

# Course Outcomes

## DEPARTMENT OF ENGLISH

<b>Courses</b>	<b>Outcomes</b>
<b>General English</b>	<p>Enhance language through a task-based &amp; learner – centric syllabus.</p> <p>Channelize energy through soft skills.</p> <p>Learn good English to prosper in professional and personal lives.</p> <p>Become proficient in English for global competency.</p>
<b>Poetry</b>	<p>After completion of this course students will be able to.</p> <ul style="list-style-type: none"><li>• given the freedom to express feelings to their audience.</li></ul> <p>It is a form of self-expression with the creativity of words and emotions to convey a message to the audience.</p>
<b>Prose</b>	<p>After completion of this course students will be able to.</p> <ul style="list-style-type: none"><li>• enable the students to understand the passage to read fluently to enrich their vocabulary and to enjoy reading and writing.</li><li>• It enables the students to extent their knowledge of vocabulary and structures and to become more proficient in the four language skills.</li><li>• It develops the ability of speaking English correctly and fluently.</li></ul>
<b>Drama</b>	<p>After completion of this course students will be able to.</p> <ul style="list-style-type: none"><li>• Demonstrate understanding of the social and artistic movements that have shaped theatre and dance as we know it today.</li></ul>

	<ul style="list-style-type: none"> <li>• Apply discipline-specific skills to the creation of performance.</li> </ul> <p>Analyze and interpret text and performance both in writing and orally.</p>
<b>English Language Teaching</b>	<p>After completion of this course students will be able to.</p> <ul style="list-style-type: none"> <li>• Develop the abilities in grammar, oral skills, reading, writing and study skills.</li> <li>• Students will heighten their awareness of correct usage of English grammar in writing and speaking.</li> <li>• Students will improve their speaking ability in English both in terms of fluency and comprehensibility.</li> </ul>
<b>American Literature</b>	<p>After completion of this course students will be able to.</p> <ul style="list-style-type: none"> <li>• Identify key ideas, representative authors and works, significant historical or cultural attitudes expressed in the literature or different periods or regions.</li> <li>• Demonstrate knowledge of the development of characteristic forms of styles of expression during historical periods in different regions.</li> <li>• Articulate the aesthetic principles that guide the scope and variety of works in the arts and humanities.</li> </ul>
<b>History of English Literature</b>	<ul style="list-style-type: none"> <li>• Delineate Major Writers and their works in chronological order.</li> <li>• Compare English Literature of one period with that of another.</li> <li>• Classify all major literary genres.</li> </ul>
<b>Remedial English Grammar</b>	<ul style="list-style-type: none"> <li>• Use flawless English in speech and writing.</li> <li>• Identify and rectify the communication errors in speech and writing.</li> </ul>

	<ul style="list-style-type: none"> <li>• Familiarize with the Sentence Patterns.</li> </ul>
<b>Women's Writing</b>	<p>After completion of this course students will be able to.</p> <ul style="list-style-type: none"> <li>• Learn how and on what grounds women's writing can be considered as a separate genre.</li> <li>• Differentiate between sex and gender.</li> </ul> <p>Read and understand economical texts written by women's writers across different uses.</p>

**DEPARTMENT OF BUSINESS ADMINISTRATION**

<b>Course</b>	<b>Outcome</b>
MANAGERIAL ECONOMICS:	<p>provide students with a broad range of managerial capabilities, the capacity for critical thinking, communication and problem-solving skills, legal and ethical behavior;</p> <ul style="list-style-type: none"> <li>➤ prepare graduates for diverse careers in global management, administration and entrepreneurship through a well-rounded business education with a focus on global business operations, emerging markets and technology-enabled organizations; and</li> <li>➤ expose students to both general and specialized curriculum content through core courses, specializations and electives - students are encouraged to select their electives from the Social Sciences and Humanities.</li> </ul>
FINANCIAL ACCOUNTING	<p>Upon completion of this course, students will be able to:</p> <p>Understand different accounting concepts and conventions.</p> <p>Prepare financial statements in accordance with generally accepted Accounting Principles</p> <ul style="list-style-type: none"> <li>➤ Be familiar with the rules governing accounting transactions.</li> <li>➤ Analyze financial statements with the help of various tools and techniques of accountancy.</li> </ul>

BUSINESS ENGLISH	<p>1 Describe the knowledge of Basic English Grammar and Tenses.</p> <p>2 ➤ Write down the Construction of Paragraph and Essay writing.</p> <p>3 ➤ Classify the Business Letters.</p> <p>4 ➤ Describe the Essential of and offer effective business letter.</p> <p>5 ➤ Identify the Job Application Letter</p>
GENERAL ELECTIVE	<p>1 <b>தமிழ் செம்சமொழியும் வணிக மடல்களும்:</b></p> <p>2 ➤ தமிழின் சிறப்புகளை பற்றி அறிதல்</p> <p>3 ➤ உலக சசம்சமொழி பற்றி அறிதல்</p> <p>4 ➤ வணிக கடிதம் பற்றி அறிந்து சகொள்ளுதல்</p>
PRINCIPLES OF MANAGEMN ET:	<p>Upon completion of this course, students will be able to: Understand fundamental concepts and principles of management, including the basic roles, Skills, and functions of management. Be familiar with interactions between the environment, technology, human resources, and</p> <p>➤ Organizations in order to achieve high performance. Understand realistic and practical applications of management concepts.</p> <p>➤ Compare and contrast different types, roles and styles of managers across organizations</p>
COST ACCOU NTING	<p>Upon completion of this course, students will be able to:</p> <p>➤ Analyze implications of cost in managerial decisions.\</p> <p>➤ Prepare different budgets.</p> <p>➤ Understand Standard costing and analysis of deviation.</p> <p>➤ Understand Break Even concept.</p> <p>➤ Understand various methods and techniques cost management</p>
GENERAL ELECTIVE PAPER	<p>1 <b>அலுவலக மமலொண்மம</b></p>

	<p>மமலொண்மமயின் முக்கியத்துவத்மத அறிதல்.</p> <p>➤ மமலொண்மமயின் நமடமுமற பற்றி அறிதல்</p>
Business Report Writing	<p>Write down the kinds of barriers reports.</p> <ul style="list-style-type: none"> <li>o Classify the steps in drafting formal business reports.</li> <li>o Write down points to be considered in writing individuals report.</li> <li>o Classify the reports by company secretary statutory and other reports.</li> <li>o Write down the reports on problem opportunities in business.</li> <li>o Classify the essentials in writing minutes of meeting.</li> <li>o Classify the art of summarizing reports.</li> </ul>
ORGANIZATIONAL BEHAVIOUR	<p>Define, explain and illustrate a range of organizational behavior theories;</p> <ul style="list-style-type: none"> <li>➤ Analyze the behavior of individuals and groups in organizations in terms of organizational behavior theories, models and concepts;</li> <li>➤ Apply organizational behavior concepts, models and theories to real life management situations through case analysis;</li> <li>➤ Demonstrate a critical understanding of organizational behavior theories and current empirical research associated with the topics covered in this course.</li> </ul>
BUSINESS STATISTICS	<p>Identify statistical tools needed to solve various business problems.</p> <ul style="list-style-type: none"> <li>➤ Compute measures of location and dispersion.</li> <li>➤ Apply discrete and continuous probability distributions to various business problems.</li> <li>➤ Develop the skill of performing the calculations needed for various methods of analysis.</li> </ul>

<b>COMPUTER APPLICATION IN BUSINESS –I</b>	<p>Describe the fundamentals of Information Technology (IT) infrastructure components: hardware, software, and data communications systems.</p> <ul style="list-style-type: none"> <li>➤ Explain the guiding principles of professional behavior in computing.</li> <li>➤ Demonstrate proper file management techniques to manipulate electronic files and folders in a local and networked environment.</li> </ul>
<b>FUNDAMENTALS OF COMPUTER &amp; INFORMATION TECHNOLOGY</b>	<p>Understanding the concept of input and output devices of Computers and how it works and recognize the basic terminology used in computer programming</p> <ul style="list-style-type: none"> <li>➤ Write, compile and debug programs in C language and use different data types for writing the programs.</li> <li>➤ Design programs connecting decision structures, loops and functions.</li> <li>➤ Explain the difference between call by value and call by address.</li> <li>➤ Understand the dynamic behavior of memory by the use of pointers.</li> <li>➤ Use different data structures and create / manipulate basic data files and developing applications for real world problems.</li> </ul>
<b>PRODUCTION &amp; OPERATION MANAGEMENT</b>	<p>After studying this course, you should be able to:</p> <ul style="list-style-type: none"> <li>➤ define ‘operations’ and ‘operations management’</li> </ul> <p>identify the roles and responsibilities of operations managers in different organizational contexts</p> <ul style="list-style-type: none"> <li>➤ apply the ‘transformation model’ to identify the inputs, transformation processes and outputs of an organization</li> <li>➤ identify operational and administrative processes</li> <li>➤ Describe the boundaries of an operations system, and recognize its interfaces with other functional areas within the organization and with its external environment.</li> </ul>
<b>DATA MINING &amp;</b>	<p>Store voluminous data for online processing Preprocess the data for mining applications Apply the association rules for mining the data</p>

<p>WAREHOUSING</p>	<p>Design and deploy appropriate classification techniques  Cluster the high dimensional data for better organization of the data  Discover the knowledge imbibed in the high dimensional system  Evolve Multidimensional Intelligent model from typical system  Evaluate various mining techniques on complex data object</p>
<p>BUSINESS MATHEMATICS</p>	<ol style="list-style-type: none"> <li>1 Analyze real world scenarios to recognize when simple and compound interest, annuities, payroll preparation, pricing, invoice preparation, trade discounts, taxes, and depreciation are appropriate, formulate problems about the scenarios, creatively model these scenarios (using technology if appropriate) in order to solve the problems using multiple approaches, judge if the results are reasonable, and then interpret and clearly communicate the results.</li> <li>2 &gt; Appreciate business mathematics concepts that are encountered in the real world, understand and be able to communicate the underlying business concepts and mathematics involved to help another person gain insight into the situation.</li> <li>3 &gt; Work with simple and compound interest, annuities, payroll preparation, pricing, invoice preparation, trade discounts, taxes, and depreciation problems in various situations and use correct mathematical terminology, notation, and symbolic processes in order to be prepared for future coursework in business and mathematics that requires the use of and an understanding of the concepts of business mathematics.</li> </ol>
<p>MARKETING MANAGEMENT</p>	<ol style="list-style-type: none"> <li>1 Establish a professional presence online incorporating the key disciplines of social media, search engine optimization, analytics, online navigation and user experience in order to drive traffic to an organization's website.</li> <li>2 &gt; Employ digital tools to analyze the effectiveness of a marketing campaign.</li> </ol>

	<p>3 ➤ Formulate a marketing plan including marketing objectives, marketing mix, strategies, budgetary considerations and evaluation criteria.</p> <p>4 ➤ Write a business plan for an entrepreneurial start-up venture.</p> <p>5 ➤ Develop pricing strategies that take into account perceived value, competitive pressures and corporate objectives.</p> <p>6 ➤ Develop strategies for the efficient distribution of products and services.</p> <p>7 ➤ Apply the principles of business ethics and corporate social responsibility.</p>
<p><b>RESEARCH METHODOLOGY</b></p>	<p>understand some basic concepts of research and its methodologies</p> <p>➤ identify appropriate research topics</p> <p>select and define appropriate research problem and parameters</p> <p>➤ prepare a project proposal (to undertake a project)</p> <p>➤ organize and conduct research (advanced project) in a more appropriate manner</p> <p>➤ write a research report and thesis</p> <p>➤ write a research proposal</p>
<p><b>MANAGEMENT ACCOUNTING</b></p>	<p>Upon completion of the course, students should be able to Interpret primary financial statements;</p> <p>➤ Understand how the accounting information can be used to make economic decisions;</p> <p>➤ Understand costs behavior for planning, controlling and decision making processes;</p> <p>➤ Apply simple managerial accounting tools.</p>
<p><b>HUMAN RESOURCE MANAGEMENT</b></p>	<p>Facilitate and support effective employee and labour relations in both non-union and union environments.</p> <p>➤ Research and support the development and communication of the organization's total compensation plan.</p> <p>➤ Collaborate with others, in the development, implementation, and evaluation of organizational and health and safety policies and practices. Contribute to the</p>



