

GOVERNMENT COLLEGE FOR WOMEN (AUTONOMOUS)



Estd. 1963



0435 – 2401391



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Course Outcomes(UG)

GOVERNMENT COLLEGE FOR WOMEN (AUTONOMOUS)



KUMBAKONAM – 612 001

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IV Cycle of Accreditation



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B.Sc., BOTANY

ALGAE, FUNGI AND LICHENS- U21BOC101

- CO1 Acquire knowledge about the general Characteristics cell, structure and nutritional types of bacteria.
- CO2 Identify the morphology and life cycles of different algae.
- CO3 Describe the general characteristics thallus organization, nutrition, reproduction and life cycles of various fungi.
- CO4 Understand the symbiotic association of lichens, its thallus organization structure, reproduction and uses.
- CO5 Learn about the economic importance of algae, fungi, bryophytes and lichen


MICROBIOLOGY & PLANT PATHOLOGY AND PLANT PROTECTION-U21BOC203

- CO1 Get more knowledge about the history and importance of plant pathology.
- CO2 Realize the classification of plant diseases its symptom, process of infection and pathogenesis
- CO3 Understand the various types of chemical and biological control of plant diseases.
- CO4 Identify the symptoms, causal organism, disease cycle and their management in some plant diseases.
- CO5 Know the contribution of Indian plant pathologists and various research institutes.
- CO6 Learn about the scope, importance and equipments used in plant protection.
- CO7 Describe the objectives and methods of seed treatment and soil sterilization.
- CO8 Understand the different techniques and methods of plant protection.

BRYOPHYTES, PTERIDOPHYTES, GYMNOSPERMS AND PALEOBOTANY-U21BOC305

- CO1 Describe the general characteristics and classification of liver worts and mosses
- CO2 Understand the morphology, reproduction and life – history of the following genera, 1. Riccia 2. Marchantia 3. Anthoceros and polytrichum.
- CO3 Explain the general characteristics and classification of pteridophytes by Smith.
- CO4 Learn more about the structure, reproduction and life history of the following genera:- 1. Psilotum 2. Lycopodium 3. Selaginella 4. Equisetum 5. Adiantum and 6. Marsilea
- CO5 Acquire knowledge about stellar evolution in pteridophytes, Heterospory and origin of seed habit.
- CO6 Know the general characteristics and classification of Gymnosperms by Sporne.
- CO7 Realize morphology, mode of reproduction and life history of the following genera :- 1. Cycas 2. Pinus 3. Gnetum.
- CO8 Analyse the types of fossils and methods of fossilization.




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ANATOMY, EMBRYOLOGY AND MICROTÉCHNIQUE- U21BOC407

- CO1 Distinguish the various types of tissue system and stomata types.
- CO2 Identify the primary structures of roots, stem, and leaf in dicots and monocots.
- CO3 Acquire more knowledge about the normal secondary growth in stem and root.
- CO4 Differentiate the annual rings and periderm formation.
- CO5 Compare the anomalous secondary growth in dicot stem and monocot stem.
- CO6 Learn the structure and development of anther, pollen wall and ovules.
- CO7 Understand the types of ovules and Endosperms.

CELL AND MOLECULAR BIOLOGY- U21BOC509

- CO1 Describe the basic principles of microscopy, ultra structure and functions of plasma membrane and cell inclusions.
- CO2 Differentiate the prokaryotic and Eukaryotic cells.
- CO3 Learn the structure of nucleolus, Euchromatin and Heterochromatin.
- CO4 Familiarize the special types of chromosomes – Lamp brush chromosomes and polytene chromosomes.
- CO5 Analyse the cell cycle and types of cell division: 1. Mitosis and 2. Meiosis
- CO6 Differentiate the features of nucleic acids DNA and RNA
- CO7 Understand the structure, properties and replication of DNA.
- CO8 Learn Griffith Experiment and Hershey – Chase experiment.
- CO9 Explain the structure, functions and types of RNA
- CO10 Distinguish gene regulation in prokaryotes and Eukaryotes
- CO11 Analyse the various techniques – initiation elongation termination, transcription and translation.
- CO12 Learn the genome organization of chloroplast and mitochondria.

