - part 1** | • இக்கால இலக்கியங்களை அறிமுகம் செய்தல், இக்கால இலக்கிய வகைகளை அறிதல். சிறுகதைகளைப் படிப்பதன் மூலம் வாசிப்பு திறனை நன்கு வளர்க்க முடிகிறது. • கவிதை நாடகம் சிறுகதை போன்றவற்றை எழுதும் முறையை அறிந்து கொள்கின்றனர்.<br>• மொழிப் பெயர்க்கும் முறையினை அறிந்து கொள்கின்றனர். •<br>இன்றைய உரைநடை இலக்கியப் போக்குகளை உணர முடிகிறது. •<br>சொற்களுக்கு பொருள் காணும் முறையை அறிந்து கொள்கின்றனர்.<br>• இலக்கண முறைப்படி பிழையில்லாமல் பேசவும் எழுதவும் பயன்படுகிறது. படைப்புக் கலையில் பயிற்சி பெற வழிகாட்டுகிறது. |
| 2 | **இக்கால இலக்கியம் - Core -I** | • இக்கால இலக்கியங்களை அறிமுகம் செய்தல், இக்கால இலக்கிய வகைகளை அறிதல். •<br>சிறுகதைகளைப் படிப்பதன் மூலம் வாசிப்பு திறனை நன்கு வளர்க்க முடிகிறது.<br>• கவிதை நாடகம் சிறுகதை போன்றவற்றை எழுதும் முறையை அறிந்து கொள்கின்றனர். •<br>மொழிப் பெயர்க்கும் முறையினை அறிந்து கொள்கின்றனர். இன்றைய உரைநடை இலக்கியப் போக்குகளை உணர முடிகிறது.<br>• சொற்களுக்கு பொருள் காணும் முறையை அறிந்து கொள்கின்றனர்.<br>• இலக்கண முறைப்படி பிழையில்லாமல் பேசவும் எழுதவும் பயன்படுகிறது. படைப்புக் கலையில் பயிற்சி பெற வழிகாட்டுகிறது. |
| 3 | **நன்னூல் - எழுத்ததிகாரம்** | •பொதுப்பாயிரத்தில் நூலினது வரலாறு, பத்துக்குற்றம், பத்துஅழகு, நூலைக் கற்பிக்கும் ஆசிரியனது வரலாறு, நூலைப் பயிலும் முறை, சிறப்புப் பாயிரத்தில் சிறப்பு, பாயிரத்தின் இன்றியாமை பற்றியும் எடுத்துரைக்கின்றது. • எழுத்திலக்கணத்தில் எழுத்துக்கள் பிறக்கும் இடம், சார்பெழுத்துக்கள் பற்றியும், வினாவெழுத்து, இனவெழுத்து ஆகியவை பற்றிக் கூறப்படுகின்றது.<br>• பதவியலில் பகாபதம் மற்றும் பகுபத உறுப்புகள் பற்றியும் உயிரீற்றுப் புணரியலில் புணர்ச்சி பற்றியும் செய்யுள் விகாரம் பற்றியும் எடுத்துரைக்கின்றது.<br>• மெய்யீற்றுப் புணரியலில் மெய்யீற்று பொதுவிதி, ணகர, னகர ஈறு கெடுதல் பற்றியும் மகரத்திற்குச் சிறப்புவிதி, வகர ஏற்று சுட்டுப் பெயர் ஆகியவற்றைப் பற்றி குறிப்பிடுகின்றது.<br>• உருபுபுணரியலின் சிறப்புவிதி, எட்டு உருபுகளும் சாரும் இடம், வகர, ஈற்றுச் சுட்டுப் பெயர்க்கும் சிறப்புவிதி, அது சாரியைக்குச் சிறப்புவிதி ஆகியவற்றைப் பற்றி எடுத்துரைக்கின்றது.<br>• இலக்கணப் பிழையின்றி பேசுவதற்கு மற்றும் எழுதுவதற்கு எழுத்துக்கள் பயன்பாடாக அமைகின்றன. எழுத்திலகணத்தின் இன்றைய வளர்ச்சி மற்றும் மாற்றங்களை அறிய முடிகிறது. |

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| 4 | **தமிழ் இலக்கிய வரலாறு** | • சங்க காலத்தில் அகம், புறம் சார்ந்த செய்திகளை கூறும் நூல்கள் பற்றி அறிந்து கொள்ளமுடிகிறது.<br>• சைவம், வைணவம்,சமணம், பௌத்த சமயங்களைப் பரப்ப இயற்றப்பட்ட பாடல்கள் மூலம் பக்தியுணர்வினை அறிந்து கொள்ள முடிகிறது.<br>• அந்தம் முதலாக தொடுக்கும் அந்தாதி, போர்க் கள நிகழ்வுகள் பரணியில், 18 உறுப்புகளைக் கொண்ட கலம்பகம், பத்து பருவங்களைப் பற்றி கூறும் பிள்ளைத்தமிழ், புறம் சார்ந்த தூது, மடல், சதகம், குறவஞ்சி, உலா பற்றி அறிந்துக் கொள்ள முடிகிறது.<br>• வாழ்க்கை நிகழ்வுகள், ஒரு பாத்திரம், ஒருவரின் மனவுணர்ச்சி, அனுபவம் ஆகியவற்றை மையமாகக் கொண்டு படைக்கப்படும் சிறுகதை, நாடகம் பற்றிய வளர்ச்சி நிலைகளை அறிந்து கொள்ள முடிகின்றது. இருபதாம் நூற்றாண்டு இலக்கியங்களை அறிந்து கொள்ள இயலும்.<br>• வரலாற்றை எழுதுவதற்கும் மக்களின் வாழ்க்கை முறையினை உணர்த்துவதற்கும் முடிகிறது. |
| 5 | **விழுமியக் கல்வி** | • வாழ்விற்குத் தேவையான நற்கருத்துக்களும் ஒழுக்கங்களும் இதன் மூலம் கிடைக்கின்றது.<br>• தன் மதிப்புகளைப் பெறவும் தன்னம்பிக்கை உடையவராக மாற்ற பயன்படுகின்றது.<br>• வாழ்க்கையில் வரும் பிரச்சனைகளை எதிர்கொள்ள பயன்படுகிறது.<br>• கல்வியின் வழி தனிமனித முன்னேற்றம் பெற இயலும். மனித மதிப்புகள், பெண்ணிய உரிமைகள் ஆகியனவற்றை அறியலாம்<br>• ஒழுக்கமே தனிமனித முன்னேற்றத்திற்கு வழி. அதன் வழி வீடும், நாடும் உயரும். ஆகவே எத்தருணத்திலும் அது அவசியம். |
| 6 | **நன்னூல் சொல்லதிகாரம்** | • பெயரியலில் வகைகள், உயர்திணை, அ.ஃறிணை என்ற இரண்டு திணைகளும் ஆண்பால், பெண்பால், பலர் பால், ஒன்றன் பால் பலவின் பால் என்ற ஐம்பால்களும் தன்மை, முன்னிலை, படர்க்கை என்ற மூவிடங்களும் கூறப்பட்டுள்ளன.<br>• வினையியல் மூலமாக செய்பவன், கருவி, நிலம், செயல், காலம், செய்பொருள் என்ற ஆறையும் தருவது வினைச்சொல் என இலக்கணத்தைக் கூறுகின்றது.<br>• முன் வந்த பெயருக்கும் வினைக்கும் பின் வரும் இடைக்கும் உரிக்கும் பொது இலக்கணங்களைப் பொதுவியல் என்ற இயல் கூறுகின்றது.<br>• உரியியலில் ஓரறிவுயிர், ஈரறிவுயிர், மூவறிவுயிர், நான்கறிவுயிர் என்ற அறிவின் அடிப்படையில் உயிர்களின் பாகுபாட்டை எடுத்துரைக்கின்றது.<br>• ஒருகுணம் தழுவிய உரிச்சொற்கள்இ பலகுணம் தழுவிய உரிச்சொற்கள் என்பனவற்றைக் குறிப்பிடுகின்றது.<br>• பெயர்ச்சொல், வினைச்சொல் பற்றி தற்போதுள்ள மாற்றங்களைக் கண்டறிய இயலும். |

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| 7 | **இணையதமிழ் இலக்கியம்** | • பல வலைய தளங்களை தமக்குள்ளே கொண்டுள்ள தேடுபொறியாக இணையதளம் விளங்குகின்றது. புழழபடநஇ லுயாழழ என்ற இணையதளத்தைப் பற்றியும் அறிந்து கொள்ளமுடிகின்றது.<br>• தமிழ் வழியாக கணினியை பயன்படுத்தும் திறனை அதிகரித்துக் கொள்ளமுடிகின்றது.<br>• மின்னஞ்சல் தொடங்குவது பற்றியும் மின்னஞ்சல் மூலம் புதிய தகவல், நிகழ்வுகளை உடனுக்குடன் மற்றவர்களுக்கு பரிமாறிக் கொள்ள கற்றுக் கொள்கின்றனர்.<br>• மின்இதழ்கள், மின்நூல்கள் போன்றவற்றில் தமிழ் இதழ்கள், நூல்கள் பற்றிய தகவல்களைப் புரிந்துகொள்கின்றனர்.<br>• மின்கீற்று, முத்துக்கமலம், அகரமுதல, திண்ணை, வல்லமை போன்ற மின்இதழ்களை அறிந்து கொள்கின்றனர்.<br>• மின்இதழ்களில் மாணவர்கள் தங்களுடைய கவிதைகள், படைப்புகள் வெளியிடுவதற்கான பயிற்சியை கற்கின்றனர்.<br>• இணையத்தில் தமிழ் நூலகம் பற்றியும் அதில் உள்ள நூல்களைப் பற்றி படித்து செய்திகளை தெரிந்து கொள்ளவும் கற்றுக் கொண்டனர். |
| 8 | **இலக்கியத் திறனாய்வு** | • இலக்கியத்திற்கும், இலக்கியத்திறனாய்வுக் கோட்பாடுகளுக்கும் அறிஞர்களின் விளக்கத்தைப் பற்றி தெரிந்து கொள்ளமுடிகின்றது.<br>• இலக்கியக் கொள்கைகளான அகவெழுச்சிக் கொள்கைஇ அவயவிக் கொள்கை, அழகியல் கொள்கை பற்றியும், இலக்கியக் கொள்கையினால் ஏற்படக்கூடிய நன்மைகள் பற்றியும் அறிந்து கொள்ளமுடிகின்றது.<br>• சங்க இலக்கியத்தின் உள்ளடக்க கொள்கையைப் பற்றியும், தொல்காப்பியரின் திணைக் கோட்பாடுகளையும் கற்றுக் கொள்கின்றனர்.<br>• உள்ளுறை, உவமம், இறைச்சி, கற்பனை வகைகள் பற்றியும் மரபைப் பின்பற்ற வலியுறுத்துவதைப் பற்றியும் அறிந்துகொள்கின்றனர்.<br>• காப்பிய வளர்ச்சி பற்றியும் ஐம்பெருங்காப்பியம், ஐஞ்சிறுகாப்பியத்தின் கையாளப்பட்டுள்ள இலக்கியக் கொள்கைகள் பற்றியும் தெரிந்து கொள்கின்றனர்.<br>• நீதிநூல்கள், பதிணென் கீழ்கணக்கு நூல்களின் வகைகள் பற்றியும், இலக்கியக் கொள்கைகள் பற்றியும் அறிந்துகொண்டனர்.<br>• பக்தி இலக்கியத்தின் வரையறைகள், வகைகள் பற்றியும் தொல்காப்பியம், சங்க இலக்கியத்தில் பக்தி நெறிகள் பற்றியும் அறிந்து கொள்ளமுடிகின்றது.<br>• நாடகத்தின் கதைப்பின்னல்கள், வகைகள், பாத்திரப்படைப்பு, நாடகக் கூறுகள், உரைநடையின் வகைகள், கொள்கைகள் பற்றிய விவரங்களை கற்றுக்கொண்டனர். |

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| 9 | **சுற்றுச் சூழல் கல்வி** | • சுற்றுச்சூழலை நேசிக்கவும் , மாசுப்படுத்தாது இருக்கவும் , இயற்கை வளங்களை பேணிக்காக்கவும் விழிப்புணர்வைத் தோற்றுவித்தல்.<br>• சுற்றுச்சூழல் பற்றிய அறிமுகம் பெறுதல், நீர், நிலம் மற்றும் காற்று மாசுபாடுகளைத் தடுக்கும் வழி முறைகளை அறிந்து அதனை பேணி பாதுகாக்க வேண்டும்.<br>• சுற்றுச்சூழல் பாதுகாப்பு முறைகளை அறிதல், அதன் வழி உலக வெப்பமாதலை தடுக்கும் வழி வகைகளை அறியலாம். • சுற்றுச்சூழல் மாசு ஏற்படுவதன் விளைவுகளை உணர்தல். • சுற்றுச்சூழல் பற்றிய விழிப்புணர்வு பெறுதல். |
| 10 | **காப்பிய இலக்கியம்** | • கோவலன் - கண்ணகியின் திருமணம் மற்றும் இல்லற வாழ்க்கைப் பற்றியும் மணிமேகலா தெய்வத்தின் தன்மையும் பற்றி எடுத்துரைக்கின்றது. •<br>இராசமாபுரத்தின் சிறப்பும், சடங்குமுறைகள், சீவகனின் செங்கோலாட்சி மற்றும் கொடைத் திறமையும் பற்றி எடுத்துரைக்கின்றது.<br>• காரைக்கால் அம்மையாரை சிவபெருமான் அம்மையே என்று அழைத்த அழகையும், காரைக்கால் அம்மையர் சிவபெருமானின் மீது கொண்ட பக்தி நெறியினையும் பற்றி உணர்த்துகின்றது.<br>• அனுமான் இலங்கையில் நடந்த நிகழ்வும், சீதையின் சிறப்பை அனுமான் இராமனிடம் கூறும் விதமும் கூறப்படுகின்றது.<br>• விலாதத்துக் காண்டத்தில் மோயிசனின் பிறப்புஇ பிணி தீர்க்கும் சுனை நீரின் அழகுஇ இயற்கை வருணனை, நபிகள் நாயகத்தின் பொன்மொழிகள் பற்றி தொகுத்துக் கூறப்படுகின்றது.<br>• காப்பியங்களின் மூலம் உறவுகள் மற்றும் ஒழுக்க நெறிகளைப் பற்றி அறிந்து கொள்ளப்படுகின்றது.<br>• சமூகப் பழக்கவழக்கங்கள், கொடைத்திறம், ஆட்சி முறை ஆகியவைகளைப் பற்றி அறிய முடிகின்றது.<br>• இஸ்லாம் மதத்தின் பண்புகள், இயற்கை அழகை ரசிக்கும் திறன், பொன்மொழிகள் வாழ்விற்கு ஏற்ற வகையில் கடைப்பிடிக்க உதவுகின்றது. |
| 11 | **அகப்பொருள் இலக்கணம் நம்பியகப்பொருள் முழுவதும்** | • பொருள் இலக்கணம் பற்றிய அறிமுகம் பெறுதல்.<br>• பொருள் இலக்கணம் வகைகளை அறிதல்<br>• அகப்பொருள் இலக்கணக் கோட்டுபாடுகள் உணர்தல்<br>• பண்டைய வாழ்வியல் நெறிகளை உணர்தல்<br>• வரைவிற்குரிய நிகழ்ச்சிகள், அறத்தொடு நிற்றல்இ வரைவு மலிதலின் வகை, அவற்றின் விரி பற்றிய செய்திகளை அறிய முடிகின்றது.<br>• கற்பு வாழ்வின் இலக்கணமாக மகிழ்ச்சியும் தலைவன் பிரிவால் தலைவி ஊடுதலும் தலைவன் அவளது ஊடலை தணிவித்தலும் பற்றிய செய்திகளால் பண்டைய கால இல்லற வாழ்க்கை முறை அறியப்படுகின்றது.<br>• பண்டைய கால இலக்கணங்களை அறிந்து கொள்ளும் பொழுது தற்போதுள்ள நிலைகளை ஒப்பிட்டுப் பார்க்கும் மனோபாவம் வளர்கின்றுத. |

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| 12 | **தமிழக வரலாறும் பண்பாடும்** | • பல்லவர்கள் சைவத் திருமுறைகளிலும் சாசனங்களிலும் காடவர்கள் என்று அழைக்கப்பட்டனர் என்பதையும் சாசனங்கள் மூலம் அவர்களுடைய அரசியல் வரலாற்றையும் அறியமுடிகின்றது.<br>• நாயக்கர் கால வரலாறு, மராட்டியர் ஆட்சி காலம், ஐரோப்பியர்களின் ஆட்சி பற்றி தெரிந்து கொள்ளமுடிகின்றது.<br>• கல்வெட்டுக்கள் மூலம் அரசியல், வாணிக செய்திகளை அறியலாம். கோவில்கள் மூலம் கலைத் திறன் பற்றி அறிந்து கொள்ளமுடிகின்றது.<br>• வரலாற்றை எழுதுவதற்கு துணை நின்ற சான்றுகள், சின்னங்கள் பல தொல்பழங்காலத்து மக்களின் வாழ்க்கை முறையினை உணர்த்துவதை அறியமுடிகின்றது. • இருபதாம் நூற்றாண்டு விடுதலை இயக்கத்தில் தமிழகம் பெரும் திருப்பத்தைக் கண்டது. நேருக்கு நேர் முதன் முதலிலேயே தெரிந்து போரிட்டனர் என்பதை 1801 விடுதலைப் போராட்டத்தின் மூலம் அறியமுடிகின்றது.<br>• விடுதலை காட்டுத்தீயைப் பரவி வெற்றி பெற்ற வரலாறுஇ அதன் பின்னர் தமிழகத்தில் ஏற்பட்ட மாற்றத்தை தெரிந்து கொள்ள முடிகின்றது. |
| 13 | **நாட்டுப்புறவியல் - (Elective - 1)** | • நாட்டுப்புறவியலின் தோற்றம், வளர்ச்சியினைப் பற்றியும் மக்களின் உணர்வுநிலை, வாழ்க்கை முறையினைப் பற்றியும் எடுத்துரைக்கின்றது. •<br>நாட்டுப்புறவியலில் பாடல்களின் வகைகளும், பாடல்களால் மக்களின் நிலையையும் பற்றி அறிந்துணர முடிகிறது.<br>• நாட்டுப்புறவியலில் பழமொழிகள், விடுகதைகள், நாட்டுப்புறக்கதைகள், கதைப்பாடல்கள் ஆகியவற்றைப் பற்றி கூறப்படுகின்றது.<br>• நாட்டுப்புறக் கலைகள் பற்றியும் மருத்துவம்இ சடங்குமுறைகள், தெய்வவழிபாடு ஆகியவற்றைப் பற்றியும் எடுத்துரைக்கின்றது.<br>• நாட்டுப்புறவியலில் மேம்பாட்டின் வழி சமுதாய முன்னேற்றம் அவற்றின் தமிழக மக்கள் முன்னேற்றத்திற்கான முறைகளையும் பற்றிக் குறிப்பிடுகின்றது.<br>• நாட்டுப்புறவியலில் வீரத்தினைப் பற்றியும் மக்களின் மனநிலை, வாழ்வு நிலையைப் பற்றியும் அறிந்து கொள்ளப்படுகின்றது.<br>• நாட்டுப்புறவியலில் பாடல்களின் வகைகள் தொழிற்பாடல்கள், கும்மிப்பாடல், நடவுப்பாடல் ஆகியவற்றைப் பற்றி தெரிந்து கொள்ளப்படுகின்றது.<br>• நாட்டுப்புறக் கலைகள் கும்மி, தேவராட்டம், கரகாட்டம், காவடி போன்ற கலைகளைப் பற்றியும் மருத்துவ முறைகளைப் பற்றியும் அறிந்து கொள்ளப்படுகின்றது.<br>• நாட்டுப்புறவியலில் கோட்பாட்டின் வகைகள், அவற்றின் நடை, பண்பாடு ஆகியவற்றைப் பற்றி தெரிந்து கொள்ளப்படுகின்றது.<br>• நாட்டுப்புறத்தில் மக்களின் ஒற்றுமையும் சமூக பழக்க வழக்கங்கள், வாழ்வுநெறி பற்றி அறிந்து கொள்ளப்படுகின்றது.<br>• கலைகளை வளர்த்துக் கொள்ளும் திறன்களைப் பற்றி கடைப்பிடிக்க முடிகின்றது.<br>• நாட்டுப்புறவியலில் பண்பாடு, நாகரிகம் ஆகியவற்றைப் பற்றி அறியமுடிகின்றது. |

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| 14 | **பணிவாய்ப்புத் தமிழ் - (Non major Elective - Course - 1)** | • தமிழ் மொழியின் அடிப்பட இலக்கணம் அறிதல்<br>• சொற்களின் இயல்பு மற்றும் வகைகளை அறிதல், தமிழ்ச்சொற்களின் வகைகள் மற்றும் செய்யுள் ஈட்டச்சொற்களின் வகைகள் ஆகியனவற்றை அறிய இயலும். ஒவ்வொரு சொல்லிற்கும் உள்ள வேர்ச்சொல் மற்றும் அடிச்சொற்களை அறிய இயலும்<br>• பயன்பாட்டுத் தமிழ் அறிந்து தேர்தல், மற்றும் ஓரெழுத்து ஒரு மொழி ஒரு பொருள் பன்மொழி மற்றும் தமிழ்த்தொடர் வகைகள் ஆகியவை பற்றி அறியலாம்<br>• பேச்சுமொழி , எழுத்துமொழி , இலக்கிய மொழி அறிவு பெறுதல்<br>• புகழ் பெற்ற இலக்கியம் சார்ந்த தரவுகள் - தொல்காப்பியம்<br>• சங்க இலக்கியம் - அற இலக்கியம் - தமிழ்க்காப்பியம் - பக்தி<br>• இலக்கியம் - சிற்றிலக்கியம் - இக்கால இலக்கியம் ஆகியவை பற்றிய குறிப்புகளை அறிந்து கொள்ள உதவுகிறது. |
| 15 | **மொழிப்பெயர்ப்பியல்** | • ஒரு மொழியில் உள்ள படைப்புக்களை அதன் சிறப்பு கருதி அதனை பயின்ற மொழிபெயர்ப்பாளர் தனக்கு தெரிந்த தாய் மொழியிலோ அல்லது பிற மொழியிலோ எந்தவித குற்றமும் இல்லாமல் மொழிபெயர்ப்பதைப் பற்றி மாணவியர்க்கு விளக்குகின்றது. • ஒரு மொழிபெயர்ப்பாளன் இரண்டு மொழிகளைத் தெரிந்து வைத்திருத்தல் வேண்டும். மொழியினுடைய இலக்கணங்கள் மொழி மாற்றம் செய்யும் பொழுது அதன் கருத்து மாறாமை ஆகியவற்றை தெளிவாகப் புரிந்திருத்தல் வேண்டும் ஆகிய கருத்துக்கள் எடுத்துரைக்கப்படுகின்றன.<br>• மொழிபெயர்ப்பு வகைகளில் இடம் பெறும் விதத்தை எடுத்துரைக்கின்றன. கருத்தும் மாறாமல் இலக்கியத்தின் அழகும் மாறாமல் மொழிபெயர்த்தலே முழுநிலை மொழிபெயர்ப்பாகக் கருதப்படுகின்றது.<br>• மொழிபெயர்ப்பித்தலைச் செய்யும் பொழுது மொழிபெயர்ப்பில் ஏற்படும் சிக்கல்களையும் மொழிபெயர்ப்பு முறைகளையும் தெளிவாக தெரிந்து கொண்டு செய்யும் பொழுது மொழிபெயர்ப்பு வெற்றியடையும்..<br>• கவிதையில் ஒன்றைக் கொடுத்து மொழிபெயர்க்கச் சொல்லும் பொழுது மொழிபெயர்த்தலுக்கான திறன் வளர்கின்றது |

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| 16 | **புறப்பொருள் வெண்பாமாலை (முழுவதும்)- (Core- v)** | • பண்டைய காலப்போர் முறைகளையும் வீரர்களின் செயல்களையும் அறியும் விதமாக புறப்பொருள் வெண்பாமாலை எழுதப்பட்டுள்ளது. வெட்சி முதலாக பாடாண் திணை ஈறாகப் படலங்களாகப் பிரிக்கப்பட்டு திணை, அதில் துறையின் வகைகள் கூறப்பட்டுள்ளன. •<br>அகப்பொருள் ஏழு வகையுண்டு. அவை கைக்கிளை, ஐந்திணை (முல்லை,குறிஞ்சி,மருதம்,நெய்தல்,பாலை) பெருந்திணை என்பவற்றின் இலக்கணங்களை அறியமுடிகின்றது.<br>• பண்டைய காலப்போர் முறைகளையும் வீரர்களின் செயல்களையும் அறியும் விதமாக புறப்பொருள் வெண்பாமாலை எழுதப்பட்டுள்ளது. வெட்சி முதலாக பாடாண் திணை ஈறாகப் படலங்களாகப் பிரிக்கப்பட்டு திணை, அதில் துறையின் வகைகள் கூறப்பட்டுள்ளன.<br>• அகப்பொருள் ஏழு வகையுண்டு. அவை கைக்கிளை, ஐந்திணை (முல்லை,குறிஞ்சி,மருதம்,நெய்தல்,பாலை) பெருந்திணை என்பவற்றின் இலக்கணங்களை அறியமுடிகின்றது.<br>• பண்டைய காலப் போர் முறைகளையும் வீரர்களின் செயல்களையும் அறியமுடிகின்றது.<br>• முதற்பொருள், கருப்பொருள், உரிப்பொருள் பற்றி அறியமுடிகின்றது.<br>• வரைவிற்குரிய நிகழ்ச்சிகள், அறத்தொடு நிற்றல்இ வரைவு மலிதலின் வகை, அவற்றின் விரி பற்றிய செய்திகளை அறிய முடிகின்றது.<br>• கற்பு வாழ்வின் இலக்கணமாக மகிழ்ச்சியும் தலைவன் பிரிவால் தலைவி ஊடுதலும் தலைவன் அவளது ஊடலை தணிவித்தலும் பற்றிய செய்திகளால் பண்டைய கால இல்லற வாழ்க்கை முறை அறியப்படுகின்றது.<br>• பண்டைய கால இலக்கணங்களை அறிந்து கொள்ளும் பொழுது தற்போதுள்ள நிலைகளை ஒப்பிட்டுப் பார்க்கும் மனோபாவம் வளர்கின்றது. |

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| 17 | **புறப்பொருள் வெண்பாமாலை (முழுவதும்)- (Core- v)** | • பண்டைய காலப்போர் முறைகளையும் வீரர்களின் செயல்களையும் அறியும் விதமாக புறப்பொருள் வெண்பாமாலை எழுதப்பட்டுள்ளது. வெட்சி முதலாக பாடாண் திணை ஈறாகப் படலங்களாகப் பிரிக்கப்பட்டு திணை, அதில் துறையின் வகைகள் கூறப்பட்டுள்ளன. அகப்பொருள் ஏழு வகையுண்டு. அவை கைக்கிளை, ஐந்திணை (முல்லை,குறிஞ்சி,மருதம்,நெய்தல்,பாலை) பெருந்திணை என்பவற்றின் இலக்கணங்களை அறியமுடிகின்றது.<br>• பண்டைய காலப் போர் முறைகளையும் வீரர்களின் செயல்களையும் அறியமுடிகின்றது.<br>• முதற்பொருள், கருப்பொருள், உரிப்பொருள் பற்றி அறியமுடிகின்றது.<br>• வரைவிற்குரிய நிகழ்ச்சிகள், அறத்தொடு நிற்றல்இ வரைவு மலிதலின் வகை, அவற்றின் விரி பற்றிய செய்திகளை அறிய முடிகின்றது.<br>• கற்பு வாழ்வின் இலக்கணமாக மகிழ்ச்சியும் தலைவன் பிரிவால் தலைவி ஊடுதலும் தலைவன் அவளது ஊடலை தணிவித்தலும் பற்றிய செய்திகளால் பண்டைய கால இல்லற வாழ்க்கை முறை அறியப்படுகின்றது.<br>• பண்டைய கால இலக்கணங்களை அறிந்து கொள்ளும் பொழுது தற்போதுள்ள நிலைகளை ஒப்பிட்டுப் பார்க்கும் மனோபாவம் வளர்கின்றது. |
| 18 | **படைப்பிலக்கியம் - (Core Practical-II)** | • படைப்பிலக்கியம் குறித்த அறிமுகம் பெறுதல் மரபுக்கவிதை எழுதச் செய்தல் - ஈற்றடி தந்து எழுதச்செய்தல் (அ) முதல் சொல் தந்து எழுதச் செய்தல் ஆகியவற்றை அறியலாம்.<br>• படைப்பிலக்கிய வகைகளை அறிதல புதுக்கவிதை - குறுங்கவிதை - துணுக்குப்பா எழுதச் செய்தல் - தலைப்பு தந்து எழுதச் செய்தல் - உணர்வுகள் - சூழல்கள் சொல்லப்பட்டு எழுதச் செய்தல் ஆகியவற்றை அறியலாம்.<br>• படைப்பு உத்திகளை அறிதல் தலைப்பு தந்து மூன்று பக்க அளவில் சிறுகதை எழுதச்செய்தல் - மையக்கரு தந்து எழுத வைத்தல் ஆகியவற்றை அறியலாம்.<br>• படைப்பாளராக உருவாகுதல், தலைப்பு தந்து ஓரங்க நாடகம் எழுதச் செய்தல் ஆகியவற்றை அறியலாம்.<br>• சிறுவர் இலக்கியம் படைத்தல் - குழந்தை பாடும் வகையில் எளிய பாடல்கள் எழுதச்சொல்லல், குழந்தைகளுக்கான கதைகள் எழுதுதல், உங்களுக்குத் தெரியுமா ?<br>• சிறு விளக்க உரைகள் - துணுக்குகள் - நகைச்சுவைக் கட்டுரை எழுதுதல் ஆகியவற்றை அறியலாம். |
| 19 | **திராவிட மொழிகளின் ஒப்பிலக்கணம் - (Allied Paper -II)** | • திராவிட மொழிகள் பற்றிய அறிமுகம் பெறுதல<br>• திராவிட மொழிகளை ஒப்பிட்டு நோக்குதல்<br>• திராவிட மொழிகளின் தனித்தன்மைகளை அறிதல்<br>• திராவிட மொழிகளில் தமிழ் பெறும் இடத்தை அறிதல்<br>• உலகமொழிக்குடும்பங்கள் மற்றும் திராவிட மொழிக்குடும்பங்கள் மற்றும் அவற்றின் தனித்தன்மைகள் ஆகியனவற்றை அறியலாம். |

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| 20 | **இதழியல் - (Elective- II)** | • இதழியல் பற்றி அறிமுகம் செய்தல்<br>• இதழ்கள் நடத்தும் முறைகளை அறிதல் மற்றும் செய்தி கட்டமைப்பு, தலைப்பு, முதல் பத்தி, உடல் பகுதி, தலையங்கம் ஆகியனவற்றை வடிவமைக்கும் முறை பற்றி அறிய முடிகிறது.<br>• .இதழியல் சட்டங்கள் மற்றும் சுதந்திரம் பற்றி அறிதல்<br>• இதழியலாளராக உருவாகும் தகுதியைப் பெறுதல்<br>• இந்திய விடுதலைக்கு இதழ்களின் பங்கு மற்றும் இன்றைய தமிழ் இதழ்களின் நோக்கும் போக்கும் பற்றி அறிய இயலும்<br>• செய்தி மூலங்கள், செய்தி சேகரித்தல், செய்தி நிறுவனங்களின் வழி செய்தி பெறும் முறைகள் ஆகியவை பற்றி அறிய இயலும். |
| 21 | **பணிவாய்ப்புத்தமிழ் - (Non major Elective- Course - II)** | • தமிழ்மொழி மற்றும் இலக்கியங்கள் வாயிலாகத் தமிழரின் தொன்மையான நாகரிகத்தை அறிய வழிவகை செய்கிறது. • தமிழ் இலக்கியம் முழுமையும் மேலோட்டமாக அறிய முற்பட உறுதுணையாக உள்ளது.<br>• இலக்கண, இலக்கிய வகைகளை அறிவதோடு மட்டுமின்றி அதனை பற்றி செம்மையாக அறிந்து கொள்ள உதவுகிறது<br>• பணிவாய்ப்பிற்குத் தம்மைத் தகுதிப்படுத்திக் கொள்ளுவதோடு பயன்பாட்டில் தமிழ் மொழியின் பங்களிப்பு மற்றும் அது அடைந்துள்ள மாற்றங்கள் பற்றி அறிய முடிகிறது<br>• .போட்டித் தேர்விற்கு தயார் படுத்திக்கொண்டு பணிவாய்ப்பினை பெற முற்றிலும் வழி காட்டுகிறது. |
| 22 | **கலைச் சொல்லாக்கமும் தொழில்நுட்பத்தமிழும் - (Skill Based Studies - II)** | • கலைச் சொல்லாக்கம் குறித்து அறிமுகம் செய்தல், நைடாவின் மொழிபெயர்ப்பு விதிகளை அறிந்து அதன் வழி மொழிபெயர்க்கும் முறைகளைஎ அறிதல்,மொழிபெயர்ப்பில் புதுச் சொற்களை உருவாக்கும் முறைகளை அறிய முடிகிறது. • தமிழகலைச் சொல்லாக்கம் முறைகள் மற்றும் அறிவியல் கலைச்சொல்லாக்க முறைகளை அறிய முடிகிறது.<br>• ஊடகங்கள் மற்றும் பிற தகவல் தொழில் நுட்ப சாதனங்கள் தொழில் நுட்ப தமிழுக்கு பயன்படும் விதம் குறித்து அறிய முடிகிறது<br>• தொழில்நுட்பத்தமிழ் குறித்து உணர்ந்த பிறகு அவரவர் பாடத் துறை சார்ந்த பத்து தொழில்நுட்பச் சொற்களுக்கு தக்க தமிழ்க் கலைச்சொற்களை உருவாக்க பழகுதல் வேண்டும். |

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| 23 | **காப்பிய இலக்கியம்** | • கண்ணகி,கோவலனின் திருமணவாழ்க்கையைப் பற்றி புகாரக் காண்டத்தின்வழிஅறிந்துகொள்ளமுடிகின்றது.<br>• திருமணச் சடங்குகளான மங்கல நீராட்டு சடங்கு, சிகைகழிக்கும் சடங்கு,மயிர்விடைச முதலிய பல சடங்குகளையும் திருமணமுறைகளையும் அறிந்துகொள்ள முடிகின்றது.<br>• புனிதவதியார் என்ற இயற்பெயர் கொண்ட காரைக்காலம்மையார் என்பவரின் வாழ்க்கைவரலாற்றையும் அவர் சிவன்மீதுகொண்டபக்திநிலையையும் அறிந்து கொள்ள முடிகின்றது.<br>• காப்பியங்களின் இலக்கணங்களைத் தெரிந்து கொள்ள முடிகின்றது.<br>• காப்பியகாலசமூகமக்களின் பழக்கவழக்கங்களை அறிந்துகொள்ள முடிகின்றது.<br>• அன்றைய காலகட்ட நகர அமைப்பையும் வளங்களையும் பல்வேறுநாடு,நகரங்களையும் தெரிந்து கொள்ள முடிகின்றது.<br>• காப்பிய கதைமாந்தர்களின்வழிஒழுக்கநெறிகளைக் கற்றுக்கொள்ளமுடிகின்றது. |
| 24 | **அற இலக்கியம்** | • ஒருஅரசன் வினை மேற்கொள்ளும் போது தெரிந்து கொள்வகை, வலிஅறிதல்,காலம் அறிதல், இடன் அறிதல்,தெரிந்துதெளிதல் முதலியனவற்றைக் கருத்தில் கொண்டுசெயலாற்றவேண்டும் என்றுதிருக்குறள் குறிப்பிடுகின்றது. அறிவுடையார் வேப்பிலையின் கண் பழுக்கவைக்கும் வாழைக்கனிக்கு சுவை மாறாமைக்கு ஒப்பாவர் என்றபலகருத்துக்கள் கூறப்படுகின்றன.<br>• காரியாசான எழுதியுள்ள சிறு பஞ்சமூலம் கண்டங்கத்திரி, சிறுவழுதுணை, சிறுமல்லி, பெருமல்லி, நெருஞ்சி ஆகிய ஐந்தின் வேர்களைச் சேர்த்து மருந்தாக்குவது போல ஐந்துவிடயங்கள் மூலம் நீதியைப் போதித்து ஒழுக்கக் கேட்டிற்கு மருந்தாகின்றது.<br>• நான்மணிக்கடிகை கல்வியறிவு இல்லாதவனுக்குஅவன் வாயிலிருந்து வரும் சொற்கள் இயமன் செய்ய தகாதவற்றைச் செய்பவர்களுக்கு அறமே இயமன் ஒருகுடும்பத்திற்கு தீய ஒழுக்கம் கொண்ட பெண் இயமனாவாள் என்ற பல கருத்துக்களை எடுத்துரைக்கின்றது.<br>• ஒருநாட்டின்பண்பாட்டைஉணர்த்துவதற்குஅந்நாட்டின் பழமொழிகள் பெரிதும் பயன்படுகின்றன. ஞாயிற்றைகைமறைப்பார் இல்,திங்களைநாய் குரைத்தன்றுமுதலியநானூறு பழமொழிகள் மக்களின் இலக்கணத்தைக் கூறுகின்றன.<br>• இளமைப்பருவத்தில் கற்பதும்,தந்தைத் தாயைப் போற்றிவணங்குதல்,பெரியோரைச் சேர்தல்,சுற்றத்தாரைக் காத்தல் போன்றஅறவாழ்க்கையைப் பின்பற்றவேண்டும் என்றுதிரிகடுகம் கூறுகின்றது.<br>• பெரியாரைத் துணை கொண்டுஇசிறியஎண்ணம் கொண்டமனிதர்களோடுசேரக்கூடாதுஎன்றஅறத்தின் சிறப்புவிளக்கமாகஎடுத்துரைக்கப்படுகின்றது.<br>• உறவுகளின் மதிப்பையும் அவர்களின் தொடர்பினால் உண்டாகும் நன்மையையும் அறிந்துசெயல்படவழிவகைசெய்கின்றது. |

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| 25 | **புறப்பொருள் வெண்பாமாலை நம்பியகப்பொருள** | • பண்டையகாலப்போர் முறைகளையும் வீரர்களின் செயல்களையும் அறியும்விதமாகபுறப்பொருள் வெண்பாமாலைஎழுதப்பட்டுள்ளது. வெட்சிமுதலாக பாடாண் திணை ஈறாகப்படலங்களாகப் பிரிக்கப்பட்டுதிணை,அதில் துறையின் வகைகள் கூறப்பட்டுள்ளன.<br>• அகப்பொருள் ஏழுவகையுண்டு. அவைகைக்கிளை,ஐந்திணை (முல்லை,குறிஞ்சி,மருதம்,நெய்தல்,பாலை) பெருந்திணைஎன்பவற்றின் இலக்கணங்களைஅறியமுடிகின்றது.<br>• பண்டையகாலப்போர் முறைகளையும் வீரர்களின் செயல்களையும் அறியமுடிகின்றது.<br>• முதற்பொருள்,கருப்பொருள்,உரிப்பொருள் பற்றி அறியமுடிகின்றது.<br>• வரைவிற்குரியநிகழ்ச்சிகள்,அறத்தொடுநிற்றல்இ வரைவுமலிதலின் வகை,அவற்றின் விரிபற்றியசெய்திகளை அறிய முடிகின்றது.<br>• கற்புவாழ்வின் இலக்கணமாகமகிழ்ச்சியும் தலைவன் பிரிவால் தலைவி ஊடுதலும் தலைவன் அவளதுஊடலைதணிவித்தலும் பற்றியசெய்திகளால் பண்டையகால இல்லறவாழ்க்கைமுறைஅறியப்படுகின்றது.<br>• பண்டையகால இலக்கணங்களைஅறிந்துகொள்ளும் பொழுதுதற்போதுள்ளநிலைகளைஒப்பிட்டுப் பார்க்கும் மனோபாவம் வளர்கின்றது. |
| 26 | **தமிழக வரலாறும் பண்பாடும்** | • பல்லவர்கள் சைவத்திருமுறைகளிலும் சாசனங்களிலும் காடவர்கள் என்று அழைக்கப்பட்டனர் என்பதையும்சாசனங்கள் மூலம் அவர்களுடையஅரசியல் வரலாற்றையும் அறியமுடிகின்றது. •<br>நாயக்கர் காலவரலாறு,மராட்டியர் ஆட்சிகாலம்,ஐரோப்பியர்களின் ஆட்சிபற்றி தெரிந்து கொள்ளமுடிகின்றது.<br>• கல்வெட்டுக்கள் மூலம் அரசியல்,வாணிகசெய்திகளைஅறியலாம். கோவில்கள் மூலம் கலைத் திறன் பற்றி அறிந்து கொள்ள முடிகின்றது.<br>• வரலாற்றைஎழுதுவதற்குதுணைநின்றசான்றுகள்,சின்னங்கள் பலதொல்பழங்காலத்துமக்களின் வாழ்க்கைமுறையினைஉணர்த்துவதைஅறியமுடிகின்றது.<br>• இருபதாம் நூற்றாண்டுவிடுதலை இயக்கத்தில் தமிழகம் பெரும் திருப்பத்தைக் கண்டது. நேருக்குநேர் முதன் முதலிலேயேதெரிந்துபோரிட்டனர் என்பதை 1801 விடுதலைப் போராட்டத்தின் மூலம் அறியமுடிகின்றது.<br>• விடுதலைகாட்டுத்தீயைப் பரவி வெற்றி பெற்றவரலாறுஇஅதன் பின்னர் தமிழகத்தில் ஏற்பட்டமாற்றத்தை தெரிந்து கொள்ளமுடிகின்றது. |

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| 27 | **நன்னூல் சொல்லதிகாரம்** | • பெயரியலில்வகைகள்,உயர்திணை, அ.ஃறிணைஎன்ற இரண்டு திணைகளும் ஆண்பால்,பெண்பால்,பலர் பால்,ஒன்றன் பால் பலவின் பால் என்ற ஐம்பால்களும் தன்மை,முன்னிலை,படர்க்கைஎன்ற மூவிடங்களும் கூறப்பட்டுள்ளன.<br>• வினையியல் மூலமாக செய்பவன், கருவி, நிலம், செயல், காலம், செய்பொருள் என்றஆறையும் தருவதுவினைச்சொல் என இலக்கணத்தைக் கூறுகின்றது.<br>• முன்வந்தபெயருக்கும் வினைக்கும் பின் வரும் இடைக்கும் உரிக்கும் பொது இலக்கணங்களைப் பொதுவியல் என்ற இயல் கூறுகின்றது.<br>• உரியியலில் ஓரறிவுயிர்,ஈரறிவுயிர்,மூவறிவுயிர்,நான்கறிவுயிர் என்றஅறிவின் அடிப்படையில் உயிர்களின் பாகுபாட்டைஎடுத்துரைக்கின்றது.<br>• ஒருகுணம் தழுவியஉரிச்சொற்கள்இபலகுணம் தழுவிய உரிச்சொற்கள் என்பனவற்றைக் குறிப்பிடுகின்றது.<br>• பெயர்ச்சொல், வினைச்சொல் பற்றி தற்போதுள்ளமாற்றங்களைக் கண்டறிய இயலும். |
| 28 | **தமிழ் இலக்கியவரலாறு** | • சங்ககாலத்தில் அகம்,புறம் சார்ந்தசெய்திகளை கூறும் நூல்கள் பற்றி அறிந்து கொள்ளமுடிகிறது.<br>• சைவம், வைணவம்,சமணம், பௌத்த சமயங்களைப் பரப்ப இயற்றப்பட்ட பாடல்கள் மூலம் பக்தியுணர்வினை அறிந்து கொள்ள முடிகிறது.<br>• :அந்தம் முதலாகதொடுக்கும் அந்தாதி,போர்க்களநிகழ்வுகள் பரணியில், 18 உறுப்புகளைக் கொண்டகலம்பகம்,பத்து பருவங்களைப் பற்றி கூறும் பிள்ளைத்தமிழ்,புறம் சார்ந்த தூது,மடல்,சதகம்,குறவஞ்சி,உலா பற்றிஅறிந்துக் கொள்ள முடிகிறது.<br>• வாழ்க்கை நிகழ்வுகள்,ஒருபாத்திரம்,ஒருவரின் மனவுணர்ச்சி,அனுபவம் ஆகியவற்றைமையமாகக் கொண்டுபடைக்கப்படும் சிறுகதை,நாடகம் பற்றியவளர்ச்சிநிலைகளைஅறிந்துகொள்ளமுடிகின்றது.இருபதாம் நூற்றாண்டு இலக்கியங்களைஅறிந்துகொள்ள இயலும்.<br>• வரலாற்றை எழுதுவதற்கும் மக்களின் வாழ்க்கைமுறையினைஉணர்த்துவதற்கும்முடிகிறது. |