	<p>development, implementation, and evaluation of employee recruitment, selection, and retention plans and processes.</p> <ul style="list-style-type: none"> <li>➤ Administer and contribute to the design and evaluation of the performance management program.</li> <li>➤ Develop, implement, and evaluate employee orientation, training, and development programs.</li> </ul>
TOURISM MANAGEMENT	<p>Interpret and evaluate tourism as a phenomenon and as a business system.</p> <ul style="list-style-type: none"> <li>➤ Explain the diverse nature of tourism, including culture and place, global/local perspectives, and experience design and provision.</li> <li>➤ Identify and assess relationships and networks relative to building tourism capacity.</li> </ul>
INSURANCE MANAGEMENT	<ol style="list-style-type: none"> <li>1 Demonstrate knowledge of insurance contracts and provisions, and the features of property-liability insurance, life and health insurance, and employee benefit plans.</li> <li>2 ➤ Demonstrate knowledge of the operation and management of insurance entities, and the economic implications of organizational design and structure.</li> <li>3 ➤ Develop skills to facilitate insurance product cost and pricing, marketing, and distribution.</li> <li>4 ➤ Develop practical skills through professional development seminars, internships, and/or a practicum in insurance and risk management.</li> <li>5 ➤ Examine the role of public policy including social insurance in personal financial planning and risk management.</li> </ol>
INVESTMENT MANAGEMENT	<ol style="list-style-type: none"> <li>1 Identify the problems of security exchange board of India (SEBI)</li> <li>2 ➤ To increase the awareness of the investors investing the securities of shares, bond and debentures.</li> <li>3 ➤ Identify the competition of security market.</li> <li>4 ➤ Investors analyze the profile of the company and financial statement of the company.</li> <li>5 ➤ Company can issue the bonus shares and Right shares.</li> <li>6 ➤ Write down the primary market and difference between</li> </ol>

	secondary market.
FINANCIAL MANAGEMENT	<p>1 Describe the concept of financial management and its function</p> <p>2 ➤ Identify the principles of capital structure</p> <p>3 ➤ Identify the source of finance</p> <p>Describe the working capital management and its techniques of forecasting in working capital. Describe the concept of cost of capital and its classifications</p> <p>➤ Identify the determination of cost of capital</p>
BUSINESS LAW	<p>Describe the law and commercial law rules and regulation.</p> <p>➤ Identify the contract and its classification of contract.</p> <p>➤ Write down the essential of a valid contract.</p> <p>➤ Describe the capacity of parties and incapacity of parties in contract.</p> <p>➤ Write down the sale of good act.</p> <p>➤ Identify the transfer of property.</p>
RETAIL MANAGEMENT	<p>Retailers play an important role in bridging demand and supply gap of products and services. It is the final stage of distribution of a product or service (from manufacturing to reaching the customer in the end).</p> <p>➤ Earlier, brick and mortar firms (shops and stores) and door to door sales used to be the only forms of retailing. With the rise of modern technology, E-Commerce has caught retailing by storm!</p> <p>➤ With time, retailing has evolved. Shopping malls, E-Commerce websites and other multi channel distribution systems have made retailing sector bigger and better!</p>

### Department of commerce

Department of commerce	
B.Com	
Course	Outcome

Business organization and Office Management.	On successful completion of this subject the students acquires the knowledge about the various types of business organizations, office management and related.
Accountancy	To enable the students to learn principles and concepts of Accountancy.
Marketing	On successful of this course the students should have the practical knowledge and he tactics in the marketing.
Principles of Insurance	To make the students understand various principles, provisions that govern the life general insurance companies and to give them an overview about insurance industry.
Banking Theory	After the successful completion of this course, the students will be able to know the functions of banks.
Business Statistics	To enable the students to prepare for competitive examinations, to understand the concept of share the calculate in different methods.
Principles of Management	On successful completion of this course, the students should have understood principles and functions of management, process of decision making, and modern trends in management process.
Business Mathematics	To enable the students to prepare for competitive examinations, to understand the concept of Simple interest, compound interest and concept of EMI
Banking law and practice	To enlighten the students' knowledge on Banking Regulation Acts. After the successful completion of the course the student should have a through knowledge on Indian Banking System and Acts pertaining to it
Corporate Accounting	This course aims to enlighten the students on the accounting procedures followed by the Companies. To enable the students to be aware on the Corporate Accounting in conformity with the provision of the Companies Act.
Costing	To keep the students conversant with the ever –Enlarging frontiers of Cost Accounting knowledge.
Commercial Law	On successful of this course the students should have be well versed in basic provision regarding legal frame work governing the business world.
Income Tax	This course aims to provide an in-depth knowledge on the provisions of Income Tax. To familiarize the students with recent amendments in Income-tax

Special Accounts	Through this paper the students acquired the knowledge of solving current issues of organization in accounting using innovative techniques.
Management Accounting	This course aims to develop an understanding of the conceptual framework of Management Accounting. After the successful completion of the course the student acquires the knowledge in the Management Accounting Techniques in business decision making
Industrial Law	The paper gives the students the ability to understand the parameters to assess opportunities and constraints for new industrial ideas.
Entrepreneurship development	On successful completion of this course, the student should be well versed in Concept relating to entrepreneur, Knowledge in the finance institution, project report incentives and subsidies.
Vanigakadithankal	To develop the business communication skill through the application and exercise. To develop awareness new trends in business communications.







#### DEPARTMENT OF COMMERCE WITH CA



Course	Outcome
Principles of Management	On successful completion of the course, students have learnt to manage the organization. Those principles made the students to decide what should be done to accomplish the given tasks and to handle the situations which they faced in the management.
Financial Management	Students learnt to handle the finance. By studying Financial Management, students have diverse career opportunities. They can be able to analyze the funds to be invested in banking, entrepreneurship sectors with sufficient return.
Accountancy	Accounting provides the students various skills and knowledge that can be applied to a number of industries. As long as the business exists, the accountants will be needed. Sufficient knowledge for higher studies like CA, ICMA, ICSI etc.
Marketing Management	Marketing Management build a solid foundation of business skills, not just a sale. Students learnt consumer behavior, brand management, marketing research and recent trends in marketing.
Income Tax law and Practice	A practical paper with current amendments. Updating of knowledge about the five heads of income and deductions, exemptions. Students

	get rich experience that adds up to lots of job prospects
Business Statistics	Enabling the students to prepare for competitive examinations. Students are able to conduct research, to read and evaluate the articles and develop critical thinking.
Business Mathematics	Enabling the students to prepare for competitive examinations, through understanding the concept of Simple interest, compound interest and Probability.
Banking law and practice	The students can understand the way the financial systems operate in Banks. Basic knowledge of banking and advanced technologies in banking also mould the students with current trends.
Corporate Accounting	The course aims to enlighten the students on the accounting procedures followed by the Companies. Students can be made aware of valuation of shares. Knowledge about amalgamation, absorption and reconstruction of company can be imparted.
Costing	To make the students to learn the conceptual frame work of costing. The basic concepts and processes in determination of costs of products and services. Applications
Industrial Law	On success of finishing this course, the students acquired well-versed knowledge in Judicial setup of labour laws. The course helps the students to understand and apply the concept of labour laws and the system in which it operates.
Special Accounts	On successful completion of this course students can obtain the knowledge about the procedure for preparing Banking, Insurance Companies and public Utility concern.
Management Accounting	This course is developing an understanding of the conceptual framework of Management Accounting. The students able to understand the concept of Cost-Volume-Profit relationship, preparing various types of budgets and standard costs.
Customer Relationship Management	On completion of this paper, the students develop skills to analyze and synthesize information and issues related to customer relationship management. Good communication skills to work with the team.
Investment and portfolio Management	Acquiring the knowledge on investment avenues and security analysis. The students can learn the investment environment in the role of a private and professional investor.
Entrepreneurship Development	Understanding the nature of entrepreneurship and functions of them in successful, commercial application of innovations. They can get a confirm business idea. Develop the personal attributes that enables

	best use of entrepreneurial opportunities.
Vanigakadithankal	Developing the business communication skill through the application and exercise. Make the new students to aware of trends in business communications.
C programming	On successful of completion of this subject students will have the knowledge of programming ability in C language.
C++ Programming	To inculcate knowledge on object- oriented programming concepts using C++.
Computer Network	This paper combines the fundamental concept of data communication with the present. Knowledge on network, technologies, wireless and broad band.
E-Business	The Paper understanding of the concept and various application issues of e-business like internet infrastructure, security over internet payment systems and various online strategies for e-business
Visual programming	Enabling the students to develop the programs and simple applications using visual c++.












### Department of Biochemistry


















Course outcomes	
Course (UG)	Outcomes
<b>BIOMOLECULES</b>	To know about the structure & composition of biomolecules of life and its metabolic functions.
<b>CELL BIOLOGY</b>	To know about the size, shape and function of the cell organelles. To know about the various metabolism of cell.
<b>ANALYTICAL BIOCHEMISTRY</b>	To learn the equipment handling skills as follows: <ul style="list-style-type: none"> <li> Centrifuge</li> <li> Chromatography</li> <li> Spectroscopy</li> <li> UV-chamber</li> <li> Electrophoresis</li> <li> Blotting techniques</li> </ul> <p>To apply the techniques in diagnosis of diseases.</p>
<b>INTERMEDIATORY METABOLISM</b>	To learn about the various metabolic conversion of food in living organisms. To know about the metabolic defects and to identify the cause of

	disease.
<b>ENZYMOMOLOGY</b>	To know about the enzymes and its uses. To apply the enzymes in industrial production.
<b>HUMAN PHYSIOLOGY</b>	To know about the anatomy of human body. To learn about the functions of various endocrine systems and elite organs present in our body.
<b>MOLECULAR BIOLOGY &amp; GENETICS</b>	To know about the modern genetic information. To learn about the cause of hereditary disease To understand the advanced molecular techniques and its applications
<b>MICROBIOLOGY &amp; IMMUNOLOGY</b>	To know about the various ki9nd of micro biota. To learn about the cultivation of microbes and its application in food.
<b>CLINICAL BIOCHEMISTRY</b>	To know about the disease, diagnosis, prophylaxis and precautions To know about the symptoms of various diseases To understand the human immune systems and immunotheraphy
<b>PLANT BIOCHEMISTRY</b>	To learn about the various plant growth hormones. To learn the various metabolic pathways in plants.
<b>BIOTECHNOLOGY</b>	To apply the various techniques in industries.  Fermentor  Gene cloning Production and application of organic solvents, vitamins and monoclonal antibodies.
<b>NUTRITIONAL BIOCHEMISTRY</b>	To know about the nutritive value of the food. To know the composition of food. To learn the nutritional disorders. To learn the balanced diet formulation.
<b>MINIPROJECT</b>	To improve the student's practical knowledge. To gain the knowledge through field work and industrial visit.