GENETICS, BIostatISTICS AND EVOLUTION- U21BOC510

- CO1 Apply the Mendel law's in monohybrid, Dihybrid, Backcross and test cross.
- CO2 Differentiate allelic and non – Allelic interactions.
- CO3 Learn about the recombination, linkage and crossing over, cytoplasm inheritance and sex determination.
- CO4 Describe the different functional units of gene and operon concept.
- CO5 Understand the classification, types, mechanism and application of mutation.
- CO6 Know the definition and scope of Bio-statistics
- CO7 Explain the sampling and random sampling techniques.
- CO8 Analyse the types of data, presentation of data and graphical methods.
- CO9 Evaluate the measures of central tendency, dispersion and probability distributions.
- CO10 Understand the different concepts, theories of evolution and population genetics



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MORPHOLOGY, TAXONOMY OF ANGIOSPERM AND ECONOMIC BOTANY- U21BOC511

- CO1 Describe the morphological features of vegetative, floral and fruit parts.
- CO2 Explain the types of inflorescence and fruits.
- CO3 Understand the binomial nomenclature and ICBN Rules.
- CO4 Illustrate the systems of classification (Bentham and Hooker's) its merits and demerits and various techniques of Herbarium.
- CO5 Describe the detailed study of selected families and their economic importance.
- CO6 Acquire knowledge about the economic importance of plants Fruits, Edible, Sugar, Fibres, Medicinal plants and Forest products.

BIOPHYSICS, BIOCHEMISTRY AND PLANT PHYSIOLOGY- U21BOC613

- CO1 Understand the plant – Water relationship with various physiological activities and theories.
- CO2 Explain the Translocation of solutes by means of various theory role and deficiency symptoms of minerals.
- CO3 Know the types of spectrum and the role of pigments in photosynthesis.
- CO4 Describe the photosynthesis by different pathways and cycles.
- CO5 Learn the respiration by means of various cycles and its types.
- CO6 Identify the various plant growth hormones, its chemical nature, physiological effects and functions.
- CO7 Understand the physiological effects such as senescence, abscission – and photoperiodism, Vernalization and seed dormancy.
- CO8 Explain the nature, properties and mechanism of enzyme actions.
- CO9 Describe the structure, classification and functions of carbohydrates, lipids and proteins.
- CO10 Apply the laws of physics in biological phenomena.

PLANT ECOLOGY AND CONSERVATION- U21BOC614

- CO1 Know the types of ecology, its relationship with flora plants environment.
- CO2 Understand cause of deforestation and alleopathy.
- CO3 Learn the concepts, components and types ecosystem.
- CO4 Describe the food chain, food web and energy flow.
- CO5 Explain the methods, developments and units of vegetation.
- CO6 Differentiate the plant succession and ecological classification of plants.
- CO7 Realize the different types of pollution and its controlling measures
- CO8 Familiar with phyto geography, climatic conditions and botanical regions of India.
- CO9 Discuss the various vegetational types of Tamil Nadu - Evergreen, Deciduous, Scrub& Mangrove.
- CO10 Identify the types of distribution, endemism and conservation.



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PLANT BREEDING, LANDSCAPING AND HORTICULTURE - U21B06MBEC2:1

- CO1 Describe the different methods of crop improvement such as introduction, acclimatization and selection.
- CO2 Learn the various techniques of hybridization
- CO3 Understand the Mutation breeding and its application in plant breeding.
- CO4 Know the types polyploidy and its role for crop improvement.
- CO5 Explain the scope and importance of Horticulture.
- CO6 Acquire knowledge about the different methods of plant propagation and plants growth regulator in Horticulture.
- CO7 Realize classification of horticultural crops.
- CO8 Create interest in different Horticultural techniques such as Green House, Indoor Gardening, Bonsai, Flower arrangement and Nursery management.
- CO9 Understand the principle, Elements, design and layout of landscaping.
- CO10 Describe the special types of Gardens in specific area.

PLANT BIOTECHNOLOGY AND BIOINFORMATICS -U21B06MBEC3:1

- CO1 Definition and scope of Biotechnology.
- CO2 Describe the different techniques use in tissue culture.
- CO3 Explain general feature, types of the varies plasmid are used in vector.
- CO4 Understand the steps, techniques and involved in Genetic Engineering.
- CO5 Realize the role of Agro bacterium in plant genetic engineering.
- CO6 Analysis the importance and application of bio-mass production and Biofertilizers.
- CO7 Know types of waste treatment, solid, liquid and sewage.
- CO8 Familiar the history scope and application of bio-informatics
- CO9 Learn the different types of data-base-biological nucleic acid primary and secondary protein.
- CO10 Identify the structural classification and literature databases.




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B.Sc., CHEMISTRY

GENERAL CHEMISTRY I- U21CHC101

- CO1 State the fundamental assumptions of atomic theory and explain the composition of atoms, including electronic configuration.
- CO2 Describe the arrangements of elements in periodic table based on their electronic configuration, bonding and properties.
- CO3 Explain the formation of ionic and covalent bonds and its physico chemical properties

GENERAL CHEMISTRY II- U21CHC203

- CO1 Explain the importance of s, p, block elements and their properties
- CO2 Describe the fundamental concepts of organic chemistry
- CO3 Describe the basic ideas of quantum mechanics and apply them to problems in physical chemistry
- CO4 Demonstrate that quantum mechanics is needed to describe the world around us, and its relationship with descriptive chemistry.
- CO5 Synthesize organic compounds.