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| 29 | **மொழிப்பெயர்ப்பியல்** | • ஒருமொழியில் உள்ளபடைப்புக்களைஅதன் சிறப்புகருதிஅதனைபயின்ற மொழிபெயர்ப்பாளர் தனக்கு தெரிந்ததாய்மொழியிலோஅல்லதுபிறமொழியிலோஎந்தவிதகுற்றமும் இல்லாமல் மொழிபெயர்ப்பதைப் பற்றிமாணவியர்க்குவிளக்குகின்றது. • ஒருமொழிபெயர்ப்பாளன் இரண்டுமொழிகளைத் தெரிந்துவைத்திருத்தல் வேண்டும். மொழியினுடைய இலக்கணங்கள் மொழிமாற்றம் செய்யும் பொழுதுஅதன் கருத்துமாறாமை ஆகியவற்றை தெளிவாகப் புரிந்திருத்தல் வேண்டும் ஆகியகருத்துக்கள் எடுத்துரைக்கப்படுகின்றன.<br>• மொழிபெயர்ப்புவகைகளில் இடம்பெறும் விதத்தை எடுத்துரைக்கின்றன. கருத்தும் மாறாமல் இலக்கியத்தின் அழகும் மாறாமல் மொழிபெயர்த்தலே முழுநிலை மொழிபெயர்ப்பாகக் கருதப்படுகின்றது.<br>• மொழிபெயர்ப்பித்தலைச் செய்யும் பொழுதுமொழிபெயர்ப்பில் ஏற்படும் சிக்கல்களையும் மொழிபெயர்ப்பு முறைகளையும் தெளிவாக தெரிந்து கொண்டு செய்யும் பொழுதுமொழிபெயர்ப்புவெற்றியடையும்..<br>• கவிதையில் ஒன்றைக் கொடுத்துமொழிபெயர்க்கச் சொல்லும் பொழுதுமொழிபெயர்த்தலுக்கானதிறன் வளர்கின்றது. |
| 30 | **சங்க இலக்கியம்** | • சங்ககால இலக்கியங்களின் வழி திணை இலக்கிய கோட்பாடுகளை அறிய முடிகிறது. • முதல் பொருள், கருப்பொருள் மற்றும் உரிப்பொருள் இலக்கியங்களில் அமைந்துள்ள விதம் மற்றும ் இலக்கியங்களின் சிறப்பை உணர்த்த முடிகிறது.<br>• சங்ககால மக்களின் வாழ்க்கை நெறிமுறைகளை பற்றி தெளிவுபடுத்த முடிகிறது.<br>• அக்காலப் போர் முறையினையும் மன்னர்களது சிறப்புகளையும் தெரிந்துகொள்ள முடிகிறது<br>• கூற்றுகள் வழி மக்களது உளநிலையை அறிந்து கொள்ள வழி வகுக்கிறது.<br>• வரைவு கடாதல், அறத்தோடு நிற்றல், உடன்போக்கு ஆகிய இது போன்ற வாழ்க்கை நடத்திய பாங்கினை அறிந்தனர். பாடாண்திணை, பொருண்மொழிக்காஞ்சித்துறை மற்றும் செவியறிவுறூஉ பாடல்கள் வழி மக்களின் வாழ்வியல் விழுமியங்களை அறிந்து கொள்ள முடியும். |
| 31 | **யாப்பருங்கலக்காரிகை** | • யாப்பிலக்கணத்தை அறிந்து கொள்ள வழி காட்டுகிறது. யாப்பிலக்கண உறுப்புகளான எழுத்து, அசை, சீர், தளை, அடி, ஓசை மற்றும் தொடை இவற்றை அறிய வழி வகை செய்கிறது.<br>• பாவின் வகைகளையும், அதன் உட்பிரிவுகளையும் அறிய ஏதுவாக அமைகிறது<br>• தொல்காப்பியர் கூறாத பாவின் இனங்களையும், தொடை விகற்பங்களையும் அறிந்து கொள்ள முடிகிறது.<br>• மரபு வழியில் செய்யுள் இயற்ற வழி காட்டி பயிற்சி அளிக்கிறது. |

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| 32 | **தண்டியலங்காரம்** | • அணியிலக்கணத்தை அறிந்து கொள்ள வழி காட்டுகிறது. • 35 வகையான அணியின் இலக்கணம் மற்றும் அதன் வகைகளை அறிந்து கொள்ள வழி காட்டுகிறது.<br>• ஒரு அணி பிற அணிகளோடு பொருந்தி வரும் பாங்கினை செம்மையாக உணர்ந்து கொள்ள முடிகிறது.<br>• :தொல்காப்பியர் கூறாத அணியின் வகைகளை அறிந்து கொள்ள முடிகிறது.<br>• மரபு வழியில் செய்யுள் இயற்ற வழி காட்டி பயிற்சி மற்றும் இலக்கிய ரகனையோடு இலக்கியம் படைக்கவும் வழி காட்டுகிறது. |
| 33 | **ஓலைச்சுவடியியல** | • தமிழில் ஒலைச்சுவடிகள் அமைந்துள்ளவிதம், ஒலைச்சுவடிகள் எழுதும் முறைகள் ஒலைச்சுவடி வகைகளை அறிந்து கொள்ள உதவுகிறது. • ஒலைச்சுவடி வாசிப்புப் பயிற்சி மற்றும் சுவடிப்பயிற்சியின் மூலம் பழங்கால மக்களின் எழுத்து முறைகளை அறிந்து கொள்ள பெரிதும் உதவுகிறது.<br>• ஒலைச்சுவடிகள் நூலகம், அரசினர் கீழ்த்திசை சுவடிகள் நூலகத் தமிழ்ச் சுவடிகள் விளக்க அட்டவணைத் தொகுதிகள் மற்றும் தமிழகக் சுவடிகள் நூலகங்களை பற்றி அறிய முடிகிறது.<br>• தமிழ்ச் சுவடிப் பதிப்பியல் வரலாற்றினை அறிய வழி காட்டுகிறது.<br>• பாட வேறுபாடுகள், பாடத்தெரிவு முறைகள், விடுபாடு நிரப்புதல்,இடைச்செருகல், இனம் காணல் மற்றும் திருத்தம் செய்தல் ஆகியனவற்றை அறிந்து கொள்ள முடிகிறது. சுவடியயல் பதிப்புத் திறன்களை அறிந்து கொள்வதன் மூலம் பழங்கால நூல்களை அழிந்து விடாமல் காக்க உறுதுணையாக அமைகிறது. |
| 34 | **தகவல் தொடர்பியல** | • ஊடகங்களின் தேவையையும் பயன்பாட்டையும் அறியச் செய்தல். • வட்டார வழக்குகளை அறிந்து கொள்ள முடிகிறது.<br>• செய்தி எழுதும் முறையையும் வாசிக்கும் விதத்தையும் அறிந்து கொண்டனர்.<br>• பகுதி நேரப் பணியாளராகப் பணிபுரிய வகை செய்கின்றது.<br>• கணினிஇ இணையத்தைக் கையாள உதவுகின்றது.<br>• நிகழ்ச்சிகளைத் தயாரிக்கவும் தொகுத்து வழங்கவும் பயன்படுகின்றது.<br>• இதழ்கள், ஊடகங்கள் நடத்தும் முறைகளை அறிதல் மற்றும் செய்தி கட்டமைப்பு, தலைப்பு, முதல் பத்தி, உடல் பகுதி, தலையங்கம் ஆகியனவற்றை வடிவமைக்கும் முறை பற்றி அறிய முடிகிறது.<br>• இதழியல் சட்டங்கள் மற்றும் சுதந்திரம் பற்றி அறிய வழிவகுக்கிறது<br>• செய்தி மூலங்கள், செய்தி சேகரித்தல், செய்தி நிறுவனங்களின் வழி செய்தி பெறும் முறைகள் ஆகியவை பற்றி அறிய இயலும். |

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| 35 | **பெண்ணியம்** | • பெண்ணியம் தோன்றிய வரலாறுஇ அதன் காலம்இபெண்ணியத்தின் நோக்கம் பற்றியும் மேலைநாட்டுப் பெண்ணியவாதிகள்இ தமிழ்நாட்டுப் பெண்ணியவாதிகள் பற்றியும் அவர்களால் பெண்களுக்கு கிடைத்த உரிமைகள் பற்றியும் அறிந்து கொள்ளமுடிகின்றது. • மூன்று வகைப் பெண்ணியங்கள் பற்றியும்பிறவகைப் பெண்ணியங்கள் பற்றியும் அறிந்து கொள்ளமுடிகின்றது. தமிழ் ஆய்வுகளில் காணப்படும் பெண்ணியத்தின் வளர்ச்சி பற்றியும் அதன் வரலாறும் பற்றியும் அறிந்து கொள்ளமுடிகின்றது.<br>• இலக்கியங்களில் பெண்களின் நிலைஇ பெண்களை மையப்படுத்தி பெண்ணியம் பேசுகின்ற சிறுகதைகளைப் பற்றி அறிந்து கொள்ளமுடிகின்றது. பாலினம் பற்றியும் பாலின வேறுபாடு பற்றியும் அறிந்து கொள்ளமுடிகின்றது.<br>• பெண்ணியத் திறனாய்வின் அவசியத்தைஉணர்ந்தனர்.<br>• பெண்ணியப் படைப்பாளர்களையும் படைப்புகளையும் அறிந்துகொண்டனர். |
| 36 | **சுற்றுலாவியல்** | • சுற்றுலாவினால் ஏற்படும் பண்பாட்டு பரிமாற்றங்களை உயர்ந்து கொள்ள முடிகிறது. • ஆன்மீக சுற்றுலா தளங்கள், இன்ப சுற்றுலா தளங்கள் மற்றும் கல்விச் சுற்றுலா தளங்கள் பற்றி அறிய வழி காட்டுகிறது<br>• இந்தியாவிற்கு வரும் சுற்றுலா பயணிகளின் மூலமாக நமது பாரத, பண்பாடு மற்றும் கலாச்சாரம் அகில உலகம் எங்கும் பரவியுள்ள பாங்கினை அறிந்து கொள்ள முடிகிறது<br>• இந்தியாவில் உள்ள சுற்றுலாத் தளங்களை பாதுகாக்க அரசாங்கம் எடுத்துள்ள திட்டங்கள் மற்றும் அவற்றின் செயல்பாடுகள் ஆகியவற்றை அறிந்து கொள்ள ஆவண செய்கிறது. |

## M.A ENGLISH

### PROGRAMME SPECIFIC OUTCOMES

**PSO1:** To meet the advanced interests of the student of English Studies in selected areas.

**PSO2:** To help the student develop the ability to organize ideas and present them coherently with a considerable degree of sophistication in keeping with the norms of scholarly research and writing.

**PSO3:** Able to engage analytically with existing theories, methods and interpretations in English literature studies, and work independently on analyzing relevant theories, methods, arguments and interpretations within the field

### COURSE OUTCOMES

| S.NO | NAME OF THE SUBJECT | DESCRIPTION |
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| | | • Understand the rhetorical dimensions of reading and composing arguments. |

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| 1. | **RHETORIC AND RESEARCH METHODOLOGY** | • Able to apply a discourse analytical approach to a (limited) object of their choice, and to present their findings in an appropriate manner, in writing as well as orally.<br>• Understand the ethical strategies or rhetorical appeals, are devices in rhetoric that classify the speaker's appeal to the audience.<br>• Understand about how the useful methods are illustrated by examples and illustration by comparison and contrast.<br>• Understand the basic concepts of research.<br>• Understand the step in the process of carrying out research as it helps in, hypothesis construction and selection of appropriate research designs.<br>• Understand the structure of the research paper<br>• Understand about how to identify the research topic<br>• Understand the techniques employed in collecting and analyzing data.<br>• Understand about the importance of primary and secondary sources<br>• Understand about how to gather all the bibliographic entries together and write them down in alphabetical order<br>• Able to understand where a line of text begins and ends. Able to understand the typographical, grammatical, spelling, and punctuation errors, but also ensure that the ideas within are clearly communicated while following<br>the appropriate format. |

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| 2. | **LITERARY CRITICISM: CONTEMPORARY CRITICAL THEORIES** | **Classical & Critical Approaches**<br>• Understand about Plato"s views on justice, the order and character of the just city-state and the just man.<br>• Understand that the work of any poet exists by reason of its connection with past work, both in continuation and in divergence.<br>• Modern Approaches<br>• Understand that the literary work is an immediate part of the literary environment that collects the incidents and social active into it.<br>• Understand about Barthes main point that the reader holds more responsibility to the text than the author.<br>**Feminist Approach**<br>Understand about structuralism in literature and how it should engage with literature.<br>Understand that woman must write about women and bring women to writing.<br>**Post-Colonial Studies on Race Ethnicity**<br>Understand that how the historical, cultural, and political views of the East orient that are held by the West, and observes how they developed and where they came from.<br>Understand how the scholars rethink historical problems of subalternity, voicing, and death.<br>Understand about disrupting hegemony of literary |

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| 3. | **PROFESSIONAL SKILLS** | **COMPUTER APPLICATION SKILLS**<br>• Able to create a word document and navigate your way around the basic applications<br>• Able to create an excel workbook and navigate you way around the basic applications<br>• Able to create a professional email signature and learn how to edit and update it with important and timely company information.<br>• Able to create and present a basic PowerPoint presentation complete with headings, bullet points and picture<br>**COMMUNICATION SKILLS**<br>Able to synthesis and analysis of the written text; proficiency in utilizing standard forms of writing and grammar for a variety of audiences in multiple contexts.<br>Aware of the self in process and its impact on interaction with others.<br>**COMMUNICATION TECHNOLOGY**<br>Aware about the main processes in an ICT system.<br>Able to become an active participants and encourage both reflection and interaction in the electronic discussion boards<br>**PEDAGOGY SKILLS**<br>Able to understand the teaching skills like lecturing, questioning or leading a discussion and mastery of teaching strategies.<br>Acquire skilled supervision with an opportunity to get a constructive feedback<br>**INDUSTRIAL TECHNOLOGY**<br>Understand about how to identify the research topic<br>Understand the techniques employed in collecting and analyzing data. |

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| 4. | **AREA PAPER** | • Understand the actual meaning of Research and different analysis mode of research.<br>• Students can easily find their theme and sub-theme for their research.<br>• Students overcome the difficulties in finding the title for their research.<br>This unit will ensure the students to have very clear idea about their research.<br>Students get full knowledge about forming different paragraph in their research.<br>Students will have a clear idea about the importance of coherence for each sentence for their research.<br>Gain full knowledge about collecting different forms of secondary source for their research.<br>Students will easily overcome the problem of arranging the bibliography for their research.<br>Able to overcome the various problems and issues on research. |

## M.A ENGLISH

### PROGRAMME SPECIFIC OUTCOMES

**PSO1:** Possess an awareness of alternatively defined traditions and/or genres, such as Indian Writing in English, Postcolonial literature, world literature and American literature.

**PSO2:** Students will learn to construct course-related projects directed at investigating, understanding, and applying scholarly approaches and criticism in the field of literary studies.

**PSO3:** Students will learn to participate in advanced professional activities (conferences, publications, practicum experiences, research projects, and other activities).

### COURSE OUTCOMES

| S.NO | NAME OF THE SUBJECT | DESCRIPTION |
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| 1. | **BRITISH LITERATURE – I** | • To ensure the students by teaching the language of Chaucer in „Canterbury Tales". And also give the knowledge about British Literature background with religious aspects<br>• To develop the ideas about prose writing in English Literature<br>• To give the explanation on Bacon"s Essay"s and Chapter „Book of Mark" in the Bible<br>• To create the background knowledge of early Dramatical Writing in British Literature<br>• To encourage the students to know about the Bacon"s contribution to British Literature<br>• To give the knowledge about John Donne, Robert Herrick and Shakespeare"s poetry writing style<br>• To make the students to understand the Herbert and Vaughan's poems |

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| 2. | **BRITISH LITERATURE – II** | • Give the impact about satirical writing in English Empoly the knowledge with culture impact in writing<br>• Ensure the subjective poetry knowledge<br>• Burn‟s writing methodology in poetry<br>• To give the ideas about ironical style<br>• Tradition and conventional ways used in Addsion and Steele's writing<br>• To understand the dramas, which are using the culture and class classification<br>• To grasp the thoughts and ideas about the fictions in Early British Literature |
| 3. | **INDIAN WRITING IN ENGLISH** | • The learners would be provided a great amount of information and knowledge about the structure and history of English Language, and its social and geographical variations that prepare them for a various career paths.<br>• Students will understand the poetry from various cultures, languages and historic periods, letting |
| 4. | **DIASPORIC FICTION** | • Identify the relationship between literary texts and their historical, political and cultural contexts.<br>• Demonstrate the experiences of dislocation, relocation, acculturation and marginalization as explored and addressed in the works of diasporic writers.<br>• To analyze how the notions of home and cultural identity are changing across generations of diasporic writers.<br>• Analyze the issues of diaspora, location, history and memory in literature.<br>• Identify the relationship between geography and form between location and representation. |
| 5. | **CREATIVE WRITING** | • Write with proficiency in one or more creative literary form.<br>• Practice the process-oriented approach to writing.<br>• Students understand the public relations and corporate communication aims to graduate highly skilled.<br>• Students will develop their research, interviewing and writing skills by producing a variety of feature articles for publication in text and online forms.<br>• To understand what writing an assignment involves, identify strengths and weaknesses. To understand the functions of essays. |

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| 6. | **INDIAN WRITING IN ENGLISH** | • To give the ideas about partition in India and also ensure the religious belief on Death<br>• To grasp the history of India through Indian English Writing<br>• To assure the spirituality believes of Indians<br>• To know about the contemporary writers writing style such as Vijay Tendulkar, Mahesh Dattani<br>• To know about the current scenario reflects in literature<br>• To get the ideas about the Family bonds in Indian tradition and culture<br>• To make the students with Knowledge about ideas of Short stories impact and also its moral teaching methodology |
| 7. | **AMERICAN LITERATURE** | • Identify the basic terminology and practical elements of poetry.<br>• Recognize poetry from a variety of cultures, languages and historic periods.<br>• Increase student's comprehension of the prose and establish a personal connection to it.<br>• To demonstrate understanding of the different technologies and techniques used in the creation of a play and theatre.<br>• To demonstrate an understanding of various forms and structures of fiction. |
| 8. | **LITERARY CRITICISM** | • To know about the origin and emerge of Literary Criticism<br>• To ensure the students about the Approaches and it‟s theories<br>• To know about the Plato and Aristotle‟s criticism<br>• To make a clarification about Sidney‟s thoughts and representation in criticism<br>• To comprehend the ideas and thoughts of Dryden<br>• Pope‟s Clarification and theories<br>• Dr.Johnson‟s point of view on Literature<br>• To know about the criticism on Wordsworth, Coleridge and Arnold‟s theories<br>• To assure the student‟s with the theories of T.S.Eliot, I.A.Richards and F.R.Leavis |

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| 9. | **RESEARCH METHODOLOGY** | • Understand the basic concepts of research.<br>• Understand the step in the process of carrying out research as it helps in , hypothesis construction and selection of appropriate research designs.<br>• Understand the structure of the research paper.<br>• Understand about how to identify the research topic<br>• Understand the techniques employed in collecting and analyzing data.<br>• Understand about the importance of primary and secondary sources<br>• Able to think about what background information should appear early on and group that information together.<br>• Understand about how to conduct research and document it.<br>• Able to understand that copied content from a reliable source instead of writing is the best option for them for completing their assignment very effectively.<br>• Able to understand the importance of quotation which is relevant to the argument.<br>• Able to understand where a line of text begins and ends.<br>• Able to understand the typographical, grammatical, spelling, and punctuation errors, but also ensure that the ideas within are clearly communicated while following the appropriate format. |
| 10. | **WORLD LITERATURE IN TRANSLATION** | • Students will interpret texts with attention to ambiguity, complexity, and aesthetic value.<br>• Students will evaluate genres of writing and write in appropriate genres and modes for a variety of purposes and audiences.<br>• Students will read diverse texts within their historical and cultural contexts, developing a critical understanding of how literature can both uphold and resist existing structures of power.<br>• Students will identify topics and formulate questions, identify appropriate methods and sources for research, and engage ethically with sources.<br>• Students will participate in critical conversations and prepare, organize, and deliver their work to the public. |

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| 11. | **SHAKESPEARE** | • Gain "Shakespeare Literacy." Demonstrate mastery over fundamental information about Shakespeare‟s works, life, and legacy.<br>• Assess reaction to the themes and issues bought up in Shakespeare's plays, poems, and sonnets.<br>• Analyze literature of the imagination and fantasy for their structure and meaning, using correct terminology.<br>• Identify and describe distinct literary characteristics of fantasy and works of the imagination using literary, psychological, and cultural perspectives, as well as examples from myth, fairy tale, Gothic horror, magic realism, and other forms of imaginative writing.<br>• Identify major literary characters in Shakespeare's work.<br>• Identify and describe distinct literary characteristics of contemporary drama, emphasizing changing approaches to theater as well as the social, cultural, and philosophical implications in representative plays.<br>• To improve comprehension through the use of writing- to-learn strategies, such as outlining, paraphrasing, mapping, summarizing, and synthesizing, this will improve comprehension and retention. Develop an ability to recognize main idea and supporting details in order to improve comprehension and retention of written information.<br>• Develop and communicate the ideas about Shakespeare clearly in formal and researched writing.<br>• Analyze Shakespeare Critically. Interpret Shakespeare‟s works critically in their written form, in performance (stage or screen) and in digitally mediated transformations. |

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| 12. | **MODERN LITERATURE – IV** | • It useful for the students or any individual to gain basic knowledge on elements of poetry and its figure of speeches.<br>• The poem centers on the feelings and thoughts of the persona. The poem is composed of Prufrock‟s own neurotic and lyrical associations.<br>• Yeats “Sailing to Byzantium” describes the metaphorical journey of a man pursuing his own vision of eternal life as well as his conception of paradise.<br>• To explore the themes of fern hill through close attention to diction and imagery.<br>• To increase awareness of the complexity of the poets art.<br>• This style of writing is central to much of Woolf‟s fiction, although it‟s particularly central to The Waves.<br>• Woolf was interested in depicting reality as fragmented and one of the most direct and influential ways she did this was through her unique stream of conscious narration.<br>• Sons And Lovers is a semi auto-biographical work. The novel deals with a son who loved his mother too dearly, and with a mother who lavished all her affection upon her son.<br>• Robert lynd‟s writings are also a great resource for ESL students.<br>• „What I believe‟ is a defence of democracy and secular values against the advance of totalitarian regimes in Europe. Forster argues that there are two main advantages to democracy. First, it allows individual expression; secondly, it permits criticism. |
| 13. | **COMPARATIVE LITERATURE** | • Promote a global and dynamic vision of literary and cultural phenomena<br>• Demonstrate an informed appreciation of cross-cultural interconnections and of the diversity of literatures and cultures across time and space.<br>• Able to understand how the women writers had been translated<br>• Choose the appropriate theoretical and methodological tools for their analyses.<br>• Show informed knowledge of the main trends in literary, aesthetic, and cultural theories and in methodologies.<br>• Evaluate theory and research in various subfields pertaining to the study of two or more literary traditions, including French literature and thought, in a comparative framework, which is to say across national, regional, and sciplinary boundaries.<br>• Demonstrate superior linguistic and cultural literacy in French as well as across national and disciplinary boundaries so as to meet the standards of the journals in French Studies, comparative literature, and related fields.<br>• Understand the original contributions to the fields of French and Francophone literature as well as comparative literature and related fields |

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| 14. | **COMMON WEALTH LITERATURE** | • Analyze the various elements of poetry such as diction, tone, form, genre, imagery, figures of speech, symbolism, theme, etc.<br>• Demonstrate an awareness of the role analysis plays in informing appreciation and understanding of poetry.<br>• Able to critically and independently read, analyse and appreciate literary texts<br>• Articulate personal and critical responses to texts and refine their own views in the light of different perspectives.<br>• Identify the relationship between drama and its socio- cultural context representing myriad colours of the genre.<br>• Comprehend the continual critical engagement of drama with society.<br>• Demonstrate the use or knowledge of effective approaches for creating sustained works of fiction distinguished by a nuanced use of appropriate narrative elements, techniques, and conventions (plot, character, voice, scene, exposition, pacing, sensory description, setting, point of view, action, dialog, mood, etc.).<br>• Demonstrate awareness of the complexity of human relationships and behaviour through the study of character.<br>• Illuminate the pain of exile and the ambiguities of post colonialism with a tapestry of colorful characters.<br>• Comprehend the evolution of characters and plot. |
| 15. | **MODERN ENGLISH STRUCTURES AND PRINCIPLES OF WRITING** | • Able to express themselves, to provide information, to persuade, or to create a literary work.<br>• Understand about very large number of the languages found in the world today are used only in the spoken form.<br>• Able to know the human attempts to represent information visually may be traced back to cave drawings years ago or to clay tokens years ago.<br>• Understand the some of the processes of creating new words in a language.<br>• Understand the regularities in the word-formation processes in our language.<br>• Understand the importance of structure of the paragraph.<br>• Understand the methods of developing – Outlining, drafting and revising<br>• Understand the importance of structure to an essay.<br>• Students will learn how to plan and organize an essay |

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| 16. | **NEW LITERATURES** | • To get ideas about literature of recent decades in the context of Africa‟s chaos of Social tradition and change and the values of culture and regret for cultural separation.<br>• About the persistence of certain colonial mindsets in the post-colonial Africa, restored by sorting out the language.<br>• Traditional versus modern thoughts and cultural values<br>clashes in Indian and American women‟s life. •<br>Identity of a girl through the short stories can be described as a bildungs roman.<br>• About the brutal examination of the lives of windows in colonial India and the major social and political issues in Africa through Yoruba tradition.<br>• The quest of a deracinated individual, lacking any clear- cut frame of reference and a system of value, for emotional rots and spiritual anchorages.<br>• About the struggle Immigrants whose identity gets fractured in the host country, the issue of identifying an individual‟s space of the Immigrants.<br>• According due importance to the Native languages an about the terrorism, globalization, nuclear disarmament, global capitalism. |
| 17. | **LITERATURES AND GENDER** | • Demonstrate knowledge of the history of women‟s studies, with an understanding of its growth and relation to the fields of gender and sexuality studies.<br>• Appreciate variations in women‟s experiences across time, nations and cultures<br>• Explores sociological and psychological sensitive issues of women.<br>• Differentiate the male and female antagonists.<br>• Examine how people deal with the extremes of a lonely existence.<br>• Appreciate the types of challenges, the feminists and the women rights activists faced in gaining equality for women.<br>• Knowledge of how the lives of women were changed after World War II.<br>• Understand the difference between „sex‟ and „gender‟ and be able to explain social construction theories of identity.<br>• Appreciate women‟s contributions to society historically, culturally and politically.<br>• Knowledge of the life of soldiers and their sufferings and feelings.<br>• Examined the evolving lives of women in modern society. |
| **B.A ENGLISH** | | |
| **PROGRAMME SPECIFIC OUTCOMES** | | |

**PSO1:** Recognize and discuss major figures, movements, and texts from several periods of English and American literature.
**PSO2:** Demonstrate knowledge and comprehension of major texts and traditions of language and literature written in English as well as their social, cultural, theoretical, and historical contexts;
**PSO3:** Demonstrate competence in grammar, usage, and mechanics in their written work.

## COURSE OUTCOMES

| S.NO | NAME OF THE SUBJECT | DESCRIPTION |
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| 1. | **ENGLISH FOR INFOTAINMENT–I** | • Students will develop their appreciation for the purposes and pleasures of prose.<br>• Students will articulate ways that literary works construct values and ethical meaning.<br>• Student read and analyzes poems and from s writer‟s perspective specifically to ground them in required craft and teams & concepts within each genre.<br>• Students will demonstrate an understanding the different ways in which has been described and structures in conversation and discussions.<br>• Students will understand that there are different types of questions and be able to categorize them.<br>• Students will understand the Informer examines the devasting effect of a totalitarian regime on an ordinary Lutheran Family. |
| 2. | **INDIAN WRITING IN ENGLISH** | • Identify the techniques and ways of making patterns that put emotions into words.<br>• Demonstrate the various prevailing trends in Indian English literature.<br>• Identify the conflicts and struggle between the characters and to analyze the internal psyche.<br>• Identify the essence of Indian Literature through Indian cultures and customs present in the material.<br>• Demonstrate the background of Indian novelists and importance of Indian traditional values. |
| 3. | **MODERN ENGLISH GRAMMAR AND USAGE** | • Students will understand that verbs change form depending on their relationship to time.<br>• Students will be able to recognize prepositional phrases and state that they are composed of prepositions and their objects.<br>• Students will be able to identify articles and use them correctly in sentences.<br>• Students will be able to differtiate between the four different types of sentences.<br>• Identify the voice of the verb in each sentence and to changing the voice from active to passive voice.<br>• Students will be able to define gerund use verbs as gerunds in sentences and phrases.<br>• To make students aware of the differences in sense of the modes in sentences. |

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| 4. | **SOCIAL HISTORY OF ENGLAND** | • Students are introduced into the base of English history and discoveries.<br>• To know the divisions in religion, civil war and its significance.<br>• The coffee house life of englishers, revolutions in the field of agriculture and industry were introduced to know the culture and lifestyle of English people.<br>• To identify the war and its effects on people and the inventions, discoveries in the field of medicine.<br>• To know the parliamentary democracy in England and the reform acts its result, the world war and its consequences. |
| 5. | **VALUE EDUCATION** | • To enable the students to understand the meaning and concept of values.<br>• To know about the various types of moral values and the relation between values with other disciplines.<br>• To create the awareness of healthy behaviors , social responsibility and qualities of a good citizen.<br>• To know about the environment, other living beings and also know about the child labor and bonded labor.<br>• To encourage the students to know Women Empowerment, Women Rights, related Government Policies also. |
| 6. | **COMMUNICATION SKILLS – III** | • To communicate effectively and appropriately in real- life.<br>• To express and argue a point of view clearly and effectively.<br>• To speak intelligibly using appropriate word stress, and intonation patterns. To express and respond to personal feelings, opinions and attitudes. To convey messages effectively in person or by telephone.<br>• To narrate events and incidents, real or imaginary in a logical sequence.<br>• To present oral reports or summaries, make announcements, clearly and confidently.<br>• To take active part in group discussion, showing ability to express agreement to summarise ideas to elicit the views of others and present own ideas. |
| 7. | **AGE OF DRYDEN AND POPE** | • To develop the students to know about the general features of Augustan age and also the aspects of Augustan literature.<br>• To study about the development of satire and poetry and also the limitations of Augustan poetry.<br>• To understand the development of prose writing style of the prose writers.<br>• To know about the new features and elements us which used in dramas by the dramatists<br>• To develop reading ability of the students. |

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| 8. | **HISTORY OF ENGLISH LITERATURE – II** | • To learn the specific trends of different writers and their works in Pre- Romantic Age<br>• To encourage the students to speak and write in English.<br>• To prepare the students to know about the characteristics of Romantic Age Poet, Prose writers, Novelists and Dramatists.<br>• To enable the students to develop their knowledge about Victorian Age.<br>• To Understand the writers and the literary works and their characteristics of Age of Hardy.<br>• To learn the difference genres like poetry, prose, novel and also criticism in the Modern period. And prepare the students for competitive exams. |
| 9. | **SUBALTERN STUDIES** | • To introduce the students to know about the Subaltern writers and works and the characteristics of the works.<br>• To enable the students to know about the culture and lives of the suppressed people.<br>• To encourage the students to understand the various themes of the Subaaltern Studies.<br>• To realize the History for the under classes and voiceless people in various genres. |
| 10. | **BUSINESS ENGLISH COMMUNICATION** | • To prepare the students in English to motivate their entry into employment skill and for their career development.<br>• To understand grammatical rules in both Speaking and Writing.<br>• To encourage the students to speak and write in English without errors. To develop the skills for their profession.<br>• To understand the necessary of Public Speaking and its characteristics and rules in order to develop their power of employability.<br>• To prepare the students to achieve their goals and train the students to face the problems in the competitive world. To make the students to how to prepare for an interview and to get a good job. |
| 11. | **TWENTIETH CENTURY LITERATURE – I** | • Recognize the main poets in the periods of modernism and post-modernism.<br>• Demonstrate other disciplines of worldly customs.<br>• Identify the dramatic techniques and aristocracy of Britishers.<br>• Demonstrate the class divisions during twentieth century.<br>• Identify the revolts against religion and the power of government. |

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| 12. | **POST-COLONIAL LITERATURE** | • To introduce the students to the Post- Colonial works and the famous writers of various countries<br>• To encourage the students to know about the culture and life style of the colonized people of colonized countries<br>• To introduce the various themes of Post- Colonial Literature.<br>• To learn about the Post Colonial elements in Post Colonial Literature.<br>• To encourage the students to learn the differences and similarities between Post Colonial Literature and other Literature. |
| 13. | **SHAKESPEARE – I** | • Students will develop their understanding of how William Shakespeare's plays were influenced by the physical space in which they were originally produced, the Globe Theatre.<br>• Student develop an understanding of how themes can be explored in a literary text and develop an understanding of the relevance of studying classic texts , extend their knowledge of a variety of different texts - form / context.<br>• Students will become familiar with the structure of a tragedy play/form increase their familiarity with Shakespearean language and expression explore and understand the idea of textual<br>• Students will become familiar with, and learn to identify a range of literary techniques relevant to the study of a dramatic text further develop their analytical writing skills<br>• Developing wall stories during or after reading and asking questions relating to where and why a character is in a particular setting |
| 14. | **AMERICAN LITERATURE** | • Identify the basic terminology and practical elements of poetry. Recognize poetry from a variety of cultures, languages and historic periods.<br>• Increase student‟s comprehension of the prose and establish a personal connection to it.<br>• To demonstrate understanding of the different technologies and techniques used in the creation of a play and theatre.<br>• To demonstrate an understanding of various forms and structures of fiction. |
| 15. | **ENGLISH LANGUAGE TEACHING** | • Make the students to communicate in a new language.<br>• Students can get benefits from language learning by gaining increased problem solving abilities.<br>• To get greater comprehension for how language works and is used.<br>• To get increased ability in digital literacy.<br>• Language learning helps exercise the brain to keep it flexible and agile. |

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| 16. | **TRANSLATION THEORY AND PRACTICE** | • To refer the aspects of translation theory in evaluating strategies for dealing with certain types of texts.<br>• To study the meaning of biblical passage within their original historical and cultural contexts.<br>• To undertake processes for ensuring a quality of translation.<br>• Aspects of translation theory and terminology relevant to practical translation.<br>• To understand the skills required to become a professional translator and what is meant by translation competence. |
| 17. | **ENGLISH FOR CREATIVE WRITING** | • Which components of the short story as a creative medium would you like to convey.<br>• A review gives the reader a concise summary of the content. This includes a description of the research topic and scope of analysis as well as an overview of the book‟s overall perspective. • A feature writing story is distinguished from other types of non-fiction by the quality of the writing.<br>• Advertising is a very powerful tool to raise brand awareness, launch new products and communicate with your target audience.<br>• The students upon completion of this program will be able to demonstrate and apply critical thinking skills in a variety of communication study content. |
| | | **PROSE** • |

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| 18. | **COMMUNICATION SKILLS – IV** | Students able to know anyone cannot accept the responsibility for others behavior. They must surrender their own wills to God.<br>• By the end of the lesson students shall be able to discuss TayebSalih‟s style briefly. Identify and list down the synonyms in the text provide. Use the newly learned vocabulary.<br>**POETRY**<br>• Students to enhance their sense of literary appreciation.<br>• Students enhancing skills of summarizing, line by line analysis, annotation. To sensitize the students to the interpretative value of poetry. Students will get God‟s faith.<br>• Students fully known about Australia in the war time.<br>• After studying the grammar students should be able to understand the differences between spoken and written English.<br>• Student will able to write circular and minutes.<br>• Students will able to identify the different forms of sentences.<br>• Students will learn how to framing questions.<br>• Students have improved their writing skill and speaking skill.<br>• Its provide students with an opportunity to test their interview skills, someone who isn‟t evaluating them for an actual job. |
| | | **POETRY** |

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| 19. | **AGE OF SHAKESPEARE AND MILTON** | • To gain an understanding of Milton‟s place in the history of thought about political and religious freedom.<br>• In Spenser‟s poetry we get a characteristic blending of mythology and realism.<br>• After this lesson, the students will be able to: identify the figurative language in sonnet. Create their own sonnets mimicking sonnet.<br>• Students will feel comfortable with reading, writing, and interpreting poetic texts, and will understand the formal structure of a sonnet.<br>• Students will gain understanding of the poetic speaker‟s feelings and become acquainted with a few of the mysteries surrounding Shakespeare‟s personal life.<br>**PROSE**<br>• The Essays are written in a wide range of styles, from the plain and unadorned to the epigrammatic. They cover topics drawn from both public and private life, and in each case the essays cover their topics systematically from a number of different angles, weighing one argument against another.<br>**DRAMA**<br>• Recognize the political and social contexts for The Jew of Malta.<br>• Develop our critical vocabulary when disguising the figure of the anti- hero.<br>• Analyze the connection between anti-Semitism in early modern England with twentieth century propaganda.<br>**FICTION**<br>• In the shoemaker Holiday is a hilarious play. It is a perfect comedy. It is full fun and gaiety. The spirit of the pure comedy is preserved from the beginning to the end of this play. This shows Dekker‟s greatness as a dramatist.<br>• It is a clear and instructive narrative of so much of the |
| 20. | **LITERARY FORMS** | • Students will have a clear knowledge on poetry and different forms of poetry.<br>• Students will come across various literary technique, tone, content and length of poetry.<br>• Students will really understand the different structure of poetry.<br>• Students will have a clear awareness about different types of movements and their functions.<br>• Students understand about what is meant by drama.<br>• Through this unit the students will have a proper knowledge about the different forms of drama and its structure.<br>• Students clear knowledge about the elements of novel and short story.<br>• Students will also come across the difference between novel and short story. |

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| 21. | **HISTORY OF ENGLISH LITERATURE** | • Able to employ knowledge of literary traditions to produce imaginative writing.<br>• Able to demonstrate knowledge of the history or culture of the English language Gain working knowledge of the principal works, authors, genres, and periods of American and British literatures. Possess an awareness of alternatively defined traditions and/or genres, such as women‟s literature, postcolonial literature, world literature, or Native American literature.<br>• Analyze literature using appropriate terminology and common rhetorical figures.<br>• Apply theoretical approaches to critical reading of literary texts<br>• Write effectively and produce clear and coherent prose demonstrating effective use of grammar and style<br>• Construct arguments and execute well-structured, thesis-driven interpretations based on textual evidence Develop extended arguments that take account of existing scholarly conversations .<br>• Demonstrate awareness of English as a language, including its systematic structure, history, and uses English Literature Majors will emerge from the program with the additional ability. |
| 22. | **COMMUNICATION SKILLS –IV** | • Understand about the author of the poem, has been deeply involved with nationalism and the rise of independent cultural values in Canada.<br>• Understand the belief that life and death are interlinked between one another, reflecting each other.<br>• Understand about an act of chivalry, gallantry, patriotism and sacrifice on the part of a young French Soldier.<br>• Understand the tale of two boys who trade clothing one afternoon and, as a result, they trade lives as well.<br>• Able to identify the rules for degrees of comparison<br>• Able to illustrate the rules in forming the degrees of comparison by answering correctly<br>• Able to articulate what passive and active voices are<br>• Able to recognize them in writing<br>• Able to change passive voice phrasing to active voice in their own writing<br>• Able to generate effective critical thinking into primary issues in the given topic.<br>• Able to share, study, and interpret proverbs.<br>• Able to find a proverb that rings true for them and explain its significance.<br>• Understand typical conventions of reports<br>• Understand the purpose of different sections of a report<br>• Write in an appropriate style for an academic or scientific report |

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| 23. | **AGE OF WORDSWORTH** | • Understand about how Wordsworth shows full respect toward the common man, using language and Imagery that was not only easy for the everyday person to comprehend, but connected Wordsmith to them as well.<br>• Understand how author attempt by dedicating an "untrodden region" of his mind to the worship of the neglected goddess.<br>• Understand about Keats's perception of the conflicted nature of human life, i.e., the interconnection or mixture of pain/joy, intensity of feeling/numbness or lack of feeling, life/death, mortal/immortal, the actual/the ideal, and separation/connection. |
| 24. | **AGE OF WORDSWORTH** | • Understand about how the speaker invokes the "wild West Wind" of autumn, which scatters the dead leaves and spreads seeds so that they may be nurtured by the spring, and asks that the wind, a "destroyer and preserver," hear him.<br>• Able to realize that the persona of this poem is actually the cloud of the title, who in the poemtalks about its various appearances and what it does during its life<br>• Students learnt about how the authorportrays the tiger as a divine spirit that will not be subdued by restrictions, but will arise against established rules and conventions.<br>• Understand about how Blake speaks directly to a lamb, playing on the animal representation for the Lord Jesus Christ.<br>• Understand about how the speaker mourns the deaths of all men, particularly the poor.<br>• Understand about Lamb"s lamentation with the issues of child labor, social in equality and the professional conduct in industrial England<br>• Understand about how the journe**y** is best to travel alone as well as discussing all the things that can be gained.<br>• As the title suggests, the primary theme of Sense and Sensibility is the use of sense vs. sensibility. In protest against the romantic literature of her day that praised extreme emotionalism and focused on the needs and wants of self above the common good or community.<br>• Understand about how Scott was increasingly interested in establishing a national identity for Scotland and this theme underlies the question of English national identity in the medieval period in the plot of Ivanhoe. |

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| 25. | **AGE OF TENNYSON** | • Acquire knowledge over the most renowned poets of the Victorian Era.<br>• Understand a meditation on death, history and literary contexts.<br>• Understand the basic ideas on literary criticism through the literary legends Shakespeare and Dante.<br>• Understand the power of women during the 20th Century and natural duties of men and women.<br>• Understand the general selfishness and injustice of society towards the poor people.<br>• Acquire knowledge over the Marxist Movement.<br>• Understand the theme of remorse, the desire for redemption and the challenge of atoning.<br>• Gain the general idea of enigmatic as „anything (is) possible at the hands of time and chance; except, perhaps and fair play".<br>• Gain the idea over the way in which the poor people suffer but conduct themselves with great honesty and nobility.<br>• Acquire knowledge on David"s childhood poverty and the part of society during 19th Century England. |
| 26. | **LITERARY CRITICISM** | • Able to understandthat criticism is the practice judging and commenting on the qualities and character of literary works.<br>• Horace and Aristotle criticism theories make the students to know a complex psychological account of literature.<br>• Students able to understand the poets and writers of the late 17th& 18th century Understand about the important texts in the history of criticism, theories and their practical values.<br>• Able to evaluate, interpret the literature and to know about the philosophical nature of literature, goals and methods. |
| | | • Knowledge of how to lead a pure and dignified life and the union of human soul with God. |

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| 27. | **INDIAN LITERATURE IN TRANSLATION** | • Elucidate the writer‟s protest against social discrimination and economic exploitation.<br>• Gain knowledge of the shimmering elusiveness of reality, its very order and symmetry contributing to the melancholic concealment of the great mystery of existence.<br>• Gain knowledge of the real fact of the tragedy, of partition, the painful event in the history of India<br>• Able to examine the appalling state of women in Indian society.<br>• Gain knowledge of the issue of the gender-bias in society and the oppression of women by the patriarchal order.<br>• Elucidate the cruel aspects of the various castes prevalent in India in the post-independent era.<br>• Gain knowledge about the traditions and customs which are blindly adhered to the Indian women from emerging as individuals.<br>• Elucidate an intense concern for the familial, social and economic tensions in the reality of contemporary times and its ever-changing contexts of modern life.<br>• Examines various phases of human relationships, both |
| 28. | **PRESENTATION SKILLS** | **ORGANISING SPEECH**<br>• Able to understand the use language to inform the people around us of what we feel, what we desire, and question/understand the world around us.<br>• Able to understand how to use maps, graphs and tables to present complicated information in a way that is accessible and understandable<br>**MODES OF DELIVERY**<br>• Able to identify guide words in a variety of dictionaries.<br>• Able to locate words using guide words.<br>• Able to locate guide words using words.<br>• Able to understand the influence of the speech situation<br>• Able to assess a situation with respect to a hearer‟s social, cultural or emotional needs constitutes a crucial facet of a speaker‟s social and linguistic competence.<br>• Able to know how to begin when a person wants to introduce himself/herself or someone else to an English native speaker.<br>• Able to introduce themself both casually and confidently.<br>• Able to comprehend the elements of note-taking techniques |