		<p>To develop the student's skill on writing and interpretation of results.</p> <p>To provide hand on training on the operation of scientific instruments.</p>
<b>UG COURSE (PRACTICALS)</b>		
<b>ANALYTICAL BIOCHEMISTRY</b>		<p>To analyse various biomolecules,</p> <ul style="list-style-type: none"> <li>+ Carbohydrates</li> <li>+ Lipids</li> <li>+ Amino acids</li> </ul> <p>Biochemical preparation.</p>
<b>BIOCHEMISTRY TECHNIQUES</b>		<p>To estimate the Biomolecules using</p> <ul style="list-style-type: none"> <li>+ DNSA method</li> <li>+ Lowry's method</li> <li>+ Zak's method</li> <li>+ Orcinol method</li> <li>+ Drabkin's method</li> </ul> <p>To Determine</p> <ul style="list-style-type: none"> <li>+ Acid number</li> <li>+ Saponification number</li> <li>+ Total activity of salivary amylase</li> <li>+ Total activity of alkaline phosphatase.</li> </ul>
<b>MICROBIOLOGY IMMUNOLOGY</b>	<b>&amp;</b>	<p>To separate the blood &amp; serum</p> <p>To estimate the qualitative analysis of urine</p>
<b>CLINICAL BIOCHEMISTRY</b>		<p>To learn about the media preparation.</p> <p>To learn about the ABO blood grouping.</p> <p>To learn the biochemical reactions in bacteria</p>
<b>COURSE (PG)</b>		<b>OUTCOME</b>
<b>CHEMISTRY BIOMOLECULES</b>	<b>OF</b>	<p>To learn about the chemical composition and structure of the food.</p> <p>To study about the types of bond present in the</p>





	<p>food.</p> <p>To know the structure and functions of food substance.</p>
<b>ANALYTICAL BIOCHEMISTRY</b>	<p>To learn about the different types of separation techniques. To learn the equipment handling skills as follows:</p> <ul style="list-style-type: none"> <li> Centrifuge</li> <li> Chromatography</li> <li> Spectroscopy</li> <li> UV-chamber</li> <li> Electrophoresis</li> <li> Blotting techniques</li> </ul> <p>To know the application of various separation techniques.</p> <p>To apply the techniques in diagnosis of metabolic disorders.</p>
<b>ENZYME TECHNOLOGY</b>	<p>To learn about the enzymes and it's uses.</p> <p>To know about the modern enzyme purification techniques.</p> <ul style="list-style-type: none"> <li> Immobilization</li> <li> Biosensor</li> </ul> <p>To learn about the enzyme kinetics.</p>
<b>PLANT BIOCHEMISTRY</b>	<p>To know about the structure and functions of plant.</p> <p>To learn about the plant nutrition &amp; it's nutritive value.</p> <p>To learn the types of plant growth hormones &amp; it's regulation</p>
<b>FOOD TECHNOLOGY</b>	<p>To evaluate the various microorganisms present in the spoiled food.</p> <p>To learn about the various food preservation methods</p> <ul style="list-style-type: none"> <li> High temperature</li> <li> Freezing</li> <li> Drying</li> </ul>

	<ul style="list-style-type: none"> <li> Salting</li> <li> Canning</li> <li> Chemicals</li> <li> Radiations such as UV.</li> </ul> <p>To detect the illness and hazards caused by food.</p>
<b>CELL BIOLOGY</b>	<p>To learn about the structure &amp; functions of cell. To learn about the cell structure</p> <ul style="list-style-type: none"> <li> Chromosomes</li> <li> DNA</li> </ul> <p>To know about the various signalling pathways.</p>
<b>MICROBIOLOGY &amp; IMMUNOLOGY</b>	<p>To study about the morphology &amp; classification of microorganisms present in various sources. To learn about the clinical aspects of immunology. To know about the cells &amp; organs of immune system.</p>
<b>BIOTECHNOLOGY</b>	<p>To learn about the various scientific techniques</p> <ul style="list-style-type: none"> <li> Cloning</li> <li> Gene therapy</li> <li> Blotting techniques</li> <li> Fermentor</li> <li> PCR</li> </ul> <p>To apply the various techniques in research of commercial &amp; industrial importance.</p>
<b>BIOPROCESSTECHNOLOGY</b>	<p>To provide hands on training on the handling fermentor/ bioreactor. To learn about the various industrial productions such as</p> <ul style="list-style-type: none"> <li> Antibiotics</li> <li> Vitamins</li> <li> Hormones</li> <li> Enzyme</li> <li> Biofuels</li> </ul>
<b>MOLECULAR GENETICS</b>	<p>To learn about the structure, organization &amp; types of various gene.</p> <ul style="list-style-type: none"> <li> DNA</li> </ul>

	<ul style="list-style-type: none"> <li>✚ RNA</li> <li>✚ Protein</li> </ul> <p>To know about the process involved in gene transfer</p> <ul style="list-style-type: none"> <li>✚ Replication</li> <li>✚ Transcription</li> <li>✚ Translation</li> <li>✚ Recombination</li> <li>✚ Mapping</li> </ul> <p>To evaluate the gene defects by using,</p> <ul style="list-style-type: none"> <li>✚ Pedigree analysis</li> <li>✚ Sex determination</li> <li>✚ Genetic counseling</li> <li>✚ Karyotyping</li> </ul>
<p><b>GENE EXPRESSION &amp; METABOLIC REGULATION</b></p>	<p>To learn about the various metabolic regulation,</p> <ul style="list-style-type: none"> <li>✚ Carbohydrates</li> <li>✚ Amino acids</li> <li>✚ Fatty acids</li> <li>✚ Nucleic acids</li> </ul> <p>To know about the mechanism &amp; action of hormones.</p> <p>To learn about the metabolic regulation of various genes,</p> <ul style="list-style-type: none"> <li>✚ Operons</li> <li>✚ Chaperons</li> <li>✚ Oncogene</li> <li>✚ Agonist &amp; antagonist</li> </ul>
<p><b>MEDICAL BIOCHEMISTRY</b></p>	<p>To learn the basics &amp; scope of Biochemistry.</p> <p>To study about the various disorders.</p> <p>To learn about the various metabolic regulation,</p> <ul style="list-style-type: none"> <li>✚ Carbohydrates</li> <li>✚ Lipids</li> <li>✚ Proteins</li> <li>✚ Nucleic acids</li> </ul>

	To evaluate the various clinical test.
<b>MOLECULAR BIOLOGY</b>	<p>To know about the modern genetic information.  To learn about the cause of hereditary disease.  To learn about the structure, organization &amp; types of various gene.</p> <ul style="list-style-type: none"> <li>○ DNA</li> <li>○ RNA</li> <li>○ Protein</li> </ul> <p>To know about the process involved in gene transfer</p> <ul style="list-style-type: none"> <li>○ Replication</li> <li>○ Transcription</li> <li>○ Translation</li> <li>○ Recombination</li> <li>○ Mapping</li> </ul> <p>To learn about the developmental genetics.</p>
<b>BIOPHARMACEUTICALS</b>	<p>To learn about the drug designing &amp; modeling.  To know about the drug metabolism.  To learn about the production &amp; application of pharmaceutical products</p> <ul style="list-style-type: none"> <li>○ Antibiotics</li> <li>○ Probiotics</li> <li>○ Vitamins</li> <li>○ Microbes</li> </ul> <p>To learn about the pharmaceutical products using DNA technology</p> <ul style="list-style-type: none"> <li>○ Insulin</li> <li>○ HGH</li> <li>○ Erythropoitin</li> </ul>
<b>HORMONES &amp; CELL SIGNALLING</b>	<p>To learn about the classification of hormones.  To study about the clinical importance of hormones signal transduction.</p>
<b>MAJOR PROJECT</b>	<p>To improve the student's practical knowledge.  To gain knowledge through field work and industrial visit.</p>

	To develop the student's reference skill and the language skill. To execute the student's equipment handling skills
<b>PG COURSE (PRACTICALS)</b>	
<b>BIOCHEMICAL ANALYSIS</b>	To Estimate the biomolecules from various food grains. To learn about the enzyme kinetics.
<b>MICROBIOLOGY &amp; IMMUNOLOGY</b>	To learn about the antigen-antibody reactions. To learn about the biochemical analysis of microbes
<b>CLINICAL BIOCHEMISTRY &amp; MOLECULAR BIOLOGY</b>	To Estimate the following blood constituents  Blood sugar & urea  Serum calcium & iron To learn the techniques involved in nucleic acids

### Department Of Chemistry

<b>Course Outcome</b>	
<b>Course</b>	<b>Outcomes</b>
Fundamental Concept	To develop an interest among students in all disciplinary topic in chemistry. It gives an opportunity to develop in organic chemistry, inorganic chemistry, physical chemistry and in applied chemistry. To make students capable of understanding in all the basic concepts in chemistry.
Inorganic Chemistry	To learn the names of elements this is present in periodic table and get knowledge of their properties. To impart essential theoretical knowledge an atoms, molecules, atomic structure and chemical bonding. To gain knowledge in bioinorganic compounds and its applications.
Organic Chemistry	Students able to know the nomenclature of chemical compounds. To get knowledge for synthesis of drugs. To be trained to write the mechanism of organic reaction.
Physical Chemistry	They able to derive thermodynamic equations and kinetics equations. To know the terms in states of matter, thermodynamics, chemical kinetics, chemical equilibrium and applications spectroscopy. To gain knowledge in

	electrochemical reactions and its function in all fields of science.
Analytical Chemistry	To learn the method error analysis, correlation coefficient, true value, standard deviation method. To get precaution of chemical and glassware. To know the purification methods and techniques
Industrial Chemistry	To get exposure in different industries and get knowledge in synthesis of various compounds. To gain knowledge in dyes, pigments, food colouring agents. To be familiar with fertilizers and its manufacturing process.
Polymer Chemistry	To gain knowledge in polymers which is naturally occurred and also synthetic polymer? To learn the constituent of polymer and its degradation. To know textile fibres and its uses.
Quantitative Analysis (Volumetric Analysis)	To develop skills for quantitative analysis for basic acid and bases.
Qualitative Organic Analysis	To understand the basic skill knowledge in analysis of organic elements and inorganic salts.
Gravimetric Analysis	To understand the fundamental skills for estimation and preparation of organic compounds.
Physical Chemistry	To know the clear thought for phase diagram, conductometric titration, potentiometer, partition coefficient, and electrochemistry methods.
Applied Chemistry Practical	Our students able to determine the variety of applications like hardness of water, percentage of chlorine in bleaching powder, BOD calculation and acid value of an oil.