GENERAL CHEMISTRY III- U21CHC305

- CO1 Explain basic principles of inorganic analysis and its applications
- CO2 Describe the aromaticity and nucleophilic substitution reactions
- CO3 Explain the fundamental concepts of thermodynamics
- CO4 Explain the fundamental concepts of Organic chemistry and its reaction
- CO5 Apply the fundamentals of organic chemistry to future research

GENERAL CHEMISTRY IV- U21CHC407

- CO1 Learn about noble gases and its electronic configuration
- CO2 Explain the reactions of mono carboxylic acid and dicarboxylic acid
- CO3 The application of thermodynamics third law
- CO4 Explain the importance of free energy and work function




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INORGANIC CHEMISTRY I- U21CHC509

- CO1 Explain the bonding in co-ordination chemistry using Molecular orbital theory and the combination of atomic orbitals. Identify the principles, structure and reactivity of selected co-ordination complexes.
- CO2 Explain the nomenclature of co-ordination complexes
- CO3 Interpret their electronic spectra And magnetic properties
- CO4 Describe the reaction mechanisms of co-ordination compounds.

- CO5 Graduate students will learn the unique properties organic and inorganic solids have with respect to compounds in solution or in the gas phase, and understand the breadth of compositions and structure solids can have.

ORGANIC CHEMISTRY I- U21CHC510

- CO1 Distinguish between different kinds of isomers and differentiate between mirror images that are superimposable and mirror images that are not super imposable
- CO2 Assign cis/trans or E/Z configuration for alkanes
- CO3 Explain the fundamentals of Heterocyclic compounds
- CO4 Familiarize with structure of heterocyclic compounds
- CO5 Understand the Application of reagents in Organic Synthesis

PHYSICAL CHEMISTRY I- U21CHC511

- CO1 To learn about concept of phase and derivation of phase
- CO2 Define the importance of phase diagrams in the field of material science and engineering.
- CO3 Students should be able to interpret the phase diagram of pure substance and recognize conditions here phases exist in equilibrium.
- CO4 Explain the fundamentals of electrochemistry.
- CO5 Evaluate the electrodes and cells


ANALYTICAL CHEMISTRY- U21CH5MBE1:1

- CO1 Evaluate the analytical data in terms of statics
- CO2 To understand the concept of gravimetric analysis
- CO3 Explain the fundamentals and interpretation method of IR, Raman, UV spectra

WATER TREATMENT AND ANALYSIS- U21CH5MBE1:2

- CO1 Evaluate the quality of water
- CO2 To understand the concept of water analysis
- CO3 Explain about BOD,COD




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ORGANIC SYNTHESIS- U21CH5MBE1:3

- CO1 Explain the concept of Region selectivity
- CO2 To understand the concept of Protecting groups
- CO3 Explain the synthesis method of Hetero cyclic compounds

ORGANIC CHEMISTRY II- U21CHC613

- CO1 Gained knowledge about amino acids and proteins
- CO2 Understand the rearrangements in chemical reactions
- CO3 Know about the classification and properties of proteins and nucleic acids
- CO4 Explain the importance of antibiotics
- CO5 Understand the procedures of organic synthesis

PHYSICAL CHEMISTRY II- U21CHC614

- CO1 Determine the rate law ,order of reaction with respect to each reactant, the overall order of the reaction, rate constant and units.
- CO2 To understand the concept of surface chemistry
- CO3 Apply the concept of adsorption in the field of pollution control.
- CO4 Explain the fundamentals of photochemistry and its applications .
- CO5 Understand the basic concepts of chemical kinetics on reactions.


INORGANIC CHEMISTRY II- U21CH6MBE2:1

- CO1 Aware about the penetrating power of α, β, γ radiation
- CO2 Calculate the age of an object
- CO3 How nuclear chemistry and radiation chemistry can be used to make issues more visible and solve problems, particularly in relation to environmental problems and metal production.
- CO4 Understand the role of metals in biological systems
- CO5 Chemistry of f block elements

FOOD CHEMISTRY- U21CH6MBE2:2

- CO1 Explain the classification of foods, and nutritive value of food
- CO2 Explain the classification of vegetables
- CO3 Analyze the quality of food and food products
- CO4 Analyze the nutrients present in food.




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ROLE OF CHEMISTRY IN LIFE- U21CH6MBE2:3

- CO1 Explain about Health & Hygiene
- CO2 Explain the classification of drugs
- CO3 Explain about blood-fluids
- CO4 Explain enzymes ,Hormones and common diseases.