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| 29. | **WRITING SKILLS** | **SENTENCE STRUCTURE**<br>• Students will be able to identify the four types of sentences: declarative, interrogative, exclamatory, and imperative<br>**SIGNAL WORDS**<br>• Students will learn about the functions and practical uses of conjunctions and prepositions; use of subjects + verbs; synonyms and antonyms; using nouns and pronouns; joining clauses together; using words/phrases to talk about events in time; how some events depend on other events. |
| 30. | **WRITING SKILLS** | **MECHANICS OF WRITING**<br>• Students will be able to: differentiate between common punctuation marks; demonstrate an understanding of punctuation through correct usage; identify when each punctuation mark (period, exclamation point, question mark, comma and quotation marks) is needed.<br>**VOCABULARY**<br>Able to recognize ways to become a better speller.<br>• Implement methods of monitoring your common spelling problems. Regardless of how good a speller you are, knowing the type of spelling errors you are likely to make can help you correct the errors.<br>**WRITING**<br>• Understand about the way of organizing the thoughts and beginning to put the information on the paper.<br>• Understand the aim of writing: to express oneself, to provide information, to persuade, or to create a literary work. When someone communicates ideas in writing, they usually do so to express themselves, inform their reader, to persuade a reader or to create a literary work. |

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| 31. | **TWENTIETH CENTURY LITERATURE II** | **POETRY**<br>• Have a sophisticated understanding of the relationship between literary texts and social structures; Know how to read both formal and thematic aspects of texts in relationship to larger cultural and historical movements.<br>**PROSE**<br>• Intended to provide an overview of major developments in the English language literary tradition, introduce the knowledge and skills required for understanding and appreciating literature from different historical periods, and give practice in critical and interpretive writing<br>• Understand and successfully deploy a range of terms and concepts integral to literary studies.<br>**DRAMA**<br>• Demonstrate critical understanding of some major twentieth-century authors and texts in the genres of prose fiction and poetry.<br>• Locate these texts in the contexts of literary modernism or postmodernism, and identify the significant characteristics of these movements as reflected in the literary texts.<br>**FICTION**<br>• Engage in analysis of the themes, forms, styles, and techniques that characterize particular works.<br>• Situate the analysis of literary texts in the context of appropriate scholarship and critical debate.<br>• Know the cultural, political, and stylistic protocols of beat poetry, the black arts movement, postmodernism and second wave feminist literature<br>• Communicate at an advanced level in genres that are appropriate for literary criticism, and in print, digital or interpersonal environments. |
| | | • Able to analyze Shakespeare‟s recasted productions. |

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| 34. | **SHAKESPEARE - II** | • Understand the different ways of interpreting the recasted editions of Shakespeare.<br>• Able to know the ideas underlying Shakespeare‟s portrayal of evil.<br>• Understand the beliefs about the supernatural elements in Shakespeare‟s time as presented in his plays.<br>• Analyze themes, plots, characters in „Macbeth‟.<br>• Develop a greater critical understanding of the ways in which human deeds and their consequences are represented and explored in Shakespeare‟s „Macbeth‟<br>• Understand the traditions of Roman and Italian Renaissance comedy followed by Shakespeare.<br>• Identify the conflicts in the play and appreciate its relationship to character and plot.<br>• Gain a good knowledge of the major events in the careers of Antony and Cleopatra, including the historical context (late republican and triumviral) in which they lived<br>• Analyze the literary and material culture of the triumviral period and of the reaction to Antony and Cleopatra in the Augustan period. |

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| 35. | **WOMEN'S WRITING** | • Students will gain a clear understanding of the major movements of feminist thoughts and related areas of the body of knowledge making up the field of gender and feminist studies.<br>• Students will gain more information about the author Judith Wright, Jayanta Mahapatta, Gwendolyn Brook, and Sylvia Plath.<br>• From the poems students across that life‟s not always batter on the other side. And place of freedom and individualism.<br>• Students will able to discuss the ideas of truth and perception as the related to the poems.<br>• Students will able to analyze the significances of the passage in the poem.<br>• Students will get know the poem revolve around the truth of reflections in the life of an individual.<br>• Understand the sufferings of immigrants who seek their own identity in an unknown place.<br>• Students will explore the notion of being imprisoned and consider how freedom is fundamental human rights regardless of one‟s race or nationality.<br>• Students will learn how to interpret boarder ideas from texts, specifically poetry.<br>• Students will learn how to connect the written form with personal experiences.<br>• Students will learn the own identity from the play Slam the Door Softly.<br>• Students learn the housewife, enlists the supports of the feminine mystique, thinking about women to promote her feminist view to her husband from the character Nora<br>• Students learn how power imbalances due to gender in a culture are reflected in or challenged.<br>• Students know gender imbalance in society or the imbalance within their own home.<br>• Students able to understand the dimensions of the immigrant‟s psychological and emotional condition.<br>• Students have known the best of Indian and western culture, finds modern women to be mandatory clarification to gaze life with modishness.<br>• Students will know about journey of self-discovery, social consciousness, aggressive nature of women. |
| | | • Gain the knowledge on the comparison of two similar and dissimilar forms and trends in two |

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| 36. | **COMPARATIVE LITERATURE** | different literature.<br>• Understand the impact of French and America for the development of Comparative Literature.<br>• Understand the role of reception study for the development of writer‟s popularity.<br>• Gain knowledge over the influence study and its impact on writer‟s career development.<br>• Understand the purpose of Thematology in which the concept is to study a theme typically in regards to geographically distributed cultures.<br>• Acquire knowledge over the concept of archetypes, which residue the innumerable experiences of the mind.<br>• Understand the reciprocal relationship between a literary phenomena and social structure.<br>• Understand the socio-economic situations, political issues, the World view and creativity of the writers.<br>• Understand the importance of translation for the study of comparative literature.<br>• Gain the knowledge over the problems on the consequences of the decolonization of a country, especially questions relating to the political and cultural<br>independence of subjugated people. |
| 37. | **FUNDAMENTALS OF LANGUAGE AND PHONETICS** | • Understand the relationship between the history of the English language and social and political processes.<br>• Differentiate spoken and written language and specific use of English as a language.<br>• Understand how the English language has changed over<br>time from its origins to the present day.<br>Assimilate the development of Vocabulary through variety of techniques<br>Understand the main principles of production of speech<br>sounds and the organs involved in it. |
| 38. | **FUNDAMENTALS OF LANGUAGE AND PHONETICS** | • Comprehend the place and manner of articulation of English speech sounds.<br>• Apply English as a language to an impressive and effective level through conversation with a neutralized accent.<br>• Learn and practice correct articulation, rhythm and intonation to use correct speech patterns.<br>• Demonstrate the knowledge of the International Phonetic Alphabet.<br>• Gain the basic skills in Phonetic transcription. |

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| 39. | **JOURNALISM** | • Understand the First Amendment principles, law, ethics and their application to professional journalistic practice and the pursuit of truth. Ability to apply tools and technologies appropriate for the communications professions in which they work.<br>• Understand the knowledge of basic numerical and statistical concepts, as well as an understanding of how to attribute sources, both human and physical, into stories.<br>• Acquire capacity to critically evaluate their own work and that of others for accuracy and fairness, clarity, appropriate style and grammatical correctness<br>• Ability to write correctly and clearly in forms and styles appropriate for the communications professions, audiences and purposes they serve.<br>• Ability to conduct research and evaluate information by methods appropriate to the communications professions in which they work.Understand about journalism concepts and theory in the use and presentation of images and information. Ability to effectively cover the diversity of groups in a global society. Understand the role of multimedia technologies, including social media, in the journalistic practice.<br>• Understand the history and role of professional journalists in shaping American Society. Gain knowledge and practical application of the full range of journalistic reporting, researching, interviewing, editing and writing. |
| | | • Spotting error exercise requires students to critically pay attention to every aspects of the material |

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| 40. | **ENGLISH FOR EMPLOYABILITY** | presentation.<br>• Students will have to identify mistakes and correct them while working in group Conversational practice is to increase the students English communication skills LSRW.<br>• Conversational practice is to help students improve their spoken English skills to able to communicate more effectively in English.<br>• Students will understand the importance and power of good non-verbal communication.<br>• Students first learn the sign and message given by Body Language, the examine body language in different culture.<br>• Through letter writing students will improving social skills- saying "thank you, sending an invitation, differing help or support.<br>• Students will learn exchanging ideas and opinion.<br>• Students will able to explore the appropriate language and format associated with a formal letter.<br>• Through group discussion students to develop English communication and presentation skills.<br>• Group discussion can encourage the students to interact with the group more clearly by asking questions and speaking out their own opinion.<br>• Debate provides experiences to the students that are conductive to life changing, cognitive and presentation skills.<br>• In addition through debate students acquire unique educational benefits as they learn and polish skills far beyond what can be learnt in any other setting.<br>• Mock interview provide students with an opportunity to test out their interview skills.<br>• It helps students reduce stress and anxiety about interviewing. |

## M.PHIL MICROBIOLOGY

### PROGRAMME SPECIFIC OUTCOMES

**PSO1:** To have graduates with high knowledge and research ability and to develop further techniques in Microbiology.
**PSO2:** To understand the basic knowledge in clinical, immunological and biochemical techniques in order to continue their carrier in future.
**PSO3:** To create power and capabilities in Microbiology in order to apply advance techniques for maintaining the accuracy during the diagnosis.
**PSO4:** To prepare a new inception of Microbiologist that are capable of excelling in carrier of their choosing.
**PSO5:** To provide an opportunities for students to engage in productive scholarly research projects that complement their training.

### COURSE OUTCOMES

| S.NO | NAME OF THE SUBJECT | DESCRIPTION |
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| 1 | **Research Methodology** | • Know about collection of data, analysis, interpretation. |
| 2 | **Medical Microbiology** | • Gain knowledge about the disease causing microorganisms and its harmful effects |
| 3 | **Immunology** | • Gain knowledge about cells of immune system, immune response against antigen. |
| 4 | **Area Paper – Industrial Microbiology** | • Known the bioprocess technology and fermentation process and product recovery |
| 5 | **Area Paper – Environmental Microbiology** | • Know about the environment interaction with microorganisms and its effects |

## M.SC MICROBIOLOGY

## PROGRAMME SPECIFIC OUTCOMES

**PSO1:** To have graduates with high knowledge and research ability and to develop further techniques in Microbiology.
**PSO2:** To understand the basic knowledge in clinical, immunological and biochemical techniques in order to continue their carrier in future.
**PSO3:** To create power and capabilities in Microbiology in order to apply advance techniques for maintaining the accuracy during the diagnosis.
**PSO4:** State/describe within microbiology discipline in core theories and execution.
**PSO5:** To prepare a new inception of Microbiologist that are capable of excelling in carrier of their choosing.
**PSO6:** To provide an opportunities for students to engage in productive scholarly research projects that complement their training.

## COURSE OUTCOMES

| S.No | Name of the Subject | Description |
|---|---|---|
| 1. | **Introduction to Microbiology and microbial diversity** | • Describe the History, Scope of Microbiology and its general characteristics |
| 2. | **Bioinstrumentation** | • Students will gain knowledge of gene expression and Molecular Biology techniques in Lab |
| 3. | **Biophysical Methodology** | • Gain knowledge about Principle and working mechanism of instruments |
| 4. | **Microbial Physiology & metabolism** | • Idea about reactions occurring in the cells & energy production |
| 5. | **Lab in Microbiology** | • Students will develop the skill of handling microscope, media preparation and biochemical reaction |
| 6. | **Bacteriology and Virology** | • Students gathered knowledge about the discovery, classification and its effects. |
| 7. | **Industrial Microbiology** | • How to isolate, cultivate, preserve microorganism, fermentation process and product recovery. |
| 8. | **Food & Diary Microbiology** | • Students improved their knowledge by preparing the preparation of fermentation and its products |

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| 9. | **Environmental Microbiology** | • Know about ecosystem ecological hierarchy, interaction between microbes, plants and animals |
| 10. | **Lab in Applied Microbiology** | • Gain about Clinical, food sample analysis, antimicrobial sensitivity test |
| 11. | **Basic Bioinformatics** | • Students occurred knowledge on basics of computer and their application in biology, databases. |
| 12. | **IPR, Biosafety and Bioethics** | • Gain knowledge about applying and maintaining patents, protecting innovative ideas. |
| 13. | **Cell & Molecular Biology** | • Understand about the cell organelles, cell signaling with their molecular basis. |
| 14. | **Microbial Genetics** | • Know about the gene, expression and mutation |
| 15. | **R DNA Technology** | • Understand about R DNA and its application in production of transgenic |
| 16. | **Lab in Microbial Genetics & Molecular Biology** | • Techniques were used well studied in Microbial genetics |
| 17. | **Biostatistics** | • Understand the concept of Statistics and application in data analysis |
| 18. | **Research Methodology** | • Know about collection of data, analysis, interpretation. |
| 19. | **Medical Microbiology** | • Gain knowledge about the disease causing microorganisms and its harmful effects |
| 20. | **Immunology** | • Gain knowledge about cells of immune system, immune response against antigen. |

## B.SC MICROBIOLOGY

## PROGRAMME SPECIFIC OUTCOMES

**PSO1:** To have graduates with high knowledge and research ability and to develop further techniques in Microbiology.
**PSO2:** To understand the basic knowledge in clinical, immunological and biochemical techniques in order to continue their carrier in future.
**PSO3:** To create power and capabilities in Microbiology in order to apply advance techniques for maintaining the accuracy during the diagnosis.
**PSO4:** State/describe within microbiology discipline in core theories and execution.
**PSO5:** To prepare a new inception of Microbiologist that are capable of excelling in carrier of their choosing.
**PSO6:**To provide an opportunities for students to engage in productive scholarly research projects that complement their training.

## COURSE OUTCOMES

| S.No | Name of the Subject | Description |
|---|---|---|
| 1. | **Basic Microbiology** | Students will gain knowledge on role of Microbiology in various areas |

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| 2. | **Microbial Taxonomy** | Students will gain knowledge on Classification of Micro organism |
| 3. | **Microbial Genetics & Molecular Biology** | Gain Knowledge about genetic material, expression, mutation and its effects |
| 4. | **General Biology** | Outline of classification of plants was clearly understood by students |
| 5. | **Human physiology** | Will gain knowledge about Human organs and its functions |
| 6. | **Biofertilizer lab** | Describes about biofertilizer production and its application |
| 7. | **Agricultural & Environmental Microbiology** | Students know about the interaction between microbes and environment, biogeochemical cycling, harmful and beneficial effects. |
| 8. | **Food & Diary Microbiology** | The students developed their skills to know how the microbes are involved in food microbiology |
| 9. | **Industrial Microbiology** | Describe the strain development strategies and product formation using fermentation technique. |
| 10. | **General Virology** | Brief outline of virus and its type |
| 11. | **Enzyme & Enzyme Technology** | Know about activity and kinetics of enzyme action. |
| 12. | **Elective-Bioinstrumentation** | Enable the students to handle various instruments and their working principle |
| 13. | **Nutritional biochemistry** | Know about nutritional value, metabolism and disorders |
| 14. | **Food Fermentation techniques- lab** | Gain knowledge about fermented food products and its beneficiary effects |
| 15. | **Microbial Physiology & Metabolism** | Students will gain knowledge about the carbohydrate utilization pathways and energy productions |
| 16. | **Lab in Microbiological techniques** | Learned about basic rules & regulations to be followed in laboratory, sterilization techniques, biochemical tests |
| 17. | **Immunology** | To know about the development of immune system and its response against antigen |
| 18. | **Lab in Microbial Genetics, Molecular Biology & Immunology** | Determination of antibiotic resistance, lethal death time, auxotrophic mutant of given bacterial culture and immunological tests. |
| 19. | **SBE – Microbiological analysis of air and Water- Lab** | Know about the microorganisms present in air and water. Technique used to isolate in aseptic conditions |
| 20. | **Elective –Cell Biology & Biochemistry** | Gain knowledge about biomolecules, organelles, cell divisions |
| 21. | **Developmental biology** | Gain knowledge about embryo formation and development |
| 22. | **Recombinant DNA Technology** | Know about the gene manipulation and applications of gene, transgenic animals & plants |
| 23. | **Medical Microbiology** | Gain knowledge about the disease causing microorganisms and its harmful effects |
| 24. | **Plant & Animal Biotechnology** | Learn about the isolation and purification of protoplasts plant tissue culture and ethical issues. |
| 25. | **Lab in Applied Microbiology I** | Gain knowledge about microbial population in fruit juice, soft drinks, ice cream, pickles and meat. |

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| 26. | **Lab in Applied Microbiology II** | Determination of Clinical analysis ,cell counting and clinical assay and gene isolation |
| 27. | **Basic Bioinformatics** | Have a knowledge about computer and its application in bioinformatics |
| 28. | **Biosafety and IPR** | Gain knowledge about applying and maintaining patents, protecting innovative ideas |
| 29. | **Lab in bioinformatics** | understand about protein and nucleic acid sequence data retrieval, search tools |

## M.SC BIOCHEMISTRY

### PROGRAMME SPECIFIC OUTCOMES

**PSO1:** Understand the fundamentals of chemistry, biology and key principles of biochemistry.
**PSO2:** Ability to design experiments and interpret experimental data's in carriers of choosing.
**PSO3:** Can gain proficiency in basic laboratory techniques in both Chemistry & Biology.
**PSO4:** Able to demonstrate an understanding of biochemical principles & techniques to future.
**PSO5:** Understand laboratory investigations & theoretical explanations relating to diagnosis, treatment and prevention of diseases.

### COURSE OUTCOMES

| S.No | Name of the Subject | Description |
|---|---|---|
| 1. | **Chemistry of Biopolymers** | • Students will gain knowledge on Protein & nucleic acid structure & function |
| 2. | **Enzyme & Enzyme Technology** | • Know about activity and kinetics of enzyme action. |
| 3. | **Cellular Biochemistry** | • Student acquired knowledge on Cell organelles, and its metabolic reactions. |
| 4. | **Lab in Biochemical Techniques Biochemical Analysis** | • Students gain knowledge about Enzyme kinetics, Preparation of crude enzyme extract and its assay. |
| 5. | **Biophysical Methodology** | • Gain knowledge about Principle and working mechanism of instruments |
| 6. | **Bioprocess Technology** | • Students Gain knowledge about bioprocess technique |
| 7. | **Microbiology & its Application** | • Discussed about the scope of Microbiology & its application in various fields |
| 8. | **Molecular Biology** | • Students gain knowledge on genetic material, structure and replication of DNA and its expression. |
| 9. | **Plant Biochemistry** | • Students will develop knowledge on plant cell organelles and its functions |
| 10. | **Lab in Microbiology & Molecular Biology** | • Learned about sterilization techniques, isolation of microorganism and molecular biology techniques |
| 11. | **Basic Bioinformatics** | • Students occurred knowledge on basics of computer and their application in biology, databases. |

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| 12. | **Bioethics, Biosafety and IPR** | • Gain knowledge about applying and maintaining patents, protecting innovative ideas |
| 13. | **Endocrinology & Metabolic Regulation** | • Explained about endocrinology and its regulation & classification |
| 14. | **Clinical Biochemistry** | • Understand the disorders of biomolecule metabolism and its diagnosis |
| 15. | **Immunobiology** | • Learn about the Overview of Immunology, antigenicity and immune response. |
| 16. | **Lab in Immunology & Clinical Biochemistry** | • Gain knowledge about the immunology kit assay to diagnose disease. |
| 17. | **Biostatistics** | • Understand the concept of Statistics and its application in data analysis. |
| 18. | **Research Methodology** | • Know about collection of data, analysis, interpretation. |
| 19. | **Plant and Animal Biotechnology** | • Understand about the plant tissue culture and different techniques related to plant tissue culture |
| 20. | **Biochemical & Environmental Toxicology** | • Gain Scope of Toxicology and its effects |

## B.SC BIOCHEMISTRY

### PROGRAMME SPECIFIC OUTCOMES

**PSO1:** Understand the fundamentals of chemistry, biology and key principles of biochemistry.
**PSO2:** Ability to design experiments and interpret experimental data's in carriers of choosing.
**PSO3:** Can gain proficiency in basic laboratory techniques in both Chemistry & Biology.
**PSO4:** Able to demonstrate an understanding of biochemical principles & techniques to future.
**PSO5:** Understand laboratory investigations & theoretical explanations relating to diagnosis, treatment and prevention of diseases.

### COURSE OUTCOMES

| S.No | Name of the Subject | Description |
|---|---|---|
| 1. | **Biomolecules** | Discussed about the history, classification, properties and development of Biomolecules |
| 2. | **Nutritional Biochemistry** | Student gain knowledge about the food composition and its nutritional importance |
| 3. | **Intermediatory Metabolism** | Students gain knowledge about physiological metabolism and ATP generation. |
| 4. | **Statistics for Biology** | Will gain knowledge to collect data for statistical analysis with graphical representation. |
| 5. | **Human Physiology** | Will gain knowledge of Organization of human system clearly with its functions. |
| 6. | **Bioinstrumentation** | Students know about the principle and working mechanism of techniques used in biochemistry lab. |
| 7. | **Phytotherapy** | Discuss the common herbs & their importance, effects |
| 8. | **Cell Biology and virology** | Gain knowledge about cell organelles and its function. Virus and its effects. |
| 9. | **Molecular Biology** | Gain Knowledge about genetic material, expression, mutation and its effects |

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| 10. | **Genetics** | Know about structure of chromosome, interaction of gene and mutations. |
| 11. | **General Biology** | Outline of classification of plants was clearly understood by students |
| 12. | **Developmental Biology** | Gain knowledge about embryo formation and development |
| 13. | **Clinical Biochemistry** | Gain knowledge about nutritional disorders, diagnosis test. |
| 14. | **Pharmacology** | Know about the drugs, drug delivery and its functions |
| 15. | **Dairy technology** | Students know about Milk and Milk Products |
| 16. | **Plant Biochemistry** | Gain knowledge about the plant growth, physiological functions of plant. |
| 17. | **Clinical Biochemistry Lab** | Understand about collection of blood and analysis of blood. |
| 18. | **Enzyme & Enzyme Technology** | Explained about enzymes their classification & purification technique, assay and specificity. |
| 19. | **Lab in Biomolecules** | CO1 - Qualitative analysis of biomolecules with standard techniques |
| 20. | **Immunology** | To know about the development of Immune system and its response against antigen |
| 21. | **Lab in Immunology & Microbiology** | Know about Immunological kits assay methods |
| 22. | **General Microbiology** | Know about the Microbiology, s scope and its application. |
| 23. | **Bioprocess technology** | Gain Knowledge about Bioprocess technology and product formation and recovery |
| 24. | **Protein Purification Techniques** | Know about the purification of enzymes and characterization. |
| 25. | **Hormones and Neurochemistry** | Students understand about types of hormones and its action of hormones. |
| 26. | **R DNA technology** | Know about the gene manipulation and applications of gene, transgenic animals & plants |
| 27. | **Genetics & Genetic Engineering** | Know about cloning process, library construction and techniques used in genetics |
| 28. | **Lab in genetics & Molecular Biology** | Understand about techniques used for gene transfer |
| 29. | **Lab in biochemical Techniques & biochemical analysis** | Understand Estimation of biomolecules and quantification of biomolecules |
| 30. | **Bioinformatics** | Have a knowledge about computer and its application in bioinformatics |
| 31. | **Biosafety and IPR** | Gain knowledge about applying and maintaining patents, protecting innovative ideas |
| 32. | **Bioinformatics Lab** | understand about protein and nucleic acid sequence data retrieval, search tools |
| **M.PHIL CHEMISTRY** | | |
| **PROGRAMME SPECIFIC OUTCOMES** | | |

**PSO1:** To acquire an ability to express the advance knowledge of chemistry with other disciplines.
**PSO2:** To demonstrate the concept via self-direction with originality in tackling and solving problems in the planning and implementation of research.
**PSO3:** Able to work effectively as a team leader and player in Research and Development laboratories and Industries.
**PSO4:** To adopt the principles of green chemistry for designing experimental techniques to mitigate environmental pollution in a more appropriate manner.

**COURSE OUTCOMES**

| S.NO | NAME OF THE SUBJECT | DESCRIPTION |
|---|---|---|
| 1 | **RESEARCH METHODOLOGY** | • To introduce the purpose and importance of research. • To impart knowledge in the various methods of research.<br>• To learn the scientific method of collecting data and to compute statistical parameters to arrive at meaningful conclusions.<br>• To know the methodology of writing thesis and journal articles.<br>• Understand some basic concepts of research and its methodologies<br>• Identify appropriate research topics.<br>• Select and define appropriate research problem and parameters.<br>• Prepare a project proposal (to undertake a project).<br>• Organize and conduct research (advanced project) in a more appropriate manner.<br>• Write a research report and thesis. |
| 2 | **ADVANCES IN CHEMISTRY** | • To impart knowledge and understanding in the advanced concepts of organic chemistry.<br>• To impart knowledge and understanding in the advanced concepts of inorganic chemistry.<br>• To impart knowledge and understanding in the advanced concepts of physical chemistry.<br>• To impart research aptitude and provide adequate training in synthesis, characterization, instrumentation.<br>• To appreciate the applications of various analytical tools for the characterization of materials.<br>• To study the theoretical concepts and applications of NMR, ESR and mass spectroscopy<br>• To learn the theories and importance 2D NMR. • To highlight the importance medical diagnostics. |

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| 3 | **AREA PAPER FOR THESIS** | • Considerably more in-depth knowledge of the major subject/field of study, including deeper insight into current research and development work • Deeper knowledge of methods in the major subject/field of study. • A capability to contribute to research and development work.<br>• The capability to use a holistic view to critically, independently and creatively identify, formulate and deal with complex issues.<br>• The capability to plan and use adequate methods to conduct qualified tasks in given frameworks and to evaluate this work.<br>• The capability to create, analyse and critically evaluate different technical/architectural solutions.<br>• The capability to critically and systematically integrating knowledge.<br>• The capability to clearly present and discuss the conclusions as well as the knowledge and arguments that form the basis for these findings in written and spoken English.<br>• The capability to identify the issues that must be addressed within the framework of the specific thesis in order to take into consideration all relevant dimensions of sustainable development.<br>• A consciousness of the ethical aspects of research and development work. |
| 4 | **DISSERTATION** | • Design and manage a piece of original project work.<br>• Develop a research proposal and protocol;<br>• Discuss the ethical dimensions of their research and obtain appropriate ethical approval if needed;<br>• Synthesise knowledge and skills previously gained and applied to an in-depth study;<br>• Establish links between theory and methods within their field of study;<br>• Select from different methodologies, methods and forms of analysis to produce a suitable research design, and justify their design;<br>• Present the findings of their project in a written report. |

## M.SC CHEMISTRY

## PROGRAMME SPECIFIC OUTCOMES

**PSO1:** The graduate has expert knowledge of a well-defined area of research within chemistry.
**PSO2:** The graduate has specific skills in planning and conducting advanced chemical experiments and applying structural-chemical characterization techniques.
**PSO3:** Students should have an advanced level understanding of at least three of the following areas of chemistry - Analytical, Inorganic, Organic, and Physical Chemistry. They should have a graduate level understanding of their major area(s) of research.
**PSO4:** Students should broaden their professional foundations through activities such as teaching, internships, and fellowships.
**PSO5:** Students should be able to communicate scientific results in writing and in oral presentation.

| COURSE OUTCOMES | | |
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| **S.NO** | **NAME OF THE SUBJECT** | **DESCRIPTION** |
| 1 | **ORGANIC CHEMISTRY I** | • Describes the stability and reactivity of carbocations, carbens, nitrens, and benzynes. •<br>Estimate the identification by chemical and spectral methods.<br>• derstand the NMR concept of aromaticity, anti aromaticity and Huckel Theory of aromaticity.<br>• Understand the aromatic character of six, five, seven, and eight membered rings.<br>• Analyse the nucleophilic substitution and electrophilic substitution reactions.<br>• Describe the bonding properties of systems with (4n+2) π electrons and 4n π electrons.<br>• Investigate the structural and solvent effects of E1, E2, and E1CB Mechanism.<br>• Understand the mechanism of aliphatic electrophilic substitution (SE1, SE2, SEi) reactions. |
| 2 | **INORGANIC CHEMISTRY I** | • To understand the applications of valence shell electron pair repulsion theory. •<br>Explain about the applications of semiconductors and super conductors.<br>• To explain about the polymers and their benefits.<br>• Give a briefly explain about the concept of hybridization.<br>• This course provides an introduction to the fundamentals of chemistry. Students learn about elements, compounds, mixtures, atomic theory and structure.<br>• Inorganic chemistry principles including atomic structure, symmetry, orbitals and bonding models for molecules and solids.<br>• Used in primary and secondary batteries and super capacitors, which are inorganic compounds. Students are introduced to technologies that are currently in use, such as<br>• lithium-ion, lithium and sodium-sulfur batteries and electrochemical double-layer capacitors, as well as proposed technologies like metal-air and lithium-sulfur batteries.<br>• To understand the concept of reactions of boranes.<br>• To understand and construct qualitative sets of molecular orbitals for simple molecules and inorganic complexes.<br>• Physical and electronic properties of solid-state materials and bioinorganic molecules. |

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| 3 | **PHYSICAL CHEMISTRY I** | • Physical chemistry forms the theoretical background to understand the chemical phenomena, starting from the laws of physics. • The properties of molecules can nowadays be understood by means of theoretical chemistry. Thermodynamics, mobility of molecules, intermolecular interactions and reaction kinetics are essential in chemistry.<br>• Teaching gives the students rather broad theoretical background and tools to understand various methods in chemical research and analytics.<br>• Understanding of molecular properties, and hence of materials, is given. The most important approaches are thermodynamics, kinetics and theoretical chemistry.<br>• The competence in physical chemistry finds applications in all the fields of chemistry, including process engineering, biochemistry and medicine.<br>• It can independently search, interpret and absorb chemistry-related scientific knowledge and take responsibility for his/her own professional development.<br>• It can critically handle chemistry-related data and draw conclusions based on it. |
| 4 | **ORGANIC CHEMISTRY PRACTICAL** | • Organic materials can be used in experiments that develop other practical skills such as data analysis, enthalpy determination, rates of reaction and research skills. • Burning alcohols and measuring enthalpy changes, finding the pH of acids and measuring rates of a reaction, for example, may all be contexts where students develop many practical skills that in turn lead to a better understanding of the underlying organic chemistry.<br>• In organic chemistry practical, students are expected to show skills in preparation, purification and characterization of organic compounds, but teachers should not restrict practical activities to these areas.<br>• Students get the opportunities to use organic reactions or materials in other contexts, especially problem-based practical activities<br>• Student engagement is improved as students are able to work on the experiments themselves rather than watch passively<br>• MStudents' manipulative skills improve as they handle small-scale apparatus.<br>• Reduced time needed – reduced-scale experiments can usually be completed more quickly than with conventional full-scale apparatus. |

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| 5 | **MEDICINAL CHEMISTRY & DRUG DESIGN** | • Introduction of chemical principles that are required to understand the action and behaviour of drug compounds and hence the relationship between the structure and stereochemistry of a compound and its chemical and therapeutic properties. • Outline on the basic features of molecular modeling, molecular mechanics and dynamics of Bio- macro molecules.<br>• Understand the theoretical principles and important applications of toxic metals, metal sites of Metallo enzymes.<br>• Analyze the relationship between drug's chemical structure and its therapeutic uses.<br>• Inculcate the structure and functions of vitamins.<br>• Analyze and understand the chemical basis for the rational design, synthesis, and mechanism of action of drugs, and selective metabolic inhibition.<br>• Learn basic principles of structural and functional relationships of biological molecules.<br>• Demonstrate the importance of chemistry in the development and application of therapeutic drugs.<br>• Gain an appreciation of the importance of ionisation of drugs with respect to the solubility and efficacy of drugs.<br>• Understand how changes in the chemical structure of drugs affect efficacy. |
| 6 | **ORGANIC CHEMISTRY –II** | • To enable students to understand and appreciate the advanced concepts of stereochemistry and conformational analysis. • To learn the concept stereochemistry and its importance.<br>• To identify the stereo chemical notation.<br>• To provide knowledge and understanding of the various reagents in organic synthesis<br>• To understand the important oxidation and reduction reactions.<br>• To learn familiar name reactions<br>• To understand the various types of acyclic and cyclic compounds.<br>• To introduce the concept of asymmetric synthesis.<br>• To apply the knowledge gained in the reagents in organic synthesis.<br>• To understand the various asymmetric synthesis. |

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| 7 | **INORGANIC CHEMISTRY –II** | • To familiarize the bonding concepts and isomerism in coordination compounds.<br>• To provide thorough understanding of the electronic spectra and reaction mechanisms of coordination compounds.<br>• To be able to recognize the types of isomers in coordination compounds<br>• To enable the student understand and appreciate the structure and bonding in organometallic compounds and pi-acceptor complexes. • To be able to use Crystal Field Theory to understand the magnetic properties (and in simple terms the colour) of coordination compounds.<br>• To be able to name coordination compounds and to be able to draw the structure based on it's name.<br>• To enable the students to understand Electronic Spectra of Metal Complexes.<br>• To learn in detail about the Organometallics. |
| 8 | **PHYSICAL CHEMISTRY –II** | • Students will have a firm foundation in the fundamentals and application of current chemical and scientific theories including those in Physical Chemistry, Surface Chemistry, Polymer Chemistry and Quantum chemistry.<br>• Students will be able to design and carry out scientific experiments as well as accurately record and analyze the results of such experiments.<br>• Students will be skilled in problem solving, critical thinking and analytical reasoning as applied to scientific problems. |
| 9 | **INORGANIC CHEMISTRY PRACTICAL** | • To develop skill identifying less common metal ions. •<br>To develop skill in estimating metal ions through complexometric titrations.<br>• To develop skill in estimating metal ions through redox titrations.<br>• To develop skill in estimating metal ion through spectrophotometry.<br>• Making informed choices among post-graduate opportunities for work or further Education.<br>• The communication of the results of scientific experiments in oral reports and written reports.<br>• Acquires the knowledge of systematic analysis.<br>• Learns the effective usage of chemicals. |

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| 10 | **ANALYTICAL TECHNIQUES** | • Explain the fundamentals of analytical chemistry and steps of a characteristic analysis.<br>• Expresses the role of analytical chemistry in science.<br>• Compare qualitative and quantitative analyses.<br>• Expresses the quantitative analysis methods.<br>• Expresses the qualitative analysis methods.<br>• Evaluate the analytical data in terms of statistics.<br>• Estimates kinds of errors in chemical analysis.<br>• Evaluates the effects of systematic errors on analytical results. |
| 11 | **ORGANIC CHEMISTRY III** | • Understand and reproduce accepted mechanisms of organic reactions including all intermediates, arrows, charges, and resonance structures. •<br>Understand and interpret spectra (IR, 1H NMR, 13C NMR, Mass Spec., and UV-VIS) of organic molecules.<br>• Name or draw the structure of an organic molecule using substitutive and/or functional class IUPAC nomenclature.<br>• Understand physical properties of organic molecules.<br>• A review of molecular symmetry with applications to molecular orbitals and spectroscopy will be described, and the spectroscopic interaction of matter with varying forms of radiation will be examined, including the phenomena of absorption, fluorescence and phosphorescence..<br>• Understand the fundamental principles of NMR spectroscopy and mass spectrometry and develop and apply methodology to interpret spectra (UV, IR, MS, 1-D and 2-D 1H and 13C NMR) of unknown samples in order to determine their structure. |

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| 12 | **INORGANIC CHEMISTRY III** | • Investigate the spectroscopic techniques like UV, IR, NMR, and ESR Spectroscopy. • Describe the structural elucidation of simple molecules, Effect of coordination on ligand vibrations in IR spectroscopy.<br>• Analyse and interpret the chemical shifts and coupling constant involving different nuclei.<br>• Explain the Effect of quadrapolar nuclei on the 1H NMR spectra and the fluxional behaviour of molecules NMR f paramagnetic molecules.<br>• Analyse the Isotropic shifts, contact shifts and pseudo –contact interactions, Lanthanide shift reagents in NMR spectroscopy of inorganic molecules.<br>• Describe the theoretical principles of EPR spectroscopy, McConnell relationship, hyperfine splitting, Zero field splitting, Kramer's degeneracy.<br>• Discuss the theory of Mossbauer spectroscopy, Doppler Effect, isomer shift and applications of MB spectroscopy to inorganic compounds.<br>• Description of nuclear chemistry, properties of nucleus, liquid drop model, shell model of nucleus, nuclear fission.<br>• Understand the applications of radioisotopes in agriculture, industry and medicine, neutron activation analysis and hot atom chemistry.<br>• Understand the aspects of Inorganic Photochemistry, Photochemistry of Coordination compounds, solar energy conversion and charge transfer photochemistry. |

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| 13 | **PHYSICAL CHEMISTRY III** | • Studying the symmetry properties of the molecules in terms of symmetry elements present and symmetry operations generated by the symmetry elements. • The introduction to quantization of energy levels and degeneracy using the particle in a 1D and 2D box as examples.<br>• An overview of the interaction of radiation with matter, and a basic understanding of absorption, emission and scattering processes.<br>• Coverage of the basic principles of the major spectroscopies, including ultraviolet & visible spectroscopy, infrared, nuclear and electronic spectroscopies.<br>• The applications of molecular symmetry and electronic spectra of molecules can be understood.<br>• The scope of statistical thermodynamics and specific heat of solids can be determined.<br>• An overview of general features of spectrum and concept of Franck Condon principle can be studied easily.<br>• It gives the introduction to ESR spectrum instrumentation and organic radicals in solution.<br>• The spin lattice, spin-spin relaxation & spin-spin coupling concept can be understood in spectroscopy.<br>• It covers the statistical thermodynamics and entropies for translational, rotational, vibrational and electronic motions of mono and diatomic molecules. |
| 14 | **PHYSICAL CHEMISTRY PRACTICAL** | • Set up glassware and apparatus to conduct experiments in Physical Chemistry.<br>• Interpret data from an experiment, including the construction of appropriate graphs and the evaluation of errors.<br>• Present the results of a practical investigation in a concise manner.<br>• write the rate of reaction taking into account the stoichiometry of all species, express a rate law for elementary processes<br>• To develop skill in carrying out kinetics experiments.<br>• To develop skill in carrying out experiments related to distribution law and study phase diagrams.<br>• To impart skill in analysis through conductometry.<br>• To develop skill analysis through potentiometry<br>• Enable the students to prepare data analysis using spread sheet program.<br>• Integrate most functions encountered in chemical practice. |

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| 15 | **ENVIRONMENTAL CHEMISTRY GREEN CHEMISTRY & ASYMMETRIC SYNTHESIS** | • Students will describe and analyze the current national and global environmental problems; looking at the science behind them, the economics involved.<br>• Identify how globalized processes impact socioecological systems.<br>• Understand the 12 principles of green chemistry as well as the tools of green chemistry including the use of alternative feedstock's or starting materials, reagents, solvents, target molecules, and catalysts basic theoretical concepts and methodologies of both the physical and social sciences.<br>• Learn how to solve large-scale problems using a multitude of tools and approaches.<br>• Develop innovative methods to produce soft water for industrial use and potable water at cheaper cost. |
| 16 | **CHEMISTRY OF NATURAL PRODUCTS & BIO INORGANIC CHEMISTRY** | • To enable the students to understand the structure of organic natural products. • To Know Terpenoids<br>• To define Alkaloids.<br>• To understand Prostaglandins.<br>• To explain carbohydrates and proteins.<br>• To learn Synthesis and structure of Proteins and peptides,<br>• To learn Synthesis and structure of Nucleic acid, Fats and Lipids<br>• To understand biological functions of B6. • To provide knowledge of the structures of metallo proteins and metallo enzymes.<br>• To familiarize the importance of natural product and bio-inorganic compounds. |
| 17 | **NANO CHEMISTRY & SUPRA MOLECULAR CHEMISTRY** | • understanding of the historical evolution and current revolution that is nanoscience. • understanding of the fundamental uniqueness of the chemical and physical properties of nanomaterials and their potential impact in science, engineering, medicine, and the environment<br>• understanding of the interdisciplinary nature of nanoscience<br>• understanding of top down and bottom up methods of nanomaterials preparation<br>• understanding of the tools behind nanomaterials characterization (e.g., the scanning tunneling microscope)<br>• understanding of the importance of diffusion as a primary means of movement by nanomaterials<br>• understanding of micro- and nano-fluidics. |
| **B.SC CHEMISTRY** | | |
| **PROGRAMME SPECIFIC OUTCOMES** | | |

**PSO1:** Able to design, carry out, record and analyze the results of chemical experiments.
**PSO2:** Apply their skills such as problems solving, critical thinking and analytical reasoning to solve chemical problems and explore new areas of research.
**PSO3:** Able to use modern library searching and retrieval methods to obtain information about a topic, chemical, chemical technique, or an issue relating to chemistry.
**PSO4:** Knows the proper procedures and regulations for safe handling and use of chemicals and can follow the proper procedures and regulations for safe handling when using chemicals.
**PSO5:** Are able to communicate the results of their work to chemists and non-chemists.
**PSO6:** Understand the ethical, historic, philosophical, and environmental dimensions of problems and issues facing chemists.
**PSO7:** Find gainful employment in industry or government, be accepted at graduate or professional schools (law, medicine, etc.), or find employment in school systems as instructors or administrators.