## DEPARTMENT OF COMPUTER SCIENCE

### B.SC COMPUTER SCIENCE

TITLE OF THE COURSE	COURSE OUTCOMES
<b>PROGRAMMING IN C</b>	<ul style="list-style-type: none"> <li>• In-depth understanding of various concepts of C language.</li> <li>• Ability to read, understand and trace the execution of programs.</li> </ul>

	<ul style="list-style-type: none"> <li>• Skill to debug a program.</li> <li>• Skill to write program code in C to solve real world problems.</li> </ul>
<b>FUNDAMENTALS OF COMPUTER</b>	<ul style="list-style-type: none"> <li>• Understanding the concept of input and output devices of Computers and how it works and recognize the basic terminology used in computer programming.</li> <li>• Write, compile and debug programs in C language and use different data types for writing the programs.</li> <li>• Design programs connecting decision structures, loops and functions.</li> <li>• Explain the difference between call by value and call by address.</li> <li>• Understand the dynamic behavior of memory by the use of pointers.</li> <li>• Use different data structures and create / manipulate basic data files and developing applications for real world problems.</li> </ul>
<b>OBJECT ORIENTED PROGRAMMING WITH C++</b>	<ul style="list-style-type: none"> <li>• Familiarization with a widely used programming concept – Object Oriented Programming.</li> <li>• Develop logical thinking.</li> <li>• Skill to write codes in C++ by applying concept of OOP, such as Objects, Classes, Constructors, Inheritance etc., to solve mathematical or real world problems</li> <li>• Ability to isolate and fix common errors in C++ programs.</li> </ul>
<b>DESKTOP PUBLISHING</b>	<ul style="list-style-type: none"> <li>• Define desktop publishing software.</li> <li>• Open, edit, view, save, print, and close publications .</li> <li>• View the PageMaker Program Window.</li> <li>• Work with the toolbox.</li> <li>• Plan a publication.</li> <li>• Create a fact sheet.</li> <li>• Create a business report.</li> <li>• Create a newsletter.</li> </ul>

	<ul style="list-style-type: none"> <li>• Create an advertisement.</li> <li>• Create a menu.</li> <li>• Create a poster.</li> <li>• Create a brochure Create, manipulate, and control text</li> </ul>
<b>DATA STRUCTURES &amp; ALGORITHMS USING C AND C++</b>	<ul style="list-style-type: none"> <li>• Ability to analyze algorithms and algorithm correctness.</li> <li>• Ability to summarize searching and sorting techniques.</li> <li>• Ability to describe stack, queue and linked list operation.</li> <li>• Ability to have knowledge of tree and graphs concepts.</li> </ul>
<b>DISCRETE MATHEMATICS</b>	<ul style="list-style-type: none"> <li>• Develops formal reasoning.</li> <li>• Creates habit of raising questions.</li> <li>• Knowledge regarding the use of Discrete Mathematics in Computer Science.</li> <li>• Helpful in formulating questions.</li> <li>• Ability to communicate knowledge, capabilities and skills related to the computer engineer profession.</li> </ul>
<b>JAVA PROGRAMMING</b>	<ul style="list-style-type: none"> <li>• Knowledge of the structure and model of the Java programming language, (knowledge).</li> <li>• Use the Java programming language for various programming technologies (understanding).</li> <li>• Develop software in the Java programming language, (application) ,</li> <li>• Evaluate user requirements for software functionality required to decide whether the Java programming language can meet user requirements (analysis)</li> <li>• Propose the use of certain technologies by implementing them in the Java programming language to solve the given problem (synthesis).</li> <li>• Choose an engineering approach to solving problems starting from the acquired knowledge of programming and knowledge of operating systems. (evaluation).</li> </ul>
<b>OPERATION RESEARCH</b>	<ul style="list-style-type: none"> <li>• <b>Formulate</b> and solve mathematical model (linear programming problem) for a physical situations like production, distribution of goods and economics.</li> </ul>



	<ul style="list-style-type: none"> <li>• <b>Apply</b> the concept of simplex method and its extensions to dual simplex algorithm.</li> <li>• <b>Solve</b> the problem of transporting the products from origins to destinations with least transportation cost.</li> <li>• <b>Convert</b> and <b>solve</b> the practical situations into non-linear programming problem.</li> <li>• <b>Identify</b> the resources required for a project and generate a plan and work schedule.</li> <li>• <b>Test</b> the controllability and observability of a given system; <b>Design</b> of pole assignment and observer using state feedback.</li> <li>• <b>Identify</b> and <b>analyze</b> non-linear systems using describing function analysis</li> <li>• <b>Analyze</b> linear and non-linear systems using Lyapunov function and design Lyapunov function for stable systems</li> <li>• <b>Formulate</b> an optimal control problem and design optimal control signal.</li> </ul>
<b>OPERATING SYSTEM</b>	<ul style="list-style-type: none"> <li>• Appreciate the role of operating system as System software.</li> <li>• Compare the various algorithms and comment about performance of various algorithms used for management of memory, CPU scheduling, File handling and I/O operations.</li> <li>• Apply various concept related with Deadlock to solve problems related with Resources allocation, after checking system in Safe state or not.</li> <li>• To appreciate role of Process synchronization towards increasing throughput of system.</li> <li>• Describe the various Data Structures and algorithms used by Different Oss like Windows XP , Linux and Unix pertaining with Process , File , I/O management.</li> <li>• To control the behavior of OS by writing Shell scripts.</li> </ul>
<b>RELATIONAL DATABASE</b>	<ul style="list-style-type: none"> <li>• To understand the features of database management</li> </ul>

<b>MANAGEMENT SYSTEMS</b>	<p>systems and Relational database.</p> <ul style="list-style-type: none"> <li>• To use SQL- the standard language of relational databases.</li> <li>• To understand the functional dependencies and design of the database.</li> <li>• To understand the concept of Transaction and Query processing.</li> </ul>
<b>WEB DESIGN</b>	<ul style="list-style-type: none"> <li>• Apply critical thinking and problem solving skills required to successfully design and implement a web site.</li> <li>• Demonstrate the ability to analyze, identify and define the technology required to build and implement a web site.</li> <li>• Demonstrate knowledge of artistic and design components that are used in the creation of a web site.</li> <li>• Utilize and apply the technical, ethical and interpersonal skills needed to function in a cooperative environment.</li> </ul>
<b>DIGITAL PRINCIPLES AND COMPUTER ORGANIZATION</b>	<ul style="list-style-type: none"> <li>• Classify and compute the performance of machines.</li> <li>• Understand how to implement memory chips, boards modules and caches.</li> <li>• Relate to arithmetic for ALU implementation.</li> <li>• Understand the basics of hardwired and micro-programmed control of the CPU.</li> <li>• Learn about various I/O devices and the I/O interface.</li> <li>• Appreciate advancements to architecture like pipelining and superscalar operation.</li> </ul>
<b>COMPUTER NETWORKS</b>	<ul style="list-style-type: none"> <li>• Independently understand basic computer network technology.</li> <li>• Understand and explain Data Communications System and its components.</li> <li>• Identify the different types of network topologies and protocols.</li> <li>• Enumerate the layers of the OSI model and TCP/IP. Explain the function(s) of each layer.</li> <li>• Identify the different types of network devices and their functions within a network</li> <li>• Understand and building the skills of submitting and routing mechanisms.</li> </ul>
<b>COMPUTER GRAPHICS</b>	<ul style="list-style-type: none"> <li>• Apply the Set theory and Relation concepts.</li> </ul>

	<ul style="list-style-type: none"> <li>• Apply the Functions and define the recursive functions.</li> <li>• Apply Laplace transform to different applications</li> <li>• Apply Inverse Laplace transform to different applications.</li> <li>• Identify the permutations and combinations. Define variable and also identify the mapping.</li> </ul>
<b>SOFTWARE ENGINEERING</b>	<ul style="list-style-type: none"> <li>• An ability to identify, formulates, and solves complex engineering problems by applying principles of engineering science, and mathematics.</li> <li>• An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.</li> <li>• An ability to communicate effectively with a range of audiences.</li> <li>• An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.</li> </ul>
<b>VB.NET &amp; ASP.NET</b>	<ul style="list-style-type: none"> <li>• Separate operations into appropriate VB.NET procedures and functions.</li> <li>• Assemble multiple forms, modules, and menus into working VB.NET solutions</li> <li>• Create VB.NET programs using multiple array techniques.</li> <li>• Build integrated VB.NET solutions using files and structures with printing capabilities.</li> <li>• Translate general requirements into data-related solutions using database concepts</li> </ul>

**M.Sc., CS&IT**

TITLE OF THE COURSE	COURSE OUTCOMES
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<p><b>PRINCIPLES OF INFORMATION TECHNOLOGY</b></p>	<ul style="list-style-type: none"> <li>• Perform end user support including identifying and implementing solutions to user requests.</li> <li>• Analyze technical requirements to determine resource requirements and the impact the solution will have on an organization.</li> <li>• Design, plan, budget and propose an IT project for an identified need within a specific scope.</li> <li>• Install technical hardware and software including network, database and security components.</li> <li>• Perform routine maintenance to maintain the currency of an operating system, network, database and security needs.</li> <li>• Identify and resolve technical problems using trouble-shooting and research techniques.</li> <li>• Analyze and select application and operating system settings to create an optimal user environment.</li> </ul>
<p><b>PROGRAMMING IN C</b></p>	<ul style="list-style-type: none"> <li>• In-depth understanding of various concepts of C language.</li> <li>• Ability to read, understand and trace the execution of programs.</li> <li>• Skill to debug a program.</li> <li>• Skill to write program code in C to solve real world problems.</li> </ul>
<p><b>DATA STRUCTURE AND ALGORITHMS</b></p>	<ul style="list-style-type: none"> <li>• Ability to analyze algorithms and algorithm correctness.</li> <li>• Ability to summarize searching and sorting techniques</li> <li>• Ability to describe stack, queue and linked list operation.</li> <li>• Ability to have knowledge of tree and graphs concepts.</li> </ul>
<p><b>COMPUTER FUNDAMENTALS AND ARCHITECTURE</b></p>	<ul style="list-style-type: none"> <li>• Apply the Set theory and Relation concepts.</li> <li>• Apply the Functions and define the recursive functions.</li> <li>• Apply Laplace transform to different applications.</li> <li>• Apply Inverse Laplace transform to different applications.</li> <li>• Identify the permutations and combinations.</li> <li>• Define variable and also identify the mapping.</li> </ul>
<p><b>OPERATING SYSTEM</b></p>	<ul style="list-style-type: none"> <li>• Demonstrate understanding of the concepts, structure and design of operating Systems.</li> <li>• Demonstrate understanding of operating system design and its impact on application.</li> <li>• System design and performance.</li> <li>• Demonstrate competence in recognizing and using operating system</li> </ul>

	features.
<b>DATABASE TECHNOLOGY</b>	<ul style="list-style-type: none"> <li>• Understand and evaluate the role of database management systems in information technology applications within organisations.</li> <li>• Recognise and use contemporary logical design methods and tools for databases;</li> <li>• Derive a physical design for a database from its logical design;</li> <li>• Implement a database solution to an information technology problem;</li> <li>• Understand the SQL data definition and SQL query languages;</li> </ul>
<b>JAVA PROGRAMMING</b>	<ul style="list-style-type: none"> <li>• Use an integrated development environment to write, compile, run, and test simple object-oriented Java programs.</li> <li>• Read and make elementary modifications to Java programs that solve real-world problems.</li> <li>• Validate input in a Java program.</li> <li>• Identify and fix defects and common security issues in code.</li> <li>• Document a Java program using Javadoc.</li> <li>• Use a version control system to track source code in a project.</li> </ul>
<b>COMPUTER NETWORKS</b>	<ul style="list-style-type: none"> <li>• Have a good understanding of the OSI Reference Model and in particular have a good knowledge of Layers 1-3.</li> <li>• Analyze the requirements for a given organizational structure and select the most appropriate networking architecture and technologies;</li> <li>• Have a basic knowledge of the use of cryptography and network security;</li> <li>• Specify and identify deficiencies in existing protocols, and then go onto formulate new and better protocols; 5</li> <li>• Have an understanding of the issues surrounding Mobile and Wireless Networks.</li> <li>• Have a working knowledge of datagram and internet socket programming</li> </ul>
<b>COMPUTER ORIENTED</b>	<ul style="list-style-type: none"> <li>• Demonstrate understanding of common numerical methods and how they are used to obtain approximate solutions to otherwise intractable mathematical problems.</li> </ul>