PHARMACEUTICAL CHEMISTRY- U21CH6MBE3:1

- CO1 Explain the fundamental concepts of pharmaceutical chemistry
- CO2 Explain the different types of drugs and its applications.
- CO3 Describe the symptoms and remedies of some types of diseases.
- CO4 Understand the importance of indian medicinal plants.


BIO CHEMISTRY- U21CH6MBE3:2

- CO1 Explain the fundamental concepts in Bio-chemistry
- CO2 Explain the different types of carbohydrates and its applications.
- CO3 Describe about proteins
- CO4 Understand the importance of proteins

APPLIED CHEMISTRY- U21CH6MBE3:3

- CO1 Explain the fundamental applications of chemistry
- CO2 Explain the different types of petroleum products
- CO3 Describe about paper manufacturing
- CO4 Understand the importance of milk and milk products




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B.COM COMMERCE

FINANCIAL ACCOUNTING (U21COC101)

- CO 1 Prepare final accounts of their business.
- CO 2 Prepare accounts of non-trading organisation.
- CO 3 Prepare accounting in single entry system and able to convert single entry to double entry system
- CO 4 Prepare Bank Reconciliation statement
- CO 5 Calculate average due date and record transactions related to Bills of Exchange.

BUSINESS COMMUNICATION (U21COC102)

- CO 1 Build affinity with the customers and increase sales.
- CO 2 Knowledge and skill in business related communication.
- CO 3 Develop the skills required for preparing business correspondence.
- CO 4 Develop and delivering effective presentation.
- CO 5 Improves effective communication in business.

BUSINESS ACCOUNTING (U21COC203)

- CO 1 Understand the concept of branch accounts.
- CO 2 Prepare hire purchase accounts.
- CO 3 Understand the concept of Consignment and Joint Ventures.
- CO 4 Understand the procedure of preparing royalty accounts.
- CO 5 Gain the knowledge about Insurance claims.

PARTNERSHIP ACCOUNTING (U21COC304)

- CO 1 Understand about partnership, rules and adjustment of partners capital accounts.
- CO 2 Know the adjustments to be followed at the time of Admission.
- CO 3 Prepare the accounts at the time of Retirement.
- CO 4 Gain knowledge about dissolution and apply the rule of Garner Vs Murray.
- CO 5 Understand the procedures of sale of firm to a company.


BANKING THEORY LAW AND PRACTICE (U21COC305)

- CO 1 Define theoretical structure of banking.
- CO 2 Explain the function of commercial banks.
- CO 3 Describe banker and customer relationship.
- CO 4 Make use of modern banking services like e-banking.
- CO 5 Understand the procedure of mobile banking.

COST ACCOUNTING (U21COC406)

- CO 1 Explain the concept of cost, costing and cost accounting.




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- CO 2 Apply the various material control techniques.
- CO 3 Compute the labour cost and the rate of labour turnover.
- CO 4 Allocate the overheads to various departments in various systems and compute the machine hour rate.
- CO 5 Compute the job, process and batch cost.

FINANCIAL MANAGEMENT (U21COC507)

- CO 1 Analyse the financial management concept and calculate time value of money and cost of capital.
- CO 2 Take financial decision based on capital structure theories.
- CO 3 Calculate different leverages and determine suitable dividend policy.
- CO 4 Estimate the working capital requirement of a business.
- CO 5 Compare the business proposals and take decisions using capital budgeting.

CORPORATE ACCOUNTING (U21COC508)

- CO 1 Apply various methods to issue shares.
- CO 2 Apply the accounting procedures for redemption of shares and debentures.
- CO 3 Prepare final accounts of companies.
- CO 4 Know the procedures for amalgamation, absorption and reconstruction of the companies.
- CO 5 Prepare holding company accounts and gain an idea about liquidation of companies.


AUDITING (U21COC509)

- CO 1 Understand generally accepted auditing principles and process of auditing.
- CO 2 Understand generally accepted auditing standards and the professional and ethical responsibilities of the independent public accountant.
- CO 3 Demonstrate knowledge of collection of audit evidence and preparation of audit work papers and report.
- CO 4 Explain the fundamental concept of auditing.
- CO 5 Understand the internal audit process and can work in such situation

COMPUTER APPLICATIONS IN BUSINESS (U21COC510)

- CO 1 Create word document with tables, images, hyperlinks and watermarks.
- CO 2 Create worksheets, organize data and create charts in excel.
- CO 3 Work in a computerized accounting environment.
- CO 4 Choose data entry operator, System operator in various concerns.
- CO 5 Handle accounting software.