**COURSE OUTCOMES**

| S.NO | NAME OF THE SUBJECT | DESCRIPTION |
|---|---|---|
| 1 | **GENERAL CHEMISTRY I** | • Students will have a firm foundation in the fundamentals and application of current chemical and scientific theories including those in Analytical, Inorganic, Organic and Physical Chemistries.<br>• Understand some of important sources and classification of organic compounds.<br>• Understand some elements having their valance.<br>• Explain in detail about detection of nitrogen & Sulphur by Lassaigne's test.<br>• Students will be skilled in problem solving, critical thinking and analytical reasoning as applied to scientific problems. |
| 2 | **GENARAL CHEMISTRY II** | • Introduction to Inorganic, Organic chemistry and including basic Physical chemistry methods. The laboratory course gives the students experience with quantitative methods of working.<br>• Understanding a balanced chemical equation and masses of multiple reactants, determine the limiting reagent.<br>• Describe the functional groups: alcohols, amines, esters, carboxylic acids, aldehydes, ketones, alkenes, alkynes.<br>• Analyze the theoretical principles of Reaction rates, Rate law, Reaction mechanisms, rate-limiting step.<br>• Examine the total pressure of a gas mixture mole fractions, determine the partial pressure of each gas in the mixture. |

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| 3 | **VALUE EDUCATION** | • Understand the concept of value, value crisis, value erosion and its impact on individual, social and cultural level. •<br>Analyze the knowledge about Family, Human progress, Individual and intellectual freedom, Aesthetic values, Moral ethical values.<br>• Able to Understand the concept of Conscience and Fairness<br>• Understand the differences between moral and ethical values.<br>• Describe the qualities of good citizen and society, Importance of healthy behaviour, pursuit of excellence. |
| 4 | **GENERAL CHEMISTRY III** | • Interpret the reactions and properties of halogen compounds.<br>• Understand nucleophiles and electrophile groups and their properties.<br>• Express the differences between SN1 and SN2 mechanism.<br>• Recognize the main differences between E1 and E2 mechanism.<br>• Illustrates reactions ofAliphatic alcohols.<br>• Illustrates preparation methods of Phenols. |
| 5 | **VOLUMETRIC ANALYSIS & ORGANIC ANALYSIS & ESTIMATION (PRACTICAL)** | • Learns the handling of various apparatus.<br>• Follows the reaction with respect to time.<br>• Gains the theory behind volumetric titration.<br>• To develop skills for quantitative estimation using the different branches of volumetric Analysis .<br>• To develop skills required for the qualitative analysis of organic compounds.<br>• Gains the importance about semi micro analysis. |

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| 6 | **ENVIRONMENTAL STUDIES** | • Understand key concepts from economic, political, and social analysis as they pertain to the design and evaluation of environmental policies and institutions.<br>• An Environmental Studies major will be able to critically examine all sides of environmental issues and apply understanding from disciplines such as history, economics, psychology, law, literature, politics, sociology, philosophy, and religion to create informed opinions about how to interact with the environment on both a personal and a social level.<br>• Appreciate concepts and methods from ecological and physical sciences and their application in environmental problem solving.<br>• An Environmental Studies major will be able to recognize the physical, chemical, and biological components of the earth's systems and show how they function.<br>• Appreciate the Ethical, Cross-culturals, and historical context of environmental issues and the links between Human and Natural Systems. |
| 7 | **ORGANIC CHEMISTRY I** | • Understand and reproduce accepted mechanisms of aromatic compounds and their reactions including all intermediates, arrows, charges, and resonance structures.<br>• Explain the preparation properties and uses of toluene, xylene, mesitylene and styrene<br>• Describe the various substitution reactions like electrophilic, nucleophile, and free radical substitution reactions.<br>• Discuss the various effects such as inductive effect, electrometric effect, resonance and hyper conjugation with examples.<br>• Predict the major and minor products of a variety of organic reactions with appropriate stereochemistry, optical isomerism, optical activity and asymmetric synthesis. |

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| 8 | **ALLIED PHYSICS** | • It describes the forces in nature of science, work, power, energy and its types, Friction, Motion of bodies along an inclined plane, Kinetic and potential energy.<br>• Illustrate the basic principles of angular velocity, angular acceleration, torque and angular momentum.<br>• Understanding the principles of Normal acceleration, Centrifugal and Centripetal forces, Work and Power in rotational motion.<br>• It demonstrates basic principles behind Kepler's laws of planetary motion, Laws of Gravitation, Artificial satellites.<br>• Developing the knowledge on Gravitation with examples, G-Boys method, Variation of G with latitude, altitude and depth.<br>• Understand the theoretical knowledge of Gauss law, Application field due to a charged sphere. |
| 9 | **BIOCHEMISTRY** | • Students will explain/describe the synthesis of proteins, lipids, nucleic acids, and carbohydrates and their role in metabolic pathways.<br>• Students will analyze structural-functional relationships of genes and proteins.<br>• Explain the specificity of enzymes (biochemical catalysts), and the chemistry involved in enzyme action.<br>• Explain how the metabolism of glucose leads ultimately to the generation of large quantities of ATP.<br>• Describe how fats and amino acids are metabolized, and explain their biosynthesis and biological actions.<br>• Describe the structure of DNA, and explain how it carries genetic information in its base sequence. |
| 10 | **NME - APPLIED CHEMISTRY** | • Understand the mechanism, properties and application of polymeric resin.<br>• Describe the preparation properties and synthetic uses of natural and synthetic rubber.<br>• Explain the natural and synthetic fibers.<br>• Distinction between the resins and plastics.<br>• Describe the composition of rubber in improving the mechanical properties of polymers.<br>• Estimate the manufacture of Urea formaldehyde, and nylon 66. |

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| 11 | **SBE - WATER TREATMENT** | • It describe the operation and mechanisms of the hydrological cycle.<br>• List and describe the major physical, chemical and biological characteristics of clean fresh water, and explain their effects on aquatic organisms.<br>• It explain the mode by which potable water is produced through the processes of screening, micro straining, aeration, coagulation and flocculation, sedimentation, flotation, filtration and disinfection.<br>• Explains how the issues of nitrates, trace organics, fluoridation and plumbo-solvency can be dealt with in potable water supply.<br>• The main desalination processes used to produce potable water from saline or brackish sources. |
| 12 | **INORGANIC CHEMISTRY- I** | • The introducing the atomic Structure, Nuclear Chemistry, VSEPR theory and MO Theory and VB Theory.<br>• To Understand the Categorize matter .<br>• To Illustrate the explanation of atomic structure.<br>• Briefly explain electronic structure of atom, Categorize the atomic structure.<br>• Relate the quantum numbers and atomic orbitals.<br>• Evaluate the periodic properties of elements. |
| 13 | **PRACTICAL PAPER II – VOLUMETRIC ANALYSIS** | • To understand basic facts and concepts in Chemistry while retaining the exciting aspects of Chemistry so as to develop interest in the study of chemistry as a discipline.<br>• To develop the ability to apply the principles of Chemistry.<br>• To appreciate the achievements in Chemistry and to know the role of Chemistry in nature and in society.<br>• To be familiarized with the emerging areas of Chemistry and their applications in various spheres of Chemical sciences and to apprise the students of its relevance in future studies.<br>• To develop skills in the proper handling of apparatus and chemicals.<br>• To be exposed to the different processes used in industries and their applications. |

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| 14 | **ALLIED PHYSICS PRACTICAL** | • To Know about The Basic Experiments on Physics rather than Electronics. • To Know about the Concept of Bridges in Practical<br>• To Handle the Equipment and Kits Carefully.<br>• To do the Basic Physics technical Calculation.<br>• To Handle the instruments in a Protective Manner.<br>• To understand the Concept of Pendulum.<br>• To get a Deep Knowledge in the concept of Acceleration due to Gravity. |
| 15 | **MEDICINAL CHEMISTRY** | • Introduction of chemical principles that are required to understand the action and behaviour of drug compounds and hence the relationship between the structure and stereochemistry of a compound and its chemical and therapeutic properties. •<br>Outline on the basic features of molecular modelling, molecular mechanics and dynamics of Bio- macro molecules.<br>• Understand the theoretical principles and important applications of toxic metals, metal sites of Metallo enzymes.<br>• Analyse the relationship between drug's chemical structure and its therapeutic uses.<br>• Inculcate the structure and functions of vitamins.<br>• Analyse and understand the chemical basis for the rational design, synthesis, and mechanism of action of drugs, and selective metabolic inhibition. |
| 16 | **NME - APPLIED CHEMISTRY II** | • The generation of energy from various types of fuels.<br>• To gain knowledge in match industry.<br>• Learns the fundamentals about silicate industry.<br>• Relate various Petrochemical products with each other.<br>• Pollution occurring from various sources and resulting toxic effects<br>• To acquire basic knowledge in Explosives<br>• Understand the manufacturing process of cement.<br>• understand the Photographic techniques. |

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| 17 | **SBE - CLINICAL CHEMISTRY** | • Explain professionally the concepts of measurement of uncertainty.<br>♦ To understand the basics of blood and composition<br>• To impart knowledge on clinical biochemistry and laboratory practices.<br>• To understand the normal and abnormal constituents of urine<br>• To gain the clinical demonstration of Blood grouping, Rh factor, Blood Glucose and Hb content.<br>• Compare and contrast human body chemistry levels under normal and abnormal conditions.<br>• Explain and evaluate clinical chemistry procedures and correlate test results with patient conditions. |
| 18 | **ORGANIC CHEMISTRY II** | • Describe the resonance of carboxylate ion and relative strength of carboxylic acids.<br>• Students will analyze preparation and properties of amino acids, hydroxyl acids, and dicarboxylic acids.<br>• Explain the effects of substituent on acidic characters.<br>• Analyze the synthesis and reactions of acid halides, amines, anhydrides and esters.<br>• Describe the Newmann's projection formula, Sawhorse formula and Fishers projection formula.<br>• Understand the Baeyer's strain theory and it's modification.<br>• Describe the general methods of preparation and properties of cyanides, isocyanides, alkyl nitrites and nitro alkenes.<br>• Explain the basic character of amine and steric effect.<br>• Analyze the structure and configuration of glucose and fructose. |
| 19 | **INORGANIC CHEMISTRY II** | • Apply current chemistry models/theories to understand and predict the physical/electronic properties, bonding, and reactivity that occur in inorganic complexes with emphasis on coordination complexes containing transition metals.<br>• Construct qualitative sets of molecular orbitals for simple molecules and inorganic complexes.<br>• Describe the physical and electronic properties of solid-state materials and bioinorganic molecules.<br>• Develop important process skills which will enhance lifelong.<br>• By completing this course students will understand the foundational principles and topics relevant to the field of inorganic chemistry. This will aid the program outcomes to prepare students for employment or further educational training.<br>• Using concepts and models applicable to inorganic chemistry, students will analyze inorganic systems in a systematic and detailed fashion. Predictions of physical and chemical properties will be based on these analyses. |

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| 20 | **PHYSICAL CHEMISTRY I** | • It gives the scope and importance of thermodynamics and Joule Thomson effect.<br>• To understanding of simple chemical kinetics including zero, first, and second order rate laws.<br>• To understanding of the concept of activation energy and its effects on the rates of chemical reactions.<br>• The tools to derive the rate law for simple reaction mechanisms.<br>• An understanding of the concept of steady state, steady state approximation and its use in deriving the rate law for complex mechanisms such as that found in unimolecular reactions.<br>• It gives the detailed knowledge about entropy concept. |
| 21 | **ANALYTICAL CHEMISTRY** | • The course gives an introduction to inorganic and organic analytical chemistry, including basic analytical methods. The laboratory course gives the students experience with quantitative methods of working.<br>• Outline Errors for Data Analysis, Absolute and Relative error, precession and accuracy, significant figures.<br>• Explain the theoretical principles and important applications of gravimetric analysis, formation of precipitate & Co-precipitation.<br>• Explain the theoretical principles of various separation techniques in chromatography, and typical applications of chromatographic techniques.<br>• Understand how different sampling techniques and instrumental methods can be used in polarography.<br>• Analyze the theoretical principles of selected instrumental methods within electro analytical and spectrometric/ spectrophotometric methods, and main components in such analytical instruments.<br>• Description of X-Ray methods, Mosley's law and Duane Hunt law, photo graphic detectors. |

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| 22 | **SPECTROSCOPY** | • Understand the basic concepts of Spectroscopy followed by the properties of electromagnetic waves. • Explain the principles of Molecular and Rotational spectroscopy calculate bond lengths and moment of inertia of diatomic molecule.<br>• Recognize the vibrational spectra of the diatomic molecule and rotation–vibration spectra of a diatomic molecule<br>• Investigate the Raman spectra and understand the quantum and classical theory<br>• Demonstrate Electronic spectroscopy of the transition metals and their examples with spectra of d1, d2 ions.<br>• Understand the Franck Condon Principle and Charge transfer spectra<br>• Demonstrate an understanding of the processes responsible for NMR chemical shifts and splitting patterns.<br>• Analyse the spin spin splitting or coupling in NMR and their applications |
| 23 | **POLYMER CHEMISTRY** | • Differentiate between natural and man-made polymers.<br>• Explain polymerization methods.<br>• Understand polymerization kinetics and uses of polymers.<br>• state the key design features of a product which relate directly to the material(s) used in its construction. •<br>Describe the role of rubber-toughening in improving the mechanical properties of polymers<br>• Identify the repeat units of particular polymers and specify the isomeric structures which can exist for those repeat units<br>• Estimate the number- and weight-average molecular masses of polymer samples given the degree of polymerisation and mass fraction of chains present.<br>• Understand and explain extrusion, compression, injection and blow molding processes of making simple household/industrial polymer products. |

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| 24 | **SBE - EVERYDAY CHEMISTRY** | • This course is a survey of biochemistry that introduces the student to the structure and function of important biochemical compounds as well as to the central reactions of metabolism.<br>• The main topics include the structure and function of proteins, carbohydrates and lipids, the catalysis, kinetics and regulation of enzymes, the reactions of glycolysis, the citric acid cycle, oxidative phosphorylation, gluconeogenesis, and the pentose phosphate pathway.<br>• To understand the concept of pasteurization of milk.<br>• Briefly explain about perfumes, wax products, soap, powder and their ingredients also applications.<br>• Applications of candles, chalk crayons, naphthalene balls.<br>• The scope of environmental studies and their pollutions.<br>• To understand the concept of everyday chemistry in life.<br>• It helps to know the chemicals which are used every day products such as powder, paste and also insecticides. |
| 25 | **ORGANIC CHEMISTRY III** | To understand the basic concept of organic spectroscopy.<br>• To learn about the Principle and applications of ultraviolet and Woodward Fisher Rule.<br>• To understand the infra-red spectroscopy in organic structure determination.<br>• To understand the infra-red spectroscopy in organic structure determination.<br>• To understand the concept of tautomerism and free radicals.<br>• To familiarize the various rearrangement mechanism.<br>• To learn and practice the molecular rearrangements and the reaction mechanisms.<br>• To learn the heterocyclic compounds containing one hetero atom.<br>• To learn the basic aspects of heterocyclic compounds and natural products.<br>• To study the synthesis of Alkaloids and Terpenoids. |

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| 26 | **PHYSICAL CHEMISTRY II** | • An understanding of Photochemistry and types of Process and to apply this to describe the Photochemical Reaction.<br>• To define central parts of electrochemical cells and electrochemical equipment such as anode, cathode, membrane, diaphragm, liquid junction, reference electrode, and potentiostat.<br>• To define and relate mathematically basic physical and thermodynamic concepts related to electrochemical cells such as electric potential, electric field, cell potential, null potential, electrochemical potential, and activity and account for sign conventions.<br>• Illustrate the account for the electrochemical series and representation of electrochemical thermodynamics.<br>• To define and describe mathematically diffusion, migration, and convection.<br>To define transport, kinetic and ohmic over potential.<br>• To calculate the combined transport and kinetic overpotential for electrodes at which a one-electron .reaction takes place and for which transport can be described through mass transfer coefficients.<br>• To calculate ohmic over potential for dilute solutions for macro- and microelectrodes such as trough electrodes, hemispherical electrodes, and disk electrodes. |
| 27 | **INDUSTRIAL CHEMISTRY** | • A basic outline of an oil refinery and the key petrochemical unit operations.<br>• The kinetic description of simple and complex chemical reactions and to apply these concepts to typical reactions, including polymerization and photochemical reactions.<br>• An understanding of types of Process and to apply this to describe the Prevention of Corrosion.<br>• An basic understanding of manufacture of Paints and Match Sticks and photographic Film.<br>• Understand the basic structure of crystal lattices and appreciate the 14 Bravais lattices and Miller Indices<br>• An appreciation of the chemistry of selected major industrial processes, including their environmental footprint as well as the calculation of atom economy and E-factor.<br>• Become familiar with Fertilizers and natural and Artificial fertilizers as well as their everyday uses.<br>• An appreciation of the critical historical events for industrial chemistry<br>• Students will appreciate the central role of chemistry in our society and use this as a basis for ethical behavior in issues facing chemists including an understanding of safe handling of chemicals, environmental issues and key issues facing our society in energy, health and medicine. |

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| 28 | **GRAVIMETRIC ANALYSIS & ORGANIC PREPARATION (PRACTICAL)** | • The students will get training in the quantitative analysis of metal ions and anions using gravimetric method.<br>• To calculate a limiting reagent, yield, and percent yield<br>• To maintain a detailed scientific notebook<br>• To critically evaluate data collected to determine the identity, purity, and yield of products.<br>• To summarize findings in writing in a clear and concise manner.<br>• To use the scientific method to create, test, and evaluate a hypothesis.<br>• To engage in safe laboratory practices handling laboratory glassware, equipment, and chemical reagents To perform common laboratory techniques, including r recrystallization. |
| 29 | **ORGANIC ESTIMATION & ORGANIC ANALYSIS** | • Recognise many functional groups and their reactivity.<br>• Set up glassware and apparatus to conduct experiments in Organic Chemistry.<br>• Interpret data from a range of physical techniques to characterize Organic compounds.<br>• Present the results of a practical investigation in a concise manner.<br>• Recognize many fundamental bond forming reactions and how to apply them in synthesis.<br>• Describe bonding models and appreciate how these impact on the properties of a simple molecule • Apply curly arrow nomenclature to depict the mechanistic course of a reaction.<br>• Appreciate when different reactions are likely to compete and ways to bias reactions towards a single outcome.<br>• Understand and apply the concept of protecting groups.<br>• Understand how spectroscopic techniques can be used to delineate a molecule's structure. |

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| 30 | **NANO SCIENCE& TECHNOLOGY** | • Explain the fundamental principles of nanotechnology and their application to biomedical engineering. • Apply engineering and physics concepts to the Nano-scale and non-continuum domain.<br>• Identify and compare state-of-the-art nanofabrication methods and perform a critical analysis of the research literature.<br>• Design processing conditions to engineer functional nanomaterials.<br>• Evaluate current constraints, such as regulatory, ethical, political, social and economical, encountered when solving problems in living systems.<br>• Apply and transfer interdisciplinary systems engineering approaches to the field of bio and nanotechnology projects.<br>• Discuss and evaluate state-of-the-art characterization methods for nanomaterials, and determine nanomaterial safety and handling methods required during characterization. |
| 31 | **TEXTILE CHEMISTRY** | • The characterization of yarns, woven and knitted fabrics.<br>• Mechanical processes of preparation of longitudinal and surface textile materials<br>• The chemical finished technology of textile materials<br>• Historical and present textile technological processes from the point of processing of basic fiber<br>• To learn knowledge about the textile terminology<br>• To observe the practical approach in textile industry<br>• Test applications for the textiles-yarn analyze.<br>• We impart among the students and awareness of National and International regulations governing the manufacturing and export of textile goods globally. |

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| 32 | **EXTENSION ACTIVITY** | • Understand the community in which they work.<br>• Understand themselves in relation to their community<br>• Identify the needs and problems of the community and involve them in problem solving process. • Develop among themselves a sense of social and civic responsibility<br>• Utilize their knowledge in finding practical solution to individual and community problems<br>• Develop competence required for group-living and sharing of responsibilities<br>• Gain skills in mobilizing community participation<br>• Acquire leadership qualities and democratic attitude<br>• Develop capacity to meet emergencies and natural disaster.<br>• Practice national integration and social harmony. |

## M.SC PHYSICS

## PROGRAMME SPECIFIC OUTCOMES

**PSO1:** To give students a comprehensive understanding of the principles of Physics.
**PSO2:** To gain the skill to design and carry out scientific experiments and interpret the data.
**PSO3:** To understand the interdisciplinary nature of Physics and to be aware of the emerging fields in Physics.
**PSO4:** To build a scientific temper and to learn the necessary skills to succeed in research or industrial field.
**PSO5:** To be able to define and resolve new problems in Physics and participate in the future development of Physics.

## COURSE OUTCOMES

| S.NO | NAME OF THE SUBJECT | DESCRIPTION |
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| 1. | **MATHEMATICAL PHYSICS I** | • Understand basic theory of Legendre's equation.<br>• Understand basic theory of Laplace transforms.<br>• Understand basic theory of Functions of complex variables.<br>• Apply methods of functions of complex variables for calculations of integrals.<br>• Understand orthogonal functions.<br>• Learn Dirac's Delta Function.<br>• Learn special functions. |

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| 2. | **CLASSICAL MECHANICS** | • Familiarization of elementary principles.<br>• Clear understanding of symmetry properties.<br>• Vivid knowledge of kinematics of rigid body motion.<br>• Deep insight into oscillation and canonical transformation.<br>• Able to understand equations of canonical transformation.<br>• Learn Small Oscillations.<br>• Acquired advanced general knowledge in classical mechanics. |
| 3. | **APPLIED ELECTRONICS** | • Deep knowledge of Op-amps and its application is acquired. •<br>Analytical study of the circuits and working of counters, registers<br>• Basic introduction of various D/A and A/D converters.<br>• Gained broad knowledge of the scientific theories and methods.<br>• Able to analyse different sources of Optical Devices.<br>• Understand LED's and its applications.<br>• Know the different between RTL and DTL circuits. |
| 4. | **ASTROPHYSICS** | • Renewal of the concepts of coordinate system and stellar spectra.<br>• Clear understanding of astronomical instruments.<br>• Broad idea on the cosmology.<br>• Familiarization of the concept of stellar evolution.<br>• Acquire knowledge about Interstellar Medium.<br>• Understand Astronomical Instruments and Observational Techniques.<br>• Able to understand Cosmology and its applications. |

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| 5. | **MATHEMATICAL PHYSICS-II** | • Define and derive convergent and asymptotic series.<br>• Apply techniques of complex analysis, such as contour integrals and analaytic continuation, to the study of special functions of mathematical physics.<br>• Calculate approximations to integrals by appropriate saddle point methods. Define and manipulate the Dirac Delta and other distributions and be able to derive their various properties.<br>• Be fluent in the use of Fourier and Laplace transformations to solve differential equations and derive asymptotic properties of solutions.<br>• Solve partial differential equations with appropriate initial or boundary conditions.<br>• Can solve heat and D'Alemberts equation by using partial differential equations.<br>• Have confidence in solving mathematical problems arising in physics by a variety of mathematical techniques.<br>• Can distinguish sequences and series and solve problems in power series, Laurent and maclaurin series.<br>• Will be able to check the analytic nature by C-R equation. |
| 6. | **QUANTUM MECHANICS-I** | On completion of this course a student will be able to<br>• The time-dependent and time- independent Schrödinger equation for simple potentials like for instance the harmonic oscillator and hydrogen like atoms, as well as the interaction of an electron with the electromagnetic field. •<br>Quantum mechanical axioms and the matrix representation of quantum mechanics. Approximate methods for solving the Schrödinger equation ( the vibrational method, perturbation theory, Born approximations). Spin, angular momentum states, angular momentum addition rules, and identical particles.<br>• Apply principles of quantum mechanics to calculate observables on known wave functions.<br>• Solve time-dependent and time-independent Schrödinger equation for simple potentials. Apply the vibrational method, time-independent perturbation theory and time-dependent perturbation theory to solve simple problems.<br>• Combine spin and angular momenta. General experience with non-relativistic quantum mechanics that is useful for further studies in theoretical physics, as well as nanotechnology.<br>• Knowledge about fundamental quantum mechanical processes in nature. |

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| 7. | **STATISTICAL MECHANICS& THERMODYNAMICS** | • Give an account of the relevant quantities used to describe macroscopic systems, thermodynamic potentials and ensembles. • Give an account of the macroscopic and microscopic description of temperature, entropy and free energy and their descriptions in terms of probabilities<br>• Give an account of the theory of statistical mechanics and the approximations making a statistical description possible<br>• Apply the theory to understand gases and crystals and in addition be able to construct microscopic models and from these derive thermodynamic observables<br>• Describe the importance and consequences of quantum mechanics for macroscopic particle systems<br>• Understand the strength and limitations of the models used and be able to compare different microscopic models<br>• Describe transport phenomena and show an understanding on how diffusion coefficients are computed<br>• Show an analytic ability to solve problems relevant to statistical mechanics<br>• Apply the principles of statistical mechanics to selected problems;<br>• Apply techniques from statistical mechanics to a range of situations; |
| 8. | **GENERAL PRACTICAL- II** | • Explain Solar Spectrum.<br>• Understand electrical resistance of a metal.<br>• Learn numerical aperture (NA) of a telecommunication-grade Optic fibre<br>• Describe Laser Experiments.<br>• Able to understand Zeeman effect.<br>• Analyze and measure band Gap of Thermistor.<br>• Determine Solar Constant.<br>• Learn Michelson Interferometer.<br>• Understand Hall Effect.<br>• Know about Absorption spectra and its applications. |

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| 9. | **MATERIAL CHARACTERIZATION/ MICROPROCESSOR** | • To provide concepts on the several materials characterization techniques at the morphological, structural and chemical level.<br>• The acquisition of skills in the use and selection of advanced experimental techniques for characterization of materials and application of these techniques to solving problems in materials science and engineering.<br>• Several characterization techniques are discussed, from the most conventional to the most recent.<br>• To enable the knowledge that in the future so that the students can prioritize choices of materials characterization meets the needs and resources available.<br>• To understand the broad and general process by which a material's structure and properties are probed and measured. |
| 10. | **ELECTRO MAGNETIC THEORY** | • To Identify, Formulate and solve fields and electromagnetic Propagation problems in a multidisciplinary Frame.<br>• To provide the students with a solid foundation in Engineering Fundamentals required solving Problems.<br>• To attain the ability to solve the problems in different Conductors and Dielectrics.<br>• To understand about Emission, Propagation and reception of Electromagnetic wave System.<br>• To attain the ability to solve Electrostatic and magnetic to static circuits using basic relations.<br>• To attain Knowledge on all the theoretical observations in Electromagnetic theory. |
| 11. | **QUANTUM MECHANICS II** | On completion of this course a student will be able to<br>• Basic non-relativistic quantum mechanics. |

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| 12. | **SOLID STATE PHYSICS** | On completion of this course a student will be able • To describe different types of crystal structures in terms of the crystal lattice and the basis of constituent atoms.<br>• To understand the concept of reciprocal space and be able to use it as a tool<br>• To know the significance of Brillouin zones<br>• To calculate thermal and electrical properties in the free-electron model<br>• To formulate the theory of X-ray diffraction in the reciprocal lattice (k-space) formalism and apply this knowledge to generalize the formulation for matter waves<br>• To describe the different physical mechanisms involved in crystal binding identifying the repulsive and attractive interactions and correlate these with the atomic properties<br>• To formulate the theory of lattice vibrations (phonons) and use that to determine thermal properties of solids<br>• To formulate the problem of electrons in a periodic potential, examine its consequence on the band-structure of the solid and develop a framework that explains the physical properties of solids in terms of its band-structure • To apply the knowledge obtained to make a judicious<br>choice of a solid in terms of its desired property |
| 13. | **SOLAR CELLS** | • To demonstrate knowledge of different solar cells modules and uses.<br>• To describe working of the solar cell modules. |
| 14. | **PRACTICAL III** | • To know how to ascending the order of numbers and descending the order numbers.<br>• To calculate the transpose of a matrix |

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| 15. | **SPECTROSCOPY** | • To attain a Deep Knowledge in the Quantum States of a given material, and in analysing these states to energy terms.<br>• To understand which Quantum State belong to the Ground State.<br>• To get a Clear idea on transitions between Quantum states as a result of an absorption, emission or Scattering.<br>• To understand about the Determination of Atomic Orbitals, Molecular Orbitals.<br>• To qualitatively predict the Rotational, Vibrational, or Electronic spectrum of various materials ranging from Single atoms to large molecules.<br>• To gain knowledge in Comparing the Atomic and Molecular Spectra.<br>• To Study the Effect of bonding and Non Bonding Techniques.<br>• To get a deep knowledge in NMR Spectroscopy.<br>• To understand the important and Basic terms like Fluorescence and Phosphorescence<br>• To acquire a Deep Knowledge in Selection rule. |
| 16. | **NUCLEAR PHYSICS & PARTICLE PHYSICS** | • To interpret the fundamental physical laws in the fields of nuclear physics and elementary particles.<br>• To gain ability to analyze and solve problems in the physics of nuclear and elementary particles fields.<br>• To discuss nuclear and radiation physics applications in medical diagnostics and therapy, energetic, geology, archaeology.<br>• To describe experimental techniques used (or developed) for nuclear physics purposes (logic circuits, gamma cameras, semiconductor detectors) and discuss their influence on development of new technologies. • To grasp knowledge about Nuclear reactions, Fission and Fusion and their characteristics.<br>• To understand the significance of various decays which tells the students about the nuclear process.<br>• To explore the interior of nucleus and interaction between nucleons.<br>• To explain the nuclei properties, compare a drop of liquid with that of a nucleus and understand Shell model.<br>• To distinguish between the principles and working of different types of detectors, counters and accelerators.<br>• To describe basic radioactivity, calculate half-lives and understand radiation hazards. |
| **B.SC PHYSICS** | | |

## PROGRAMME SPECIFIC OUTCOMES

**PSO1:** Students will show that they have learned laboratory skills, enabling them to take measurements in a physics laboratory and analyze the measurements to draw valid conclusions. **PSO2:** Students will demonstrate knowledge of classical mechanics, electromagnetism, quantum mechanics, and thermal physics, and be able to apply this knowledge to analyze a variety of physical phenomena.

**PSO3:** Apply basic knowledge related to Electronic Devices & Circuits, Electromagnetics, Digital Signal Processing and Communication Systems.

**PSO4:** To provide students with the basic foundation in physics and astronomy, the scientific method, and to motivate scientific enthusiasm and curiosity and the joy of learning.

**PSO5:** To provide students with the tools needed to analyze problems, apply mathematical formalism and experimentation, and synthesize ideas.

**PSO6:** Describe the ideas in physics and articulate how these central concepts recur in physics - oscillations & waves, Eigen states, conservation laws, energy, symmetry, discrete-to-continuous descriptions.

**PSO7:** The student shall have gained a broad knowledge of the scientific theories and methods of their field of study.

**PSO8:** The student shall be able to contribute to innovation and application of basic research.

**PSO9:** The student shall be able to analyze existing theories, methods and interpretations within their field of study, and work independently with relevant problems.

**PSO10:** The student shall know how to use relevant methods of research and scientific knowledge independently and critically.

## COURSE OUTCOMES

| S.NO | NAME OF THE SUBJECT | DESCRIPTION |
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| 1. | **PROPERTIES OF MATTER** | • This course introduces properties of solids, liquids and gases. It deals with forces and energy between atoms and between molecules, and with mechanical and thermal properties.<br>• Distinguish between the different forces that hold atoms together.<br>• To understand the basic concepts of acceleration due to gravity. Methods to determine the acceleration of gravity and factors affecting it.<br>• Clarify about capillarity.<br>• Explain about the elastic nature of matter and applications of the elastic properties of solids.<br>• Enlighten thermal expansion of a solid in terms of interatomic forces.<br>• Describe osmosis process of liquid.<br>• Describe diffusion through a gas in molecular terms.<br>• Explain thermal conduction in matter.<br>• Define and illustrate the basic knowledge of flow of liquids and concept of viscosity |

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| 2. | **THERMAL PHYSICS** | • Ability to understand the basic concepts of thermodynamic such as temperature, pressure, system, properties, process, state, cycles and equilibrium. • Identify and describe the statistical nature of concepts and laws in thermodynamics, in particular: entropy, temperature, chemical potential, Free energies, and partition functions.<br>• Apply the concepts and principles of black-body radiation to analyze radiation phenomena in thermodynamic systems.<br>• Apply the concepts and laws of thermodynamics to solve problems in thermodynamic systems such as gases, heat engines and refrigerators etc.<br>• Analyze phase equilibrium condition and identify types of phase transitions of physical systems.<br>• Ability to conduct experiments regarding the measurement and calibration of temperatures and pressures in groups<br>• It gives the scope and importance of thermodynamics and Joule Thomson effect.<br>• Ability to apply the first Law of Thermodynamics on closed and control volume systems.<br>• Helps to acquire knowledge about solar energy and its uses.<br>• Ability to understand the basics of spectrum of light. |
| 3. | **VALUE EDUCATION** | • Understand the concept of value, value crisis, value erosion and its impact on individual, social and cultural level. • Analyze the knowledge about Family, Human progress, Individual and intellectual freedom, Aesthetic values, Moral ethical values.<br>• Able to Understand the concept of Conscience and Fairness<br>• Understand the differences between moral and ethical values.<br>• Describe the qualities of good citizen and society, Importance of healthy behaviour, pursuit of excellence.<br>• Examine the goals and objectives of bio ethics and medicinal ethics, organ transplantation.<br>• Helps to create awareness about “Child labour and Bonded labour”.<br>• Discuss about women’s right, factor affecting development and political, government program regarding women’s development.<br>• Helps to create awareness about women’s development schemes & policies provided by the Government.<br>Understand the difference between spiritual and devotion Values. |

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| 4. | **ELECTRICITY AND ELECTROMAGNETISM** | • To define electric charge (q) & know how objects become electrically charged. • Understand the difference between conductors and insulators.<br>• To know how to draw electric field lines and how to use them to interpret electric fields.<br>• To understand the concept of flux.<br>• To understand the difference between electric potential energy, electric potential.<br>• To calculate the work required to move a charge in an electric field<br>• To understand electrostatic interactions of point charges in terms of electric force, electric field, electric potential and electric potential energy.<br>• To understand how a capacitor works and to know how to relate charge on a capacitor to the Potential capacitor.<br>• To understand dielectrics, dielectric breakdown and how dielectrics make capacitors more effective.<br>• To describe electric current, current density, drift velocity. |
| 5. | **CORE PRACTICAL – I** | • Apply knowledge of mathematics and physics fundamentals and an instrumentation to arrive solution for various problems.<br>• Understand the usage of basic laws and theories to determine various properties of the materials given.<br>• Understand the application side of the experiments. • Use standard methods to calibrate the given low range voltmeter and ammeter and to measure resistance of the given coil and various physical quantities.<br>• Use of basic laws to study the spectral properties and optical properties of the given prism.<br>• Develope the skill of handling equipment.<br>• Making error free measurements and error analysis. |
| 6. | **ENVIRONMENTAL STUDIES** | • Students will describe and analyze the current national and global environmental problems; looking at the science behind them, the economics involved, and the policies regarding them. Students will |

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| 7. | **OPTICS AND SPECTROSCOPY** | • Define and explain the propagation of light in conducting and non-conducting media;<br>• Define and explain the physics governing laser behaviour and light matter interaction;<br>• Apply wave optics and diffraction theory to a range of problems;<br>• Apply the principles of atomic physics to materials used in optics and photonics;<br>• Calculate the properties of various lasers and the propagation of laser beams;<br>• Calculate properties of and design modern optical fibres and photonic crystals; •<br>Use the tools, methodologies, language and conventions of physics to test and communicate ideas and explanations<br>• The student will be introduced to the design of optical systems and aberrations, with an emphasis on image forming systems.<br>• The student will become able to analyze and understand interference between plane waves and spherical waves, reflection and transmission of plane waves, and optical wave guiding within thin plates and optical fibers.<br>• The student will get acquainted with Fresnel's and Fraunhofer's diffraction integrals and their validity requirements. |
| 8. | **ALLIED CHEMISTRY** | • Understand the principles of VB theory & able to apply the theory for simple molecule.<br>• Helps to know about Molecular Orbital Theory Overlapping of atomic orbital and their applications for simple molecules.<br>• Analyze Chemical kinetics, rate la and Rate constant.<br>• Enzyme kinetics, first order rate constant, Second order and third order reaction are understood.<br>• Investigate Arrhenius theory of electrolyte, Ionic product of water and its applications.<br>• Analyze the theoretical principles of Reaction rates, Rate law, Reaction mechanisms, rate-limiting step.<br>• Explain the basic concepts of simple calculation of PH from molarity and Buffer Solution.<br>• Acquire basic concepts about batteries and its types.<br>• Generalize the principles of corrosion, Rusting and their preventive methods.<br>• Understanding the classification of carbohydrates,<br>preparation, properties, structure and uses of various types of carbohydrates. |

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| 9. | **ELECTIVE - SOLID STATE PHYSICS** | • Get familiar with the basic physics principles that allow us to understand the properties of solid state materials<br>• Explain the basic concepts that are used to describe the structure and physical properties of crystalline substances,<br>• Use physical models to perform calculations of the properties of solids,<br>• Summaries an experimental work and its theoretical interpretation in a written report.<br>• Give an overview of an application related to the physical phenomena treated in the course<br>• Understand the importance of the crystalline order in solids. •<br>Acquire basic concepts about crystalline lattices and the techniques to study them.<br>• Understand the importance of the dynamics of electrons in the conductance properties of materials<br>• Understand the importance of the quantum behavior of electrons in metals<br>• Understand the origin of the energy bands in solids and basic notions on their calculation. |
| 10. | **SBE - BIO-MEDICAL INSTRUMENTATION** | • Explain the different medical imaging systems, compare advantages and disadvantages, understand the limitations and find the best suitable method for different pathological diagnoses.<br>• Explain and describe different diagnostic measurement methods for identification of humane bio potentials and their necessary instrumentation.<br>• Explain and describe different diagnostic measurement methods for different humane variables and their necessary instrumentation.<br>• Explain and describe different therapeutic methods of treatment where electrical medical equipment are a vital part of the method and their necessary instrumentation.<br>• Analyze and evaluate the effect of different diagnostic and therapeutic methods, their risk |

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| 11. | **NME – FUNDAMENTALS OF COMPUTER** | • Understanding the concept of input and output devices of Computers and how it works and recognize the basic terminology used in computer programming<br>• Write, compile and debug programs in C language and use different data types for writing the programs.<br>• Design programs connecting decision structures, loops and functions.<br>• Explain the difference between call by value and call by address.<br>• Understand the dynamic behavior of memory by the use of pointers. •<br>Use different data structures and create / manipulate basic data files and developing applications for real world problems. |
| 12. | **MATHEMATICAL PHYSICS** | • To demonstrate proficiency in mathematics and the mathematical concepts needed for a proper understanding of physics. |
| 13. | **PRACTICAL II** | • Emphasize the significance of laws involved in electric circuits.<br>• Educate the Basics Of Instrumentation, Data Acquisition And Interpretation of Results.<br>• Enhance the Students Understand The Concepts In Materials Properties.<br>• Understand the basics of operational amplifier.<br>• Acquire knowledge on elementary ideas of electricity and magnetism.<br>• Apply the characteristics of electronic devices in practical.<br>• Handling simple measuring instruments.<br>• Make to measure certain mechanical and optical properties of matter.<br>• Used to estimate the of error |
| 14. | **ALLIED CHEMISTRY PRACTICAL** | • Experimental practice of quantitative volumetric analysis.<br>• To determine the concentration or the mass of the minimum formula from the titrated chemical material composing a pure liquid or a solution.<br>• To determine the amount of a substance in a given sample using titration. Understand the concentration terms such as molarity and normality. To make solutions of various molar concentrations.<br>• Using graduated pipettes, and volumetric pipettes for volumetric measurement. The ability to interpret and explain the limits of accuracy of their own experimental data in terms of significance and underlying theory. Understand the principle behind<br>the volumetric analysis. |

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| 15. | **ELECTIVE – ENERGY PHYSICS** | • Apply knowledge of mechanics and vectors to explain natural physical processes and related technological advances.<br>• Use an understanding of elementary mathematics along with physical principles to effectively solve problems encountered in everyday life, further study in science, and in the professional world.<br>• Design experiments and acquire data in order to explore physical principles, effectively communicate results, and critically evaluate related scientific studies. •<br>Assess the contributions of physics to our evolving understanding of global change and sustainability while placing the development of physics in its historical and cultural context.<br>• The student should be able to define mechanical energy and relate it to the amount of kinetic energy and potential energy.<br>• The student should be able to analyze a physical situation and identify whether the total mechanical energy of an object is increasing, decreasing or remaining constant.<br>• The student should be able to identify the basic principles of and the conditions required for energy conservation.<br>• The student should be able to categorize forces as being conservative or non-conservative and explain the significance of such a categorization scheme. |
| 16. | **NME – SET THEORY & LOGIC** | • Learn about the logical foundations of such mathematical concepts as number, continuity and set<br>• Gain an appreciation of the usefulness and limitations of the development of theories from axioms<br>• Understand the concept of infinity and its role in mathematics.<br>• Be able to construct simple mathematical proofs and possess the ability to verify them<br>• Have substantial experience to comprehend formal logical arguments<br>• Be skillful in expressing mathematical properties formally via the formal language of propositional logic and predicate logic<br>• Be able to specify and manipulate basic mathematical objects such as sets, functions, and relations and will also be able to verify simple mathematical properties that these objects possess<br>• Acquire ability to describe computer programs (e.g. recursive functions) in a formal mathematical manner<br>• Be able to apply basic counting techniques to solve combinatorial problems |

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| 17. | **SBE - HOME APPLIANCES** | • Apply knowledge of mathematics, science, and engineering to the analysis and design of electrical circuits<br>• Identify, formulate, and solve engineering problems in the area circuits and systems.<br>• The students got the knowledge about lightning and switching overvoltage phenomenon in power system and their protection.<br>• The students got the knowledge about different generation techniques of high voltage for testing purpose.<br>• Application of main components used in power system protection<br>• Protection systems used for electric machines, transformers, bus bars, transmission lines.<br>• Theory, construction, and applications of main types of circuit breakers.<br>• Design the protection systems needed for each main part of a power system apply and explain different methods for analysing power system stability.<br>• Create mathematical models for dynamic and stability analysis of power systems.<br>• Explain different power system controls, and their impact on the system stability. |
| 18. | **ELECTRONICS I** | • Acquire a basic knowledge in solid state electronics including diodes and operational amplifier.Develop the ability to analyze and design analog electronic circuits using discrete components.<br>• Observe the amplitude and frequency responses of common amplification circuits. Design, construct, and take measurement of various analog circuits<br>to compare experimental results in the laboratory with theoretical analysis. Ability to design and conduct experiments, as well as to analyze and interpret data.<br>• Describe how analog signals are used to represent digital values in different logic families, including characterization of the noise margins. Design and analyze circuits for digital arithmetic. |
| 19. | **CLASSICAL MECHANICS** | • Define and discuss the concepts of microstate and macro state of a model system. Define and discuss the concepts and roles of entropy and free energy from the view point of |

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| 20. | **QUANTUM MECHANICS** | • Helps to understand the concepts of origin of quantum mechanics and also discuss about the limitations of classical mechanics.<br>• Apply their knowledge of both particle and wave mechanical concepts of matter through various illustrations.<br>• Learn the mathematical tools needed to solve quantum mechanics problems. Apply knowledge to solve a system using both operator and Schrodinger methods, the application of Schrodinger equation to both one dimensional and three dimensional problems.<br>• This will include complex functions and Hilbert spaces, and the theory of operator algebra. Solutions of ordinary and partial differential equations that arise in quantum mechanics will also be studied.<br>• Develop problem solving methods that will include mathematical as well as numerical computations and solutions.<br>• Build connections between mathematical development and conceptual understanding.<br>• Helps to understand how a wave function is interpreted in terms of probability, and appreciate its physical significance.<br>• To understand the applications of the Schrödinger equation to the hydrogen atom.<br>• Used to describe the origin of energy quantization and calculate eigenvalues for simple potentials, including a particle in a box and ring etc.<br>• Learn about the fundamental concepts of linear vector space and several operators with various examples. |
| | | • Helps to get basic knowledge about Fibers and LASERs. |

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| 21. | **FIBER OPTICS** | • Recognize and classify the structures of Optical fiber and types.<br>• Discuss the channel impairments like losses and dispersion.<br>• Distinguish Step Index, Graded index fibers and compute mode volume.<br>• Explain the Transmission Characteristics of fiber and Manufacturing techniques of fiber /cable.<br>• Discuss splicing techniques, passive optical components and explain noise in optical system.<br>• Design short haul and long haul Analog / Digital optical communication system and explain advanced optical transmission systems.<br>• Describe the characteristics of Optical Emission with reference to LED and LASER.<br>• Identify different types of LEDs /lasers and their junction physics.<br>• To expose the students to the basic concepts of optical fibers and their properties |
| 22. | **LASER PHYSICS** | • Explain and use most basic principles of laser physics<br>• Determine the wavelength of a laser. Determine the spectral bandwidth of a laser using Fabre-Perot interferometer<br>• Measure the internal divergence of a laser beam<br>• Investigate the mode structure of a laser<br>• Construct a simple dye laser and make it tunable<br>• Convert the laser wavelength using technique of frequency doubling<br>• Propose different ways to apply laser light in spectroscopic experiments.<br>• To provide knowledge on nonlinear optics, theory of some simple optical processes.<br>• Illustration on Natural, Collisional and Doppler Broadening. |

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| 23. | **MEDICAL PHYSICS** | • Demonstrate knowledge of fundamental aspects of the structure of the cell and nucleus.<br>• Describe the physics principles underlying the operation of medical imaging equipment.<br>• Demonstrate an understanding of and apply mathematical methods of image construction and processing.<br>• Demonstrate an understanding of aspects of clinical applications of imaging methods.<br>• Discuss radiation safety issues in the operation of medical imaging equipment.<br>• Enhancing medical physics-specific problem- solving skills.<br>• Demonstrate satisfactory knowledge of the base of scientific information required to practice clinical medical physics.<br>• Demonstrate the ability to evaluate and integrate such knowledge into the solution of clinically relevant problems as measured by the course work.<br>• Demonstrate an appropriate level of skill in the identification of clinical medical physics problems and the design and implementation of appropriate problem-solving methods and solutions as measured by course work.<br>• Students will have a clear knowledge about human physiology system. |
| 24. | **SBE – ENTERTAINMENT ELECTRONICS** | • Describe the components of a computer, their role and function, and discuss how CPU, memory, storage, and network resources are leveraged by systems software; articulate the various forms of virtualization;<br>• Acquire knowledge about working principle of Electronic items.<br>• Learn about the importance of internet and its applications. •<br>Understand how Digital camera differs from old camera.<br>• To understand the concept of television and tap recorder construction. |
| | | • To explain concepts and terminology of *digital electronics.* |

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| 25. | **DIGITAL ELECTRONICS** | • Understand the application of logic to design and creation.<br>• To explain uses of gates.<br>• To find solutions to a problem.<br>• To acquire the basic knowledge of digital logic levels and application of knowledge to understand digital electronics circuits.<br>• To impart how to design Digital Circuits.<br>• Convert different type of codes and number systems which are used in digital communication and computer systems.<br>• Employ the codes and number systems converting circuits and Compare different types of logic families which are the basic unit of different types of logic gates in the domain of economy, performance and efficiency.<br>• Analyze different types of digital electronic circuit using various mapping and logical tools and know the techniques to prepare the most simplified circuit using various mapping and mathematical methods. |
| 26. | **NUCLEAR PHYSICS** | • Apply the models describing the basic nucleon and nuclear properties Describe the properties of strong and weak interaction.<br>• Explain the different forms of radioactivity and account for their occurrence<br>• Calculate the kinematics of various reactions and decay processes by relativistic calculations<br>• Describe the astrophysical processes leading to nuclear synthesis<br>• Classify elementary particles and nuclear states in terms of their quantum numbers Account for the fission and fusion processes and the basic properties of the nuclear and fusion reactors<br>• Explain the different processes by which ionising radiation interacts with matter and the functionality of detectors for radioactivity Explain the effects of radioactivity in biological matter Explain alpha, beta and gamma decay at a basic particle physics level. |

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| 27. | **ATOMIC PHYSICS** | • To inculcate a deep knowledge to the students on structure of the atom this describes to identify the macroscopic particles. • To gain a deep knowledge on Davison &Germen's experiment.<br>• To describe the important term in Compton scattering that is the Einstein equation. • To examine the mathematical derivation of Moseley's law.<br>• To analyze the theoretical principles of Bragg's law and to determine the dimensional quantity.<br>• Introduction to de Broglie-hypothesis concept of the matter waves.<br>• Detailed explanation on the complete experimental in Moseley's law experiment.<br>• To understand the concept of Bohr magnetism.<br>• To illustrate the basic principles critical potentials of energy level diagram.<br>• To study the experimental determination for the specific in magnetron equation. |
| 28. | **PHYSICS PRACTICAL – III (NON- ELECTRONICS)** | • To Know about The Basic Experiments on Physics rather than Electronics.<br>• To Know about the Concept of Bridges in Practical<br>• To Handle the Equipment and Kits Carefully.<br>• To Get a Deep Knowledge in the Concept of Spectrometer<br>• Asses the possible hazards of conducting experiments and carry them out safely.<br>• Acquire the appropriate data accurately and keep systematic record of your laboratory activities<br>• Interpret your findings using the correct physical scientific framework Communicate the findings succinctly using formal reports. |
| | | • Able to analyze and design differential amplifiers and integrated circuits. |

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| 29. | **PHYSICS PRACTICAL – IV (ELECTRONICS)** | • Can acquire knowledge to analyze and design circuits employing integrated-circuit operational amplifiers.<br>• Can easily understand about the special electronic devices (examples: diode, transistor flip-flop ).<br>• Will be able to analyze and design analog to digital converters.<br>• Can gain the knowledge about operational amplifier and its applications.<br>• Could construct adder and sub tractor circuits.<br>• Gain the knowledge about the working of half adder and full adder circuits.<br>• Could design half and full subtractor circuits and will be able to analyze, design, build, and troubleshoot a broad range of combinational circuits using digital circutits.<br>• Students will continue use of concepts covered in digital fundamentals.<br>•Will be able to demonstrate understanding of the different families of digital integrated circuits and their characteristics. |
| 30. | **ASTROPHYSICS** | • Apply basic physical principles from a broad range of topics in physics to astronomical situations.<br>• Be able to formulate scientific problems in mathematical terms and apply analytical and numerical methods towards its solution.<br>• Develop skills to design observing projects with research telescopes and projects drawing upon data in the literature and in archives.<br>• Establish competence in focused areas of astrophysical theory and experiment.<br>• Generate fluency in the scientific enterprise and awareness of possible career paths available to the undergraduate astronomy and astrophysics major.<br>• To acquire the skills and abilities needed to form part of a research group in these areas.<br>• To undertake doctoral studies in the abovementioned fields.<br>• To start working at a company dedicated to research in these areas. • To critically argue, issue judgments and present new ideas on the basis of the analysis of information originating from these scientific areas.<br>• To continue with the learning process in these subjects, to a large extent autonomously. |
| | | • To inculcate a deep knowledge to the students on gain a microprocessor is on integrated ship. |

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| 31. | **SBE - MICROPROCESSOR** | • To describe the important term in Address bus &Data bus to transmit to the signals.<br>• To examine the mathematical derivation of Input and output devices pair of register in the programme.<br>• To analyze the theoretical principles of instruction set and to determine the dimensional operating code.<br>• Introduction to addressing modes of memory.<br>• Detailed explanation of the micro processing complete integrated ship of the assembly language.<br>• To understand the classification of instruction in to the logical group.<br>• To illustrate the basic principles microprocessor software designer.<br>• To study the experimental determination for the specific in register in the flags.<br>• The programme assembly language in error-prone process. |
| 32. | **EXTENSION ACTIVITY** | • Understand the community in which they work.<br>• Understand themselves in relation to their community.<br>• Identify the needs and problems of the community and involve them in problem solving process.<br>• Develop among themselves a sense of social and civic responsibility.<br>• Utilize their knowledge in finding practical solution to individual and community problems.<br>• Develop competence required for group-living and sharing of responsibilities.<br>• Gain skills in mobilizing community participation.<br>• Acquire leadership qualities and democratic attitude.<br>• Develop capacity to meet emergencies and natural disaster and Practice national integration and social harmony. |

## MBA

### PROGRAMME SPECIFIC OUTCOMES

**PSO1:** Evaluate and integrate ethical considerations when making business decisions.
**PSO2:** Incorporate diversity and multicultural perspectives when making business decisions.
**PSO3:** Communicate effectively with all stakeholders of her role as a manager.
**PSO4:** Describe the importance and process of management.