<p><b>NUMERICAL METHODS</b></p>	<ul style="list-style-type: none"> <li>• Apply numerical methods to obtain approximate solutions to mathematical problems.</li> <li>• 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.</li> <li>• Analyze and evaluate the accuracy of common numerical methods.</li> <li>• Implement numerical methods in Matlab.6Write efficient, well-documented Matlab code and present numerical results in an informative way.</li> </ul>
<p><b>COMPUTER GRAPHICS</b></p>	<ul style="list-style-type: none"> <li>• Understand the basics of computer graphics, different graphics systems and applications of computer graphics.</li> <li>• Discuss various algorithms for scan conversion and filling of basic objects and their comparative analysis.</li> <li>• Use of geometric transformations on graphics objects and their application in composite form.</li> <li>• Extract scene with different clipping methods and its transformation to graphics display device.</li> <li>• Explore projections and visible surface detection techniques for display of 3D scene on 2D screen.</li> </ul>
<p><b>PRINCIPLES OF COMPILER DESIGN</b></p>	<ul style="list-style-type: none"> <li>• Define the phases of a typical compiler, including the front- and backend.</li> <li>• Identify tokens of a typical high-level programming language; define regular expressions for tokens and design; implement a lexical analyzer using a typical scanner generator.</li> <li>• Explain the role of a parser in a compiler and relate the yield of a parse tree to a grammar derivation; design and implement a parser using a typical parser generator.</li> <li>• Apply an algorithm for a top-down or a bottom-up parser construction; construct a parser for a small context-free grammar.</li> </ul>
	<ul style="list-style-type: none"> <li>• An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics</li> </ul>

<p><b>SOFTWARE ENGINEERING</b></p>	<ul style="list-style-type: none"> <li>• An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors</li> <li>• An ability to communicate effectively with a range of audiences</li> <li>• An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts</li> <li>• An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives</li> </ul>
<p><b>VISUAL PROGRAMMING</b></p>	<ul style="list-style-type: none"> <li>• Explain basic concepts and definitions.</li> <li>• Express constants and arithmetic operations.</li> <li>• Distinguish variable and data types.</li> <li>• Prepare project in visual programming.</li> <li>• Manage and analyse prepared project with programs.</li> <li>• Interpret and report obtaining results.</li> </ul>
<p><b>MULTIMEDIA AND ITS APPLICATIONS</b></p>	<ul style="list-style-type: none"> <li>• Assessment is designed to indicate achievement of the course outcome and performance tasks.</li> <li>• The instructor will outline the methods used to assess student progress and the criteria for assigning a grade at the beginning of the course.</li> <li>• Assessment will be based upon a combination of in-class participation, attendance, examinations, and quality of the multimedia project(s).</li> <li>• Determination of problem solving skills, team work, and communication skills may also be included.</li> </ul>

## CYBER SECURITY

- Identify some of the factors driving the need for network security
- Identify and classify particular examples of attacks
- Define the terms vulnerability, threat and attack
- Identify physical points of vulnerability in simple networks
- Compare and contrast symmetric and asymmetric encryption systems and their vulnerability to attack, and explain the characteristics of hybrid systems.

## DEPARTMENT OF COMPUTER APPLICATIONS

### COURSE OUTCOMES

<b>C And Data Structure</b>	<ul style="list-style-type: none"><li>✓ To understand the basic structure of C programs with constants, variables, data types and operators.</li><li>✓ To comprehend an Array and String declaration and initializations.</li><li>✓ Used to understand the importance of user defined functions, Structure definitions and Unions.</li><li>✓ Used to provide the methods for declaring, initializing and accessing the pointers and various file handling techniques.</li><li>✓ To summarize the classifications and operations of data structures.</li></ul>
<b>C And Data Structure Lab</b>	<ul style="list-style-type: none"><li>✓ To improve the programming knowledge of students.</li><li>✓ To perform the various string operations.</li><li>✓ Helps to improve the debugging skills of students.</li></ul>
<b>Programming In C++</b>	<ul style="list-style-type: none"><li>✓ Used to appreciate the principles of object oriented programming and expressions, tokens and control structures in C++.</li><li>✓ To understand the significance of classes, objects, member functions, constructors and destructors.</li><li>✓ Provides ability to understand the various types of inheritance and virtual classes.</li></ul>



	<ul style="list-style-type: none"> <li>✓ To know about the various file operations including opening, closing, updating and error handling operations.</li> <li>✓ To provide the knowledge about the user defined templates and the importance of exception handling.</li> </ul>
<b>Programming In C++ Lab</b>	<ul style="list-style-type: none"> <li>✓ Helps to understand the OOPs concept in programming.</li> <li>✓ To implement the various error handling methods.</li> <li>✓ To enhance the programming skills of students.</li> </ul>
<b>Database Management System</b>	<ul style="list-style-type: none"> <li>✓ Upon successful completion of this course, students should be able to:</li> <li>✓ Understand the purpose of database systems, relational databases and E-R diagrams.</li> <li>✓ Provides the basic knowledge about relational designs and normal forms.</li> <li>✓ Helps to understand the different kinds of databases such as parallel and distributed databases.</li> <li>✓ Provides the way to creating and maintaining the tables, sequences, views and indexes.</li> <li>✓ To understand the functionalities of stored procedures and triggers.</li> </ul>
<b>Oracle Lab</b>	<ul style="list-style-type: none"> <li>✓ Helps to understand the process of creating and manipulating tables.</li> <li>✓ Students can able to identify how to handle queries.</li> <li>✓ To understand the mechanism of Procedural languages and stored procedures.</li> </ul>
<b>Java Programming</b>	<ul style="list-style-type: none"> <li>✓ Helps to understand the basic concepts and benefits of OOPs and also describes the evolution of JAVA.</li> <li>✓ Provides the detailed information about the operators, decision making and looping statements.</li> <li>✓ To comprehend the Method overloading, Array, String, Vector and Interface in JAVA.</li> <li>✓ To provide the importance of unique features of JAVA such as Packages, Threads and Error management.</li> <li>✓ To understand the difference between applet programming and graphical programming.</li> </ul>
<b>Java</b>	<ul style="list-style-type: none"> <li>✓ To make the student learn an object oriented way of solving problems using java.</li> </ul>

<b>Programming Lab</b>	<ul style="list-style-type: none"> <li>✓ To make the students to write programs using multithreading concepts and handle exceptions.</li> <li>✓ To help the students to write programs that connects to a database and be able to perform various operations.</li> </ul>
<b>Net Programming</b>	<ul style="list-style-type: none"> <li>✓ Student will be able set up work environment and the variables, constants and operators of .Net.</li> <li>✓ Used to provide the brief information about the windows common controls.</li> <li>✓ Students can able to identify the additional controls and menus of windows like progress bar, linked label and etc.</li> <li>✓ To understand the inbuilt functions and types and mechanism of exception handling.</li> <li>✓ To know the linkage between the .Net and database connectivity using ADO .Net.</li> </ul>
<b>Net Programming Lab</b>	<ul style="list-style-type: none"> <li>✓ Helps to improve the student's ability in form designing.</li> <li>✓ Students can able to understand the process and uses of various tools in .Net</li> <li>✓ Helps to identify the various applications such as console application, web application and silver light application.</li> </ul>
<b>Computer Architecture And Design</b>	<ul style="list-style-type: none"> <li>✓ Students will able to the basic register organisations, instruction codes and instruction cycles.</li> <li>✓ Helps to recognize the basic programming of computer including the machine and assembly languages, program loops and subroutines.</li> <li>✓ To understand the built in functionalities of central processing unit.</li> <li>✓ Provides the way to understand the basic computer arithmetic and priority interrupt.</li> <li>✓ Helps to identify the various memory organisations and their functionalities of computer unit.</li> </ul>
<b>Web Design Technology</b>	<ul style="list-style-type: none"> <li>✓ Students are able to common tags and rules of HTML languages and forms and frames.</li> <li>✓ Helps to understand the java script internet and java script array.</li> <li>✓ Provides the information about java script selection structures</li> </ul>

	<p>and functions.</p> <ul style="list-style-type: none"> <li>✓ Assists to understand the java script objects such as Math, String, Date and Boolean.</li> <li>✓ To understand the basic functionalities of VB script.</li> </ul>
<b>Computer Graphics</b>	<p><b>Students will able to:</b></p> <ul style="list-style-type: none"> <li>✓ The history and video display generation of computer graphics.</li> <li>✓ Understand the basic transformation principles of two dimensional and their matrix representation.</li> <li>✓ Identify the process of windowing, clipping and shielding.</li> <li>✓ Comprehend the basics of three dimensional transformations such as translation, scaling and rotation.</li> <li>✓ Analyze the components of user interface and the user's model.</li> </ul>
<b>Data mining And Data Warehousing</b>	<ul style="list-style-type: none"> <li>✓ Students can understand the data mining techniques and applications and frequent pattern mining.</li> <li>✓ To understand the classification techniques and its importance.</li> <li>✓ To recognize the clustering methods and its types.</li> <li>✓ To identify the functionalities and significance of web data mining.</li> <li>✓ To understand the process of data warehouse and its tools and techniques.</li> </ul>
<b>Computer Networks</b>	<ul style="list-style-type: none"> <li>✓ To understand the uses of computer networks and network standardization.</li> <li>✓ Students will be able to understand the functionalities of data link layer.</li> <li>✓ Helps to analyze the processes of network layer.</li> <li>✓ To identify the protocol and characteristics of transport layer.</li> <li>✓ To recognize the functionalities of network layer and network security.</li> </ul>
<b>Software Engineering</b>	<ul style="list-style-type: none"> <li>✓ To understand the quality and productivity factors of software.</li> <li>✓ Students can able to understand the various cost estimation techniques of software product.</li> <li>✓ Helps to comprehend the fundamental design concepts of software design and coding style of software product.</li> <li>✓ To identify the various software testing strategies.</li> </ul>

	<ul style="list-style-type: none"> <li>✓ To provide the way for measuring the quality of the software product.</li> </ul>
<b>Project</b>	<ul style="list-style-type: none"> <li>✓ Project work enables the students to develop an inquisitive mind, always wanting to find out why things happens the way they happen.</li> <li>✓ The usefulness of project work is that it enables the student to be methodical in his approach to solving the research problem.</li> <li>✓ To ensure that students learn the theoretical and practical skills that they need.</li> </ul>

## DEPARTMENT OF MATHEMATICS

### COURSE OUTCOME

S.No	SUBJECT NAME	COURSE OUTCOME
1	PROBABILITY AND STATISTICS	<p>Upon successful completion of Probability And Statistics students can analyze statistical data using Ms-Excel.</p> <p>Also students can organize, manage and present data in real world problems into probability models.</p>
2	ANALYSIS	<p>Upon successful completion of analysis, students can define the series of real numbers also construct rigorous mathematical proofs.</p> <p>Enable to use analytical technique in diverse situations like physics engineering and other mathematical text.</p>
3	OPERATION RESEARCH	<p>Upon successful completion of operation research students can improve the decision making skills.</p> <p>Students will have a strong tie up with computer science and it is enable them to use the mathematical tools to solve optimization problems.</p>
4	ALGEBRA	<p>Upon successful completion of algebra students can develop and apply the concepts &amp; expressions of inequalities to solve problems</p> <p>Students can easily solve polynomial equations by symbolic methods.</p> <p>It level up the quantitative reasoning skills.</p>
5	DIFFERENTIAL EQUATIONS	<p>Upon successful completion of differential equations students can predict the world around us.</p>