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MANAGEMENT ACCOUNTING (U21COC611)

- CO 1 Explain the concept and technique of management accounting and preparation of financial statements.
- CO 2 Calculate ratios and construct balance sheet using ratios.
- CO 3 Determine the marginal cost concept and apply in the business decision.
- CO 4 Prepare different types of budget.
- CO 5 Analyse the material, labour and overhead variances using standard cost techniques.


INCOME TAX THEORY LAW AND PRACTICE (U21COC612)

- CO 1 Introduces the basic concepts of income tax regarding residential status and exempted incomes.
- CO 2 Apply the different provisions relating to determination of taxable income from salary.
- CO 3 Calculate income from house property.
- CO 4 Calculate the business or professional income.
- CO 5 Have expertise to compute the taxable income from other sources.

ENTREPRENEURIAL DEVELOPMENT (U21COC613)

- CO 1 Understand the skills required for organizing and carrying out entrepreneurship activities.
- CO 2 Explore entrepreneurial leadership and management styles.
- CO 3 Apply the systematic process to select and screen a business idea.
- CO 4 Select the best institutions financing and supporting entrepreneurs.
- CO 5 Identify entrepreneurship as a viable, lucrative and preferred career.




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B.Sc., COMPUTER SCIENCE

PROGRAMMING IN C(U21CSC101)

- CO 1** Students learn about the, fundamental of programming language. Know the concept of variable, data types, operators, Expressions
- CO 2** Know the concept of control structures and Looping statements
- CO 3** Learn to create arrays and its types. They learn about functions, strings and storage classes.
- CO 4** To know about how to pass pointers to functions
- CO 5** Gain the knowledge about structure and files. Learn to create file, operations on file, command line arguments in C.

OBJECT ORIENTED PROGRAMMING WITH C++(U21CSC203)

- CO 1** To learn the object oriented programming(OOP), concepts such as abstraction, encapsulation, polymorphism, overloading, inheritance and generic programming
- CO 2** Describe the concepts of inheritance, pointers and virtual functions
- CO 3** To understand the concepts of files, templates and exception handling.
- CO 4** Develop skills to write C++ Programs using to OOPS concepts

FUNDAMENTALS OF DATA STRUCTURES AND ALGORITHMS(U21CSC305)

- CO 1** To give a fundamental knowledge on data structures and exposure to development of algorithms related to data structures.
- CO 2** Choose an appropriate data structure and algorithm design method for a specified problem design.
- CO 3** Assess how the choice of data structure and algorithm design methods impacts the performance of program.
- CO 4** Implement operations like searching, insertion and deletion traversing mechanism etc. on various data structures such as stack queue and linked list.
- CO 5** Implement non-linear data structures are tree and graphs for a specified applications.
- CO 6** Implement appropriate sorting searching technique for a given problem analyze the complexity of given algorithms.
- CO 7** Solve problems using algorithm design methods such as the divide and conquer and dynamic programming and writing programs for these solutions.



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FUNDAMENTALS OF PHOTOSHOP (U21CS3NME1:1)

- CO 1** To impart the knowledge about the Photoshop in order to improve the employability skills of the learners.
- CO 2** To get basics idea on working with images and colors.
- CO 3** To learn how to select and more an image
- CO 4** To know how to paint and draw an image using various custom tools
- CO 5** To get practical knowledge about layer effect.
- CO 6** To know the uses of various filters.


OFFICE AUTOMATION LAB(U21CS3NME1:2)

- CO 1** To get the basic ideas of MS Office including Word, Excel &PowerPoint.
- CO 2** To create documents, parts of word window and keyboard operations.
- CO 3** To learn the tabs, commands, tool bars and their icons of MS Word.
- CO 4** To describe the concepts of MS Excel basics such as spreadsheets, creating and editing worksheets and menus, commands, tool bars.
- CO 5** To acquire the knowledge about MS PowerPoint including creating presentations, the ribbon tabs and groups and working with different views.

PROGRAMMING IN JAVA(U21CSC407)

- CO 1** To give basic knowledge of Object Oriented Programming paradigm and to impart the programming skills in JAVA.
- CO 2** Knowledge on the basic java language features, types and control structures
- CO 3** Use the java programming language for various programming technologies.
- CO 4** Understand the idea inheritance and packages. Propose the use of certain technology by implementing them in the Java programming language to solve the given problem.
- CO 5** Know exception handling, threads are used to perform sub tasks and interthread communication.
- CO 6** Develop applications using an applet will be able to graphics using AWT.
- CO 7** Develop software in the programming language.