### COURSE OUTCOMES

| S.NO | NAME OF THE SUBJECT | DESCRIPTION |
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| | | • Discuss and communicate the management evolution and how it will affect future managers. |

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| 1. | **MANAGEMENT PROCESS & BUSINESS MODELS** | • Observe and evaluate the influence of historical forces on the current practice of management.<br>• Practice the process of management's four functions: planning, organizing, leading, and controlling.<br>• Elaborate the importance and process of decision making.<br>• Explain the various organization structure and its purpose.<br>• Describe the centralization and decentralization.<br>• Identify and properly use vocabularies within the field of management to articulate one's own position on a specific management issue and communicate effectively with varied audiences.<br>• Evaluate leadership styles to anticipate the consequences of each leadership style.<br>• Gather and analyze both qualitative and quantitative information to isolate issues and formulate best control methods.<br>• Understand the nature of TQM and Benchmarking. |
| 2. | **MANAGERIAL ECONOMICS** | • Describe the fundamental concepts of managerial economics.<br>• Classify the types of demands and supply and its determinants.<br>• Analyze the production functions.<br>• Identify the cost- output relationship.<br>• Explain the Market structure- Perfect, monopoly, oligopoly, duo-poly.<br>• Understand methods of pricing and its government interventions.<br>• Differentiate accounting and profit.<br>• Elaborate Break-even analysis in profit planning and control.<br>• Gather and analyze about monetary and fiscal policy.<br>• Observe the importance of national income. |

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| 3. | **ORGANIZATIONAL BEHAVIOR** | • Discuss the development of the field of organizational behavior and explain the micro and macro approaches.<br>• Enumerate the environmental differences and their influence on international OB.<br>• Analyze and compare different models used to explain individual behavior related to motivation and rewards<br>• Identify the various leadership styles and the role of leaders in a decision making process.<br>• Explain group dynamics and demonstrate skills required for working in groups (team building)<br>• Identify the processes used in developing communication and resolving conflicts<br>• Explain organizational culture and describe its dimensions and to examine various organizational designs<br>• Elaborate the approaches and factors contributing to organizational effectiveness.<br>• Discuss the implementation of organizational change.<br>• Understand the impact and consequences of stress on behavior. |
| 4. | **ACCOUNTING FOR MANAGEMENT** | • Identify and differentiate the different types of accountants<br>• Record transactions in the proper format and in the proper journal, ledger, trial balance and final accounts.<br>• Identify the components of a set of financial statements and explain their purpose<br>• Interpret financial statements using common financial statement analysis techniques<br>• Describe the managerial uses of fund flow and cash flow statement.<br>• Differentiate fund flow and cash flow analysis.<br>• Preparation of cost sheet.<br>• Analyze the problems on applications of break-even concept.<br>• Explain the various types of budget.<br>• Describe the problems on material, Labour and over- head variances. |

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| 5. | **BUSINESS LAW** | • Understand the importance of the dynamics of business and its environment;<br>• Review the impact of technological, political, social and cultural environment on business.<br>• Analyze the global environment and its dimensions.<br>• Explain the growth and factors affecting foreign investments.<br>• Describe the essential elements of Indian Contract Act 1872.<br>• Identify the remedies of Contract.<br>• Enumerate the conditions and warranties of Sales of Goods Act, 1930.<br>• Explain the rights and duties of the buyer and seller.<br>• Describe the kinds and incorporation of companies.<br>• Elaborate about appointment, powers and duties of a director. |
| 6. | **PRINCIPLES OF MANAGEMENT** | • Discuss and communicate the management evolution and how it will affect future managers.<br>• Observe and evaluate the influence of historical forces on the current practice of management.<br>• Practice the process of management's four functions: planning, organizing, leading, and controlling.<br>• Elaborate the importance and process of decision making.<br>• Explain the various organization structure and its purpose.<br>• Describe the centralization and decentralization.<br>• Identify and properly use vocabularies within the field of management to articulate one's own position on a specific management issue and communicate effectively with varied audiences.<br>• Evaluate leadership styles to anticipate the consequences of each leadership style.<br>• Gather and analyze both qualitative and quantitative information to isolate issues and formulate best control methods.<br>• Understand the nature of TQM and Benchmarking. |

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| 7. | **MARKETING MANAGEMENT** | • Explain the importance of marketing in developing countries.<br>• Classify the various environmental factors affecting the market function.<br>• Analyze the buyer and seller in buying motives.<br>• Explain market segmentation on different bases of buyer behavior.<br>• Characteristics of consumer goods, industrial goods.<br>• Describe the new product development and its strategies.<br>• Explain the pricing policies and its determination.<br>• Analyze the various kinds of pricing.<br>• Classify types of channel, level and problem of channels.<br>• Analyze promotion, sales promotion and sales forecast. |
| 8. | **FINANCIAL MANAGEMENT** | • Explain scope and finance function of financial management.<br>• Describe the sources of finance.<br>• Identify the cost of capital and source of capital.<br>• Classify the types of leverage.<br>• Explain the factors influencing capital structure<br>• Elaborate dividend policy and general determinants of dividend policy.<br>• Describe the working capital management and its importance.<br>• Enumerate the determinants of working capital<br>• Explain the capital budgeting and its objectives.<br>• Classify the types of techniques applying in capital budgeting. |
| 9. | **HUMAN RESOURCE MANAGEMENT** | • Describe the objectives and functions of HRM.<br>• Explain the role and structure of personnel principlesand policies.<br>• Discuss the Human Resource Planning process.<br>• Analyse the placement and inductions.<br>• Describe the factors and principles of wage and salary administration. |

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| 10. | **QUANTITATIVE TECHNIQUES** | • Describe the different phases of operation research.<br>• Elaborate the types of simplex methods.<br>• Discuss the transportation problem.<br>• Describe the assignment models.<br>• Identified the concept of probability.<br>• Discuss the element of queuing theory.<br>• Eliminate the network diagram representation.<br>• Analysis the time calculation and critical path in network.<br>• Discuss the performance review techniques.<br>• Eliminate the game theory and its concepts. |
| 11. | **E-BUSINESS** | • Described the aim is where the business wants to go in the future, its goals.<br>• Eliminate the target marketing<br>• Determinate the e-payment<br>• Discussed the mobile marketing play a vital role in e- business<br>• Application of e-business tools and techniques<br>• Described the ways to drive more traffic into business website<br>• Discussed the e banking play vital role in e-business<br>• Eliminate the online deliver system<br>• Described the social media in e-business<br>• Discussed the enterprise resource planning |
| 12. | **STRATEGIC MANAGEMENT** | • Explain levels of strategic planning and its process.<br>• Describe various dimensions and its issue in strategic decision making.<br>• Identify the factors affecting environmental scanning in environmental analysis.<br>• Elaborate various types of environment.<br>• Enumerate corporate strategies of formulation.<br>• Explain business level of strategies and its types.<br>• Describe factors affecting strategic choice in corporate and business level.<br>• Obtain a basic understanding on implementation of strategies.<br>• Explain business ethics and corporate social responsibility<br>• Analyze the techniques of strategic evaluation and control. |

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| 13. | **BUSINESS RESEARCH METHOD** | • Identify the research types and its problem for the research.<br>• Explain types of hypothesis and its meaning<br>• Describe research design and Principles of sampling.<br>• Analyze to choose between primary and secondary data.<br>• Prepare the questions for data collection and importance of pre testing.<br>• Classify the techniques of developing measurement tools.<br>• Analyze the processing of data<br>• Explain testing of hypothesis and ANOVA.<br>• Obtain a basic understanding on Interpretation.<br>• Enumerate the mechanics of writing a research report. |
| 14. | **SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT** | • Elaborate the investment opportunities risk and return.<br>• Obtain a basic understanding on the role of DEMAT and SEBI.<br>• Analyze the fundamental of security analysis in industry and company.<br>• Explain source of information for security analysis.<br>• Describe the theories of technical analysis.<br>• Identify the timing for investment in efficient market.<br>• Enumerate the risk in different portfolio and securities.<br>• Explain the various models of pricing.<br>• Measure the returns from different securities.<br>• Monitor the present scenario of financial market. |
| 15. | **MANAGEMENT INFORMATION SYSTEM** | • Describe the levels of management in MIS.<br>• Analyze the business and technical dimension of information.<br>• Explain the analysis and design of information systems.<br>• Enumerate the various stages of MIS theory.<br>• Classify the importance of MIS planning.<br>• Explain the mortar of MIS.<br>• Elaborate the effect of MIS on management and the process.<br>• Identify the type of long range communication and its elements.<br>• Describe the need for DDP and application of development cycle. |

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| 16. | **STRATEGIC FINANCIAL MANAGEMENT** | • Explain strategic approach to financial management<br>• Identify the techniques of forecasting<br>• Evaluate the risky investment in security analysis.<br>• Classify various risk management models.<br>• Analyze the types of leverages and its relation to financial risk.<br>• Enumerate the factors determining capital structure.<br>• Explain the sources of long term finance.<br>• Describe the foreign capital markets and instruments.<br>• Obtain basic understanding on mergers and acquisition.<br>• Elaborate the restructuring of business and disinvestment. |
| 17. | **SOFTWARE PROJECT MANAGEMENT** | • Obtain basic understanding on the components of SPM.<br>• Elaborate the techniques of project management.<br>• Monitor and measure the software metrics development.<br>• Explain the issues of metrics in multiple projects. •<br>Identify the quality standards and issues in obtaining<br>certifications.<br>• Describe the benefits and implications of software quality for the organization and customers.<br>• Enumerate the risk issues in SW development and implementation.<br>• Analyze the tools and techniques for identifying risk management.<br>• Explain the emerging issues in SPM.<br>• Evaluate the pricing and payment across countries. |
| 18. | **INDUSTRIAL RELATIONS AND LABOUR LEGISLATION.** | • Explain the concepts and levels of IR.<br>• Identify the strength and weakness of Indian Trade Union.<br>• Analyze the causes of Industrial dispute.<br>• Enumerate the steps in handling and settling disputes and grievances.<br>• Describe the importance and functions of collective bargaining.<br>• Elaborate the role and methods of workers participation in management.<br>• Explain the Factories Act 1948 and the Industrial Disputes Act 1947.<br>• Describe the Industrial Employment Act 1946.<br>• Obtain a basic understanding on Payment of Wages Act 1936 and Minimum Wages Act 1948.<br>• Explain Workman's Compensation Act 1923. |
| | | • Obtain a basic understanding on corporate entrepreneurship. |

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| 19. | **CORPORATE ENTREPRENEURSHIP** | • Analyze the role of entrepreneurship in NGO and government organizations.<br>• Explain the relevance of HRM and corporate entrepreneurship.<br>• Describe the role of compensation, rewards, awards and appraisal.<br>• Elaborate the role of strategic management and corporate strategy.<br>• Classify technology- push Vs. market-pull approaches to innovation.<br>• Identify the issues surrounding the corporate culture.<br>• Explain the obstacles in corporate environment.<br>• Enumerate the levels of leadership in corporate entrepreneurship.<br>• Analyze the constraints on entrepreneurial performance. |
| 20. | **ADVANCED BEHAVIOURAL SCIENCE** | • Describe the relationship between behavioral science with other functional areas.<br>• Enumerate Organization Development and interventions in behavioral science.<br>• Identify the Transactional Analysis.<br>• Explain Assertiveness relevance in organizational life.<br>• Analyze the performance interview.<br>• Describe goal setting and its features. •<br>Classify the behavior change techniques.<br>• Elaborate Implementing and evaluating the behavior change program<br>• Identify Managerial counselling and its elements.<br>• Enumerate Anxiety and stress. |
| 21. | **STRATEGIC HUMAN RESOURCE MANAGEMENT** | • Describe the human resource contribution to energy.<br>• Identified the resource strategy planning.<br>• Analysis the forecasting the supply and demand of designing strategy human resource system.<br>• Eliminate the strategy recruitment and selection process.<br>• Discuss the strategy compensation system.<br>• Elaborate the employee development.<br>• Discuss the performance in human resource practices.<br>• Analysis the universal practices Vs. contingency perspectives.<br>• Describe the need for downsizing approach to a strategic downsizing.<br>• Elaborate the contribution to the SHRM. |

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| 22. | **INTERNET AND WEB APPLICATIONS** | • Explain the concept Internet industry structure.<br>• Describe in brief Common Gateway Interface.<br>• Explain the concept Online Electronic Payment System.<br>• Enumerate the concept Firewalls.<br>• Explain Internet Advertising in brief. •<br>Give a detailed concept on E-Commerce.<br>• Discuss about the visual technologies.<br>• What are the general applications of Multimedia?<br>• What are all the legal issues in cyber laws? Discuss<br>• Discuss the Management issues related to Web server set-up. |
| 23. | **INSURANCE ADMINISTRATION** | • Understand the basic concept and importance of<br>Insurance Administration.<br>• Review the present impact of Life Insurance in social life.<br>• Analyse the underwriting method.<br>• Explain the factors affecting rates of morality.<br>• Describe the procedure to assign, nomination to their heirs.<br>• Enumerate the Revenue accounts and balance sheet of insurance company.<br>• Explain the role of surveyor while claiming insurance.<br>• Obtain the knowledge regarding claims settlement and recovery procedure.<br>• Elaborate the IRDA rules governing agency force.<br>• Identify the role of NRI in insurance. |
| **PGDCS** | | |
| 1. | **BUSINESS COMMUNICATION** | • Explain significance and principles of business communication.<br>• Describe essentials of a good business letters.<br>• Explain the drafting of interview letters, appointment order and purchase quotation.<br>• Describe the drafting of sales and financial correspondence letters.<br>• Explain the correspondence with shareholders and debenture.<br>• Describe resume-letter of application, goodwill messages, and condolence letters.<br>• Analyze the messages through electronic media.<br>• Describe Trade associations, Chamber of Commerce and public authorities.<br>• Explain inter departmental communication.<br>• Describe communication with regional/branch offices. |

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| 2. | **BUSINESS AND COMPANY LAW** | • Explain essentials of a valid contract and nature of contract.<br>• Describe the indemnity and guarantee contract.<br>• Analyze the instruments negotiable by law and by custom.<br>• Explain the presumption of law as to negotiable instruments.<br>• Enumerate nature and types of business enterprises.<br>• Describe the protection of persons dealing with a company.<br>• Explain the sources of capital in financial structure.<br>• Analyze the transfer and transmission of securities in physical and depository models. •<br>Describe the appointment, reappointment of directors.<br>• Explain the kinds of meetings and resolutions. |
| 3. | **BUSINESS ENVIRONMENT AND MANAGEMENT** | • Describe the concept and relevance of business environment<br>• Discuss the market guidance and regulations of business environment.<br>• Explain the mixture of market forces and government regulation.<br>• Describe the role of government in the areas of infrastructure, industrial policy, labour and industrial Relations, foreign trade and taxation subsidies.<br>• Analyze the features of inflation, demand pull and cost push inflation and its measures.<br>• Explain the theory of comparative cost advantages.<br>• Enumerate nature of management and its process.<br>• Explain span of management.<br>• Describe the communication, motivation, morale and leadership.<br>• Enumerate the essential of a good control system of principles of management. |
| 4. | **COMPANY SECRETARIAL PRACTICE-I** | • Describe the powers and duties of company secretary.<br>• Explain the functions of company secretary.<br>• Obtain a basic understanding on filling various forms and returns with registrar of companies.<br>• Identify the procedure for incorporation of private/public limited companies.<br>• Explain the procedures for appointment, reappointment, removal and varying terms of membership in a company.<br>• Describe the procedure for making application to the court/company law board.<br>• Analyze the procedure for alterations in Memorandum and Articles of Association of a company.<br>• Explain forfeiture of shares, checklists and specimen resolutions.<br>• Describe the formalities of calling and conducting meetings of Board, its committees and others.<br>• Analyze the specimen notices and resolutions. |

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| 5. | **COMPANY ACCOUNTS** | • Classify the term Accounting.<br>• Discuss National and International Accounting Standard.<br>• Explain the SEBI rules for Buy- Back of shares.<br>• Enumerate the way for treatment of Preliminary expenses.<br>• Determine the managerial remuneration concept in brief.<br>• Transfer of unpaid dividend to investor Education and Protection fund. Explain<br>• Enumerate the concept Holding and Subsidiary companies.<br>• Discuss the Accounting treatment and disclosure in Internal reconstruction.<br>• Discuss the usage of accounting applications in DBMS<br>• Enumerate the role of computers in accounting. |
| 6. | **HUMAN RESOURCE MANAGEMENT** | • Explain Significance and nature of Human Resource Management.<br>• Describe the new directions in Human Resource Management.<br>• Identify the planning process<br>• Analyze the methods of training<br>• Elaborate the selection process.<br>• Enumerate the career planning and career development.<br>• Analyze the wage plans and policies.<br>• Describe performance appraisal process.<br>• Obtain the line and staff relationship.<br>• Classify the Human Resource morale and motivation. •<br>Analyse the interim and final dividend<br>• Describe the procedure for registration of documents<br>• Explain the returns to registrar of companies<br>• Analyse the contents of Memorandum of Association<br>• Highlight the directors report |

**B.B.A**

**PROGRAMME SPECIFIC OUTCOMES**

**PSO1:** Ability to develop ethical and value-based leadership ability.
**PSO2:** Ability to understand, analyze and communicate regional, national, global economic, legal, and ethical aspects of business.
**PSO3:** Ability to lead themselves and others in the achievement of organizational goals, contributing effectively to a team environment.

**COURSE OUTCOMES**

| S.NO | NAME OF THE SUBJECT | DESCRIPTION |
|---|---|---|
| 1. | **FUNDAMENTALS OF MANAGEMENT** | • Describe the importance and process of management.<br>• Classify the various approaches to management.<br>• Explain the principles and process of planning<br>• Analyze the types of decision making<br>• Describe the organization structure<br>• Identify delegation of authority and responsibility.<br>• Explain leadership and its importance.<br>• Classify communication process and its various channels.<br>• Identify the types of control<br>• Analyze the control techniques. |
| 2. | **FINANCIAL ACCOUNTING** | • Classify basic accounting concepts and kinds of accounts.<br>• Preparation of journal, ledger and subsidiary books.<br>• Preparation of trial balance and errors.<br>• Preparation of BRS<br>• Preparation of Trading and profit and loss account<br>• Preparation of balance sheet.<br>• Preparation of income and expenditure accounts.<br>• Preparation of receipts and payments accounts.<br>• Describe the accounting for depreciation • Analyze the methods of depreciation. |
| 3. | **MANAGERIAL ECONOMICS** | • Characteristics of managerial economics.<br>• Explain various relationships of managerial economics with other disciplines.<br>• Discuss determinants of demand and its function.<br>• Describe methods of measuring elasticity of demand.<br>• Identify law of demand and its function.<br>• Discuss Cobb Douglas production function.<br>• Describe the cost concept of average and marginal cost analysis<br>• Analyze the Break even analysis.<br>• Identify various types of market.<br>• Describe method of pricing under different market structure. |

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| 4. | **VALUE EDUCATION** | • Describe the need for practicing positive values for good life.<br>• Identify impact on individual, societal, cultural level of value education.<br>• Discuss human progress of value education.<br>• Explain moral and ethical values.<br>• Classification of social responsibility of societal values.<br>• Explain the emotional intelligence, spiritual values and self-fulfillment.<br>• Analyze medical ethics and social ethics.<br>• Describe the child labor and bonded labor.<br>• Explain women's rights and its factors.<br>Discuss the government programs and policies. |
| 5. | **ORGANISATIONAL BEHAVIOUR** | • Describe the scope and importance of organization<br>• Explain the approaches to organizational behaviour<br>• Identify the nature of individual and group behaviour<br>• Classify the determinants of personality<br>• Describe the concept of learning and attitudes.<br>• Identify the types of reinforcement.<br>• Analyze the various types of group, and group dynamics.<br>• Discuss the types of managing conflict and methods.<br>• Describe the organizational change and development.<br>• Analyze the organizational effectiveness and culture. |
| 6. | **BUSINESS ENVIRONMENT** | • Enumerate the concept and significance of business environment.<br>• Identify the economic and social environments and heir impact on business.<br>• Describe government and business relationship in India.<br>• Analyze the provision of Indian constitution pertaining to business.<br>• Elaborate the impact of foreign culture.<br>• Analyze the social responsibilities of business environment.<br>• Describe the public sector, private sector and joint sector.<br>• Classify growth, achievement and failure of public sector in India.<br>• Explain the Industrial Licensing policy 1991, FEMA, SEBI, WTO, TRIPS.<br>• Identify the impact of technological changes in business. |

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| 7. | **ENVIRONMENTAL STUDIES** | • Discuss the Multidisciplinary nature of Environment.<br>• Enumerate the types of Resource<br>• Discuss the functions of Forest Ecosystem<br>• Explain the role of Industrial conservation.<br>• Enumerate biodiversity and its conservation.<br>• Discuss the value of Biodiversity<br>• Briefly explain Disaster Management<br>• Explain the effects and control measures of urban and industrial wastage.<br>• Discuss the ways to control Air pollution<br>• Enumerate the concept Nuclear Hazards. |
| 8. | **FINANCIAL ACCOUNTING** | • Classify basic accounting concepts and kinds of accounts.<br>• Preparation of journal, ledger and subsidiary books.<br>• Preparation of trial balance and errors.<br>• Preparation of BRS<br>• Preparation of Trading and profit and loss account<br>• Preparation of balance sheet.<br>• Preparation of income and expenditure accounts.<br>• Preparation of receipts and payments accounts.<br>• Describe the accounting for depreciation •<br>Analyze the methods of depreciation. |
| 9. | **BUSINESS STATISTICS** | • Classification and tabulation of statistical data<br>• Describe the diagrammatic and graphical representation of data.<br>• Describe the methods of frequency distribution<br>• Identify standard deviation and their co-efficient.<br>• Analyze the types of samples and its use of sampling in business<br>• Describe the conditional probability.<br>• Classify the Karl Pearson's Rank and correlation co- efficient.<br>• Describe the regression analysis.<br>• Calculation of straight line and moving average trend<br>• Analyze the sales analysis and business forecasting. |

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| 11. | **PERSONALITY DEVELOPMENT** | • Describe the determinants of personality development.<br>• Classify the need for personality development.<br>• Describe the techniques and strategies for self - motivation.<br>• Analyze the importance of self-esteem and enhancement of self esteem.<br>• Describe the emotional intelligence and leadership effectiveness.<br>• Classify negotiation skills of interpersonal skills.<br>• Describe the memory importance and its causes.<br>• Explain the technique of passing exams, management of examination fear.<br>• Describe the power of positive thinking personality development.<br>• Analyze the enhancement of concentration through positive thinking. |
| 12. | **ONM - OFFICE MANAGEMENT** | • Describe the scope and functions of office management.<br>• Identify the qualifications of office manager.<br>• Enumerate the administrative arrangements and physical conditions<br>• Explain office automation.<br>• Identify the office equipment.<br>• Analyze the storage equipment.<br>• Explain mail services and communication<br>• Describe the correspondence and handling mail.<br>• Explain the office supervisor qualifications and qualities.<br>• Enumerate the duties and responsibilities of office supervisor. |
| 13. | **HUMAN RESOURCE MANAGEMENT** | • Describe the objectives and functions of HRM.<br>• Explain the role and structure of personnel principles and policies.<br>• Discuss the Human Resource Planning process.<br>• Analyse the placement and inductions.<br>• Describe the factors and principles of wage and salary administration.<br>• Explain the fringe benefits and job evaluation systems.<br>• Explain the welfare and safety measures.<br>• Discuss the employee motivation need and measures.<br>• Analyse the personnel records and reports.<br>• Enumerate the personnel research and personnel audit. |

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| 14. | **COST ACCOUNTING** | • Describe the concept of Cost accounting.<br>• Identify and prepare cost sheet.<br>• Analyze the procedure to reconcile cost and financial accounts. •<br>Reconciliation of cost and financial accounts is necessary.<br>• Enumerate the essentials of a good system of material control.<br>• Describe the factors to be considered while determining the maximum level, minimum level, re-order level and re-order quantity.<br>• Discuss the different method of time keeping.<br>• Explain the labour turnover and its causes.<br>• Mention the different method of classification of overheads.<br>• Identify the machine hour rate and how it is calculated. |
| 15. | **E-COMMERCE** | • Describe the importance of e-commerce<br>• Evaluate the anatomy of e-commerce<br>• Discuss the types of e-commerce<br>• Analyse the applications of e-commerce<br>• Highlight the functions of online advertising<br>• Explain the process of online marketing<br>• Discuss the importance of electronic data interchange<br>• Analyse the types of firewall<br>• Describe the various types of electronic payment system<br>• Evaluate the risks in electronic payment system |
| 16. | **FINANCIAL MANAGEMENT** | • Explain scope and finance function of financial management.<br>• Describe the sources of finance. •<br>Identify the cost of capital and source of capital.<br>• Classify the types of leverage.<br>• Explain the factors influencing capital structure<br>• Elaborate dividend policy and general determinants of dividend policy.<br>• Describe the working capital management and its importance.<br>• Enumerate the determinants of working capital<br>• Explain the capital budgeting and its objectives.<br>• Classify the types of techniques applying in capital budgeting. |

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| 17. | **MARKETING MANAGEMENT** | • Explain the importance of marketing in developing countries.<br>• Classify the various environmental factors affecting the market function.<br>• Analyze the buyer and seller in buying motives.<br>• Explain market segmentation on different bases of buyer behavior.<br>• Characteristics of consumer goods, industrial goods.<br>• Describe the new product development and its strategies.<br>• Explain the pricing policies and its determination.<br>• Analyze the various kinds of pricing.<br>• Classify types of channel, level and problem of channels.<br>• Analyze promotion, sales promotion and sales forecast. |
| 18. | **PRODUCTION MANAGEMENT** | • Explain production management objectives and its functions.<br>• Describe production system relationship with other functional areas.<br>• Analyze production planning and control and its techniques.<br>• Identify the types of maintenance in production planning and control<br>• Explain plant location problems and its advantages of urban, semi-urban and rural locations.<br>• Describe the principles of plant layout and its factors influencing layout.<br>• Analyze the procedure of work study, method study and its objectives.<br>• Explain the comparison of various techniques of work measurement.<br>• Analyze the quality control and statistical quality control.<br>• Describe the inspection techniques in quality control. |
| 19. | **RESEARCH METHODOLOGY** | • Explain research importance, advantages and limitations.<br>• Describe the research process and its design.<br>• Analyze sampling process and selection of sample types.<br>• Describe sample size and sampling errors.<br>• Explain data collection methods and kinds of data.<br>• Analyze case study method. • Describe the statistical data analysis and its sources.<br>• Explain formulation and testing of hypothesis.<br>• Describe the interpretation and report writing.<br>• Identify types of report writing and its principles. |

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| 20. | **OPERATIONAL RESEARCH** | • Explain general methods for solving operational research models.<br>• Describe the tools, techniques and methods of OR<br>• Elaborate the mathematical formation of LPP.<br>• Explain graphical method of LPP.<br>• Describe game theory and rules of dominance.<br>• Identify the methods of games without saddle point.<br>• Obtain a basic understanding on transportation problem of mathematical formulation.<br>• Identify the methods for obtaining an initial feasible solution.<br>• Enumerate the mathematical formulation of assignment problem.<br>• Classify the balanced and unbalanced assignment solution. |
| 21. | **BUSINESS LAW** | • Obtain a basic understanding on Indian Contract Act 1872.<br>• Explain the performance and acceptance of contract.<br>• Enumerate the Sales of Goods At 1930.<br>• Describe the conditions and warranties in transfer of property.<br>• Explain Negotiable Instrument Act 1881. •<br>Identify the parties to a negotiable instrument.<br>• Elaborate the laws and contract of insurance.<br>• Explain the fundamental principles of life, fire and marine insurance.<br>• Describe the characteristics and kinds of Companies Act 1956.<br>• Classify Memorandum and articles of association. |
| 22. | **GENERAL APTITUDE AND REASONING I** | • Explain analogy and how to choose the pair.<br>• Classify double, triple, numerical and applied analogy.<br>• Obtain a basic understanding on logical reasoning.<br>• Explain the clear understanding the structure of arguments.<br>• Identify the synonyms, antonyms, verb and tenses.<br>• Elaborate the fastness and clarity in reading comprehension.<br>• Enumerating completion of series in missing number and wrong term.<br>• Describe alphabet and mixed series.<br>• Explain advantages and disadvantages of abbreviations and terminology.<br>• Describe the basics of internet and e-mailing in information and communication technology. |

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| 23. | **MANAGEMENT ACCOUNTING** | • Discuss the Importance and Limitations of Management Accounting.<br>• Give the difference between Management Accounting and Financial Accounting. •<br>Discuss the classification of Ratio.<br>• Explain benefits and limitations of Ratio.<br>• Give the difference between Cash flow and Fund flow statement.<br>• Sketch the format of Cash flow and Fund flow statement.<br>• Enumerate the types of Budget.<br>• Discuss the merits and demerits of budgetary control.<br>• Enumerate Break Even chart.<br>• Explain Pros and Cons of Marginal costing. |
| 24. | **TOTAL QUALITY MANAGEMENT** | • Described the fundamental techniques and principles of quality deployment.<br>• Elaborate total quality management works by continuously improving all aspect of work through structured control.<br>• Determine the gap between the customer needs and what the system delivers<br>• Discuss systematically reduced and results in never - ending improvement in customer satisfaction at every level.<br>• Total quality management is benefited for customer<br>• Identified the Brand image of the company will improve while using total quality management<br>• Identified to use the PDSA cycle<br>• Determined the uses FEMA stage<br>• Eliminate the six sigma in total quality management •<br>Discussed the guideline provide in ISO 9000 it more benefited for the company |

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| 25. | **TRAINING AND DEVELOPMENT** | • Identify the training concept and features.<br>• Find out the organizational problems resolved by training.<br>• Describe the learning principles and theories.<br>• Analyse the training policy and positive outcome of training.<br>• Explain the training methods and lecture methods.<br>• Describe the advantage of language skills and career growth of individuals.<br>• Discuss the training process and preparation of trainees.<br>• Analyse the emerging trends in training for competitive advantage.<br>• Identify the stages of career development.<br>• Explain the emerging trends and future prospects in training and development. |
| 26. | **EXPORT MANAGEMENT** | • Describe the functions of export management<br>• Evaluate the problems in exporting<br>• Discuss the objectives of EXIM policy<br>• Analyse the methods of export pricing<br>• Explain the features of pre shipment finance<br>• Describe the functions of export promotional council<br>• Identify the documentation required in export<br>• Discuss the methods of payment in export<br>• Explain the incentive for Indian exporters<br>Evaluate the suggestions to improve exports. |
| 27. | **MANAGEMENT INFORMATION SYSTEM** | • Describe the levels of management in MIS.<br>• Analyze the business and technical dimension of information.<br>• Explain the analysis and design of information systems.<br>• Obtain basic understanding on the applications of MIS.<br>• Enumerate the various stages of MIS theory.<br>• Classify the importance of MIS planning.<br>• Explain the mortar of MIS.<br>• Elaborate the effect of MIS on management and the process.<br>• Identify the type of long range communication and its elements.<br>• Describe the need for DDP and application of development cycle. |

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| 28. | **BUSINESS ETIQUETTE** | • Obtain the basic concept and golden rules of Business etiquette.<br>• Review the development good business etiquette.<br>• Analyse the Interpersonal and Intrapersonal communication.<br>• Explain the soft skills and its importance.<br>• Describe the oral communication in practice.<br>• Enumerate the good telephone manners.<br>• Elaborate the body language, para language, tone, pitch, speech of delivery.<br>• Identify the verbal and non-verbal clues. •<br>Explain the cultural variables in business.<br>• Obtain the characteristics of good corporate culture. |
| 29. | **GENERAL APTITUDE AND REASONING II** | • Identify Coding and decoding techniques.<br>• Enumerate the matrix and mixed letter coding<br>• Explain the clear understanding of profit and loss<br>• Describe the time, speed and distance calculation.<br>• Explain the logical reasoning and the structure of arguments.<br>• Obtain a basic understanding on Logical word and rank sequence.<br>• Elaborate diagrammatic relationship.<br>• Identify the concept of venn diagram<br>• Classify the mirror images<br>• Enumerating the pattern completion. |
| 30. | **ONME – ESSENTIALS OF MANAGEMENT** | • Explain the nature and scope of management process.<br>• Classify the levels of management.<br>• Discuss the types of planning and importance.<br>• Analyse the procedures and methods of planning.<br>• Explain the types of organizing<br>• Explain the organizational structure and elements of organization.<br>• Analyse the delegation of authority.<br>• Explain the difference between authority and power.<br>• Describe the needs and types of coordination.<br>• Identify the control process and techniques. |
| **M.PHIL COMPUTER SCIENCE** | | |
| **PROGRAMME SPECIFIC OUTCOMES** | | |

**PSO1:** Mastery with the fundamental knowledge in algorithms, programming languages and architecture.
**PSO2:** Proficiency with fundamental knowledge in several specialized areas of research and expertise in at least one area of research.
**PSO3:** Ability to identify the exact problem, apply reasoning, and provide technical skills to solve problems with minimal guidance, and to conduct independent and innovative research.
**PSO4:** Ability to communicate concepts and results to a technical audience in the form **o**f conference papers, journal papers, and/or oral presentations.
**PSO5:** Enhanced in creation of innovation with write-up and manuscript skills.
**PSO6:** Expertise in developing new tools and algorithms.
**PSO7:**Proficiency in good teaching methodology.
**PSO8:**Efficient in satisfying the technical demands in the current industry.

**COURSE OUTCOMES**

| S.NO | NAME OF THE SUBJECT | DESCRIPTION |
|---|---|---|
| 1. | **RESEARCH METHODOLOGY** | • Discover various types of research and new facts.<br>• Verify and test important facts to analyze an event or process or phenomenon to identify the cause and relationship<br>• Able to develop new scientific tools, concepts and theories to solve and understand scientific problems<br>• Enhanced ability in selection of research area<br>• Ability to identify the exact problem and provide appropriate solution. |
| 2. | **FOUNDATIONS OF COMPUTER SCIENCE** | • Enhanced in image processing- sensing, acquisition-segmentation.<br>• Improved in classification & clustering of data mining and Able to preprocess data<br>• Enhanced in cryptography techniques<br>• Analyze the network security issues & threats.<br>• Develop design for mobile computing |

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| 3. | **PROFESSIONAL SKILLS** | • Proficiency in Computer Science.<br>• Technical and Functional skills.<br>• Personal Development with soft skills.<br>• Interpersonal and communication skills.<br>• Micro-Teaching skills.<br>• Develop design for mobile computing. |

## M.SC COMPUTER SCIENCE

## PROGRAMME SPECIFIC OUTCOMES

**PSO1:** Understanding of the basics of computer science, to develop proficiency in the practice.
**PSO2:** Apply fundamental principles and methods of Computer Science to a wide range of applications and mathematical and scientific reasoning to a variety of computational problems.
**PSO3:** Students have the opportunity to develop foundational skills to install and maintain computer networks, troubleshoot hardware and software problems, manage databases, and develop web pages.
**PSO4:** Design and implement software systems that meet specified design and performance requirements
**PSO5:** Apply advanced algorithmic and mathematical concepts to the design and analysis of software. Apply sound principles to the synthesis and analysis of computer systems.