		<p>Categorize partial differential equations with suitable standard forms.</p> <p>The population growth of species can be examined.</p> <p>Students can develop themselves in biological process from celestial motion to bridge to interactions between neurons.</p>
6	DIFFERENTIAL GEOMETRY	<p>Upon successful completion of differential geometry students can easily analyze shapes &amp; process data on non flat surfaces. The essential is in the professions like surveying, navigation &amp; astronomy.</p>
7	NUMBER THEORY	<p>Apply mathematical concepts and principles to perform numerical and symbolic computation.</p> <p>Students can use technology appropriately to investigate and solve mathematical and statistical problems. Right clear and precise proofs .</p>
8	GRAPH THEORY	<p>Upon successful completion of the course graph theory students can apply graph theory based tools in solving practical problems the core ideas in graph theory used in science business and industry.</p> <p>Students can able to formulate networking through graphs</p>
9	TOPOLOGY	<p>Understanding the concept of open and closed set interior closure and boundary.</p> <p>Students can create a new topological spaces by using subspace product space and quotient topology.</p> <p>Students can apply theoretical concepts in top to understand real world applications.</p>

10	TRIGONOMETRY	Use computational techniques and algebraic skills essential for the study of exponential and trigonometric functions as well as their inverses. Students can use visualization, spatial reasoning as well as geometric properties and strategies to model and solve problems involving exponential and trigonometric functions as well as inverses.
11	FUZZY MATHEMATICS	Recognize fuzzy logic membership function. Decide the difference between crisp set and fuzzy set theory. Gain the methods of fuzzy logic. Compare statistical method against fuzzy logic methods. Make applications on fuzzy logic membership function and fuzzy inference systems.
12	DISCRETE MATHEMATICS	Demonstrate the ability to write and evaluate a proof or outline the basic structure of and give examples of each proof techniques described. Apply counting principles to determine probabilities. Determine when a function is one to one and onto`
13	ANALYTICAL GEOMETRY	Express equations of the line a point and direction of which are given. Express equation of the plane that passes through a point and is perpendicular to two directions. Formulate equation of surfaces on Cartesian coordinates` Express hyperboloid of one and two sheets.
14	VECTOR CALCULUS	Upon successful completion of the course vector calculus able to apply the basic concepts of partial derivatives. Understand and able to apply the concepts of vector function, vector field, scalar field, gradient, divergence and curl. Able to apply Green's theorem, Stokes' theorem and Gauss's theorem in solving engineering problems.
15	STATICS	Upon successful completion of the course statics student can convert problem description into testable research hypothesis.

		Student can write code to extract and reformat real data to utilize statistical programming environments.
16	MODERN ALGEBRA	<p>Upon successful completion of the course modern algebra analyze mapping groups, Abelian groups, symmetric groups and their properties.</p> <p>Develop aspects of subgroups, normal subgroups, quotient subgroups .</p> <p>Distinguish the concepts of homeomorphisms and automorphisms</p> <p>Gains knowledge in ring theory.</p>
17	DISCRETE MATHEMATICS	<p>Upon successful completion of the course discrete mathematics understand the concepts of mathematical logic such as connectives, concepts of tautology etc.</p> <p>Study the concepts of relations and functions.</p> <p>Classify the concepts of lattices and Boolean algebra.</p>

18	REAL ANALYSIS	<p>Upon successful completion of the course real analysis learn various field axioms, the Archimedean property, triangle Cauchy Schwartz inequality.</p> <p>Extend the idea to set theory, functions countable and uncountable sets.</p> <p>Investigate the properties of coverings theorems, compactness in metric space.</p>
19	DYNAMICS	<p>Upon successful completion of the course dynamics understand the dynamics changes in the body under the action of forces.</p> <p>Acquire knowledge on impact and impulse of a particle on a surface.</p>
20	CALCULUS	<p>Upon successful completion of the course calculus learn that calculus serves as a basis for advanced mathematics.</p> <p>Learn various method of integration and apply them for polynomial.</p> <p>Interpret the indefinite integral as a definite integral with variable limit(s).</p>

### DEPARTMENT OF PHYSICS

TITLE OF THE COURSE	COURSE OUTCOMES
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<p>Mechanics and Relativity</p>	<ul style="list-style-type: none"> <li>• Understand the terminology used in mechanics</li> <li>• Concepts connect the mathematical and mechanics both in static and dynamic motion of the system.</li> <li>• To improve the knowledge about the time, length and mass relative to their motion.</li> <li>• Help to improve the knowledge about inertial and non-inertial frame.</li> </ul>
<p>Properties of matter and acoustics</p>	<ul style="list-style-type: none"> <li>• Study the elastic behaviour and working of torsional pendulum.</li> <li>• Study of bending behaviour beams and analyse the expression for young's modulus.</li> <li>• Understand the surface tension</li> <li>• and viscosity of fluid.</li> <li>• Analyse waves and oscillations.</li> </ul>
<p>Thermal and statistical physics</p>	<ul style="list-style-type: none"> <li>• Identify and describe the statistical nature of concept and laws in thermodynamics in particular entropy, temperature, chemical potential, free energies, partition function.</li> <li>• Use the statistical physics methods such as boltzman distribution, gibbs function, Fermi-dirac and bose-einstein distribution to solve the problem in some physical system.</li> <li>• Apply the concept of black body radiation to</li> </ul>

	<p>analyze radiation phenomenon in thermodynamic system.</p> <ul style="list-style-type: none"> <li>• Apply the concept of thermodynamic to solve the problem in thermodynamic system such as gases, heat engine, refrigerators etc.,</li> </ul>
Electricity, Magnetism and Electromagnetism	<ul style="list-style-type: none"> <li>• Understanding the relationship between electric charge, electric field, electric potential and magnetism.</li> <li>• Be able to use electromagnetic theory and principle in Wide range of application.</li> <li>• Be able to learn about the production and transmission of EM waves.</li> <li>• Learn a variety of advanced mathematical methods to solve the problem.</li> </ul>
Optics and spectroscopy	<ul style="list-style-type: none"> <li>• Define and explain the propagation of light in conducting and non-conducting media.</li> <li>• Apply wave optics and diffraction theory to range of problems.</li> <li>• Define and explain the physics governing laser behaviour and light matter interaction.</li> <li>• Calculate properties of and design modern optical fibres.</li> </ul>
Atomic and nuclear physics	<ul style="list-style-type: none"> <li>• Describe the atomic spectra of one and two valence electron atoms.</li> <li>• Explain the change in behavior of atoms is external applied electric and magnetic field.</li> <li>• Explain the rotational, vibrational, electronic and raman spectra Of molecules.</li> <li>• Describe electron spin and nuclear magnetic resonance spectroscopy and their application.</li> </ul>

Analog electronics	<ul style="list-style-type: none"> <li>• Understand the basic of diode and working of rectifier circuits and characteristics.</li> <li>• Analyse the characteristics of transistor and transistor biasing circuits.</li> <li>• Perform the procedures for the working of single stage and multi stage amplifier.</li> <li>• Analyse the relationship between amplifier and oscillators.</li> </ul>
Computer programming in C	<ul style="list-style-type: none"> <li>• Illustrate the flow chart design an algorithm for a given problem and to develop c programmes using operators.</li> <li>• Develop conditional and iterative statement to write c programs</li> <li>• Write c programs using operators,pointers,access arrays and functions.</li> <li>• Exercise user defined data types including structuring and unions to solve problem.</li> </ul>
Mathematical physics	<ul style="list-style-type: none"> <li>• Learn about gradient, divergence and curl in orthogonal curvilinear and their typical application in physics.</li> <li>• Learn about special types of matrices that are relevant in physics and then learn about tensor.</li> <li>• Get introduced to special function like gamma function,beta function,legendary,laguer,Bessel,hermits functions and their recurrence.</li> <li>• Learn different ways of solving second order differential equations and the fundamental applications of fourier series,fourier,laplace transforms and their inverse transforms etc.,</li> </ul>
Non-conventional energy sources	<ul style="list-style-type: none"> <li>• Identify energy demand and relate with available energy sources.</li> <li>• Analyze harnessing of solar energy.</li> <li>• Analyze harnessing of wind energy.</li> </ul>

	<ul style="list-style-type: none"> <li>• Analyze magneto hydrodynamics fuel cell technology.</li> </ul>
Laser and fibre optics	<ul style="list-style-type: none"> <li>• Understand the basic principle of laser and characteristic.</li> <li>• Understand the theory of types of lasers.</li> <li>• Perform the procedures into applications oriented one.</li> <li>• Understand the basic concepts of optical fibres.</li> </ul>
Communication electronics	<ul style="list-style-type: none"> <li>• Fundamentals of analog and digital integrated circuits</li> <li>• Aim is to identify the functions of different components</li> <li>• Learn about theoretical and represent a digital signal using several modulation methods.</li> <li>• Draw the signal compute spectra of modulated signals and applying communication.</li> </ul>
Solid state physics	<ul style="list-style-type: none"> <li>• Understand basic concept and mathematical methods and solid state physics.</li> <li>• Explore important connections between theory, experiment and current application.</li> <li>• Develop basic studies about the structure of crystals.</li> </ul>
Elements of theoretical physics	<ul style="list-style-type: none"> <li>• Tackle a wide range of topics using powerful analytical tool, including formal method, in classical and quantum physics.</li> <li>• Evaluate complex problems and formulate solutions, identifying the role of theory, hypothesis and experiment in the scientist.</li> <li>• Apply classical and quantum theoretical techniques in research.</li> <li>• Plans carry out and report a theoretical physics based investigations.</li> </ul>

	<ul style="list-style-type: none"> <li>•</li> </ul>
Digital electronics	<ul style="list-style-type: none"> <li>• Describe how analog signals are used to represent digital values in different logic families, including characterization of the noise margins.</li> <li>• Draw a circuit diagrams for a sequential logic circuit and analyze its timing properties (input setup and hold times, minimum clock period, output propagation delays)</li> <li>• Discuss how to interface digital circuits with analog components (ADC, DAC, sensors, etc.,)</li> <li>• Properly incorporate synchronous and asynchronous memories into a circuit design.</li> </ul>
Microprocessor	<ul style="list-style-type: none"> <li>• The analyzed the properties of microprocessor and micro-controllers.</li> <li>• Train the practical knowledge through laboratory experiment.</li> </ul>
Computer programming in C++	<ul style="list-style-type: none"> <li>• Use the characteristics of an object-oriented programming language in a program</li> <li>• The learn basic object-oriented design principles in computer problem solving.</li> <li>• Program with advanced features of the c++ programming languages.</li> <li>• Develop programs in the UNIX programming environment.</li> </ul>
Fundamental of Nano science	<ul style="list-style-type: none"> <li>• Applied the students the essential roll of nanoscience.</li> <li>• Understand the principles and characterization techniques</li> <li>• Understand the principles and fabrication</li> </ul>
<b>TITLE OF THE COURSE</b>	<b>COURSE OUTCOMES</b>

<p>Mathematical Physics I &amp; II</p>	<ul style="list-style-type: none"> <li>• Learn a broad foundational knowledge of concept of vector and scalar fields</li> <li>• Learn different ways of solving second order differential equations and the fundamental applications of fourier series, fourier, laplace transforms and their inverse transforms etc.,</li> <li>• Learn about gradient, divergence and curl in orthogonal curvilinear and their typical application in physics.</li> <li>• Learn about special types of matrices that are relevant in physics and then learn about tensor.</li> <li>• Get introduced to special function like gamma function, beta function, legendary, laugur, Bessel, hermits functions and their recurrence.</li> </ul>
<p>Classical dynamics and relativity</p>	<ul style="list-style-type: none"> <li>• Wave a deep understanding of Newton's laws.</li> <li>• Be able to solve the Newton equation for simple configuration.</li> <li>• Define and understand the mechanical concept related to discrete and continuous mechanical system.</li> <li>• Describe and understand the motion of the mechanical system using lagrange and Hamiltonian formulation.</li> </ul>
<p>Quantum mechanics-I &amp; II</p>	<ul style="list-style-type: none"> <li>• Show an understanding of wave mechanics in three dimensions.</li> <li>• Describe the structure of the hydrogen atom and show an understanding quantization of angular momentum.</li> <li>• Apply techniques such as Fourier methods and ladder operators for selected problems in quantum numbers.</li> <li>• Use the tools, methodologies, language and conventions of physics to test and communicate ideas and explanations.</li> </ul>