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E – COMMERCE(U21CS4NME2:1)

- CO 1 To get basic idea of E-Commerce and its benefits and applications.
- CO 2 To get basic idea of E-Commerce and its benefits and applications.
- CO 3 To learn how to pay online securely and to get knowledge computer crimes.
- CO 4 To know about the search engine used In E-Commerce and how to advertise in Internet.
- CO 5 To acquire knowledge of cyber laws regarding E-Commerce

INTERNET PROGRAMMING(U21CS4NME2:2)

- CO 1 To get basic idea of Internet.
- CO 2 To know about the connections of Internet.
- CO 3 To learn about E-mail.
- CO 4 To acquire knowledge of HTML

OPERATING SYSTEMS(U21CSC509)

- CO 1 To learn the fundamentals of OS.
- CO 2 To learn the mechanisms of OS to handle processes and threads and their communications.
- CO 3 To learn the mechanisms involved is memory management is contemporary OS.
- CO 4 To gain knowledge on distributed OS concepts that includes architecture, mutual exclusion algorithms, deadlock detection algorithms and agreement protocols.
- CO 5 To know the components and management aspects of concurrency management.
- CO 6 To learn programmatically to implement simple OS mechanisms.

COMPUTER ARCHITECTURE AND FUNDAMENTALS OF MICROPROCESSORS (U21CSC510)

- CO 1 To know and understand the guiding principles of digital circuits, their analysis and their design, and their use as components in computers.
- CO 2 Clear understand of computer Architecture.
- CO 3 To know and understand the guiding principles of microprocessors, instruction sets and



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addressing modes.

CO 4 To learn the architecture and assembly language programming of 8085 microprocessor.

CO 5 To develop a base for advance microprocessors.

DATA AND COMPUTER COMMUNICATIONS(U21CSC511)

CO 1 Show clear understanding of the basic concepts of data communications including the key aspects of networks and their interrelationship, physical structures, types, models & internetworking.

CO 2 Understand the purpose of network layered concepts networks communications using the layered concept, and able to compare and contrast OSI & TCP/IP.

CO 3 Show clear & unambiguous understanding of analog transmission of digital and analog data, methods, and the procedures involved in converting digital data and analog to analog signals (modulations -ASK,FSK,PSK,AM,FM,PM).

CO 4 Can effectively discuss that bandwidth utilization is goal oriented and involves tradeoffs by showing that multiplexing (TDM, FDM, WDM) efficiently use bandwidth while spread spectrum inefficiently use bandwidth to ensure privacy and ant jamming.

CO 5 Illustrations explain the concept of hamming distance, and its relationship to errors as well as detection & correction of errors in blocks codes and implementation of cyclic redundancy check, data logical link control & media access control.

CO 6 Understand connectivity LAN's, internetworking principles and how the interrupt protocols IPV4, IPV6 & ICMP operate.

CO 7 Understanding routing principles and algorithms such as distance vector & link state & demonstrate the mechanics associated with TCP/IP protocols suite (TFTP, SMTP, SNMP, and HTTP).

COMPUTER GRAPHICS(U21CS5MBE1:1)

CO 1 To provide comprehensive introduction about computer graphics system and design algorithms.

CO 2 Discuss various two-dimensional geometric transformation and output primitives.

CO 3 Extract scene with different clipping methods and its transformation.


CO 4 To make the students familiar with concepts of 3D graphics & 3D transformation

CO 5 To get the knowledge of visible surface detection methods.

MULTIMEDIA SYSTEMS(U21CS5MBE1:2)

CO 1 To understand and familiar the concepts of Multimedia by creating multimedia applications.




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- CO 2 Developed understanding of technical aspects of multimedia systems.
- CO 3 Understand various file formats for audio, video & text media.
- CO 4 Develop various multimedia systems applicable in real time.
- CO 5 Design interactive multimedia s/w.
- CO 6 Apply various networking protocols for multimedia application
- CO 7 To evaluate multimedia application for its performance


DIGITAL IMAGE PROCESSING (U21CS5MBE1:3)

- CO 1 Analyze general terminology of Digital Image Processing
- CO 2 Examine various types of images, intensity transformations and spatial filtering.
- CO 3 To learn the techniques of image restoration.
- CO 4 Understanding the concepts of compression and its algorithms
- CO 5 An able to know about the segmentation techniques.

DATABASE SYSTEM CONCEPTS(U21CSC613)

- CO 1 Basic concepts of Database management systems.
- CO 2 Analysis how data are stored and maintained using data models.
- CO 3 Draw an E-R diagram using entities, attributes and relationships among them.
- CO 4 Explain the basic database storage structures and access techniques, File organization, indexing methods including B+ tree, B-tree and hashing.
- CO 5 Its specifies basic issues of transaction processing and concurrency control.




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- CO 6** Show clear understand of PL/SQL blocks, works, triggers, and explain and demonstrate the stored procedures and functions, packages, cursors & transactions.