## COURSE OUTCOMES

| S.NO | NAME OF THE SUBJECT | DESCRIPTION |
|---|---|---|
| 1 | **ADVANCED JAVA PROGRAMMING** | • Knowledge of the structure and model of the Java programming language use the Java programming language for various programming technologies. • Develop software in the Java programming language<br>• Evaluate user requirements for software functionality required to decide whether the Java programming language can meet user requirements<br>• Propose the use of certain technologies by implementing them in the Java programming language to solve the given problem<br>• Choose an engineering approach to solving problems, starting from the acquired knowledge of programming and knowledge of operating systems. |

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| 2 | **DATA STRUCTURE AND ALGORITHM** | • Demonstrate advantages and disadvantages of specific algorithms and data structures. Select basic data structures and algorithms for autonomous realization of simple programs or program parts<br>• Determine and demonstrate bugs in program, recognize needed basic operations with data structures<br>• Formulate new solutions for programing problems or improve existing code using learned algorithms and data structures,<br>• Evaluate algorithms and data structures in terms of time and memory complexity of basic operations.<br>Define basic static and dynamic data structures and relevant standard algorithms for them: stack, queue, dynamically linked lists, trees, graphs, heap, priority queue, hash tables, sorting algorithms, min-max algorithm.<br>• Demonstrate advantages and disadvantages of specific algorithms and data structures. Select basic data structures and algorithms for autonomous realization of simple programs or program parts<br>• Determine and demonstrate bugs in program, recognize needed basic operations with data structures<br>• Formulate new solutions for programing problems or improve existing code using learned algorithms and data structures,<br>• Evaluate algorithms and data structures in terms of time and memory complexity of basic operations. |
| 3 | **MATHEMATICAL FOUNDATION OF COMPUTER SCIENCE** | • Read, understand and apply the Mathematical Logic and Predicates.<br>• Understand about the Set Theory<br>• Understand the concepts of Algebraic Structures and Combinatory<br>• How to apply Graph theory in Various Applications. |
| 4 | **PROGRAMMING IN JAVA LAB** | •Identify classes, objects, members of a class and relationships among them. Needed for a specific problem.<br>• Write Java application programs using OOP principles and proper programming. Demonstrate the concepts of polymorphism and inheritance and Multithreading<br>• Write Java programs to implement error handling techniques using exception handling<br>• Understanding Swing Concepts<br>• Students are able to understand and develop own source code in the Simple applet and application. |
| 5 | **COMPUTER GRAPHICS** | • Understand the basics of computer graphics, different graphics systems and applications of computer graphics.<br>• Discuss various algorithms for scan conversion and filling of basic objects and their comparative analysis.<br>• Use of geometric transformations on graphics objects and their application in composite form.<br>• Extract scene with different clipping methods and its transformation to graphics display device.<br>• Explore projections and visible surface detection techniques for display of 3D scene on 2D screen. |

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| 6 | **SOFT COMPUTING** | • Comprehend the fuzzy logic and the concept of fuzziness involved in various systems and fuzzy set theory.<br>• Understand the concepts of fuzzy sets, knowledge representation using fuzzy rules, approximate reasoning, fuzzy inference systems, and fuzzy logic<br>• To understand the fundamental theory and concepts of neural networks, Identify different neural network architectures, algorithms, applications and their limitations<br>• Understand appropriate learning rules for each of the architectures and learn several neural network paradigms and its applications. • Reveal different applications of these models to solve engineering and other problems. |
| 7 | **ADVANCED OPERATING SYSTEM** | • Describe and explain the fundamental components of a computer operating system.<br>• Describe and explain the fundamental components of a computer operating system Define, restate, discuss, and explain the policies for scheduling, deadlocks, memory management, synchronization, system calls, and file systems.<br>• Describe and extrapolate the interactions among the various components of computing systems<br>• Design and construct the following OS components: System calls, Schedulers, Memory management systems, Virtual Memory and Paging systems.<br>• Discuss with fellow students about designing new components of OS. |
| 8 | **RELATIONAL DATABASE MANAGEMENT SYSTEM** | • Master the basic concepts and appreciate the applications of database systems. • Master the basics of SQL and construct queries using SQL.<br>• Be familiar with a commercial relational database system (Oracle) by writing SQL using the system.<br>• Be familiar with the relational database theory, and be able to write relational algebra expressions for queries.<br>• Mater sound design principles for logical design of databases, including the E-R method and normalization approach.<br>• Be familiar with basic database storage structures and access techniques: file and page organizations, indexing methods including B-tree, and hashing.<br>• Master the basics of query evaluation techniques and and query optimization.<br>• Be familiar with the basic issues of transaction processing and concurrency control.<br>• Master working successfully on a team by design and development of a database application system as part of a team. |

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| 9 | **COMPUTER NETWORKS** | • Understand networking concepts and basic communication model. •<br>Understand network architectures and components required for data communication<br>• Analyze the function and design strategy of physical, data link, network layer and transport layer<br>• Able to trace the flow of information from one node to another node in the network<br>• Identify the components required to build different types of networks<br>• Demonstrate understand the functionalities needed for data communication into layers.<br>• Understand the working principles of various application protocols<br>• Understanding Domain Name System. |
| 10 | **RDBMS LAB** | • Infer database language commands to create simple database. •<br>Analyze the database using queries to retrieve records<br>• Have a broad understanding of database concepts and database management system software<br>• Have a high-level understanding of major DBMS components and their function<br>• Develop solutions using database concepts for real time requirements. |
| 11 | **DATA WAREHOUSING AND DATA MINING** | • The candidate will get knowledge of - Data preprocessing and data quality.<br>• To Know about Modeling and design of data warehouses.<br>• Understand the Algorithms for data mining.<br>• Be able to design data warehouses.<br>• Ability to apply acquired knowledge for understanding data and select suitable methods for data analysis. |
| 12 | **CRYPTOGRAPHY AND NETWORK SECURITY** | • Analyze the vulnerabilities in any computing system and hence be able to design a security solution.<br>• Identify the security issues in the network and resolve it.<br>• Evaluate security mechanisms using rigorous approaches, including theoretical<br>• Understand about Email and Web Security. |
| 13 | **WEB TECHNOLOGY** | •Use fundamental skills to maintain web server services required to host a website.<br>• Combine multiple web technologies to create advanced web components.<br>• Design websites using appropriate security principles, focusing specifically on the vulnerabilities inherent in common web implementations.<br>• Incorporate best practices in navigation, usability and written content to design websites that give users easy access to the information they seek. |

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| 14 | **COMPILER DESIGN** | • Describe the design of a compiler including its phases and components.<br>• Develop a large, complex, but well-structured software system that implements various phases of a compiler such as the scanner, parser, code generator, and optimizer.<br>• Work with peers on a group project.<br>• Describe current developments in compiler design and implementation.<br>• Identify the similarities and differences among various parsing techniques and grammar transformation techniques.<br>• Describe the role of the compiler in ensuring the security, privacy and integrity of data. |
| 15 | **SOFTWARE ENGINEERING** | • Describe the processes of software development.<br>• Understand and practice the various fields such as analysis, design, development, testing of Software Engineering<br>• Develop software design and modules for real time system<br>• Analyze verification & validation techniques<br>• Enhancing the software maintenance from the plan to implementation<br>• Describe configuration management & source code. |
| 16 | **WEB PROGRAMMING** | • Apply a structured approach to identifying needs, interests, and functionality of a website.<br>• Design dynamic websites that meet specified needs and interests.<br>• Use JavaScript to add dynamic content topages.<br>• Critique JavaScript code written by others, identifying examples of both good and bad practice.<br>• Modify existing HTML, CSS, and JavaScript code to extend and alter its functionality, and to correct errors and cases of poor practice.<br>• Write well-structured, easily maintained JavaScript code following accepted good practice.<br>• Effectively debug JavaScript code, making use of good practice and debugging tools. use JavaScript libraries (e.g. JQuery) to create dynamic pages. |
| 17 | **WEB PROGRAMMING LAB** | Students will be able to:<br>• Demonstrate understanding of (X)HTML(5)+CSS programming.<br>• Create and compile advanced dynamic web projects using client - JQuery(Javascript) and server – PHP technology.<br>• Demonstrate understanding of database applications with MySQL.<br>• Show understanding of the logic behind advanced web applications. |

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| 18 | **SOFTWARE PROJECT MANAGEMENT** | • Manage the scope, cost, timing, and quality of the project, at all times focused on project success as defined by project stakeholders. • Align the project to the organization's strategic plans and business justification throughout its lifecycle.<br>• Identify project goals, constraints, deliverables, performance criteria, control needs, and resource requirements in consultation with stakeholders.<br>• Implement project management knowledge, processes, lifecycle and the embodied concepts, tools and techniques in order to achieve project success.<br>• Adapt projects in response to issues that arise internally and externally.<br>• Apply project management practices to the launch of new programs, initiatives, products, services, and events relative to the needs of stakeholders.<br>• Appraise the role of project management in organization change. |
| 19 | **BIG DATA ANALYTICS** | • Understand the concept and challenge of big data and why existing technology is inadequate to analyze the big data. • Collect, manage, store, query, and analyze various forms of big data;<br>• Gain hands-on experience on large-scale analytics tools to solve some open big data problems;<br>• Understand the impact of big data for business decisions and strategy. |
| 20 | **DIGITAL IMAGE PROCESSING** | • Inculcate a basic training in the processing of images for practical applications in the domain of medical, remote sessions and in general. • Introduce basic concepts in acquiring, storage and Processing of images<br>• Introduce for enhancing the quality of images.<br>• Introduce techniques for extraction and Image Segmentation<br>• Working with Image Compression. |
| 21 | **MOBILE COMPUTING** | • Apply the fundamental design paradigms and technologies to mobile computing applications.<br>• Design effective mobile interfaces using human computer interaction principles.<br>• Evaluate the role of mobile applications in software intensive systems.<br>• Evaluate the usability of representative mobile devices such as smartphones and tablets.<br>• Appraise the quality and performance of mobile applications.<br>• Assess and implement security principles in mobile applications.<br>• Synthesize new knowledge in the area of mobile computing by using appropriate research methodologies and techniques. |

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| 22 | **PROGRAMMING IN C AND C++** | • Illustrate the flowchart and design an algorithm for a given problem and to develop IC programs using operators.<br>• Understand basic Structure of the C and C ++ PROGRAMMING, declaration and usage of variables<br>• Describes complete overview of Data types, functions, control statements, pointers.<br>• Handling 'File' & Command Line Arguments<br>• Develop conditional and iterative statements to write C and C++ programs<br>• Exercise user defined functions to solve real time problems<br>• Inscribe C programs that use Pointers to access arrays, strings and functions.<br>• Describe the procedural and object oriented paradigm with concepts of streams, classes, functions, data and objects.<br>• Understand dynamic memory management techniques using pointers, constructors, destructors, etc<br>• Describe the concept of function overloading, operator overloading, virtual functions and polymorphism. |
| 23 | **DATA STRUCTURE AND ALGORITHM** | • Define basic static and dynamic data structures and relevant standard algorithms for them: stack, queue, dynamically linked lists, trees, graphs, heap, priority queue, hash tables, sorting algorithms, min-max algorithm.<br>• Demonstrate advantages and disadvantages of specific algorithms and data structures,<br>• Select basic data structures and algorithms for autonomous realization of simple programs or program parts.<br>• Determine and demonstrate bugs in program, recognize needed basic operations with data structures<br>• Formulate new solutions for programing problems or improve existing code using learned algorithms and data structures,<br>• Evaluate algorithms and data structures in terms of time and memory complexity of basic operations. |
| 24 | **DIGITAL PRINCIPLES AND COMPUTER ORGANIZATION** | • Impart the knowledge in the field of digital electronics.<br>• Design and realize the functionality of the computer hardware with basic gates.<br>• Design digital circuits by simplifying the Boolean functions<br>• Acquire knowledge about multiprocessor organization and parallel processing<br>• To know about Half Adder and Full Adder.<br>• Able to trace the execution sequence of an instruction through the process. |
| 25 | **PROGRAMMING IN C AND C++ LAB** | • Write C programs using operators.<br>• Exercise 1 etc. on various data structures. |

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| 26 | **COMPUTER GRAPHICS** | • Understand the basics of computer graphics, different graphics systems and applications of computer graphics.<br>• Discuss various algorithms for scan conversion and filling of basic objects and their comparative analysis.<br>• Use of geometric transformations on graphics objects and their application in composite form.<br>• Extract scene with different clipping methods and its transformation to graphics display device.<br>• Explore projections and visible surface detection techniques for display of 3D scene on 2D screen. |
| 27 | **SOFT COMPUTING** | • Comprehend the fuzzy logic and the concept of fuzziness involved in various systems and fuzzy set theory.<br>• Understand the concepts of fuzzy sets, knowledge representation using fuzzy rules, approximate reasoning, fuzzy inference systems, and fuzzy logic<br>• To understand the fundamental theory and concepts of neural networks, Identify different neural network architectures, algorithms, applications and their limitations<br>• Understand appropriate learning rules for each of the architectures and learn several neural network paradigms and its applications<br>• Reveal different applications of these models to solve engineering and other problems. |
| 28 | **ADVANCED OPERATING SYSTEM** | • Describe and explain the fundamental components of a computer operating system.<br>• Describe and explain the fundamental components of a computer operating system Define, restate, discuss, and explain the policies for scheduling, deadlocks, memory management, synchronization, system calls, and file systems.<br>• Describe and extrapolate the interactions among the various components of computing systems<br>• Design and construct the following OS components: System calls, Schedulers, Memory management systems, Virtual Memory and Paging systems.<br>• Discuss with fellow students about designing new components of OS. |
| 29 | **JAVA PROGRAMMING** | • Knowledge of the structure and model of the Java programming language use the Java programming language for various programming technologies<br>• Develop software in the Java programming language<br>• Evaluate user requirements for software functionality required to decide whether the Java programming language can meet user requirements<br>• Propose the use of certain technologies by implementing them in the Java programming language to solve the given problem<br>• Choose an engineering approach to solving problems, starting from the acquired knowledge of programming and knowledge of operating systems. |

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| 30 | **COMPUTER NETWORKS** | • Understand networking concepts and basic communication model.<br>Understand networking concepts and basic communication model. Understand network architectures and components required for data communication<br>• Analyze the function and design strategy of physical, data link, network layer and transport layer<br>• Able to trace the flow of information from one node to another node in the network<br>• Identify the components required to build different types of networks<br>• Demonstrate understand the functionalities needed for data communication into layers.<br>• Understand the working principles of various application protocols<br>• Understanding Domain Name System. |
| 31 | **PROGRAMMING IN JAVA LAB** | • Identify classes, objects, members of a class and relationships among them needed for a specific problem<br>• Write Java application programs using OOP principles and proper programming<br>• Demonstrate the concepts of polymorphism and inheritance and Multithreading<br>• Write Java programs to implement error handling techniques using exception handling<br>• Understanding Swing Concepts<br>• Students are able to understand and develop own source code in the Simple applet and application. |
| 32 | **DATA WAREHOUSING AND DATA MINING** | • The candidate will get knowledge of - Data preprocessing and data quality.<br>• To Know about Modeling and design of data warehouses.<br>• Understand the Algorithms for data mining.<br>• Be able to design data warehouses.<br>• Ability to apply acquired knowledge for understanding data and select suitable methods for data analysis. |
| 33 | **CRYPTOGRAPHY AND NETWORK SECURITY** | • Analyze the vulnerabilities in any computing system and hence be able to design a security solution.<br>• Identify the security issues in the network and resolve it.<br>• Evaluate security mechanisms using rigorous approaches, including theoretical. Understand about Email and Web Security |
| 34 | **RELATIONAL DATABASE MANAGEMENT SYSTEM** | • Master the basic concepts and appreciate the applications of database systems.<br>• Master the basics of SQL and construct queries using SQL.<br>• Be familiar with a commercial relational database system (Oracle) by writing SQL using the system.<br>• Master the basics of query evaluation techniques and and query optimization.<br>• Be familiar with the basic issues of transaction processing and concurrency control.<br>• Master working successfully on a team by design and development of a database application system as part of a team. |

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| 35 | **WEB TECHNOLOGY** | • Use fundamental skills to maintain web server services required to host a website.<br>• Combine multiple web technologies to create advanced web components.<br>• Design websites using appropriate security principles, focusing specifically on the vulnerabilities inherent in common web implementations.<br>• Incorporate best practices in navigation, usability and written content to design websites that give users easy access to the information they seek. |
| 36 | **SOFTWARE ENGINEERING** | • Describe the processes of software development<br>• Understand and practice the various fields such as analysis, design, development, testing of SoftwareEngineering.<br>• Develop software design and modules for real time system<br>• Analyze verification & validation techniques<br>• Enhancing the software maintenance from the plan to implementation<br>• Describe configuration management & source code |
| 37 | **RDBMS LAB** | • Infer database language commands to create simple database<br>• Analyze the database using queries to retrieve records<br>• Have a broad understanding of database concepts and database management system software<br>• Have a high-level understanding of major DBMS components and their function<br>• Develop solutions using database concepts for real time requirements. |
| 38 | **SOFTWARE PROJECT MANAGEMENT** | • Manage the scope, cost, timing, and quality of the project, at all times focused on project success as defined by project stakeholders.<br>• Align the project to the organization's strategic plans and business justification throughout its lifecycle.<br>• Identify project goals, constraints, deliverables, performance criteria, control needs, and resource requirements in consultation with stakeholders.<br>• Implement project management knowledge, processes, lifecycle and the embodied concepts, tools and techniques in order to achieve project success.<br>• Adapt projects in response to issues that arise internally and externally.<br>• Apply project management practices to the launch of new programs, initiatives, products, services, and events relative to the needs of stakeholders.<br>• Appraise the role of project management in organization change. |

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| 39 | **BIG DATA ANALYTICS** | • Understand the concept and challenge of big data and why existing technology is inadequate to analyze the big data;<br>• Collect, manage, store, query, and analyze various forms of big data;<br>• Gain hands-on experience on large-scale analytics tools to solve some open big data problems;<br>• Understand the impact of big data for business decisions and strategy. |
| 40 | **DIGITAL IMAGE PROCESSING** | • Inculcate a basic training in the processing of images for practical applications in the domain of medical, remote sessions and in general<br>• Introduce basic concepts in acquiring, storage and Processing of images<br>• Introduce for enhancing the quality of images.<br>• Introduce techniques for extraction and Image Segmentation<br>• Working with Image Compression |
| 41 | **MOBILE COMPUTING** | • Apply the fundamental design paradigms and technologies to mobile computing applications.<br>• Design effective mobile interfaces using human computer interaction principles.<br>• Evaluate the role of mobile applications in software intensive systems.<br>• Evaluate the usability of representative mobile devices such as smartphones and tablets.<br>• Appraise the quality and performance of mobile applications.<br>• Assess and implement security principles in mobile applications.<br>• Synthesize new knowledge in the area of mobile computing by using appropriate research methodologies and techniques. |

## M.SC INFORMATION TECHNOLOGY

## PROGRAMME SPECIFIC OUTCOMES

**PSO1:** Provides students with the opportunity to develop strengths in the analysis, applied.
**PSO2:** Adhere to do higher studies or progress as an entrepreneur.
**PSO3:** Apply system and technical solutions and analysis to hardware and software problems
**PSO4:** Pursue career advancement in information technology and develop the knowledge, communication skills, critical thinking, creative skills, and technical competencies relevant to the modern workplace.
**PSO5:** Demonstrate the importance of professional development and continued education within the information technology field.

## COURSE OUTCOMES

| S.NO | NAME OF THE SUBJECT | DESCRIPTION |
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| 1. | **PROGRAMMING IN C AND C++** | • Illustrate the flowchart and design an algorithm for a given problem and to develop IC programs using operators<br>• Understand basic Structure of the C and C ++ PROGRAMMING, declaration and usage of variables<br>• Describes complete overview of Data types, functions, control statements, pointers.<br>• Handling 'File' & Command Line Arguments<br>• Develop conditional and iterative statements to write C and C++ programs<br>• Exercise user defined functions to solve real time problems<br>• Inscribe C programs that use Pointers to access arrays, strings and functions.<br>• Describe the procedural and object oriented paradigm with concepts of streams, classes, functions, data and objects.<br>• Understand dynamic memory management techniques using pointers, constructors, destructors, etc<br>• Describe the concept of function overloading, operator overloading, virtual functions and polymorphism. |
| 2. | **DATA STRUCTURE AND ALGORITHM** | • Define basic static and dynamic data structures and relevant standard algorithms for them: stack, queue, dynamically linked lists, trees, graphs, heap, priority queue, hash tables, sorting algorithms, min-max algorithm,<br>• Demonstrate advantages and disadvantages of specific algorithms and data structures,<br>• Select basic data structures and algorithms for autonomous realization of simple programs or program parts<br>• Determine and demonstrate bugs in program, recognize needed basic operations with data structures<br>• Formulate new solutions for programing problems or improve existing code using learned algorithms and data structures,<br>• Evaluate algorithms and data structures in terms of time and memory complexity of basic operations. |
| 3. | **DIGITAL PRINCIPLES AND COMPUTER ORGANIZATION** | • Impart the knowledge in the field of digital electronics<br>• Design and realize the functionality of the computer hardware with basic gates.<br>• Design digital circuits by simplifying the Boolean functions<br>• Acquire knowledge about multiprocessor organization and parallel processing<br>• To know about Half Adder and Full Adder.<br>• Able to trace the execution sequence of an instruction through the process |

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| 4. | **PROGRAMMING IN C AND C++ LAB** | • Write C programs using operators<br>• Exercise conditional and iterative statements to Write C programs<br>• Write C programs using Pointers to access arrays, strings and functions.<br>• Write C programs using pointers and allocate memory using dynamic memory management functions.<br>• Exercise user defined data types<br>• Describe the procedural and object oriented paradigm with concepts of streams, classes, functions, data and objects.<br>• Understand dynamic memory management techniques using pointers, constructors, destructors, etc.<br>• Describe the concept of function overloading, operator overloading, virtual functions and polymorphism.<br>• Student will be able to choose appropriate data structure as applied to specified problem definition.<br>• Student will be able to handle operations like searching, insertion, deletion, traversing mechanism etc. on various data structures. |
| 5 | **COMPUTER GRAPHICS** | • Understand the basics of computer graphics, differentgraphics systems and applications of computer graphics.<br>• Discuss various algorithms for scan conversion and filling of basic objects and their comparative analysis.<br>• Use of geometric transformations on graphics objects and their application in composite form.<br>• Extract scene with different clipping methods and its transformation to graphics display device.<br>• Explore projections and visible surface detection techniques for display of 3D scene on 2D screen. |
| 6. | **SOFT COMPUTING** | • Comprehend the fuzzy logic and the concept of fuzziness involved in various systems and fuzzy set theory.<br>• Understand the concepts of fuzzy sets, knowledge representation using fuzzy rules, approximate reasoning, fuzzy inference systems, and fuzzy logic<br>• To understand the fundamental theory and concepts of neural networks, Identify different neural network architectures, algorithms, applications and their limitations<br>• Understand appropriate learning rules for each of the architectures and learn several neural network paradigms and its applications<br>• Reveal different applications of these models to solve engineering and other problems. |

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| 7. | **ADVANCED OPERATING SYSTEM** | • Describe and explain the fundamental components of a computer operating system.<br>• Describe and explain the fundamental components of a computer operating system Define, restate, discuss, and explain the policies for scheduling, deadlocks, memory management, synchronization, system calls, and file systems.<br>• Describe and extrapolate the interactions among the various components of computing systems<br>• Design and construct the following OS components: System calls, Schedulers, Memory management systems, Virtual Memory and Paging systems. Discuss with fellow students about designing new components of OS. |
| 8. | **JAVA PROGRAMMING** | • Knowledge of the structure and model of the Java programming language use the Java programming language for various programming technologies<br>• Develop software in the Java programming language<br>• Evaluate user requirements for software functionality required to decide whether the Java programming language can meet user requirements<br>• Propose the use of certain technologies by implementing them in the Java programming language to solve the given problem<br>• Choose an engineering approach to solving problems, starting from the acquired knowledge of programming and knowledge of operating systems. |
| 9. | **COMPUTER NETWORKS** | • Understand networking concepts and basic communication model.<br>• Understand network architectures and components required for data communication<br>• Analyze the function and design strategy of physical, data link, network layerand transport layer<br>• Able to trace the flow of information from one node to another node in the network<br>• Identify the components required to build different types of networks<br>• Demonstrate understand the functionalities needed for data communication into layers.<br>• Understand the working principles of various application protocols<br>• Understanding Domain Name System. |
| 10. | **PROGRAMMING IN JAVA LAB** | • Identify classes, objects, members of a class and relationships among them<br>• Needed for a specific problem<br>• Write Java application programs using OOP principles and proper programming<br>• Demonstrate the concepts of polymorphism and inheritance and Multithreading<br>• Write Java programs to implement error handling techniques using exception handling<br>• Understanding Swing Concepts<br>• Students are able to understand and develop own source code in the Simple applet and application. |

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| 11. | **DATA WAREHOUSING AND DATA MINING** | • The candidate will get knowledge of - Data preprocessing and data quality.<br>• To Know about Modeling and design of data warehouses. Understand the Algorithms for data mining.<br>• Be able to design data warehouses.<br>• Ability to apply acquired knowledge for understanding data and select suitable methods for data analysis. |
| 12. | **CRYPTOGRAPHY AND NETWORK SECURITY** | • Analyze the vulnerabilities in any computing system and hence be able to design a security solution.<br>• Identify the security issues in the network and resolve it.<br>• Evaluate security mechanisms using rigorous approaches, including theoretical<br>• Understand about Email and Web Security |
| 13. | **RELATIONAL DATABASE MANAGEMENT SYSTEM** | • Master the basic concepts and appreciate the applications of database systems.<br>• Master the basics of SQL and construct queries using SQL.<br>• Be familiar with a commercial relational database system (Oracle) by writing SQL using the system.<br>• Be familiar with the relational database theory, and be able to write relational algebra expressions for queries.Master the basics of query evaluation techniques and and query optimization.<br>• Be familiar with the basic issues of transaction processing and concurrency control.<br>• Master working successfully on a team by design and development of a database application system as part of a team. |
| 14. | **WEB TECHNOLOGY** | • Use fundamental skills to maintain web server services required to host a website.<br>• Combine multiple web technologies to create advanced web components.<br>• Design websites using appropriate security principles, focusing specifically on the vulnerabilities inherent in common web implementations.<br>• Incorporate best practices in navigation, usability and written content to design websites that give users easy access to the information they seek. |
| 15. | **SOFTWARE ENGINEERING** | • Describe the processes of software development<br>• Understand and practice the various fields such as analysis, design, development, testing of Software Engineering<br>• Develop software design and modules for real time system<br>• Analyze verification & validation techniques<br>• Enhancing the software maintenance from the plan to implementation<br>• Describe configuration management & source code |

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| 16. | **RDBMS LAB** | • Infer database language commands to create simple database<br>• Analyze the database using queries to retrieve records have a broad understanding of database concepts and database management system software have a high-level<br>• Understanding of major DBMS components and their function<br>• Develop solutions using database concepts for real time requirements. |
| 17. | **SOFTWARE PROJECT MANAGEMENT** | • Manage the scope, cost, timing, and quality of the project, at all times focused on project success as defined by project stakeholders.<br>• Align the project to the organization's strategic plans and business justification throughout its lifecycle.<br>• Identify project goals, constraints, deliverables, performance criteria, control needs, and resource requirements in consultation with stakeholders.<br>• Implement project management knowledge, processes, lifecycle and the embodied concepts, tools and techniques in order to achieve project success.<br>• Adapt projects in response to issues that arise internally and externally.<br>• Apply project management practices to the launch of new programs, initiatives, products, services, and events relative to the needs of stakeholders.<br>• Appraise the role of project management in organization change. |
| 18. | **BIG DATA ANALYTICS** | • Understand the concept and challenge of big data and why existing technology is inadequate to analyze the big data;<br>• Collect, manage, store, query, and analyze various forms of big data;<br>• Gain hands-on experience on large-scale analytics tools to solve some open big data problems;<br>• Understand the impact of big data for business decisions and strategy. |
| 19. | **DIGITAL IMAGE PROCESSING** | • Inculcate a basic training in the processing of images for practical applications in the domain of medical, remote sessions and in general<br>• Introduce basic concepts in acquiring, storage and Processing of images Introduce for enhancing the quality of images.<br>• Introduce techniques for extraction and Image Segmentation<br>• Working with Image Compression |

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| 20. | **MOBILE COMPUTING** | • Apply the fundamental design paradigms and technologies to mobile computing applications.<br>• Design effective mobile interfaces using human computer interaction principles.<br>• Evaluate the role of mobile applications in software intensive systems.<br>• Evaluate the usability of representative mobile devices such as smartphones and tablets.<br>• Appraise the quality and performance of mobile applications.<br>• Assess and implement security principles in mobile applications.<br>• Synthesize new knowledge in the area of mobile computing by using appropriate research methodologies and techniques. |

## M.SC COMPUTER SCIENCE & INFORMATION TECHNOLOGY

### PROGRAMME SPECIFIC OUTCOMES

**PSO1:** Excel in problem solving and programming skills in the various computing fields of IT Industries.
**PSO2:** Develop the ability to plan, analyze, design, code, test, implement & maintain a software product for real time system
**PSO3:** Promote students capability to set up their own enterprise in various sectors of computer applications
**PSO4:** Experience in finding solutions and developing system based applications for real time problems in various domains involving technical, managerial, economical & social constraints
**PSO5:** Prepare the students to pursue research in computing or related disciplines and to work in the fields of teaching and industries.

### COURSE OUTCOMES

| S.NO | NAME OF THE SUBJECT | DESCRIPTION |
|---|---|---|
| 1. | **PROGRAMMING IN C & C++** | • Describes complete overview of Data types, functions, control statements, pointers.<br>• Handling 'File' & Command Line Arguments<br>• Allocation of dynamic memory & Storage Classes.<br>• Learning Object Oriented Programming Concepts.<br>• Able to use proper class protection mechanism to provide security.<br>• Demonstrate the use of virtual functions to implement polymorphism.<br>• Understand and implement the features of C++ including templates, exceptions and file handling for providing programmed solutions to complex problems.<br>• Able to reuse the code with extensible Class types, User- defined operators and function overloading.<br>• Managing Console I/O Operations.<br>• Understanding Function Overloading & Operator Overloading |

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| 2. | **MICRO COMPUTER ARCHITECTURE** | • Describes overview of 8086 Architecture & Assembly Language Programming.<br>• Handling 8086 Configuration<br>• Understanding Intel 80286 Internal Structure.<br>• Understanding Intel 80386 Memory System.<br>• Design of Intel 80486 Architecture.<br>• Describe modular programming.<br>• Managing Interrupts and interrupt routines<br>• Handling Stacks, Macros & String Manipulation. |
| 3. | **COMPUTER NETWORKS** | • Understand networking concepts and basic communication model.<br>• Understand network architectures and components required for data communication<br>• Analyze the function and design strategy of physical, data link, network layer and transport layer<br>• Able to trace the flow of information from one node to another node in the network<br>• Identify the components required to build different types of networks<br>• Demonstrate understand the functionalities needed for data communication into layers.<br>• Understand the working principles of various application protocols<br>• Working with routing algorithms.<br>• Describe about TCP/UDP/SNMP.<br>• Understanding Domain Name System. |
| 4. | **C AND C++ PROGRAMMING LAB** | • Students are able to understand and develop own source code in the following concepts.,<br>**USING C**<br>• Programs using I/O Statements.<br>• Programs using Control Structure.<br>• Programs using Arrays and Strings.<br>• Program using Functions:<br>a)Call by value b) Call by Reference c) User Defined d) Built-in<br>• Pointers<br>a)Operators & Expressions b) Pointers and Arrays c) Pointers & Strings d) Pointers & Structures e) Pointers & Functions.<br>• Structure<br>• Unions<br>• C Preprocessors,<br>• File Handling.<br>• Command line arguments. |

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| 5. | **USING C++** | • Inline Functions<br>• Function with default arguments Function Overloading<br>• Constructor<br>• Friend Function<br>• Operator Overloading<br>• Single Inheritance<br>• Multiple Inheritance<br>• Multilevel Inheritance<br>Hierarchical Inheritance<br>• Hybrid Inheritance<br>• Virtual Function<br>• Templates<br>• I/O Manipulators<br>• Files |
| 6. | **RELATIONAL DATABASE MANAGEMENT SYSTEM** | • Describe about Database Language.<br>• Understand the concepts of Database system Application.<br>• Understand the concept of SQL.<br>• Understand the concept of B Tree.<br>• Working query evaluation and optimization.<br>• Understand the concept of Transaction Management. |
| 7. | **OPERATING SYSTEMS** | • Aware of the evolution and fundamental principles of operating system, processes and their communication<br>• Understand the various operating system components like process management, memory management<br>• know about file management and the distributed file system concepts in operating systems and understand the working principles of paging & segmentation<br>• Working with Scheduling algorithms.<br>• Describe about Logical Structure of I/O Function. |

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| 8. | **DATA MINING** | • Aware of the Functionalities, patterns, of operating system, processes and their communication<br>• Design and deploy appropriate classification techniques<br>• Use association rule mining for handling large data set.<br>• Understand the concept of classification for the retrieval purposes. • Know the clustering techniques in details for better organization and retrieval of data.<br>• Preprocess the data for mining applications |
| 9. | **RELATIONAL DATA BASE MANAGEMENT SYSTEMS LAB** | **VB**<br>• Program using String and Data Function.<br>• Program to design a calculator.<br>• Program using list box, combo box.<br>• Program using Database Access.<br>**PL/SQL**<br>• Program using conditional control, interactive controls & sequential controls.<br>• Program using excepting handling<br>• Programs using explicit cursors & implicit cursors<br>• Program using PL/SQL tables & records<br>• Programs using database triggers<br>• Program to design procedures using In, Out, Parameter<br>• Program to design procedures using functions<br>• Program to design procedures using packages<br>• Program using ADO, DAO & RDO connectivity.<br>**Form & Report Writer**<br>• Program to create Inventory Control.<br>• Program to create Payroll.<br>• Program to create college admission. |
| 10. | **DIGITAL PRINCIPLES & COMPUTER ORGANIZATION** | • Impart the knowledge in the field of digital electronics<br>• Design and realize the functionality of the computer hardware with basic gates.<br>• Design digital circuits by simplifying the Boolean functions<br>• Acquire knowledge about multiprocessor organization and parallel processing<br>• To know about Half Adder and Full Adder.<br>• Able to trace the execution sequence of an instruction through the process |

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| 11. | **INTERNET PROGRAMMING WITH JAVA** | • Describe java evolution-features-tokens & OOPS. •<br>Understand the concepts and architecture of the World Wide Web<br>• Understand the concept of Inheritance, Interface.<br>• Creation of packages.<br>• Working with servlets<br>• Designing GUI Components<br>• Connecting JDBC- database connectivity for computing |
| 12. | **DATA STRUCTURES AND ALGORITHMS** | • Understand the linear and nonlinear data structures available in solving problems<br>• Implementation of Stack, list, Binary Trees, Graphs.<br>• Clear idea about the various algorithm design techniques<br>• Apply the algorithm design techniques to any of the real world problem<br>• Handling Dynamic Programming<br>• Write efficient algorithm for a given problem and able to analyze its time complexity |
| 13. | **DIGITAL IMAGE PROCESSING** | • Inculcate a basic training in the processing of images for practical applications in the domain of medical, remote sessions and in general<br>• Introduce basic concepts in acquiring, storage and Processing of images<br>• Introduce for enhancing the quality of images.<br>• Introduce techniques for extraction and Image Segmentation<br>• Working with Image Compression<br>• Designing Histogram Processing |
| 14. | **JAVA & HTML LAB** | Students are able to understand and develop own source code in the following concepts.,<br>• Program to create simple applet and applications<br>• Using Java classes and objects<br>• Using arrays in java<br>• Using Java inheritance and Interface<br>• Using Exceptions<br>• Using Thread Synchronization, Communication, and critical sections<br>• Program Using AWT package: windows, controls and message layout<br>• Creates package<br>• Implements DNS<br>• Works with java script,VB Script<br>• Implements JDBC<br>• Working with HTML TAGS. |

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| 15. | **SOFTWARE ENGINEERING** | • Provide an insight into the processes of software development<br>• Understand and practice the various fields such as analysis, design, development, testing of Software Engineering<br>• Develop skills to construct software of high quality with high reliability<br>• Apply metrics and testing techniques to evaluate the software<br>• Get an insight into the processes of software development<br>• Able to Model software projects into high level design using DFD, UML diagrams<br>• Able to Measure the product and process performance using various metrics |
| 16. | **MULTIMEDIA TECHNOLOGY** | • History of Multimedia and its developers.<br>• Understand the concept of text, Audio and Video.<br>• Understand the concept of data depression.<br>• Understand the concept of Image Compression.<br>• Understand the concept of image and video coding. |
| 17. | **NETWORK SECURITY AND CRYPTOGRAPHY** | • Benefits of Security and its Good Practices.<br>• Understand the concept of Intrusion and Detection.<br>• Understand the concept of Authentication and authorization control.<br>• Understand the concept of network design and device security.<br>• Understand the concept of encryption and steganography. |

## B.SC COMPUTER SCIENCE

### PROGRAMME SPECIFIC OUTCOMES

**PSO1:** Understanding of the basics of computer science, to develop proficiency in the practice of computing, and to prepare them for continued professional development..

**PSO2:** Apply fundamental principles and methods of Computer Science to a wide range of applications and mathematical and scientific reasoning to a variety of computational problems.

**PSO3:** Students have the opportunity to develop foundational skills to install and maintain computer networks, troubleshoot hardware and software problems, manage databases and develop web pages.

**PSO4:** Design and implement software systems that meet specified design and performance requirements

**PSO5:** Apply advanced algorithmic and mathematical concepts to the design and analysis of software. Apply sound principles to the synthesis and analysis of computer systems

**PSO6:** Adhere to do higher studies or progress as an entrepreneur.

### COURSE OUTCOMES

| S.NO | NAME OF THE SUBJECT | DESCRIPTION |
|---|---|---|
| 1. | **PROGRAMMING IN C (CS&IT)** | • Describes complete overview of structure, Data types, functions, control statements, pointers.<br>• Handling 'Decision making & branching statements'<br>• Allocation of array, structure & union<br>• Work with pointers to identify the memory address.<br>• Able to implement function concept & storage classes |
| 2. | **DIGITAL PRINCIPLES& COMPUTER ORGANIZATION** | • Impart the knowledge in the field of digital electronics<br>• Design and realize the functionality of the computer hardware with basic gates and other components using combinational and sequential logic<br>• Design digital circuits by simplifying the Boolean functions<br>• Acquire knowledge about multiprocessor organization and parallel processing<br>• Apply the association rules for mining the data<br>• Able to trace the execution sequence of an instruction through the process<br>• Understanding registers &BUS |
| 3. | **DISCRETE MATHEMATICS** | • Describes complete overview of set theory& relations equivalence<br>• Handling 'truth table' and Logic Gates.<br>• Working with Lagrange's theorem<br>• Calculating matrices and linear equation<br>• Working with partial ordering. |
| 4. | **VALUE EDUCATION** | • Describes value crisis & positive values & value erosion. •<br>Able to realize the family, material, human values.<br>• Realize the value of cooperative living and social responsibility.<br>• Aware of healthy behaviors.<br>• Understand the rights and powers of women. |
| 5. | **DATA STRUCTURES WITH C++(CS&IT)** | • Describes complete overview of structure, Data types, functions, control statements, pointers.<br>• Handling 'Decision making & branching statements'<br>• Describes complete overview of Constructor and Destructor.<br>• Work with pointers to identify the memory address.<br>• Able to implement the concept of STACK, QUEUE, TREE and Linked List. |

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| 6. | **PROGRAMMING IN C&C++ LAB (CS&IT)** | • Students are able to understand and develop own source code in the following concepts.,<br>**USING C**<br>• Programs using I/O Statements.<br>• Programs using Control Structure.<br>• Programs using Arrays and Strings.<br>• Program using Functions:<br>• a)Call by value b) Call by Reference c) User Defined d) Built-in Pointers<br>• a)Operators & Expressions b) Pointers and Arrays c) Pointers & Strings d) Pointers & Structures e) Pointers & Functions.<br>• Structure<br>• Unions<br>• C Preprocessors,<br>• File Handling.<br>• Command line arguments. |
| 7. | **USING C++** | • Inline Functions<br>• Function with default arguments<br>• Function Overloading<br>• Constructor • Friend Function<br>• Operator Overloading<br>• Single Inheritance<br>• Multiple Inheritance<br>• Multilevel Inheritance<br>• Hierarchical Inheritance<br>• Hybrid Inheritance |
| | | Students are able to understand and develop own source code in the following concepts.,<br>**MS-WORD** |

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| 8. | **OFFICE AUTOMATION LAB (CS&IT)** | • Table Preparation.<br>• Find and Replace.<br>• Mail Merge. **Ms-EXCEL**<br>• Pay role Calculation.<br>• Chart Preparation.<br>• MS-ACCESS<br>• Table Creation.<br>• Form. **MS-POWER POINT**<br>• Slide Show Animation |
| 9. | **MICRO COMPUTER ARCHITECTURE** | • Describes overview of 8086 Architecture & Assembly Language Programming.<br>• Handling 8086 Configuration<br>• Understanding strings& procedures & macros Structure.<br>• Understanding trouble shooting System.<br>• Design of digital interface& ports . |
| 10. | **NUMERICAL METHOS** | • Describes overview of Algebraic equations<br>• Handling direct and iterative method.<br>• Working with Interpolation<br>• Calculating Differentiation<br>• Working with predictor corrector methods. |
| 11. | **FUNDAMENTALS OF COMPUTER ALGORITHM** | • Describes overview of computer algorithms to solve a problem<br>• Handling Dynamic programming<br>• Understanding search& traversal techniques.<br>• Understanding back tracking System.<br>• Design & providing solution for Knapsack problem |
| 12. | **RELATIONAL DATABASE MANAGEMENT SYSTEM (CS&IT)** | • Describe about Database Language.<br>• Understand the concepts of Database system Application.<br>• Understand the concept of SQL.<br>• Understand the concept of B Tree.<br>• Working query evaluation and optimization.<br>• Understand the concept of Transaction Management |

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| 13. | **RELATIONAL DATABASE MANAGEMENT SYSTEM-LAB** | **PL/SQL**<br>• Program using conditional control, interactive controls & sequential controls.<br>• Program using excepting handling<br>• Programs using explicit cursors & implicit cursors<br>• Program using PL/SQL tables & records<br>• Programs using database triggers<br>• Program to design procedures using In, Out, Parameter<br>• Program to design procedures using functions<br>• Program to design procedures using packages<br>• Program using ADO, DAO & RDO connectivity. |
| 14. | **MICRO COMPUTER ARCHITECTURE LAB** | • Program to create addition of two 16-bit numbers.<br>• Program for palindrome checking**.**<br>• To demonstrate AND, OR, NOT and XOR. |
| 15. | **WED DESIGN LAB(CS&IT)** | • Program to design ordered List.<br>• Program to create Web Page with Images.<br>• Program to design Tables.<br>• Program to design Forms. |
| 16. | **VBSCRIPT** | • Program for design Date and Time Function.<br>• Program to design online shopping. |
| 17. | **OPERATING SYSTEMS (CS&IT)** | • Aware of the evolution and fundamental principles of operating system, processes and their communication<br>• Understand the various operating system components like process management, memory management<br>• know about file management and the distributed file system concepts in operating systems and understand the working principles of paging & segmentation<br>• Working with Scheduling algorithms.<br>• Describe about Logical Structure of I/O Function. |
| 18. | **DATA MINING (CS&IT)** | • Aware of the Functionalities, patterns, of operating system, processes and their communication<br>• Design and deploy appropriate classification techniques<br>• Use association rule mining for handling large data set.<br>• Understand the concept of classification for the retrieval purposes<br>• Know the clustering techniques in details for better organization and retrieval of data<br>• Preprocess the data for mining applications |

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| 19. | **SOFTWARE ENGINEERING (CS&IT)** | • Describe the processes of software development<br>• Understand and practice the various fields such as analysis, design, development, testing of Software Engineering<br>• Develop software design and modules for real time system<br>• Analyze verification & validation techniques<br>• Enhancing the software maintenance from the plan to implementation<br>• Describe configuration management & source code |
| 20. | **COMPUTER NETWORKS (CS&IT)** | • Understand networking concepts and basic communication model.<br>• Understand network architectures and components required for data communication<br>• Analyze the function and design strategy of physical, data link, network layer and transport layer<br>• Able to trace the flow of information from one node to another node in the network<br>• Identify the components required to build different types of networks |
| 21. | **COMPUTER GRAPHICS (CS&IT)** | • Understand computational development of graphics<br>• Provide in-depth knowledge of display systems, image synthesis, shape modeling of 3D application.<br>• Analyze the Line attribute & curve attribute<br>• Design animation with rotation, translation and scaling<br>• Working with CAD |
| | | Students are able to understand and develop own source code for the following concepts., Course outcomes are, |

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| 22. | **VISUAL BASIC LAB (CS&IT)** | • Simple Arithmetic Operators(+,-,*,/) Uning text command boxes.<br>• Manipulation of string and data functions.<br>• Designing in calculator.<br>• Magic square.<br>• Number Puzzle, Picture Puzzle.<br>• Using file, directory and drive list boxes o load a text file into a rich text box.<br>• Function of Command Dialog Box( open, save color font, printer, help options)<br>• Design a text editor using Rich Text Box.<br>• Design a Screen Saver.<br>• Animation of Picture.<br>• Use list box, combo box to change the font, font size of the given text.<br>• Display a popup menu in the form when you click the right mouse button.<br>• Use graphical function to draw a picture and save it.<br>• Data base Access using DAO, RDO, ODBC.<br>• Compare the Scores of two cricket teams, by the use of graphics.<br>• Design a Game(like solitare). |
| 23. | **COMPUTER GRAPHICS LAB** | Students are able to understand and develop own source code for the following concepts.,<br>Course outcomes are,<br>• Line Drawing Algorithm •<br>Circle Drawing Algorithm<br>• Transformation – Rotation – Arbitrary point<br>• Transformation – Rotation – Origin<br>• Transformation – Rotation – Fixed Point<br>• Transformation – Translation – Arbitrary point<br>• Transformation – Translation – Origin<br>• Transformation – Translation – Fixed Point<br>• Transformation – Scaling– Arbitrary point<br>• Transformation - Scaling – Origin<br>• Transformation – Scaling – Fixed Point<br>• Windowing<br>• Clipping |

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| 24. | **INTERNET PROGRAMMING WITH JAVA (CS&IT)** | • Describe java evolution-features-tokens & OOPS.<br>• Understand the concepts and architecture of the World Wide Web<br>• Understand the concept of Inheritance, Interface.<br>• Creation of packages. |
| 25. | **WEB TECHNOLOGY (CS&IT)** | • Describe about HTML and its Properties.<br>• Understand the concepts of Javascript.<br>• Understand the concept of Event Handling.<br>• To Know about ASP.NET and OLEDB. |
| 26. | **MULTIMEDIA TECHNOLOGY (CS&IT)** | • Describe about Text and Graphics.<br>• Understand the concepts of Digital Audio and Video<br>• Understand the concept of Authoring Tools.<br>• Understand the concept of multimedia and internet . |
| 27. | **JAVA & HTML LAB (CS&IT)** | Students are able to understand and develop own source code in the following concepts.,<br>• Program to create simple applet and applications<br>• Using Java classes and objects<br>• Using arrays in java<br>• Using Java inheritance and Interface<br>• Using Exceptions<br>• Using Thread Synchronization, Communication, and critical sections<br>• Program Using AWT package: windows, controls and message layout<br>• Creates package<br>• Implements JDBC |
| 28. | **WEB TECHNOLOGY LAB (CS&IT)** | Students are able to understand and develop own source code in the following concepts.,<br>**VB.NET**<br>• Program to find biggest among three numbers.<br>• Program for constructor and destructor<br>• Program for Inheritance.<br>**ASP.NET**<br>• Program to designing login form.<br>• Program using cookies.<br>• Program using validator control. |

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| 29. | **INFORMATION SECURITY (CS&IT)** | Describe about Security.<br>• Understand the concepts of cryptography.<br>• Understand the concept of security attacks.<br>• Understand the concept of Firewall . |
| 30. | **MULTIMEDIA LAB (CS&IT)** | Students are able to understand and develop own source code in the following concepts.,<br>• Program to create animation.<br>• Program to design cradle.<br>• Program to animate an object. |

## B.SC INFORMATION TECHNOLOGY

## PROGRAMME SPECIFIC OUTCOMES

**PSO1:** Provides students with the opportunity to develop strengths in the analysis, applied design, development, implementation, and management of information technology systems. PSO2: Adhere to do higher studies or progress as an entrepreneur.