	<ul style="list-style-type: none"> <li>• Show an understanding of water mechanics in three dimensions.</li> <li>• Describe the structure of the hydrogen atom and show an understanding quantization of angular momentum.</li> <li>• Apply techniques such as Fourier methods and ladder operators for selected problems in quantum numbers.</li> <li>• Use the tools, methodologies, language and conventions of physics to test and communicate ideas and explanations.</li> </ul>
Numerical methods	<ul style="list-style-type: none"> <li>• Apply numerical analysis which has enormous application in the field of science and some fields of engineering.</li> <li>• Familiar with finite precision computation.</li> <li>• Familiar with numerical solutions of nonlinear equations in a single variable.</li> <li>• Familiar with calculation and interpretation of errors in numerical method.</li> </ul>
Electromagnetic theory	<ul style="list-style-type: none"> <li>• Understand the basic mathematical concepts related to electromagnetic vector fields.</li> <li>• Apply the principles of electrostatics to the solutions of problems relating to electric field and electric potential, boundary conditions and electric energy density.</li> <li>• Understand the concepts related faraday's law, induced emf and maxwells equations.</li> <li>• Apply Maxwell's equations to solutions of problems relating to transmission lines and uniform plane wave propagation.</li> </ul>
Atomic and Molecular Physics	<ul style="list-style-type: none"> <li>• Explain the rotational, vibrational, electronic and raman spectra Of molecules.</li> </ul>

	<ul style="list-style-type: none"> <li>• Describe electron spin and nuclear magnetic resonance spectroscopy and their application.</li> <li>• Describe the theories explaining the structure atoms and origin of the observed.</li> <li>• Identify atomic effect such as raman and stark effect.</li> </ul>
Nuclear and particle physics	<ul style="list-style-type: none"> <li>• Demonstrate a knowledge of fundamental aspects of the structure of the nucleus, radioactive decay, nuclear reactions and the interaction of radiation and matter.</li> <li>• Discuss nuclear and radiation physics connection with other physics disciplines–solid state, elementary particles physics, radiochemistry, astronomy;</li> <li>• Discuss nuclear and radiation physics application in medical diagnostics and therapy ,energetic ,geology, archaeology;</li> </ul>
Advanced electronics	<ul style="list-style-type: none"> <li>• Understand the details of operation of the advanced semiconductor electronic devices.</li> <li>• Know the parameters of electronic devices that govern their performance and limitations.</li> <li>• Be familiar with tendency in contemporary microelectronics and principles of the nano-scale electronic devices.</li> </ul>
Microprocessor and Micro controller	<ul style="list-style-type: none"> <li>• Recall and apply a basic concept of digital fundamentals to microprocessor based personal computer system.</li> <li>• Identify a detailed s/w of structure to write the microprocessor.</li> <li>• The analyzed the properties of microprocessor and micro-controllers.</li> <li>• Train the practical knowledge through laboratory experiment.</li> </ul>



<p>Modern optics and Laser Physics</p>	<ul style="list-style-type: none"> <li>• Describe molecular energy level including vibrational, rotational levels.</li> <li>• Determine the general formula for laser gain in a generalized four level laser.</li> <li>• Describe the optical principle of thick lenses and optical observations.</li> <li>• Describe the operation of optical devices including polarisers, retraders, modulators and interferometers.</li> </ul>
<p>Nano Science</p>	<ul style="list-style-type: none"> <li>• Apply the students the essential role of nanoscience.</li> <li>• Understand the principle, background and characterization techniques.</li> <li>• Understand the basic electronic nanomaterial properties and improved the application of nanotechnology.</li> </ul>
<p>Analytical Instrument</p>	<ul style="list-style-type: none"> <li>• Select the required instrument for spectroscopy Analysis.</li> <li>• Understand the different constituent in a process outcome and analysis the performance of various online and off line instrument.</li> <li>• Perform the experimental analysis for different test like humidity, moisture, dissolved oxygen etc.,</li> <li>• Principle theory and working of the advanced analytical techniques.</li> </ul>
<p>Thermodynamics and statistical physics</p>	<ul style="list-style-type: none"> <li>• Has through knowledge on different classical and quantum mechanical distribution functions.</li> <li>• Can explain the procedure for deriving the relation between thermodynamics parameters such as pressure, temperature, entropy and heat</li> </ul>

	<p>capacity from the distribution functions.</p> <ul style="list-style-type: none"> <li>• Can explain phase transitions and magnetization in magnetic systems.</li> </ul>
Crystal growth Processes and Characterization	<ul style="list-style-type: none"> <li>• With various techniques involved in crystal growth.</li> <li>• To determine various theoretical parameter.</li> </ul>
Communication electronics	<ul style="list-style-type: none"> <li>• Fundamentals of analog and digital integrated circuits</li> <li>• Aim is to identify the functions of different components</li> <li>• Learn about theoretical and represent a digital signal using several modulation methods.</li> <li>• Draw the signal compute spectra of modulated signals and applying communication.</li> </ul>
Energy and Environmental studies	<ul style="list-style-type: none"> <li>• Explain the green house effect using simple energy balance models.</li> <li>• Understand the forcing and feedback and related to global warming.</li> <li>• Understand the interaction between emissions, atmospheric pollution and climate change.</li> <li>• Understand the main feature of the global ocean circulation and oceans rate in mitigating climate change.</li> </ul>
Medical physics	<ul style="list-style-type: none"> <li>• Get basic knowledge to carry out the duties in hospital as medical physicist and to provide opportunities for research connected with physics applied to medicine.</li> <li>• Working as a research assistant, teaching and conducting research, often.</li> <li>• Understand the artificial function of inner parts of the human.</li> </ul>

**DEPARTMENT OF FASHION TECHNOLOGY & COSTUME DESIGNING**

**DEPARTMENT OF FASHION TECHNOLOGY & COSTUME  
DESIGNING**

**COURSE OUTCOMES**

<b>TITLE OF THE COURSE</b>	<b>COURSE OUTCOME</b>
Fashion Designing	<ul style="list-style-type: none"><li>• One Of The Most Creative Course Option, Fashion Design Is Considered To Be A Very Prosperous Vocational Education Stream Not Only In India But Abroad As Well.</li><li>• This Is Primarily Because The Fashion Industry Has Grown By Leaps And Bounds And That Too Within A Decade.</li><li>• Fashion Design Is The Art Of Applying Design, Aesthetics And Natural Beauty To Clothing And Its Accessories.</li><li>• It Is Influenced By Cultural And Social Attitudes, And Has Varied Over Time And Place.</li></ul>
Basic Sewing Techiques & Pattern Making	<ul style="list-style-type: none"><li>• In <a href="#">Sewing</a> And <a href="#">Fashion Design</a>, A Pattern Is The <a href="#">Template</a> From Which The Parts Of A <a href="#">Garment</a> Are Traced Onto Fabric Before Being Cut Out And Assembled.</li><li>• Patterns Are Usually Made Of <a href="#">Paper</a>, And Are Sometimes Made Of Sturdier Materials Like <a href="#">Paperboard</a> Or <a href="#">Cardboard</a> If They Need To Be More Robust To Withstand Repeated Use.</li></ul>
Textile Science	<ul style="list-style-type: none"><li>• Textile Science Integrates The Development, Acquisition, Distribution And Utilization Of Textiles.</li><li>• Textile Science Is A Challenging Field Where Research And Diligence Pay Off In New Technologies.</li><li>• And Innovative Products That Can Improve The Comfort, Safety And Convenience Of Consumers.</li></ul>

Fashion Designing – Practical	<ul style="list-style-type: none"> <li>• Fashion Design Is The Art Of Applying Design, Aesthetics And Natural Beauty To Clothing And Its Accessories.</li> <li>• It Is Influenced By Cultural And Social Attitudes, And Has Varied Over Time And Place.</li> <li>• Fashion Designers Work In A Number Of Ways In Designing Clothing And Accessories Such As Bracelets And Necklaces.</li> </ul>
Principle Of Pattern Making	<ul style="list-style-type: none"> <li>• If We Know The Basic Principles Of Pattern Making And Alteration.</li> <li>• We Can Create Any Design Without Affecting The Size And Shape Of The Original Pattern. Principle Of Dart Manipulation.</li> <li>• There Are Many Rules For Creating, Combining And Dividing The Darts And Transferring Dart At Different Places On A Pattern Piece.</li> </ul>
Basic Sewing Techniques - Practical	<ul style="list-style-type: none"> <li>• Sewing Is An Incredibly Rewarding And Creative Skill To Learn! When You Know How To Sew, You Have The Ability To Express Yourself Through Things That You Make.</li> <li>• You Can Create Personal Touches For Your Home, Conserve Resources By Remaking Or Mending Clothing, Give One-Of-A-Kind Unforgettable Gifts, Design Your Own Wardrobe.</li> <li>• And Feel An Incredible Sense Of Accomplishment For Making Something Yourself.</li> </ul>
Textile Dyeing & Printing	<ul style="list-style-type: none"> <li>• Most forms of textile materials can be dyed at almost any stage.</li> <li>• Quality woollen goods are frequently dyed in the form of loose <a href="#">fibre</a>, but top dyeing or cheese dyeing is favoured in treating worsteds.</li> <li>• Manufacturers prefer piece dyeing, which allows stocking of white goods, reducing the risk of being overstocked with cloth dyed in colours that have not been ordered.</li> </ul>
	<ul style="list-style-type: none"> <li>• <i>Fabric embellishments</i> are decorations that are normally added</li> </ul>

Fabric Embelishment - Practical	<p>to <i>fabrics</i> to make them more beautiful.</p> <ul style="list-style-type: none"> <li>• Because of the nature of decorative patterns, which they create.</li> <li>• Common materials that can be used for this process include fringe, boutiques, beads and buttons.</li> </ul>
Garment Manufacturing Technology	<ul style="list-style-type: none"> <li>• "one machine can do the work of fifty ordinary men. No machine can do the work of one extraordinary man"</li> <li>• Men are here on earth are only developing the new technology.</li> <li>• In Fashion Business is all about quick response, lots of saying, short run of multiple goods, speed of market, Flexibility high quality and cost saving.</li> <li>• This is necessitates only increasing demand for new technology.</li> <li>• Technological development only making the apparel industry to gets increases its production and quality.</li> <li>• As todays customer s are not purchasing goods or services with closed eyes every company wants to produce best quality with optimum price to compete each other.</li> <li>• New garment manufacturing Technologies only making them to achieved their Costumer needs and compete.</li> </ul>
Fabric Structure And Design - Practical	<ul style="list-style-type: none"> <li>• The fabric-forming process or fabrication method contributes to fabric appearance, texture, and its suitability for end use.</li> <li>• The structures of woven, knitted, and nonwoven fabrics.</li> <li>• These fabrics have varying structures depending on the interlacement/interlocking <a href="#">pattern</a> of the yarns.</li> <li>• This sequence of interlacement/interlocking is termed as design of the fabric.</li> <li>• The properties of fabric are largely governed by its design as well as the <a href="#">fiber</a> content used as the raw material.</li> </ul>
	<ul style="list-style-type: none"> <li>• Elevate your wardrobe and make a statement with our stylish collection of women’s designer clothes.</li> <li>• Whether you’re looking for the latest trendy styles, modern aesthetics, or chic, timeless looks, Bloomingdale’s offers the best in women’s clothing.</li> </ul>