PHP SCRIPTING LANGUAGE (U21CSC614)

- CO 1** To understand server side scripting
- CO 2** To get the basic knowledge of XHTML & JavaScript
- CO 3** To understand how server-side programming works on the web
- CO 4** To learn PHP basic syntax for variable types calculation and creating conditional structures.
- CO 5** To understanding POST & GET in form submission data
- CO 6** To get the knowledge of cookies & session variables.
- CO 7** To learn the concepts of Read & process data in a MYSQL DB.
- CO 8** To understand the various file handling functions

SOFTWARE ENGINEERING(U21CS6MBE2:1)

- CO 1** How to apply the software engineering lifecycle by demonstrating competence in communication, planning, analysis, design, construction and deployment.
- CO 2** An ability to work is one or more significant application domains.
- CO 3** Work. and as part of a multidisciplinary learn to develop and deliver quality software.
- CO 4** Demonstrate an understanding of and apply current theories, models and techniques that provide a basis for the software lifecycle.
- CO 5** Demonstrate an ability to use the techniques and tools necessary for software engineering practice.

SYSTEM ANALYSIS AND DESIGN(U21CS6MBE2:2)

- CO 1** To give basic concepts and facilitate the learners in the concepts of System, System Analysis, Design and Implementation.
- CO 2** To understand the concepts of system & its development.
- CO 3** To identify various types of information system concepts and terminologies.
- CO 4** Able to recognize the function of system analyst.



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CO 5 To understand the system analysis & design, implementation and evaluation.

CO 6 To learn the system development strategies and future considerations.

SOFTWARE PROJECT MANAGEMENT(U21CS6MBE2:3)

CO 1 To introduce the basic concepts of Software Project Management and the various phases in Software Management Framework.

CO 2 To learn about the evaluation of software economics and the ways to improve it.

CO 3 To understand both theoretical and methodological issues involved in software project management.

CO 4 To understand the Life Cycle phases of a Software management and learn about the model based software architectures.

CO 5 To learn about organizational, factors & project manager responsibilities

CO 6 To develop strategies to calculate risk factors involved in projects.

INTERNET OF THINGS(U21CS6MBE3:1)

CO 1 To Understand the different architectures for IoT.

CO 2 To learn various protocols at the different layers for IoT.

CO 3 To Understand the different business models for IoT.

CO 4 To develop a middle ware for IoT.

CO 5 To develop Applications of IoT in Industrial Contacts.

CYBER SECURITY(U21CS6MBE3:2)

CO 1 Ability to know about cyber security basics

CO 2 Develop knowledge about internet security myths.

CO 3 Gain through understanding about password security.

CO 4 Familiarize with safe internet browsing.


CO 5 Provide clear expose about wireless security.

SOCIAL COMPUTING (U21CS6MBE3:3)

CO 1 To develop knowledge about mining the social networks like Twitter, Facebook.

CO 2 To get analyzing skills about network structures and their properties.




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- CO 3** To gain the knowledge about community maintained resources, Supporting technologies and Social information Sharing and social filtering
- CO 4** To know about random walks, link prediction and privacy in social networks.
- CO 5** To learn the knowledge about the Taxonomy of visualizations in social networks.




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B.A ECONOMICS

MICRO ECONOMICS – I (U21ECC101)

- CO 1 Understand the Nature and scope of micro economics.
- CO 2 Explain the cardinal analysis of Cardinal approach .
- CO 3 Differentiate ordinal approach from cardinal approach.
- CO 4 Understand concepts and Laws of Production function.
- CO 5 Demonstrate the concepts and types of costs and Revenues.

INDIAN ECONOMIC DEVELOPMENT (U21ECC102)

- CO 1 Understand the feature of Indian Economy.
- CO 2 Assess the population growth and occupational distribution.
- CO 3 Assessing about Agricultural productivity and Agricultural Development under Five year Plans.
- CO 4 Discuss the Role of Industries in Indian Economy and Industrial policies.
- CO 5 Explain Role of Transport in Indian Economic Development.

MICRO ECONOMICS II (U 21ECC203)

- CO 1 Understand the forms of market.
- CO 2 Explain the price and output determination under perfect competition.
- CO 3 Understand the price and output determination under imperfect competition.
- CO 4 Analyse theories of factor distribution.
- CO 5 Assess the theories of Rent Wage , Interest and Profit.

MACRO ECONOMICS (U21ECC304)

- CO 1 Understand the Nature and scope of macro economics.
- CO 2 Explain measurement of national income and its limitations.
- CO 3 Discuss the consumption and investment functions.
- CO 4 Analyse the classical and Keynes theory of employment.
- CO 5 Assess the changes in General equilibrium.