**PSO3:** Apply system and technical solutions and analysis to hardware and software problems

**PSO4:** Pursue career advancement in information technology and develop the knowledge, communication skills, critical thinking, creative skills, and technical competencies relevant to the modern workplace.

**PSO5:** Demonstrate the importance of professional development and continued education within the information technology field.

## COURSE OUTCOMES

| S.NO | NAME OF THE SUBJECT | DESCRIPTION |
|---|---|---|
| 1. | **PRINCIPLES OF INFORMATION TECHNOLOGY** | • Describes complete overview of data, database, DBMS.<br>• Describes about internet & www with its access to it.<br>• Working with multimedia tools for designing applications<br>• Understanding data warehouse& data mining structure & architecture.<br>• Able to implement applications of IT in various fields |
| 2. | **DIGITAL ELECTRONICS** | • Describes Number System & Codes. • Working with Binary arithmetic operations.<br>• Working with Encoder-Decoder Multiplexer<br>• Understanding circuit logics.<br>• Working with sequential circuits & flip-flop |

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| 3. | **ACCOUNTS AND FINANCIAL MANAGEMENT** | • Describes origin and growth of accounting.<br>• Preparation of journal & ledger.<br>• Preparation of final accounts<br>• Preparation of receipts and payments.<br>• Preparation of Final accounts |
| 4. | **COMPUTER ORGANIZATION** | • Describe machine learning-assembly language-<br>• Design instruction codes & registers<br>• Design digital circuits by simplifying the Boolean functions<br>• Acquire knowledge about memory organization<br>• Understanding I/O Organization-Interface & mode of transfer |
| 5. | **MANAGEMENT INFORMATION SYSTEM** | • Introduction about management information system.<br>• Understand the concept of MIS.<br>• Understand the concept of MIS and decision making process.<br>• Understanding the concept of database and user interface requirements. |
| 6. | **INFORMATIO N SECURITY** | • Introduce the fundamentals of Cryptography and its application to Security –<br>• Understand the standard algorithms used to provide confidentiality provide integrity and authenticity<br>• Working knowledge of network security, data base security and DS security issues in order to build secure systems<br>• Understand the mathematics behind Cryptography<br>• Understanding threats & security controls& firewall usage. |

## MCA

### PROGRAMME SPECIFIC OUTCOMES

**PSO1:** An ability to identify, critically analyze, formulate and develop computer applications.
**PSO2:** An ability to select modern computing tools and techniques and use them.
**PSO3:** An ability to design a computing system to meet desired needs within realistic constraints such as safety, security and applicability.
**PSO4:** An ability to devise and conduct experiments, interpret data and provide well informed conclusions.
**PSO5:** An ability to function professionally with ethical responsibility as an individual as well as in multidisciplinary teams with positive attitude.
**PSO6:** An ability to communicate effectively.
**PSO7:** Function effectively both as a team leader and team member on multi-disciplinary projects to demonstrate computing and management skills.

### COURSE OUTCOMES

| S.NO | NAME OF THE SUBJECT | DESCRIPTION |
|---|---|---|
| 1. | **JAVA PROGRAMMING** | • Understand fundamentals of programming such as variables, conditional and iterative execution, methods, etc.<br>• Understand fundamentals of object-oriented programming in Java, including defining classes, invoking methods, using class libraries, etc.<br>• Be able to use the Java SDK environment to create, debug and run simple Java programs.<br>• Understand the fundamentals of object-oriented programming in Java, including defining classes, objects.<br>• Understand the principles of inheritance, packages and interfaces.<br>• Understand the concept of event handling, JDBC Connectivity used in GUI. |
| 2. | **SOFTWARE ENGINEERING** | • It introduces the concepts and methods required for the construction of large software intensive systems. It aims to develop a broad understanding of the discipline of software engineering.<br>• It seeks to complement this with a detailed knowledge of techniques for the analysis and design of complex software intensive systems.<br>• Demonstrate the ability to work effectively as a team leader/ or leader in an ever – changing professional environments.<br>• Understand the issues affecting the organization, planning and control of software--based systems development;<br>• An ability to identify, formulate and solve engineering problems<br>• The ability to analyze, design, verifies, validate, implement, apply and maintain software system. |
| 3. | **MATHEMATICAL FOUNDATION OF COMPUTER SCIENCE** | • Able to draw upon foundational knowledge, learn, adapt and successfully bring to bear analytical and computational approaches on changing societal and technological challenges.<br>• An ability to apply knowledge of computing and mathematics appropriate to the discipline.<br>• An ability to identify, formulate, and develop solutions to computational challenges.<br>• An ability to design, implement, and evaluate a computational system to meet desired needs within realistic constraints. |

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| 4. | **JAVA PROGRAMMING LAB** | • To build software development skills using java programming for real world applications.<br>• To implement frontend and backend of an application<br>• To implement classical problems using java programming.<br>• Write programs based upon java concepts.<br>• Create animation & events based upon advanced java concepts.<br>• Develop programs using java collection API as well as java Standard Library. |
| 5. | **OBJECT ORIENTED ANALYSIS AND DESIGN LAB** | • Create a requirements model using UML class notations and use-cases based on statements of user requirements, and to analyze requirements models given to them for correctness and quality.<br>• Create the OO design of a system from the requirements model in terms of a high-level architecture description, and low-level models of structural organization and dynamic behavior using UML class, object, and sequence diagrams.<br>• Comprehend enough Java to see how to create software the implements the OO designs modeled using UML.<br>• To familiarize the students with language environment.<br>• To implement various concepts related to language.<br>• Understanding the fundamental principles through advanced concepts of analysis and design using UML |
| 6. | **RELATIONAL DATABASE MANAGEMENT SYSTEM** | • Learn and practice data modeling using the entity- relationship and developing database designs.<br>• Understand the use of Structured Query Language (SQL) and learn SQL syntax.<br>• Apply normalization techniques to normalize the database.<br>• To understand the features of database management systems and Relational database.<br>• To use SQL- the standard language of relational databases.<br>• To understand the functional dependencies and design of the database. |

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| 7. | **COMPUTER NETWORKS** | • Build an understanding of the fundamental concepts of computer networking.<br>• Familiarize the student with the basic taxonomy and terminology of the computer networking area.<br>• Introduce the student to advanced networking concepts, preparing the student for entry Advanced courses in computer networking.<br>• Understand and explain Data Communications System and its components.<br>• Identify the different types of network topologies and protocols.<br>• Enumerate the layers of the OSI model and TCP/IP. Explain the function(s) of each layer |
| 8. | **COMPUTER GRAPHICS** | • Know and be able to discuss hardware system architecture for computer graphics. This includes, but is not limited to: graphics pipeline, frame buffers, and graphic accelerators/co-processors.<br>• Know and be able to use a current 3D graphics API .<br>• Be able to discuss future trends in computer graphics and quickly learn future computer graphics concepts and APIs.<br>• Have a basic understanding of the core concepts of computer graphics.<br>• Be capable of using OpenGL to create interactive computer graphics.<br>• Show ability to use the facilities provided by a standard API to express basic transformations such as scaling, rotation, translation, reflection, shearing etc. |
| 9. | **RDBMS LAB** | • Learn and practice data modeling using the entity- relationship and developing database designs.<br>• Learn and practice and Design different views of tables for different users and to apply embedded and nested queries.<br>• Learn and practice Design and implement a database for a given problem according to well-known design principles that balance data retrieval performance with data consistency.<br>• Design and implement a database schema for a given problem- domain<br>• Populate and query a database using SQL DML/DDL commands.<br>• Programming PL/SQL including stored procedures, stored functions, cursors, packages. |

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| 10. | **PYTHON LAB** | • To write, test, and debug simple Python programs. To implement Python programs with conditionals and loops. Use functions for structuring Python programs.<br>• To understand why Python is a useful scripting language for developers.<br>• To learn how to design and program Python applications.<br>• Problem solving and programming capability.<br>• Demonstrate the use of Python lists and dictionaries<br>• Describe and apply object-oriented programming methodology. |
| 11. | **WEB PROGRAMMING** | • Create adaptive web pages<br>• Choose best technologies for solving web client/server problems.<br>• Use JavaScript for dynamic effects.<br>• Student will be familiar with client server architecture and able to develop a web application using java technologies.<br>• Students are able to develop a dynamic webpage by the use of java script and DHTML.<br>• Students will be able to write a server side java application called JSP to catch form data sent from client and store it on database. |
| 12. | **PRINCIPLES OF COMPLIER DESIGN** | • To introduce principal structure of compiler, basic theories and methods used for different parts of compiler.<br>• To impart knowledge of fundamentals of language translator, structure of a typical compiler, parsing methods etc.<br>• To design various phases of compiler such as Lexical analyser, parser etc.<br>• Apply techniques for the structure of compiler.<br>• Use simulation software to justify compiler design.<br>• Implement various phases of compiler. |
| 13. | **DIGITAL IMAGE PROCESSING** | • Describe and explain basic principles of digital image processing;<br>• Design and implement algorithms that perform basic image processing<br>• Design and implement algorithms for advanced image analysis<br>• Analyze general terminology of digital image processing.<br>• Get broad exposure to and understanding of various applications of image processing in industry, medicine, and defense.<br>• Understanding image formation. |

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| 14. | **WEB PROGRAMMING LAB** | • Create adaptive web pages.<br>• Choose best technologies for solving web client/server problems.<br>• Use JavaScript for dynamic effects.<br>• Apply the knowledge of the internet and related internet concepts that are vital in understanding web application development and analyze the insights of internet programming to implement complete application over the web.<br>• Understand, analyze and apply the role of markup languages like HTML, DHTML, and XML in the workings of the web and web applications.<br>• Automate the real time problems by developing & analyzing a web project and identify its elements and attributes in comparison to traditional projects. |
| 15. | **ACCOUNTING AND FINANCIAL MANAGEMENT** | • Acquire knowledge about general aspects of business operations.<br>• Describe the role of accounting information system and its limitations.<br>• Explain the concepts and procedures of financial reporting, including income statement, statement of retained earnings, balance sheet, and statement of cash flows.<br>• Recognize and understand ethical issues related to the accounting profession.<br>• Graduating accounting students will be able to use financial statements to make decisions.<br>• Graduating accounting students will be able to help managers make decisions using internal and external information. |
| 16. | **NUMERICAL METHODS** | • Derive appropriate numerical methods to solve algebraic and transcendental equations.<br>• Develop appropriate numerical methods to approximate a function.<br>• Develop appropriate numerical methods to solve a differential equation.<br>• Derive appropriate numerical methods to evaluate a derivative at a value.<br>• Demonstrate understanding of common numerical methods and how they are used to obtain approximate solutions to otherwise intractable mathematical problems.<br>• Apply numerical methods to obtain approximate solutions to mathematical problems.<br>• Derive numerical methods for various mathematical operations and tasks, such as interpolation, differentiation, integration, the solution of linear and nonlinear equations, and the solution of differential equations |

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| 17. | **OBJECT ORIENTED ANALYSIS AND DESIGN LAB** | • Specify, analyze and design the use case driven requirements for a particular system.<br>• Model the event driven state of object and transform them into implementation specific layouts.<br>• Identify, analyze the subsystems, various components and collaborate them interchangeably.<br>• Describe Object Oriented Analysis and Design concepts and apply them to solve problemS.<br>• Prepare Object Oriented Analysis and Design documents for a given problem using Unified Modeling Language. |
| 18. | **RESOURCES MANAGEMENT TECHNIQUES** | • Introduce students to the techniques of operations research in mining operations.<br>• Provide students with basic skills and knowledge of operations research and its application in mineral industry.<br>• Introduce students to practical application of operations research in big mining projects.<br>• Apply the techniques used in operations research to solve real life problem in mining industry.<br>• Select an optimum solution with profit maximization.<br>• Have complete understand of the significant role operation research play in mining project completion at every stage of the mines. |
| 19. | **DATA MINING** | • To introduce the basic concepts of Data Mining techniques.<br>• Examine the types of the data to be mined and apply preprocessing methods on raw data.<br>• Discover interesting patterns, analyze supervised and unsupervised models and estimate the accuracy of the algorithms.<br>• Process raw data to make it suitable for various data mining algorithms.<br>• Discover and measure interesting patterns from different kinds of databases.<br>• Apply the techniques of clustering, classification, association finding, feature selection and visualization to real world data. |

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| 20. | **CLOUD COMPUTING** | • Understanding the key dimensions of the challenge of Cloud Computing.<br>• Building software systems and components that scale to millions of users in modern internet.<br>• Assessment of the economics, financial, and technological implications for selecting cloud computing for own organization.<br>• Assessing the financial, technological, and organizational capacity of employer's for actively initiating and installing cloud-based applications.<br>• Assessment of own organizations' needs for capacity building and training in cloud computing-related IT areas. |
| 21. | **MOBILE COMPUTING** | • To impart fundamental concepts in the area of mobile computing, to provide a computer systems perspective on the converging areas of wireless networking, embedded systems, and software, and to introduce selected topics of current research interest in the field.<br>• Apply the fundamental design paradigms and technologies to mobile computing applications.<br>• Develop consumer and enterprise mobile applications using representative mobile devices and platforms using modern development methodologies.<br>• Design effective mobile interfaces using human computer interaction principles. |
| 22. | **SOFTWARE PROJECT MANAGEMENT** | • Understand the fundamental principles of Software Project management & will also have a good knowledge of responsibilities of project manager and how to handle these.<br>• Be familiar with the different methods and techniques used for project management.<br>• Have good knowledge of the issues and challenges faced while doing the Software project Management.<br>• Will also be able to understand why majority of the software projects fails<br>• How that failure probability can be reduced effectively.<br>• Will be able to do the Project Scheduling, tracking, Risk analysis, Quality management and Project Cost estimation using different techniques. |

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| 23. | **NETWORK SECURITY** | • Identify computer and network security threats, classify the threats and develop a security model to prevent, detect and recover from the attacks.<br>• Encrypt and decrypt messages using block ciphers, sign and verify messages using well known signature generation and verification algorithms.<br>• Analyze the vulnerabilities in any computing system and hence be able to design a security solution.<br>• Identify the security issues in the network and resolve it.<br>• Evaluate security mechanisms using rigorous approaches, including theoretical.<br>• Compare and Contrast different IEEE standards and electronic mail security. |
| 24. | **ADVANCED DATABASES** | • Assess and apply database functions and packages suitable for enterprise database development and database management.<br>• Discuss and evaluate methods of storing, managing and interrogating complex data.<br>• Analyse the background processes involved in queries and transactions, and explain how these impact on database operation and design.<br>• Analyze database requirements and determine the entities involved in the system and their relationship to one another.<br>• Develop the logical design of the database using data modeling concepts such as entity-relationship diagrams.<br>• Create a relational database using a relational database package.<br>• Manipulate a database using SQL |
| 25. | **PARALLEL PROCESSING** | • To study how parallel computers work and how to analyze the correct designs of parallel architectures, especially within the technological constraints.<br>• It provides in-depth coverage of fundamentals, design complexity, power, reliability and performance coupled with treatment of parallelism at all levels.<br>• To prepare students for a career in designing the computer systems of the future.<br>• A good understanding of optimizing serial programs and algorithms within computational science.<br>• Programming skills for and future multi- and many- core processor systems. |

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| 26. | **MANAGEMENT INFORMATION SYSTEM** | • Understand the leadership role of Management Information Systems in achieving business competitive advantage through informed decision- making.<br>• Apply Management Information Systems knowledge and skills learned to facilitate the acquisition, development, deployment, and management of information systems.<br>• Effectively communicate strategic alternatives to facilitate decision-making.<br>• Understand the nature of management information systems and their applications in business.<br>• Appreciate the difference between various kinds of management information systems and their specific roles in organizations.<br>• Use information management processes for business value. |
| **BCA** | | |
| **PROGRAMME SPECIFIC OUTCOMES** | | |
| **PSO1:** Improved communication and business management skills, especially in providing tech support.<br>**PSO2:** Awareness on ethics, values, sustainability and creativity aspects.<br>**PSO3:** The ability and the mindset to continuously update and innovate. | | |
| **COURSE OUTCOMES** | | |
| **S.NO** | **NAME OF THE SUBJECT** | **DESCRIPTION** |
| 1. | **PROGRAMMING IN C** | • To understand and develop well-structured programs using C language.<br>To learn the basic data structures implementing through C language.<br>To deal with different memory allocation & input/output methods.<br>Problem solving through computer programming using C Language. |
| 2. | **COMPUTER FUNDAMENTALS & PROBLEM SOLVING** | To understand computer fundamental and its role in problem solving.<br>To solve Programming problems using procedural approach.<br>To specify, trace, and implement programs written in a contemporary programming language that solve a stated problem in a clean and robust fashion.<br>Students will acquire the concept of flow of control and program structures. |

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| 3. | **DIGITAL PRINCIPLES** | To learn the operation of latches, flip-flops, counters, registers, and register transfers in the Computer organization.<br>To design two-level logic functions with AND, OR, NAND, NOR and XOR gates with minimum number of gate delays or literals<br>To be trained and design the combinational circuits and sequential circuits |
| 4. | **PROGRAMMING USING C++** | To acquire the knowledge about Object Oriented Programming Concepts.<br>To demonstrate the use of virtual functions to implement polymorphism, friend function etc.<br>To cognize the importance and usage about Templates, Files and Exception Handling.<br>Building up students' capacity to evaluate different algorithmic techniques and to write programs for developing simple applications using C++. |
| 5. | **PROGRAMMING IN C & C++ LAB** | Implement Programs with pointers and arrays, perform pointer arithmetic, and use the pre-processor.<br>Understand and Apply Object oriented features and C++ concepts.<br>Apply the concept of polymorphism and inheritance, exception handling and templates.<br>Develop applications using Console I/O and File I/O. |
| 6. | **VISUAL BASIC LAB** | To explore Visual Basic's Integrated Development Environment (IDE), a GUI environment.<br>To demonstrate knowledge of programming terminology and how applied using Visual Basic.<br>To know how to link the back end data with front end using database connectivity.<br>Evolving a Graphical User Interface (GUI) based applications and projects. |
| 7. | **RDBMS** | To describe the overview of Data Base systems with its Data Models.<br>To learn how to normalize the data.<br>To get familiarize with the Query Languages.<br>Understanding the needs of database processing and learn techniques for controlling the Consequences of concurrent data access. |

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| 8. | **RDBMS LAB** | To become familiar with SQL fundamental Concepts.<br>To apply Normalization techniques to normalize a database<br>To know the connectivity of databases with controls (DAO,ADO & RDO)<br>Gain a good understanding of the architecture and functioning of Database Management Systems as well as associated tools and techniques. |
| 9. | **STATISTICAL METHODS** | To have a broad background in Statistics fundamentals and techniques.<br>To recognize the importance and value of mathematical and statistical thinking, training, and approach to problem solving, on a diverse variety of disciplines.<br>To become familiar with a variety of examples where mathematics or statistics helps accurately explain abstract or physical phenomena.<br>Creating confidence to have the versatility to work effectively in a broad range of analytic, scientific, government, financial, health, technical and other positions. |
| 10 | **SBE - BUSINESS AUTOMATION LAB** | To learn the menus and shortcuts in Word Processing toperform documentation.<br>To study the basic functions to perform accounting operations. |
| 11. | **NME- BUSINESS AUTOMATION LAB** | To learn the menus and shortcuts in Word Processing to perform documentation.<br>To study the basic functions to perform accounting operations.<br>To create an effective presentation to perform presentation skills.<br>Making the students to have the capability of carrying out Basic automation work for their Business environment. |
| 12. | **PROGRAMMING IN JAVA** | To gain Knowledge of object-oriented paradigm in the Java programming language.<br>To catch the depth knowledge about Package, Interfaces, Exception handling, Threads etc.<br>To understand about Applets programming.<br>Building an expert in developing the applications in a variety of technologies and on different platforms. |
| 13. | **PROGRAMMING IN JAVA-LAB** | To gain knowledge about basic Java language syntax and semantics to write simple Java programs.<br>To become more familiar to implement OOPs concepts in application programming.<br>To impart the practical knowledge in Applet Programming.<br>Bringing out the Java developers for any projects. |

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| 14. | **TALLY LAB** | To educate the students about the usefulness/importance of Tally ERP-9 software for simplifying the accounting methods & procedures.<br>To train the students to create/load the company, group, security control, back-up etc.<br>To make the students proficient towards creating the accounting records and extract the financial statements and other statements related to inventory management, depreciation accounting and VAT procedure and records.<br>Cultivating the students with accounting knowledge to increase the job skill as Tally data entry operator |
| 15. | **ACCOUNTING AND FINANCIAL MANAGEMENT** | To know a brief of accounting procedures.<br>To know about the preparation of final Accounts.<br>To create knowledge of accessing the account information.<br>Understanding the need of Accounts of an organization for decision making. |
| 16. | **SBE -PYTHON LAB** | To develop a basic understanding of Python programming language.<br>To be fluent in the use of procedural statements in the upcoming language.<br>To be able to design, code, and test small Python programs.<br>Creating Python programmers to solve problems requiring the writing of well-documented programs. |
| 17. | **NME – DESK TOP PUBLISHING (DTP LAB)** | To understand the difference between DTP and how it differs from word processing procedures<br>To acquire knowledge of typography e.g. font size, style, kerning, alignment, hyphenation and line spacing<br>To create and print a multi-page document which incorporates a variety of visual elements to design newsletter, brochure, advertisement or magazine.<br>Bringing out the experts in designing which helps to improve the students Entrepreneurship skill. |
| 18. | **COMPUTER ARCHITECTURE** | To evaluate the historical development of computer systems<br>To identify design levels for computer system development<br>To recognize and deal with high performance architecture design<br>Making the students to understand the internal processing system and procedure of the Computer. |

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| 19. | **OPERATION RESEARCH** | To Handle Mathematical Formation of Linear Programming.<br>To Understand Simplex Method & Artificial Variables for solving LPP.<br>To Cognize transportation Problem and Assignment Problem for optimization.<br>Making the students experts in finding the optimal solutions and networking problems through the Mathematical foundation techniques. |
| 20. | **SYSTEM SOFTWARE** | To review chronological development of system softwares.<br>To learn the basics of an operating systems and its functions.<br>To acquire knowledge about the phases of compiler.<br>Gaining the knowledge about the working process and methodology of programming languages in the Computer. |
| 21. | **SOFTWARE ENGINEERING** | To know the role of the software engineer in project development.<br>To describe the processes of software development life cycle.<br>To know about the dos and don'ts in Project design and development.<br>Bringing out the talented SEs with the Knowledge of converting the user requirements into the Project in a phased approach. To understand networking concepts and basic communication model.<br>To know the working principles of various application protocols<br>To know various routing algorithms for security.<br>Familiarize the students with the knowledge of handling the data movement without any traffic |
| 22. | **PHP WITH MYSQL – LAB** | To Describe and uses, features and syntax of PHP<br>To create, translate and process HTML information using the CGI.<br>To retrieve, insert, update and delete data from the relational database MYSQL<br>Able to Write PHP code to produce outcomes and solve problems. |
| 23 | **MOBILE APPLICATIONS – LAB** | To design and develop user Interfaces for the Androidplatform.<br>To apply Java programming concepts to Android application development.<br>To identify the different application programming interfaces that is available for the different mobile platforms and languages.<br>Bringing out the students with competent designing knowledge in developing mobile. |

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| 24. | **COMPUTER GRAPHICS** | To understand computational development of graphics<br>To analyze 2D and 3D graphics.<br>To get well known about the basic transformation techniques.<br>Developing the practical knowledge in creating animated videos. |
| 25. | **WEB TECHNOLOGY** | To understand the concept of Tables, Forms, Files, Basic Web server Controls.<br>To know about Internet Basics and HTML.<br>To understand the concept of OLEDB connection class & Cookies.<br>Gaining knowledge of solving web client/server problems. |
| 26. | **MULTIMEDIA AND ITS APPLICATIONS** | To understand Multimedia Architecture and its evolution.<br>To disseminate the knowledge in Design Authoring Tools.<br>To gain the importance of multimedia in Internet.<br>Creating the Ability to use the current multimedia applications for developing animation videos. |
| 27. | **MULTIMEDIA LAB** | To understand the multimedia technology and tools.<br>To cquire conceptual knowledge of animation within the dom ain.<br>To develop an application using action script language.<br>Producing Students with the Capacity to create effective audiovisual presentation. |
| 28. | **WEB TECHNOLOGY LAB** | To apply the knowledge of the internet and related internet concepts that are vital in understanding web application development.<br>To understand, analyze and apply the role of markup languages in the workings of the web and web applications.<br>To automate the real time problems by developing & analyzing a web project and identify its elements and attributes in comparison to traditional projects.<br>Developing the ability among the students in making use of the best technologies for solving web client/server problems. |

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| 29. | **SOFTWARE TESTING LAB** | To apply various techniques and to detect the errors in the software<br>To generate and apply the test cases using the automated testing tool<br>To learn the functionality of automated testing tools to apply in the specialized environment<br>Making the students as testers to test the software by applying various testing techniques and checking quality and reliability metrics to ensure the performance of the software. |
| 30. | **JAVA PROGRAMMING** | Understand fundamentals of programming such as variables, conditional and iterative execution, methods, etc.<br>Understand fundamentals of object-oriented programming in Java, including defining classes, invoking methods, using class libraries, etc.<br>Be able to use the Java SDK environment to create, debug and run simple Java programs.<br>Understand the fundamentals of object-oriented programming in Java, including defining classes, objects.<br>Understand the principles of inheritance, packages and interfaces.<br>Understand the concept of event handling, JDBC Connectivity used in GUI. |
| 31 | **SOFTWARE ENGINEERING** | It introduces the concepts and methods required for the construction of large software intensive systems. It aims todevelop a broad understanding of the discipline of software engineering.<br>It seeks to complement this with a detailed knowledge of techniques for the analysis and design of complex software intensive systems.<br>Demonstrate the ability to work effectively as a team leader/ or leader in an ever – changing professional environments.<br>Understand the issues affecting the organization, planning and control of software--based systems development;<br>An ability to identify, formulate and solve engineering problems<br>The ability to analyze, design, verifies, validate, implement, apply and maintain software system. |

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| 32. | **MATHEMATICAL FOUNDATION OF COMPUTER SCIENCE** | Able to draw upon foundational knowledge, learn, adapt and successfully bring to bear analytical and computational approaches on changing societal and technological challenges.<br>An ability to apply knowledge of computing and mathematics appropriate to the discipline.<br>An ability to identify, formulate, and develop solutions to computational challenges.<br>An ability to design, implement, and evaluate a computational system to meet desired needs within realistic constraints. |
| 33. | **JAVA PROGRAMMING LAB** | To build software development skills using java programming for real world applications.<br>To implement frontend and backend of an application<br>To implement classical problems using java programming.<br>Write programs based upon java concepts.<br>Create animation & events based upon advanced java concepts.<br>Develop programs using java collection API as well as java Standard Library. |
| 34. | **OBJECT ORIENTED ANALYSIS AND DESIGN LAB** | Create a requirements model using UML class notations and use-cases based on statements of user requirements, and to analyze requirements models given to them for correctness and quality.<br>Create the OO design of a system from the requirements model in terms of a high-level architecture description, and low-level models of structural organization and dynamic behavior using UML class, object, and sequence diagrams. |
| 35. | **RELATIONAL DATABASE MANAGEMENT SYSTEM** | Learn and practice data modeling using the entity- relationship and developing database designs.<br>Understand the use of Structured Query Language (SQL) and learn SQL syntax.<br>Apply normalization techniques to normalize the database.<br>To understand the features of database management systems and Relational database.<br>To use SQL- the standard language of relational databases.<br>To understand the functional dependencies and design of the database. |

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| 36. | **COMPUTER NETWORKS** | Build an understanding of the fundamental concepts of computer networking.<br>Familiarize the student with the basic taxonomy and terminology of the computer networking area.<br>Introduce the student to advanced networking concepts, preparing the student for entry Advanced courses in computer networking.<br>Understand and explain Data Communications System and its components.<br>Identify the different types of network topologies and protocols.<br>Enumerate the layers of the OSI model and TCP/IP. Explain the function(s) of each layer |
| 37. | **COMPUTER GRAPHICS** | Know and be able to discuss hardware system architecture for computer graphics. This includes, but is not limited to: graphics pipeline, frame buffers, and graphic accelerators/co-processors. Know and be able to use a current 3D graphics API .<br>Be able to discuss future trends in computer graphics and quickly learn future computer graphics concepts and APIs.<br>Have a basic understanding of the core concepts of computer graphics.<br>Be capable of using OpenGL to create interactive computer graphics.<br>Show ability to use the facilities provided by a standard API to express basic transformations such as scaling, rotation, translation, reflection, shearing etc. |
| 38. | **RDBMS LAB** | Learn and practice data modeling using the entity- relationship and developing database designs.<br>Learn and practice and Design different views of tables for different users and to apply embedded and nested queries.<br>Learn and practice Design and implement a database for a given problem according to well-known design principles that balance data retrieval performance with data consistency.<br>Design and implement a database schema for a given problem- domain<br>Populate and query a database using SQL DML/DDL commands.<br>Programming PL/SQL including stored procedures, stored functions, cursors, packages. |

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| 39. | **PYTHON LAB** | To write, test, and debug simple Python programs. To implement Python programs with conditionals and loops. Use functions for structuring Python programs.<br>To understand why Python is a useful scripting language for developers. To learn how to design and program Python applications. Problem solving and programming capability.<br>Demonstrate the use of Python lists and dictionaries<br>Describe and apply object-oriented programming methodology. |

## M.SC MATHEMATICS

### PROGRAMME SPECIFIC OUTCOMES

**PSO1:** Understanding of the fundamental axioms in mathematics and capability of developing ideas based on them.
**PSO2:** Inculcate mathematical reasoning.
**PSO3:** Good understanding of number theory which can be used in modern online cryptographic technologies.
**PSO4:** Nurture problem solving skills, thinking, creativity through assignments, project work.
**PSO5:** Assist students in preparing (personal guidance, books) for competitive exams e.g. NET, GATE, etc.

### COURSE OUTCOMES

| S.NO | NAME OF THE SUBJECT | DESCRIPTION |
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| 1. | **LINEAR ALGEBRA** | • Perform matrix algebra, invertibility, and the transpose and understand vector algebra in **R**n.<br>• Understand determinants and their properties.<br>• Understand vector spaces and subspaces and apply their properties<br>• Understand linear independence and dependence.<br>• Prove basic results in linear algebra using appropriate proof-writing techniques such as linear independence of vectors; properties of subspaces; linearity, injectivity and surjectivity of functions; and properties of eigenvectors and eigenvalues<br>• Able to Students completing this course will be able to compute the inverse of an invertible matrix.<br>• Students completing this course will be able to find the null space of a matrix and represent it as the span of independent vectors.<br>• Students completing this course will be able to find the matrix representation of a linear transformation given bases of the relevant vector spaces. |
| | | • Have the knowledge of basic properties of the field of real numbers. |

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| 2. | **REAL ANALYSIS I** | • Have the knowledge of the series of real numbers and convergence, Studying Bolzano –Weirstrass theorem and Cauchy criteria.<br>• Studying the basic topological properties of the real numbers, Have the knowledge of real functions-limits of functions and their properties.<br>• Students will be able to Prove a basic set theoretic statement.<br>• Prove an appropriate statement by induction.<br>• Define continuity of a function and uniform continuity of a function and prove a theorem about continuous functions<br>• State the Bolzano-Weierstrass theorem, Rolle's theorem, extreme value theorem, and the Mean Value theorem |
| 3. | **DIFFERENTIAL EQUATIONS** | • Solving initial boundary value problems using Separation Method.<br>• Solving initial boundary value problems using Eigen func Expansion Method.<br>• Introducing the Sturm-Liouville Eigenvalue Problems to students.<br>• Solving initial boundary value problems using Integral Transforms.<br>• Solving first-order Linear and Quasi-linear wave equations using Method of Characteristics.<br>• Solve initial boundary value problems using Separation of Variables Method.<br>• Solve initial boundary value problems using Eigenfunction Expansion Method.<br>• Solve initial boundary value problems using Integral Transforms.<br>• Solve first-order Linear wave equations using Method of Characteristics.<br>• Solve first-order Quasi-linear wave equations using Method of Characteristics. |

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| 4. | **GRAPH THEORY** | • This course is aimed to cover a variety of different problems in Graph Theory. In this course<br>• Students will come across a number of theorems and proofs. Theorems will be stated and proved<br>• Formally using various techniques. Various graphs algorithms will also be taught along with its analysis. • After the course the student will have a strong background of graph theory which has diverse applications in the areas of computer science, biology, chemistry, physics, sociology, and engineering.<br>• Graph theory in many parts before it became very applicable to CS and algorithms used to be mostly recreational (not true of all areas of it, but for many of the ones used in CS it is), so mathematicians that study it have made it probably as accessible as possible. There are lots of great Graph Theory texts out there that you can learn graph theory with. As it is a discrete maths subject (most of the time, at least at the basic level where continuous problems aren't considered). |
| 5. | **PROBABILITY THEORY AND STATISTICS** | • To provide students with the foundations of probabilistic and statistical analysis mostly used in varied applications in engineering and science like disease modeling, climate prediction and computer networks etc.<br>• To understand the concepts of probability and its properties.<br>• To solve Multivariate problems in continuous and discrete random variables.<br>• To gain knowledge to apply Distributions.<br>• To apply ANOVA tables. |
| 6. | **ALGEBRA** | • This course is designed to give students a foundation for advanced study in Algebra. The fundamental theorems of algebraic structures are explained. Students will explore the concepts of Polynomial rings, UFD, ED, PID, Field extensions, Einstein's irreducibility criterion, Galois extensions etc. Throughout the course, Advanced Core standards are taught and reinforced as the student learns how to apply the concepts in real-life situations.<br>• To attain a good mathematical maturity and enables to build mathematical thinking and reasoning.<br>• Utilize the Polynomial rings, UFD, ED, PID to solve different related problems.<br>• Design, analyze and implement the concepts of Gauss Lemma, Einstein's irreducibility criterion, separable extensions etc. |

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| 7. | **REAL ANALYSIS** | • To learn the concepts of basic topological objects such as open sets, closed sets, compact sets and the concept of convergence and also to work comfortably with continuous, differentiable and Riemann integrable functions.<br>• Studying Riemann – Integral and the fundamental concepts.<br>• Locate Sequence and Series comprising convergence sequences, upper and lower limits<br>• Define properties of integration and Differentiation.<br>• Define Riemann integrable and Riemann sums and prove a theorem about Riemann sums and Riemann integrals. |
| 8. | **TOPOLOGY** | • Introduction: sets and operations, Euclidean space, relations, functions.<br>• Topological Spaces: Open and closed sets, basis for a Topologies in applications (digital topology for digital displays, phenotype spaces in biology and neural networks, etc.).<br>• Interior, closure and boundary applications to geographic information systems.<br>• Creating new topological spaces: Subspace topology, product topology, quotient spaces; applications to motion planning in robotics.<br>• Continuous functions and homeomorphisms, applications to motion planning in robotics.<br>• Metric spaces and metrizability of topological of topological spaces, separation axioms.<br>• Understand terms, definition and theorems related to topology.<br>• Demonstrate knowledge and understanding of concepts such as open and closed sets, interior, closure and boundary.<br>• Use continuous functions and homeomorphisms to understand structure of topological spaces.<br>• Demonstrate knowledge and understanding of metric spaces.<br>• Apply theoretical concepts in topology to understand real world applications.<br>• Express regularity and normality separation axiom and use them prove various properties. |
| 9. | **OPTIMIZATION TECHNIQUES** | • Introduction to optimization techniques using both linear and non-linear programming.<br>• The focus of the course is on convex optimization though some techniques will be covered for non-convex function optimization too.<br>• After an adequate introduction to linear algebra and probability theory, students will learn to frame engineering minima maxima problems in the framework of optimization problems.<br>• Cast engineering minima/maxima problems into optimization framework.<br>• Learn efficient computational procedures to solve optimization problems.<br>• Use Matlab to implement important optimization methods. |

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| 10. | **AUTOMATA THEORY** | • To explain the various types of automata and grammar.<br>• To solve the sums based on automata and grammar.<br>• To understand the nuances of Automata and Grammar.<br>• To learn deterministic and non – deterministic finite Automata.<br>• To form relation with context free languages.<br>• To specify Bottom parsers and top down prasers |
| 11. | **COMPLEX ANALYSIS** | • Identify and construct complex-differentiable functions.<br>• Use the general Cauchy integral theorem and formula.<br>• Identify complex-differentiable functions. •<br>Use the general Cauchy integral theorem and formula<br>• Identify and construct complex-differentiable functions.<br>• Compute Laurent series at an isolated singularity, and determine the residue.<br>• Use the residue theorem to compute complex line integrals and real integrals.<br>• Find Laurent series about isolated singularities, and determine residues.<br>• Use the residue theorem to compute several kinds of real integrals<br>• Determine whether a sequence of analytic functions converges uniformly on compact sets.<br>• Express some functions as infinite series or products. |
| 12. | **FUNCTIONAL ANALYSIS** | • This subject combines ideas from analysis and linear algebra and underpins many mathematical developments including many aspects of partial differential Equations, Mathematical Physics and probability and the area of mathematics.<br>• This course is useful for those working in many areas of mathematics, including Mathematical Physics, Partial Differential Equations, Mathematical and Numerical Analysis and pure or applied probability.<br>• At the End of this course, we will be able to appreciate how ideas from different areas of mathematics combine to produce new tools that are more powerful than would other be possible. We will have developed:<br>• Mathematical intuition and problem-solving capabilities.<br>• Understanding of which tool is appropriate to tackle which problem ;<br>• Ability to find information through tools like the world- wise web to solve Problems. |
| | | • Know and use geometric quantities such as length, curvature, and torsion associated to planar and spatial |

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| 13. | **DIFFERENTIAL GEOMETRY** | curves.<br>• Be able to calculate and use the Frenet frame of a spatial curve.<br>• Be able to prove the isoperimetric inequality and the "Four vertex theorem" for convex curves.<br>• Understand the technical definition of a smooth surface and its significance<br>• Be able to use the first fundamental form for a surface and give formal and informal definitions of it.<br>• Be able define and recognize conformal and equiareal mappings of surfaces.<br>• Be able to use the second fundamental form for a surface and give formal and informal definitions of it.<br>• Be able to define, use, and articulate the differences between normal curvature, geodesic curvature, Gaussian curvature, and mean curvature<br>• Be able to give the definition of a geodesic on a surface and prove the basic properties of geodesics<br>• Be able to find geodesics on particular surfaces<br>• Be able to state and use the TheoremaEgregium |
| 14. | **OPREATIONS RESEARCH** | • Understand the theoretical workings of the simplex method for linear programming and perform iterations of it by hand.<br>• Understand the relationship between a linear program and its dual, including strong duality and complementary slackness.<br>• Perform sensitivity analysis to determine the direction and magnitude of change of a model's optimal solution as the data change.<br>• Solve specialized linear programming problems like the transportation and assignment problems<br>• Understand the applications of, basic methods for, and challenges in integer programming<br>• Understand how to model and solve problems using dynamic programming<br>• Learn optimality conditions for single- and multiple- variable unconstrained and constrained non-linear optimization problems, and corresponding solution methodologies<br>**Students will be able to**<br>• Identify and develop operational research models from the verbal description of the real<br>• system.<br>• Understand the mathematical tools that are needed to solve optimisation problems.<br>• Use mathematical software to solve the proposed models.<br>• Develop a report that describes the model and the solving technique, analyse the results and propose recommendations in language understandable to the decision-making processes in Management Engineering. |

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| 15. | **STOCHASTIC PROCESS** | • This course develops the mathematical theory of random variables and random process. The goal is to teach the theoretical concepts and techniques for solving problems that arises in real life. beginning with the random variables, this course leads to the concept of stochastic process and renewal process. After a brief review of probability, the topics of decision making under markov chain, Poisson process and recurrence process will be covered in detail.<br>• Upon completion of the subject, students will be able to compute:<br>• Probabilities using an appropriate sample space.<br>• Probabilities and expectation from probability density fuctions.<br>• Mean and covariance for simple random process.<br>• They can analyze continuous and discrete time renewal process.<br>• Apply the theory of stochastic process in practical problems and to solve the basic problems in poisson process. |
| 16. | **FLUID DYNAMICS** | • Equip students with the knowledge base essential for application of computational fluid<br>• dynamics to engineering flow problems<br>• Provide the essential numerical background for solving the partial differential equations<br>• governing the fluid flow<br>• Develop students' skills of using a commercial software package<br>• On successful completion of the course, students will be able to:<br>• Understand solution of aerodynamic flows. Appraise & compare current CFD software.<br>• Simplify flow problems and solve them exactly •<br>Define and setup flow problem properly within CFD<br>context, performing solid modeling using CAD package and producing grids via meshing tool<br>• Understand both flow physics and mathematical properties of governing Navier-Stokes<br>• equations and define proper boundary conditions for solution<br>• Use CFD software to model relevant engineering flow problems. Analyses the CFD results. |
| | | • To gain understanding of the abstract measure theory and definition and main properties of the integral. |

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| 17. | **MEASURE AND INTEGRATION** | • To construct Lebesgue's measure on the real line and in $n$-dimensional Euclidean space.<br>• To explain the basic advanced directions of the theory.<br>• Additionally, students should master the technique of calculating the Lebesgue integral<br>• and understand the applications of $Lp$-spaces in probability theory.<br>• Learning integration with respect to any measure and Lebesgue Integration and related results.<br>• Studying the differences between the Riemann integral and the Lebesgue integral as a basis for further study of function spaces.<br>• After completing this subject, students will understand the fundamentals of measure theory and be acquainted with the proofs of the fundamental theorems underlying the theory of integration. • They will also have an understanding of how these underpin the use of mathematical concepts such as volume, area, and integration and they will develop a perspective on the broader impact of measure theory in ergodic theory and have the ability to pursue further studies in this and related areas. |

## B.SC MATHEMATICS

### PROGRAMME SPECIFIC OUTCOMES

**PSO1:** Know when there is a need for information, to be able to identify, locate, evaluate, and effectively use that information for the issue or problem at hand.
**PSO2:** Formulate and develop mathematical arguments in a logical manner.
**PSO3:** Acquire good knowledge and understanding in advanced areas of mathematics and statistics, chosen by the student from the given courses.
**PSO4:** Gain knowledge in foundational areas of mathematics
**PSO5:** Use technological tools to facilitate the presentation of mathematical concepts to their students.