<p>Womens Apparel Practical –</p>	<ul style="list-style-type: none"> <li>• Boasting a large and diverse catalog of clothing for women, from a variety of designer brands, you’re sure to find designer apparel suited to your taste and occasion.</li> <li>• Dress to impress for special occasions in women’s designer clothing, including our myriad of luxurious <a href="#">evening gowns</a>.</li> <li>• For more intimate evenings, try a cutout-back gown from Lauren Ralph Lauren.</li> <li>• If you’re looking to stand out from the crowd during a large event or party, consider our plethora of <a href="#">cocktail and party dresses</a> or bold jewel tones from notorious <a href="#">women’s clothing brands</a> such as Adrianna Papell or Jovani Fashions</li> </ul>
<p>Fabric Structure And Design</p>	<ul style="list-style-type: none"> <li>• The woven fabrics are produced by interlacing two orthogonal sets of yarns, that is, warp yarns that are longitudinally arranged and weft yarns that are crosswise placed.</li> <li>• The warp yarn is raised or lowered alternatively in a specific pattern over the weft yarn.</li> <li>• This specific pattern for the distribution of interlacement is termed as the weave design of the fabric. While using CAD, the weave design is represented as an orthogonal array of binary numbers.</li> <li>• For example, if warp yarn is over the weft yarn at crossover area, it is denoted by “1” and by “0” for the opposed case.</li> <li>• In this way, an infinite number of weaves can be formed.</li> </ul>
<p>Apparel Merchandising &amp; Marketing</p>	<ul style="list-style-type: none"> <li>• Fashion merchandising is the study of fashion trends to determine merchandising strategy for a retail store or fashion product provider.</li> <li>• It's an exciting field that demands both an intuition for fashion trends and a shrewd understanding of business management. When most people think about the fashion industry they immediately think of fashion design.</li> <li>• Yet there’s so much more that needs to happen for the latest</li> </ul>

	<p>designs to get out into the world and into the hands of the customers who will wear them.</p> <ul style="list-style-type: none"> <li>• In addition to being designed, clothing items need to make it into a retail store, they need to be displayed and marketed to customers, and they need to be properly stocked as items are sold.</li> <li>• This is the business side of fashion - the growing field is generally termed fashion merchandising and management.</li> </ul>
Textile Testing	<ul style="list-style-type: none"> <li>• Textile testing is the term for a whole series of tests that examine the physical, mechanical and chemical properties of textiles.</li> <li>• These tests are sometimes done before a textile goes into widespread use, or they're done on textiles arriving from other countries for sale in US markets.</li> <li>• Countries like the United States have established standards for what should and should not be in textile products.</li> <li>• Tests can show whether companies making textiles are in compliance or not.</li> </ul>
Textile Testing – Practical	<ul style="list-style-type: none"> <li>• There are many textile tests.</li> <li>• Some of them are physical tests, in which a sample of textile material is examined closely for feel and appearance.</li> <li>• Such tests are done on individual fibers or strands of material and on yarns, threads made of several fibers twisted together.</li> <li>• Textiles are also subjected to light and other elements to see how they react.</li> <li>• Some of these tests are done in a weather-ometer, a machine that tests for weathering and lightfastness of textiles.</li> <li>• It's basically an enclosed box. Textiles are placed inside and subjected to conditions replicated from the natural</li> </ul>

	environment.
Mens Apparel – Practical	<ul style="list-style-type: none"> <li>• We are committed to making a positive impact on the people who <i>wear</i> our <i>clothes</i>, our industry, and our planet, beginning with our Good fabrics.</li> <li>• Conscious by design.</li> <li>• We are committed to making a positive impact on the people who <i>wear</i> our <i>clothes</i>, our industry, and our planet, beginning with our Good fabrics</li> </ul>
Computer Aided Designing – Practical	<ul style="list-style-type: none"> <li>• Computer-aided design (CAD) is a computer technology that designs a product and documents the design's process.</li> <li>• CAD may facilitate the manufacturing process by transferring detailed diagrams of a product's materials, processes, tolerances and dimensions with specific conventions for the product in question.</li> </ul>
Garment Quality & Qualification	<ul style="list-style-type: none"> <li>• Garment manufacturing is a labor-intensive process, which doesn't lend itself to cookie-cutter consistency between pieces.</li> <li>• Unlike injection-molded products and others that can be made with standardized production methods and equipment, garments are typically individually handsewn.</li> <li>• For this reason, you're more likely to find discrepancies between pieces of clothing than with other products</li> </ul>



இதயா மகளிர் கல்லூரி - சருகணி

தமிழ்த்துறை

பாடப்பிரிவிற்கான விளைவுகள்

விளைவுகள்:

- சமூக விழுமியங்களை கற்க
- மாணவர்கள் தாம் கற்ற கல்வியை பிழையில்லாமல் கற்க
- ஊடகங்களில் வேலை பெற
- மாணவர்கள் பல்வேறு ஆன்லைன் இணையதளங்கள் மூலம் தங்கள் அறிவைப் புதுப்பிக்க ஊக்குவிக்கப்படுகிறார்கள்
- மாணவர்களின் உருவாக்கத்தை வெளிக்கொணர பயிற்சி அளித்தல்

பாடத்திட்டத்திற்கான விளைவுகள்

விளைவுகள்:

- இலக்கியத்தின் நுட்பங்களை அறிந்து கொள்ளல்
- பொது அறிவை வளப்படுத்துதல்
- மாணவர்களின் படைப்பாற்றலை வெளிக்கொணர்தல்
- மொழிபெயர்ப்பதில் சிறந்த வாய்ப்புகள்
- சினிமா தொழில்களில் வேலை வாய்ப்புக்கள்
- கற்பித்தல் தொழிலின் முக்கியத்துவத்தைப் புரிந்து கொள்ளல்
- குறிப்பு படைப்புக்களின் பயன்பாட்டைப் புரிந்து கொள்ளல்
- டி.என்.பி.எஸ்.சி தேர்வு, நெட் மற்றும் செட் போன்ற போட்டித் திறன்களில் வெற்றி பெற
- குறிப்பு புத்தகத்தின் பயன்பாட்டின் அவசியத்தை புரிந்து கொள்ள

**குறிப்பிட்ட பாடத்திட்டத்திற்கான விளைவுகள்**

இக்கால இலக்கியம்	தற்கால சமூகத்தை அறிந்து கொள்ளும் இலக்கியமாகவும், பேலும் இக்கால படைப்பாளர்களின் திறனை அறிந்து மாணவர்கள் தன்திறனை வெளிக்கொணரும் வகையில் அமைந்துள்ளது.
நன்னூல் - எழுத்ததிகாரம்	மாணவர்கள் எழுத்துக்களை பிழையில்லாமல் எழுதவும், பேசவும் பயன்படுகின்றது.
பக்தி இலக்கியம்	மாணவர்களை பண்படுத்தும் விதமாகவும், ஒழுக்க நெறியை வளர்க்கும் விதமாகவும் அமைந்துள்ளது.
சொல்லதிகாரம்	இடத்திற்கு ஏற்றார்போல சொற்களை எவ்வாறு பயன்படுத்துதல் வேண்டும் என்பது குறித்தும், சொற்களின் மேன்மை குறித்தும் அறிந்து கொள்ளலாம்.
தமிழக வரலாறும் பண்பாடும்	பண்டைய தமிழரின் நாகரிகம், பண்பாடு, கலாச்சாரம் போன்றவற்றை அறிந்து கொள்ள உதவுகின்றது.
சிறுநிலக்கியம்	அறம், பொருள், இன்பம், வீடு என்ற நான்கு உறுதிப்பொருட்களுள் ஏதேனும் ஒன்றிரண்டு உறுதிப்பொருட்கள் பற்றி எடுத்துரைக்கின்றது.
நம்பியகப்பொருள்	மனித வாழ்வின் ஒழுக்கம் பற்றி வெளிப்படுத்துகின்றது. களவு, கற்பின் மேன்மை குறித்தும், சிறப்பு குறித்தும், அகவாழ்வின் படிநிலை குறித்தும் எடுத்துரைக்கின்றது.
காப்பிய இலக்கியம்	அறம், பொருள், இன்பம், வீடு, என்ற நான்கு வகை உறுதிப்பொருட்களையும் தெளிவாக எடுத்துக் கூறுகின்றது. வீடு பேற்றினைச் சுட்டி மனித வாழ்வின் நிலையாமையைக் கூறுகின்றது.
புறப்பொருள் வெண்பாமாலை	தமிழரின் வீரம் குறித்து எடுத்து இயம்புகின்றது. வெட்சி முதல் பாடாண் ஈறாக உள்ள பன்னிரண்டு திணைகள் குறித்தும், தமிழர்கள் வீரத்தில் வாகை சூடியவர்கள் என்பதையும் மாணவர்கள் இப்பாடத்தின் மூலமாகப் புரிந்து கொள்ளலாம்.
அற இலக்கியம்	மனிதனின் வாழ்வு சிறப்புற அமைய வேண்டுமானால், அதற்கு அறவாழ்வு இன்றியமையாதவையாகும், என்பன குறித்தும், பதினெண் கீழ்கணக்கு நூல்களின் மேன்மை

	குறித்தும், எடுத்துரைக்கின்றது.
யாப்பெருங்கலக்காரிகை	செய்யுள் உறுப்புக்களின் கட்டமைப்பு குறித்தும், நான்கு வகைப் பாக்களின் சிறப்பு குறித்தும், எடுத்துரைக்கின்றது.
தமிழ் இலக்கிய வரலாறு	சங்ககாலம் தொட்டு இக்காலம் வரை மக்களின் வாழ்வியலையும் அவர்கள் இயற்றிய நூல்களின் சிறப்புக்களையும் அவற்றின் தொன்மைகளையும் அறிந்து கொள்ள முடிகின்றது.
சங்க இலக்கியம்	குறிஞ்சி முதல் பெருந்திணை ஈறாக உள்ள மக்களின் அக வாழ்வியலையும் வெட்சி முதல் பாடாண் ஈறாக உள்ள புற வாழ்வியலையும் எடுத்துக் கூறும் விதமாக சங்க இலக்கியங்கள் அமைகின்றன.
அணி இலக்கணம்	செய்யுளுக்கு அழகு சேர்க்கும் விதமாக அமைந்துள்ள உவமை அணி முதலாக முப்பத்திரெண்டு அணிகளின் மேன்மையை புரிந்து கொள்ளலாம்.
இலக்கியத் திறனாய்வு	படைப்புக்களை எவ்வாறு திறனாய்வு செய்ய வேண்டும் என்பது குறித்து அறிந்து கொள்ள முடியும்.
பெண்ணியம்	பெண்களின் உரிமைகள் மற்றும் கடமைகள் குறித்தும் சமூகத்தில் சமநிலை உடையவர்களாக வாழும் நிலை குறித்தும் எடுத்து இயம்புகின்றது.
தன்மேம்பாட்டியல்	மனிதனுக்கு பிற பொருளாதாரங்களை விட தனக்கு உதவியாக உள்ள பத்து விரல்களை மூலதனமாகக் கொண்டு செயல்பட்டால் வாழ்வில் வெற்றி பெறலாம் என்பதைச் சுட்டுகின்றது.
சுற்றுலாவியல்	சுற்றுலாவின் பல்வேறு அம்சங்களைப் பற்றியும் அது தேசிய அளவிலும் உலக அளவிலும் நட்புறவையும் மனித நேயத்தையும் வளர்க்க உள்ள வாய்ப்புகள் பற்றி எடுத்துக் கூறுகின்றது.