### COURSE OUTCOMES

| S.NO | NAME OF THE SUBJECT | DESCRIPTION |
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| | | • Able to know the simple differentiation and find the $n^{th}$ differentiation using the Leibnitz theorem. |

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| 1. | **CALCULUS** | • To find the maximum and minimum value of the linear equations.<br>• Perform calculations and algebraic manipulations, particularly differentiation andintegration, quickly and accurately.<br>• To convert the Cartesian coordinates to polar coordinates and vice versa.<br>• Able to recognize part of the integrand would be best suited for u and for dv.<br>• Able to utilize integral properties 1 through 8 to compute the integral.<br>• Able to find the area of the circle, ellipse, parabola using the integration.<br>• Solve the simple double integral problems.Solve the triple integral problems.<br>• Able to know the application of triple integral.<br>• Able to find the area and solve the problems using Jacobian.<br>• Use concepts of calculus to the model real-world problems.<br>• Use Calculus to compute quantities from physics. such as: motion of a particle (velocity,<br>• acceleration, distance travelled); mass, center of mass; work.<br>• Optimize a function of two or more variables,<br>organizing work into main steps, carefully justifying determination of critical points. |
| 2. | **CLASSICAL ALGEBRA** | • To impart skills in the carious applications of algebraic methods.<br>• Aim of teaching algebra is to help in expression of abstract ideas.<br>• Teaching of algebra should enable the students to use in the solution of some of the stiff problems in arithmetic equation and factorization help in this direction<br>• This inculcates in students, the power of accurate analysis<br>• To understand terms of series, summation and its changes.<br>• Understand the importance of roots of real and complex polynomials and learn various methods of obtaining roots.<br>• Solve simple linear equations.<br>• Collect like terms and simplicity expressions term by term.<br>• Recognize technical terms and appreciate some of the uses of algebra<br>• To simplify some formulas. |
| | | **Students will be able to** |

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| 3. | **VALUE EDUCATION** | • Full development of child's personality in its physical, mental, emotional and spiritual aspects.<br>• Inculcation of good manners and of responsible and cooperative citizenship.<br>• Developing respect for the dignity of individual and society.<br>• Inculcation of a spirit of patriotism and national integration.<br>• Developing a democratic way of thinking and living.<br>• Developing tolerance towards and understanding of different religious faiths.<br>• Developing sense of brotherhood at social, national and international levels.<br>• Helping pupils to have faith in themselves and in some supernatural power that, is supposed to control this universe and human life.<br>• Enabling pupils to make decisions on the basis of sound moral principles<br>• Evolving the evaluation criteria on value-education.<br>• Suggesting measures for better utilization of value- education.<br>• Finding out the interests of pupils in relation to different aspects and activities of value-education.<br>• Clarifying the meaning and concept of value- education. Improve the integral growth of human begins.<br>• Create attitudes and improvement towards sustainable lifestyle.<br>• Increase awareness about our national history our cultural heritage, constitutional rights, national integration, community development and environment.<br>• Create and develop awareness about the values and their significance and role.<br>• Know about various living and non-living organisms and their interaction with environment. |

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| 4. | **ANALYTICAL GEOMETRY 3D** | • The student will demonstrate knowledge of:<br>• Geometry and its applications in the real world.<br>• How to communicate geometric ideas in the language of the mathematician.<br>• The fundamental theorems of Euclidean geometry.<br>• Both the procedural and the conceptual meaning of measurement.<br>• Apply transformations and use symmetry to analyze mathematical situations.<br>• Use visualization, spatial reasoning, and geometric modeling to solve problems<br>• Gain a more profound understanding of measurement and of geometry<br>• Experience mathematics as a constructivist<br>interaction among students, the instructor, and the course content<br>Relate and integrate geometry into real life contexts as well as into other disciplines<br>Apply appropriate techniques, tools, and formulas to determine measurements<br>Select and use units of appropriate size and type to measure angles, perimeter, surface area, and volume<br>Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships |
| 5. | **DIFFERENTIAL EQUATIONS AND LAPLACE TRANSFORMS** | • Identify the type of a given differential equation and select and apply the appropriate analytical technique for finding the solution of first order and selected higher order ordinary differential equations.<br>• Evaluate first order differential equations including separable, homogeneous, exact, and linear. Evaluate Laplace Transforms.<br>• Solve second order and higher order linear differential equations.<br>• Solve homogeneous and nonhomogeneous equations.<br>• Solve differential equations using variation of parameters<br>• Solve first order differential equations utilizing the standard techniques for separable, exact, linear, homogeneous, or Bernoulli cases. Find particular solutions when given initial or boundary conditions.<br>• Solve higher order linear differential equations using reduction of order, undetermined coefficients, or variation of parameters.<br>• Find inverse Laplace transforms. |
| | | **Students will be able to** |

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| 6. | **STATICS** | • Determine calculate the moment of a force and couple vector in 3 space using vector algebra.<br>• Determine-the resultants of force system acting on rigid bodes<br>• Identify the type of a special force system<br>• Handle group of rigid bodies by using Newton's third law<br>• Handle composite values and surfaces.<br>• Students will demonstrate an understanding of vector mechanics and its applications.<br>• Applying law of parallelogram and triangle for adding two vectors.<br>• Adding two forces using the law of parallelogram and adding two forces using triangle law<br>• Resolve a given force into a force couple force system at any other point.<br>• Reduce a system of force to one force and one couple.<br>• Demonstration of the characteristics of a simple. suspension bridge Examination of the relationship between applied loads and the suspension cable tension.<br>• Upon a successful completion of statics a students will be able moment of a system of coplanar forces.<br>• Determine equilibrium of forces acting a point graphically and analytically.<br>• Determine centre of gravity of a triangle, quadrilateral solid cone. |
| 7. | **FOURIER SERIES AND FOURIER TRANSFORMS** | **Students will able to:**<br>• Find the Fourier series representation of a function of one variable<br>• Find the solution of the wave, diffusion and transform.<br>• Solve a Cauchy problem for the wave or diffusion equations using the Fourier transform<br>• Describe the various types of sets<br>• Solve the problems in real life using sets and theorem Define groups<br>• Determine the difference of sets and Groups<br>• Solve the problems of Matrices<br>• Used matrix mathematics to account for reflection and for refraction.<br>• Calculate the electrical properties of a circuit, with voltage, amperage, resistance, etc.<br>• Computing vector clocks, global predicate detection, concurrency theory posets occurrence nets, programming language semantics fixed-point semantic. |

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| 8. | **ALLIED MATHEMATICAL STATISTICS - I** | • Students will able to Prepare students for lifelong learning and successful careers using their mathematical and statistical skills.<br>• Train students thoroughly in methods of analysis and algebra, including the computational skills appropriate for mathematicians to use when solving problems.<br>• Develop the skills pertinent to the practice of mathematics, including the students' abilities to formulate problems, to think creatively, and to synthesize information.<br>• Use current mathematical concepts and data analysis techniques for problem solving.<br>• Develop oral and written communication skills that allow students to present information effectively.<br>• Instill in our students an understanding of their professional and ethical responsibilities. Afford our students the opportunity to pursue studies in a discipline other than mathematics.<br>• Use mathematical knowledge to analyze and solve problems.<br>• Communicate effectively in oral and written form.<br>• Significant attainment of knowledge in at least one discipline other than mathematics.<br>• A commitment to engage in lifelong learning.<br>• Demonstrate several approaches to basic problem solving and implement those strategies.<br>• Acquire, organize, and synthesize information and creatively use that information. |
| 9. | **FUNTAMENTALS OF COMPUTER** | • Know the characteristic features & functions of computer<br>• Understand the principles of computer architecture design and its anatomy<br>• Learn the functions of various input & output devices<br>• Know the underlying functions of auxiliary storage devices & its types<br>• Able to identify the types of software & its applications<br>• Apply the knowledge of software in programming skills<br>• Understand number system & various conversions<br>• Learn the network & its types, architectures, topologies & protocols<br>• Know the various Internet resources & its benefits<br>• Can make use of the internet in their day to day activities |
| | | • Acquired a basic knowledge of modern literature, Epics, Ancient literature, Muslim and Christian |

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| 10. | **GENERAL AWARNESS** | literature<br>• Acquired a general knowledge of the principles and mechanisms underlying cell biology, animal physiology, genetics, ecology, animal behaviour, reproduction and development;<br>• Acquired a basic knowledge of physics and chemistry sufficient to understand the physical and chemical bases of biological subjects taught in the course;<br>• Enhance to develop the basic Mathematical skills<br>• Acquired the skills to use library and internet resources independently."<br>• To gain knowledge about micro teaching and macro teaching<br>• Develop a general knowledge about Auditing and tax payment<br>• To gain knowledge about NSS, YRC, NCC etc<br>• Acquired a basic knowledge about current affairs<br>• Acquire a basic knowledge about Sports<br>• General awareness gives a wide range of ideas that can be beneficial to get through in TNPSCexams.<br>• This allows students to develop a better understanding of the group examinations. |
| 11. | **DYNAMICS** | • To introduce the physical principles to the analysis of particle and rigid-body motion problems.<br>• Be able to analyze kinematics of the three- dimensional particle motion in various coordinate<br>• Understanding of the concepts of displacement, velocity and acceleration as vectors and how to determine them.<br>• Understanding of the notion of a force as a vector.<br>• Ability to understand concepts of kinetic, potential and mechanical energies and the concept of a conservative force.<br>• Ability to use principles derived from Newton's second law, including Work & Energy, and Momentum..<br>• Ability to make a right decision related to a choice of the system of particles whose motion is to be studied.<br>• Identify the basic relations between distance, time, velocity, and acceleration.<br>• Apply vector mechanics as a tool for solving kinematic problems.<br>• Create a schematic drawing of a real-world mechanism. |

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| 12. | **ALLIED**<br>**MATHEMATICAL STATISTICS II** | **Students should**<br>• Demonstrate knowledge of probability and the standard statistical distributions.<br>• Demonstrate the ability to apply linear, nonlinear and generalized linear models.<br>• Statistical reasoning and inferential methods,statistical computing, •<br>Demonstrate understanding of how to design experiments and surveys for efficiency.<br>• Demonstrate knowledge of classical and repeated measures multivariate methods and computational techniques.<br>• The fundamentals of probability theory, statistical modeling and its limitations, and have skill in description, interpretation and exploratory analysis of data by graphical and other means, graduates are also expected to learn to communicate effectively.<br>• Able to independently read mathematical and statistical literature of various types, including survey articles, scholarly books, and online sources; and<br>• Be life-long learners who are able to independently expand their mathematical or statistical expertise when needed, or for interest's sake.<br>• After completing this course, the student should be able to:<br>• Calculate covariance and correlation and determine independence of random variables; obtain expectations and variances for linear combinations of random variables.<br>• Find the distribution of a function of random variables using the methods of distribution functions, transformations, and moment generating functions; perform bivariate transformations using Jacobians; calculate joint distributions and moments of order statistics. Calculate probabilities and quantiles for sampling distributions related to the normal distribution (t, chi-square, F); apply the Central Limit Theorem to calculate probabilities and quantiles for the sample mean.<br>• Construct point and interval estimators; evaluate their goodness (bias, variance, mean squared error).<br>• Determine properties of point estimators (efficiency, consistency, sufficiency); find minimum variance unbiased estimators; find method of moments and maximum likelihood estimators. Perform hypothesis tests for the mean; compute p-values, and probabilities of Type I and Type II errors; determine the power of a test and apply the Neyman-Pearson Lemma; construct likelihood ratio tests. |

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| 13. | **VECTOR CALCULUS & LAPLACE TRANSFORM** | • Use the parallelgram law to add geometric vectors.<br>• Resolve geometric vectors into components parallel to coordinate axes.<br>• Find use direction angles and direction cosines of a vector.<br>• Use parametric equation for plane curves and space curves.<br>• Find the Fourier series representation of a function of one variable<br>• Find the solution of the wave, diffusion and Laplace equations using the Fourier series<br>• Find the Laplace and Fourier transforms of functions of one variable<br>• Solve an initial value problem for an nth order ordinary differential equation using the Laplace transform.<br>• Solve a Cauchy problem for the wave or diffusion equations using the Fourier transform<br>• Define vector equation for lines and planes<br>• Analyze vector functions to find limits, derivatives, tangent lines, integrals, arc length, curvature,torsion.<br>• Determine gradient vector fields and find potential functions<br>• Evaluate line integrals, surface area and surface integrals<br>• Write piecewise functions using the unit step function.<br>• Find the convolution of two functions and the transform of a convolution.<br>• Find transforms using the first and second translation theorems. |
| 14. | **DISCRETE MATHEMATICS** | • Aim is to simplify and evaluate basic logic statements including compound statements, implications using truth tables and the properties of logic. • Express logic sentence in terms of predicates, quantifiers and logical connectives.<br>• Solve problems using principle normal forms.<br>• Apply the operations of sets and use venn diagrams to solve applied problems.<br>• Describe binary relations between two sets.<br>• Determine if a binary relation is an equivalence relation.<br>• Explain types of grammar with examples.<br>• Explain Automata, Deterministic Automata and Non Deterministic Automata.<br>• Able to understand the mathematical logic, statements with truth tables.<br>• Know the logic sentence in terms of predicates, quantifiers and logical connectives.<br>• Perform problems using principle normal forms.<br>• Apply the operations of sets and use venn diagrams to solve applied problems.<br>• Combine relations using set operators and composition. • Create own examples on Grammar and Automata |

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| 15. | **MODERN ALGEBRA-I** | • The aim of the course will be the study of certain structures called groups, rings, fields and some related structures.<br>• Modern algebra gives to student a good mathematical maturity and enables to build mathematical thinking and skill.<br>**Students will be able to,**<br>• Asses properties, implied by the definition of groups and rings.<br>• Use various canonical types of groups and ideals.<br>• Analyze and demonstrate examples of subgroup, subgroups and quotient group.<br>• Can give various examples of ideals and quotient rings.<br>• Use the concept of isomorphism and homomorphism for groups & rings. And to produce rigorous proof of proposition arising in the context of modern algebra. |
| 16. | **REAL ANALYSIS – I** | • The aim of the course is defining the real numbers, functions between sets, countable and uncountable sets.<br>• Recognize convergent, divergent, bounded, Cauchy sequence in Euclidean space.<br>• Defining a metric space and determining if a function in a metric space is continuous or uniformly continuous in Euclidean space.<br>• Hone the ability to do reality checks on calculations.<br>• Equip students with necessary knowledge and skills to enable them handle mathematical operations, analyses and problems involving real numbers. |
| 17. | **COMPLEX ANALYSIS – I** | • Develop an understanding of the fundamental concepts in complex analysis.<br>• It begins with the exploration of the algebraic and geometric structures of the complex number field.<br>• The concepts of analyticity, Cauchy-Riemann relations, harmonic functions, conformal mappings, Complex integration and complex power series are introduced.<br>• Equip students with necessary knowledge and skills to enable them handle mathematical operations, analyses and problems involving complex numbers.<br>• Appreciate how mathematics is used in design (e.g. conformal mapping).<br>• Hone the ability to do reality checks on calculations. |

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| 18. | **OPERATIONS RESEARCH - I** | • Formulate and model a linear programming problem from a word problem and<br>• Solve them graphically in 2 dimensions.<br>• Place a Primal linear programming problem into standard form and use theSimplex Method to solve it.<br>• Find the dual, and identify and interpret the solution of the Dual Problem from the primal problem.<br>• 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 torestore feasibility.<br>• Explain the concept of complementary slackness and its role in solvingprimal/dual problem pairs.<br>• Formulate and solve a number of classical linear programming problems and such as the assignment problem and the transportation problem.<br>• Solve simple games using various techniques.<br>• Identify and develop operational research models from the verbal description of the realsystem.<br>• Understand the mathematical tools that are needed to solve optimization problems.<br>• Facility with mathematical and computational modeling of real decision-making problems, including the use of modeling tools and computational tools, as well as analytic skills to evaluate the problems. |
| 19. | **NUMERICAL METHODS** | • Derive numerical approximations to the roots of an equation by Newton method, Bisection method.<br>• Derive numerical solution to a system of linear equation by Gaussian Elimination and Gauss- Seidal method.<br>• Find the Lagrange interpolation polynomial for any given set of points.<br>• Prove results for various numerical root finding methods.<br>• The finite element method is a numerical method that is in widespread use to solve partial differential equations in a variety of engineering fields including stress analysis, fluid dynamics, heat transfer and electro-magnetic fields.<br>• NumericalMethods studies the means of obtaining numerical results for mathematical expression. |

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| 20. | **PROGRAMMING IN C** | • Learn the basic concepts of Procedure oriented programming<br>• Understand the efficiency,flexibility,portability & extend ability of robust language<br>• Know the basic structure of a C program<br>• Learn the C fundamental data structures, Operators,Expressions,Functions, orphism, managing I/O operations and Control structures<br>• Students should be able to:<br>• Explain how an existing C program works<br>• Discover errors in a C program and describe how to fix them<br>• Critique a C program and describe ways to improve it<br>• Analyze a problem and construct a C program that solves it. •<br>Enhance the programming skill |
| | | • Demonstrate understanding of the relationship between algebraic structure with familiar number systems |

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| 21. | **MODERN ALGEBRA II** | such as integers and real number. Working knowledge of important mathematical concepts in modern algebra such as definition of group, order of finite group and order of an element.<br>• And they can verify relationship between operations satisfying various properties (i.e) use the definition to prove that a given set with binary operation is a group or not and show that a given group is abelian or not abelian. And they can construct a subgroup with specific examples.<br>• Student will be knowledgeable of different types of subgroups such as normal subgroups, cyclic subgroups and understand the structure and characteristic of these subgroups.<br>• They can prove or disprove that a given map is homomorphism/ isomorphism/ automorphism/endomorphism(depends on the examples)<br>• By using sylows theorem, Cauchy theorem can classify all groups of a certain order.(that is they can compute order of the group, order of an element of a group and the order of a subgroup in specific examples.) • And using Lagrange's theorem they can construct all left and right cosets of a subgroup, prove the properties of index.<br>• They can extend the results from group theory to study the properties of rings and fields.<br>• Ring is a fundamental object in algebra. Students can easily prove that given possibly abstract set with two composition laws is a ring or not.<br>• They can prove that two rings are isomorphic or not with specific examples.<br>• And prove that given map between rings is a ring homomorphism / isomorphism / automorphism / endomorphism or not.<br>• Then from a given ring and ideals they can compute a quotient ring.<br>•Students gain experience and confidence in proving theorems, and confidence to move forward in the study of mathematics. |

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| 22. | **REAL ANALYSIS II** | • Describe the real line as complete and ordered field.<br>• Prove the statements involving the properties of real numbers.<br>• Define the basic sets, set operations.<br>• Define a relation and functions of sets defined in a real line.<br>• Define and recognize the convergence as they apply to sequence, series and functions. • Determine the basic topological properties of subsets in real Euclidean space.<br>• Use the definition of the bounded and Cauchy sequence of a subset in the Euclidean space.<br>• Define the open covering and compactness in a subset of Euclidean space.<br>• Determine the continuity and uniform continuity of function defined in a subset of the Euclidean space.<br>• Equip students with necessary knowledge and skills to enable them handle mathematical operations, analyses and problems involving real numbers.<br>• Produce rigorous proofs of the results that arise in the context of the real analysis. |
| 23. | **COMPLEX ANALYSIS- II** | • Aim is to understand the definition of zeros of function , maximum modulus theorem, Liouville's theorem and cauchy's inequality.<br>• Compute the Taylors and Laurent's expansions of simple functions.<br>• Determine the nature of singularities, poles and calculating residues. Evaluate the integrals along a path in the complex plane and understand the statements of Cauchy's theorem.<br>• Use the cauchy's residue theorem to evaluate integrals, sum of the series and understand some important theorems.<br>• To understand and learn to use Argument Principle.<br>• To Understand and develop manipulation skills in the use of Rouche's theorem<br>• Students should be able to Prove the above theorems<br>• Solve difficult problems using the above theorems<br>• Apply Cauchy's Integral Formula to evaluate complex line integrals<br>• Expand functions in Taylor and Laurent series<br>• Apply the Residue Theorem to evaluate real integrals<br>• Apply normal families arguments in proofs. |

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| 24. | **OPERATIONS RESEARCH II** | • Identify and develop operational research models from the verbal description of the real system.<br>• Understand the mathematical tools that are needed to solve optimization problems.<br>• Facility with mathematical and computational modeling of real decision-making problems, including the use of modeling tools and computational tools, as well as analytic skills to evaluate the problems.<br>• Formulate and model a linear programming problem from a word problem and solve them graphically. • Place a Primal linear programming problem into standard form and use the Simplex Method to solve it.<br>• Describe various solutions of similar two phase and big M method. Understand the properties of a dual problem and solve it.<br>• Find the dual, identify and interpret the solution of the Dual Problem from 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.<br>• Explain the concept of complementary slackness and its role in solving primal/ dual problem pairs.<br>• Formulate and solve a number of classical linear programming problems such as the assignment problem and the transportation problem.<br>• Solve the Assignment Problem , Unbalanced Assignment Problem and travelling sales man problem.<br>• Solve simple games using various techniques.<br>• Solve two persons zero sum games and<br>• Find the optimum strategy using graphical method and dominance property. |

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| 25. | **GRAPH THEORY** | **Students will able to:**<br>• Demonstrate knowledge of the syllabus material<br>• Write precise and accurate mathematical definitions of objects in graph theory<br>• Use mathematical definitions to identify and construct examples and to distinguish examples from non-examples<br>• Validate and critically assess a mathematical proof<br>• Use a combination of theoretical knowledge and independent mathematical thinking in creative investigation of questions in graph theory<br>• Reason from definitions to construct mathematical proofs<br>• Write about graph theory in a coherent and technically accurate manner.<br>• After the course the student will have a strong background of graph theory which has diverse applications in the areas of computer science, biology, chemistry, physics, sociology, and engineering.<br>• The algorithms of Prim and Kruskal to find a minimum weight spanning tree in a connected graph. Dijkstra's algorithm to find a shortest path spanning tree in a graph or digraph. |

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| 26. | **FUZZY LOGIC** | • Be able to understand basic knowledge of fuzzy sets and fuzzy logic<br>• Be able to understand the basic notion of fuzzy rule base<br>• Know the concept of a fuzzy number and how it is defined<br>• Be able to gain knowledge about fuzzy relation and basic concept of classical logic<br>• Be able to understand the basic of linguistic variation and linguistic modifier<br>• Provide a brief introduction to fuzzy arithmetic concepts<br>• Become familiar with statistical average and arithmetical operations of triangular and trapezoidal number<br>• Provide an understanding of the basic mathematical elements of the theory of fuzzy sets.<br>• Provide an emphasis on the differences and similarities between fuzzy sets and classical sets theories.<br>• Be able to distinguish between the classical set and fuzzy relation concepts through the learned difference between the classical set characteristic function and the fuzzy relation membership function<br>• Be able to define fuzzy sets using linguistic words and represent these sets by membership functions<br>• Become aware of the application of fuzzy inference in the area of control<br>• Have acquired the ability of thinking differently and have become capable, when necessary, to apply a new thinking methodology to real life problems including engineering ones. |
| 27. | **PROGRAMMING IN C++** | • Learn the basic concepts of object oriented programming<br>• Able to differentiate OOPS & POP concepts. •<br>Know the basic structure of a C++ program<br>• Learn the C++ fundamental data structures, functions, object-oriented programming, Constructors, Inheritance, Pointers,types of Polymorphism, managing console I/O operations and C++ streams<br>• Know its applications in areas such as game development, hardware manufacturing, embedded systems and military<br>**Students should be able to:**<br>• Explain how an existing C++ program works.<br>• Discover errors in a C++ program and describe how to fix them.<br>• Critique a C++ program and describe ways to improve it.<br>• Analyze a problem and construct a C++ program that solves it.<br>• Able to use various OOPs concepts while designing a C++ program. |

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| 28. | **COMPUTATIONAL MATHEMATICS** | • Solve any system of linear equations with finite unknowns using Gauss Elimination, Gauss Jordan, Gauss seidal and Gauss Jacobi Methods. Analyze and compare alternative solutions to computing problems.<br>• Find the missing data of equal intervals using<br>Newton's and Gauss's interpolation and extrapolation formulae.<br>• Identify and solve the unequal intervals using Lagrange's Formula.<br>• Recognize and solve the equations using numerical integration and differentiations.<br>• Find the mean, median and mode for all types of distributions, and can correct the errors in between the distributions.<br>• Recognize the measure of dispersions for all distributions.<br>• Fit the curve using given data.<br>• Recognize the Regression, correlation and Rank correlation for the data.<br>• Think critically and creatively, both independently and with others.<br>• Adapt to new developments in the field of computer science. |
| 29. | **RESOURCE MANAGEMENT TECHNIQUES** | • Understand the meaning, Purpose & tools of OR<br>• Describe the history of OR & the stages of OR<br>• Explain the application of OR and their limitations.<br>• Formulate the linear programming problem.<br>• Make a graphical analysis of the linear Programming problem.<br>• Understand the basis of simplex method.<br>• Able to Assign the jobs for workers using the assignment problem.<br>• Understand the Modi, stepping stone methods for cost minimization and to solve the transportation problem.<br>• Make unbalanced Transportation problem into balanced one using appropriate method.<br>• Solve the degenerate problem.<br>• Able to know how to apply the operations research problems in business management.<br>• Describe various solutions of similar two phase and big M method<br>• Understand the properties of a dual problem and solve it.<br>• Solve the Assignment Problem, Unbalanced<br>Assignment Problem and travelling sales man problem. |

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| 30. | **ALLIED MATHEMATICS -I** | • To know the basic properties of binomial, exponential, logarithmic functions and partial derivatives. To solve the problems using the expansion of binomial, exponential, logarithmic functions. To solve algebraic equation using various methods (reciprocal equation, Newton's method). To know the fundamental concepts (A.P, G.P, H.F).<br>• To understanding types of matrices and how to perform the matrix multiplication and matrix addition.<br>• Find the roots of the characteristic equation and also find the inverse of the matrix using Cayley Hamilton theorem. • To Understand the method of solving algebraic, transcendental equations.<br>• To find the numerical solution of problems arising in roots of solution of non- linear equations, interpolations and numerical differentiations and the solution of linear systems.<br>• To know how to root finding techniques can be used to solve practical engineering problems.<br>• Understanding the theoretical and practical aspects of the use of numerical methods.<br>• Able to work the trigonometric form of complex numbers.<br>• Verify trigonometry identities and solve trigonometry equation. |
| 31. | **NUMERICAL METHODS** | • Numerical methods studies the means of obtaining numerical results for mathematical expression.<br>• Solve an algebraic or transcendental equation using an appropriate numerical method<br>• Calculate a definite integral using an appropriate numerical method<br>• Calculate the roots of a function using bisection, iteration Method.<br>• Calculate the roots of a function using Newton's methods, and also by searching for sign changes<br>• Demonstrate understanding of common numerical methods and how they are used to obtain approximate solutions to otherwise intractable. mathematical problems.<br>• Apply numerical methods to obtain approximate solutions to mathematical problems<br>• Develop the ability to calculate the unknowns of a linear equation set using direct solution techniques (Gauss elimination and inverse matrix approach) for the unique-solution case<br>• Develop the ability to calculate the unknowns of a linear equation set using iterative solution techniques (Jacobian and Gauss-Seidel Iterative Methods)<br>• Derive numerical methods for various mathematical operations and tasks, such as interpolation, differentiation, integration, the solution of linear and nonlinear equations, and the solution of differential equations. |

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| 32. | **SET THEORY AND LOGIC** | • Aim is define a finite set, infinite set, countable set, empty set and null set.<br>• Describe the difference between a finite set and an infinite set.<br>• List the intersection of two sets and the union of two sets using proper notation.<br>• Understand an equivalence relation and poset with real life examples.<br>• Construct the truth table using conjunction, disjunction and negation.<br>• Difference between tautology and contradiction with truth table.<br>• Explain the tautology implications and algebraic propositions.<br>• Able to Understand different types of sets with examples.<br>• Do some operations on sets (union, intersection. difference, complement).with venn diagrams<br>• Know about equivalence relation and poset.<br>• Construct the truth table using conjunction, disjunction and negation.<br>• Find the tautology and contradiction.<br>• Know the algebraic preposition and tautology implications. |

## B.A HISTORY

### PROGRAMME SPECIFIC OUTCOMES

**PSO1:** To enable the student to understand the importance of study of History to comprehend the day to day happenings of the world.
**PSO2:** To promote an understanding of History with a stress on importance of individual rights, human dignity and self-fulfillment.
**PSO3:** To study the utility of history in understanding the international problems facing the current world responsible for chaos and confusion in the world.
**PSO4:** To imbibe the values in the student required to be a future scientific historian.
**PSO5:** To enable the student to evolve as a responsible and socially sensitive citizen by enlightening him regarding the history of the world, Country and State.
**PSO6:** To provide the students with an awareness regarding Civil and Legal Rights.

### COURSE OUTCOMES

| S.NO | NAME OF THE SUBJECT | DESCRIPTION |
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| 1. | **HISTORY OF INDIA UPTO 1206 AD** | • To improve the knowledge of the political developments and developed the skills of the students by giving new arguments and interpretations.<br>• To understand the salient features of Indus valley civilization.<br>• To evaluate the features of Buddhism and Jainism<br>• To visualize the administration of Mauryas and the art and architecture of Mauryas.<br>• To identify the administration of Guptas and their contribution to Nalanda University.<br>• To enlightens the students on the social developments in India from the Gupta to the early medieval periods.<br>• To analyzation of the economic conditions of India during the Harsha period.<br>• To perceive socio-economic, religious situation under Harsha period.<br>• To distinguish the detail account of the Arabs as well as its overall impacts on the Indian society.<br>• To examine the Arab conquest of Sindu and the battle of Tarain |
| 2. | **HISTORY OF TAMILNADU UPTO 1336 AD** | • Prehistory is the period that begins with the appearance of the human being, about five million years ago, and finishes with the invention of writing, about 6,000 years ago.<br>• To identify the sangam literature and other sources for the Sangam period.<br>• To develop religion and the position of women in the Sangam period and the economic condition of the Sangam age.<br>• To sources for the Pallavas and Establishment of the Pallava Rule: MahendraVarman I and NarasimhaVarman I and learn about Bhakthi Movement.<br>• To Sources for the Cholas and Chola Imperialism: Raja Raja I, Rajendra I and Kulothunga I and Administration.<br>• To Sources for the Pandyasand FirstPandya Empire, Second Pandya Empire and Malik Kafur's Invasion and Madurai Sultanate.<br>• To Vijayanagaraempire served a high historical purpose by acting as a champion of Hindu religion and culture against the aggressions of the Muslims in Southern India. |
| | | • To the Students will be able to identify, describe, analyze and educate the role of different political |

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| 3. | **MODERN GOVERNMENTS-I** | parties and the electoral scenario of the world.<br>• To knowledge of basic definitions of such concepts as politics, power, governance, democracy etc.<br>• To course equipped students a more informed idea and understand the significance of the role of the government and the role of politics in the state of the world.<br>• To students are expected to learn and understand some of the most important political development of the world.<br>• To course introduces and provides the students fairly comprehensive overview of Major political system of UK. To Students will have a stronger and more informed perspective and knowledge of the political systems of UK.<br>• To evaluate the basic strengths and weaknesses of the American political system through the application of political concepts and ideas.<br>- |
| 4. | **VALUE EDUCATION** | • Gathering and studying a range of information about the learning needs of your students will help you to identify the knowledge, skills, values, and attitudes that they need to develop in their class programmers.<br>• Together experts, from various fields, including politics, religion, science and academia as well as leaders of various family and parent associations to examine these issues and to seek solutions to the problems raised by them.<br>• To basic citizenship skills and Identify ways to help and contribute to the community.<br>• To recognize and interpret how the 'common good' can be strengthened through various forms of citizen action.<br>• Child labor was significantly and positively related to adolescent mortality, to a population's nutrition level, and to the presence of infectious disease.<br>• To analysis of the priority theme and a set of concrete recommendations for governments, intergovernmental bodiesand other institutions, civil society actors and other relevant stakeholders, to be implemented at the international, national, regional and local level.<br>• To Women had to submit to laws when they had no voice in their formation. |
| 5. | **HISTORY OF INDIA FROM 1206 TO 1707 A.D.** | • To discuss the advent of Europeans and their administration. • To evaluate the Anglo-Mysore wars and Anglo-Sikh wars. • To realize the Permanent Revenue system and Lord Ripon's Local Self Government. • To understand about the Socio-religious reform movements in 19th century. • To the role of moderates and extremists in the freedom movement. |

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| 6. | **SOCIO-CULTURAL HISTORY OF TAMIL NADU, 1336-1800** | • To know about the History of Nayaks of Madurai, Senji and Tanjore.<br>• To Impart the Knowledge on the administration of Nayaks and British in Tamilnadu.<br>• To know about The Rebellions of the Poilgars in Tamil Nadu. |
| 7. | **MODERN GOVERNMENTS – II** | • To acquire the knowledge about the land marks of Indian constitutional development.<br>• To learn the salient features of Indian constitution.<br>• To equip the students with the knowledge of the executive, legislature and Judiciary of Indian constitution. |
| 8. | **ENVORNMENTAL STUDIES** | • To analyze the importance and influence of environment on the economy including the quality of manpower.<br>• To define the nature and classification of resource and energy within the context in India.<br>• To understand the causes and victims of environmental, degradation in India.<br>• To gain knowledge on environment awareness program.<br>• To illustrate about the International environment assessment program. |
| 9. | **HISTORY OF INDIA FROM 1206 TO 1707 A.D.** | • To understand the foundation of the Delhi sultanate and the Sultanate administration.<br>• To recognise the Socio, economic and religious conditions under Vijayanagar Empire.<br>• To identify the condition of India under the Mughal Empire.<br>• To explain the Administration and art and architecture of Mughals.<br>• To analyse the rise of the Marathas and the contribution of Shivaji. |
| 10. | **HISTORY OF TAMILNADU 1800 - 1947** | • To evaluate the establishment of the British rule in Tamil Nadu and Vellore mutiny. • To narrate the growth of language and literature under the British.<br>• To identify the socio- religious reform movements in Tamil Nadu. To describe the role of Tamil Nadu in Freedom movement.<br>• To examine the development of education in Tamil Nadu after Independence To enabling the students to understand the South Indian Rebellion and Vellore Mutiny.<br>• To enabling the students to understand the administration of Tamilnadu under Congress, D M K & A.I.A.D.M.K Governments.<br>• To realizing the growth of Nationalism and Freedom Movement in Tamilnadu. |

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| 11. | **HISTORY OF INDIAN WOMEN UPTO 1985** | • To examine the similarities and differences among women within and across cultures and at different historical moments.<br>• To know about feminism.<br>• To acquire Knowledge on the Role of women in Indian Freedom Movement<br>• To describe gender socialization and its consequences in individual society.<br>• To identify gender and sex-based inequalities in a particular society.<br>• To impart the knowledge on Womens' issues. |
| 12. | **TOURISM PRINCIPLES AND PRACTICES** | • To examine the basic concepts and scope of Tourism.<br>• To interpret the types of Tourism.<br>• To Illustrate the Hospitality Management and Tourism Accommodation.<br>• To understand the role of Tourism in National Economy. |
| 13. | **COMPURTE APPLICATION IN HISTORY-THEORY** | • To understand the terms highlighted in bold in the text mean.<br>• To understand the fundamental hardware components that make up a computer's hardware and the role of each of these components.<br>• To understand the difference between an operating system and an application program and each is used for in a computer<br>• To describe some examples of computers and state the effect that the use of computer technology has had on some common products. |
| 14. | **HISTORY OF CONTEMPORARY INDIA, 1947-1985** | • To recognise the integration of Indian states and SardarVallabai Patel's effort for this.<br>• To examine the internal and external policy of Jawaharlal Nehru, LalBahadurSastri and Indhira Gandhi.<br>• To narrate the internal external policies of Rajiv Gandhi, V.P.singh, Vajpayee, Manmohan Singh and NarendraModi.<br>• To recognise the role of planning commission, five year plans and the development of science and technology in India.<br>• To identify the contemporary challenges like terrorism, liberalization, privatization and globalization. |
| 15. | **HISTORY OF CONTEMPORARY TAMILNADU, 1947-1989** | • To sources of oral History.<br>• To understand the agriculture and economy in Tamilnadu.<br>• To understand the contribution of freedom fighters and freedom movements.<br>• To identify the importance of paintings culture in Tamilnadu History. |
| 16. | **PRINCIPLES AND METHODS OF ARCHAEOLOGY** | • To Know about the Archaeology and other disciplines.<br>• To Impart the Knowledge of Dating Methods in Archaeology.<br>• To know about the excavation of ancients sites in India. |

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| 17. | **HUMAN RIGHTS** | • To impart the Knowledge on different human right trends in countries.<br>• To know the function of the human rights commission of India.<br>• To make them absorb the value of Civil and Political Rights. • To construct them absorb the value of Social and Cultural Rights. |
| 18. | **HISTORY FOR COMPETITIVE EXAMINATIONS** | • To evaluate the intelligence, creativity and assessment in Competitive examinations.<br>• To understand the verbal abilities and Fluency.<br>• To analyze the numerical ability.<br>• To narrate the spatial and perceptual abilities and situation reaction test.<br>• To memory and inductive reasoning for competitive examinations. |
| 19. | **GUIDANCE AND COUNSELLING** | • To understand the concept, Need, Importance and process of Guidance and Counselling.<br>• To enables students to differentiate between guidance and counseling.<br>• To analyses the importance of educational, Career, social and moral guidance services in the learning situation.<br>• To equips learners with skills and techniques of Counselling. |
| 20. | **HISTORY OF WORLD CIVILIZATION UPTO AD 476** | • To impart the knowledge of ancient civilization and historical literacy.<br>• To understand the chorology and changes.<br>• To impact of education and science.<br>• To understand the nomadic societies. |
| 21. | **HISTORY OF EUROPE,1453 – 1789** | • To Know about the Renaissance, Reformation.<br>• To Impart the Knowledge about Wars in Spain, France Austria and America.<br>• To know the rules of European countries. |
| 22. | **CONSTITUTIONAL HISTORY OF INDIA SINCE AD 1773 TO AD 1950** | • To enable the students to learn various acts passed before independence, their provisions and significance.<br>• To know about the framing of the constitution of India.<br>• To know about the Constitution of India. |
| 23. | **FUNDAMENTAL OF TOURISM IN INDIA** | • To learn modern and early tourism.<br>• To understand the different tourism terminologies.<br>• To will get an overview of basic understanding in tourism and its education. |
| 24. | **HISTORY OF FAR EAST SINCE 1900** | • To lean Europeans administration and their revolutions.<br>• To understand other countries culture and militarism.<br>• To development of Asia in international level foreign policy.<br>• To enhance their knowledge in technological development. |

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| 25. | **HISTORY OF AMERICA, 1776 – 1945** | • To enable the Causes for the American war of Independence.<br>• To Debate the achievements of George Washington.<br>• To evaluate the role of Abraham Lincoln as the President.<br>• To elucidate rise of USA as a World Power.<br>• To Illustrate the participation of USA in the World Wars. |
| 26. | **INTERNATIONAL RELATIONS SINCE AD 1945** | • To enable the students to know about the World's Agreements namely UNO.<br>• To know about the cold war between USA and USSR.<br>• To Impart the Knowledge of various Nations' Foreign policy. |
| 27. | **HISTORY OF SCIENCE AND TECHNOLOGY 1800- 2000** | • To trace the achievements of Plato and Aristotle<br>• To highlight the contributions of Great Persons to Science and Technology.To evaluate the findings of Thomas AlvaEdison<br>• To bring out the significance of Atomic Energy. To analyse the progress of Science and Technology in modern India |
| 28. | **HISTORY OF EUROPE 1789- 1945** | • To enable the students to know about the Revolutions and Freedom Movement of said period.<br>• To impart the Knowledge on Fall of European Empires<br>• To know about the world wars. |
| 29. | **EPIGRAPHY** | • To enable the students to study various scripts<br>• To Know about the origin of Scripts and Training to write and decipher the Script<br>• To Impart the Knowledge of Inscriptions. |
| 30. | **HISTORY OF MODERN ASIA** | • To the Students have get acquainted with Political History of Asia.<br>• To understand the Students have understood the nationalist aspirations of Asia region.<br>• To understood process of colonialism in Asia. • To know understood challenges of globalization. |
| 31. | **HISTORIOGRAPHY** | • To produce written work that incorporates consideration of the relevant historiography along with the theory that informs it<br>• To construct original historical arguments based on primary source material research.<br>• To demonstrate a superior quality of writing both in terms of mechanics and in developing an argument effectively<br>• To develop an ability to convey verbally their thesis research and relevant historiography and theory. |
| 32. | **YOGA AND MEDITATION** | • To understand the importance and the need of yoga.<br>• To develop the meditation and yoga sutra's.<br>• To understand the contributions of yoga.<br>• To the kinds of Ashans and the practices. |

## PG DIPLOMA IN FASHION DESIGN AND TECHNOLOGY

### PROGRAMME SPECIFIC OUTCOMES

**PSO1:** Recognize and discuss various types of fashion shows and outline the fashion show plan.
**PSO2:** Awareness of world costume and works of various Indian as well as western designers.
**PSO3:** Encourage to write and present a report about the various types of retail organizations.

### COURSE OUTCOMES

| S.NO | NAME OF THE SUBJECT | DESCRIPTION |
|---|---|---|
| 1 | **BASIC TEXTILES** | • To make the students aware of fibre, yarn, fabric.<br>• To make the students understand about the manufacturing process and properties of fibre, yarn and fabric.<br>• To make the students familiar with the types of yarns, their properties and usage.<br>• To make the students understand the various types of fabrics and their applications.<br>• To make them understand of conversion of fibre into yarn and yarn spinning process. |
| 2 | **PATTERN MAKING** | • To make the students know about the importance of body measurements.<br>• To make the students understand about human anthropometrics.<br>• To make the students familiar with pattern making, drafting, draping of patterns.<br>• To make the students know about comprehensive pattern making skills.<br>• To make them identify the different weights of muslin and paper. |
| 3 | **FASHION DESIGNING** | • To make the students know about the principles of design.<br>• To make the students learn about colors and figures types.<br>• To make the students know about the functions of different components of fashion.<br>• To familiarize students with the design elements and principles and its application in fashion designing. |
| 4 | **FASHION ILLUSTRATION AND PORTFOLIO PRESENTATION PRACTICALS** | • To make the students know about the basics of fashion illustration.<br>• To make the students apply historic costume knowledge to construction.<br>• To make the students analyze and use color units effectively in their design process.<br>• To make the students know about the industry skills in illustration, typography and design.<br>• To make them understand conceptual and visual thinking of how to work from sketch to final art. |

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| 5 | **FUNDAMENTALS OF APPAREL DESIGNING PRACTICALS** | • To make the students know about the functioning of fashion industry.<br>• To make the students able to portray foundational skills on how to plan, conduct, evaluate and document ideas.<br>• To make the students familiar with design process and develop basic design attitudes and skills.<br>• To make the students know about the use and application of design elements.<br>• To make them develop the skills to combine design elements and principles of fashion design. |
| 6 | **APPAREL MERCHANDISING** | • To make the students know about the use of merchandising.<br>• To increase their knowledge on costing a product.<br>• To make the students familiar with apparel production and export process<br>• To equip the students with the knowledge on apparel merchandising<br>• To make them know how to develop, edit, and produce the products for sale in stores |
| 7 | **GARMENT QUALITY AND COST CONTROL** | • To make the students learn about the society and its concepts<br>• To make the students to experiment with different embroideries and printing techniques and will be able to apply them in reference to current fashion trends<br>• To make the students recognize, evaluate and execute diverse draping styles and create original designs and patterns<br>• To make them know about fitting techniques, interpret and execute specific silhouettes, styles and market trends<br>• To make them understand various craft forms of the world |
| 8 | **HISTORIC COSTUMES AND TEXTILES OF INDIA** | • To make the students understand the uniqueness of Indian culture and its diversity<br>• To make the students understand the rich heritage of India and basic understanding of the language<br>• To make the students draw different fashion postures in relation to the garments, fabric textures and their presentation<br>• To make them know about the various techniques and concepts related to the design, production and evaluation of textile and apparel products<br>• To make them understand various Indian crafts in contemporary fashion |

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| 9 | **APPAREL DESIGNING PRACTICALS** | • To familiarize the students with the terminologies related to apparel and its construction<br>• To foster understanding of international designers and their works<br>• To create awareness regarding selection criteria relating to apparel and home textiles<br>• To make them know about the various finishes used in apparel industry<br>• To make them know about yarn production and properties |
| 10 | **COMPUTER APPLICATION IN FASHION DESIGN PRACTICALS** | • To familiarize the students with foundation of CAD by teaching the fundamentals of computers<br>• To make them understand how to predict trends and directions in fashion<br>• To make them understand the choice and inclination of people in order to make forecasting<br>• To develop a competence of working on the embroidery software<br>• To make them know about multipurpose software for design, sampling and printing |

## BIOINFORMATICS

### PROGRAMME SPECIFIC OUTCOMES

**PSO1**: To have graduates with high knowledge and research ability and to develop further techniques in Bioinformatics
**PSO2:** To understand the basic knowledge in molecular,clinical, immunological and biochemical techniques in order to continue their carrier in future.
**PSO3:** To create power and capabilities in Bioinformatics in order to apply advance techniques for maintaining the accuracy during the diagnosis and treatment.
**PSO4:** State/ Describe within Bioinformatics discipline in core theories and execution.
**PSO5:** To prepare a new inception of Bioinformatics that are capable of excelling in carrier of their choosing.
**PSO6:** To provide an opportunity for students to engage in productive scholarly research projects that complement their training

### COURSE OUTCOMES

| S.NO | NAME OF THE SUBJECT | DESCRIPTION |
|---|---|---|
| 1 | **Fundamentals of Biological Systems** | • To understand the basics of biology and molecular biology which is the basics for Bioinformatics. |
| 2 | **Computational Methods for Sequence Analysis** | • To understand the concepts of structure predictions and analysis with inference of the data's thus obtained. |
| 3 | **Molecular Interactions** | • To understand the interaction and bonding of molecules inside a cell. |
| 4 | **SYSTEM BIOLOGY** | • To understand the interaction between genomics, proteomics, trnscriptomics and metabolomics |

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| 5 | **Biological Databanks and Sequence Analysis** | • To understand and apply the techniques of data analysis by using various tools like Phylip, Clustl al, NCBI Blast, EMBOSS/GCG. |
| 6 | **Programming for Bioinformatics** | • To understand the concepts for programming using C programming language. |
| 7 | **Genomics** | • To understand the genomic architecture and targets for drug designing. |
| 8 | **Proteomics** | • To understand the tools involved in protein analysis which helps for drug designing and functional aspects of the cell. |
| 9 | **Molecular Modelling and Computer Aided Drug Design** | • To understand molecular modelling and Docking required for targets. |
| 10 | **Computer Aided Drug Design** | • To understand the modelling techniques and refinements for model validations. |