LABOUR ECONOMICS (U21ECC305)

- CO 1 Understand the Meaning and characteristics of labour and issues related to labour.
- CO 2 Understand how to fix wages.
- CO 3 Explain prevention and settlement of disputes.
- CO 4 Discuss the structure of trade union in India.



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CO 5 Assess the social security measures in India.

INTERNATIONAL ECONOMICS (U21ECC406)

- CO 1 Understand the principle of comparative advantage and its formal expression and interpretation within different theoretical models.
- CO 2 Apply general equilibrium models in analyzing the economic instruments such as tariffs, quotas, export subsidies, free trade areas, customs unions and common markets.
- CO 3 Familiar with, knowledge about balance of payment deficit and measures to correct disequilibrium.
- CO 4 Familiar with the major recent developments in the world trading system, and be able to critically analysis key issues raised both by the current round of WTO negotiations and by the spread of regional trading arrangements.
- CO 5 Understand the trade relations of various countries, import-export procedures and currency exchange rate procedures.

MONETARY ECONOMICS (U21ECC507)

- CO 1 Understand The Evolution, Forms And Kinds Of MTwoy.
- CO 2 Evaluate The Various Theories Of MTwoy .
- CO 3 Understand The Types Of Inflation And Deflation
- CO 4 Analyse The Phases Of Trade Cycle.
- CO 5 Understand Banking Functions And Methods Of Credit Control


FISCAL ECONOMICS (U21ECC508)

- CO 1 Understand the scope of fiscal economics , public and prevent finance and its social advantage.
- CO 2 Gain knowledge sources of deferent types of revenue form the tax, kinds of taxation and its effect of taxation.
- CO 3 Lean about public and privet expenditure to get benefit of the peoplemore , and effect and control expenditure, types of budgets.
- CO 4 Understand the central and state relationship for federal finance, definition of fiscal finance.

ENVIRONMENTAL ECONOMICS (U21ECC509)

- CO 1 Understand the meaning , significance and various segments of Environmental economics.
- CO 2 gain the knowledge of externality and cost- benefit analysis of environmental economics.
- CO 3 Understand the various types of pollution and protection of Environment.




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CO 4 Assess the impact of environmental education and the law in the protection of environment.

CO 5 Assess the current environmental policies.

CAPITAL MARKET (U21ECC510)

CO 1 Understand the functions and importance of capital market.

CO 2 Analyse the instruments of capital market

CO 3 Understand the characteristics and function of financial institutions.

CO 4 Differentiate primary market from Secondary market.

CO 5 Assess the functioning of Stock Exchange.

HISTORY OF ECONOMIC THOUGHT (U21ECC611)

Understand the significance of history of economic thought.

CO 1

CO 2 To know about the economic ideas of classical thinkers.

CO 3 Appreciate the ideas of socialistic school.

CO 4 Familiarise the student with the ideas of welfare school.

CO 5 Explain the India leaders views in Economic Thought.

PERSONNEL MANAGEMENT (U21ECC612)

CO 1 Understand the role that personnel management in man power planning

CO 2 Develop deep insight on of job evaluation , job description , job specification.

CO 3 To provide depth knowledge on the various recruitment and selection processes employed by organisations .

CO 4 Understand the role that personnel management in motivation.

CO 5 Assess theories of leadership.

ENTREPRENEURSHIP DEVELOPMENT (U21ECC613)

CO 1 Know the importance and Role of Entrepreneur in Economic Development.


CO 2 Understand the problem of small Scale Industries and to Know Significance and incentives and subsidies through different industrial policies and programmes.

CO 3 Know the problem of women Entrepreneur Qualities and prospects of women Entrepreneur in India.

CO 4 Understand the Concept of project and project Formulation and to Know to preparation of project Report.

CO 5 Entrepreneurs Know the Sources of different institutional financial assistance.




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B.A., ENGLISH

AGE OF CHAUCER AND SPENSER (U21ELC101)

- CO 1 Get exposure to the features of Shakespearean writings and other Elizabethan dramatists such as Marlow and Webster.
- CO 2 Gain insight into the growth and development of British drama.
- CO 3 Understand the socio-political context of the period from 14th century to 17th century.
- CO 4 Apply on how the structure of Shakespearean sonnet varies from Petrarchan sonnet.
- CO 5 Comprehend the development of trends in British drama and poetry.

Age of Milton and Pope (U21ELC102)

- CO 1 Grasp the major theme of satiric poems that belong to 17th-18th century.
- CO 2 Comprehend the different types of humourin drama of that age.
- CO 3 Understand the concept of metaphysical poetry and its various features.
- CO 4 Understand different features of Neoclassicism and its influence on English society.
- CO 5 Appreciate the influence of society and culture on critical and literary thoughts of the time.


Eighteenth Century Romantic Literature (U21ELC203)

- CO 1 Understand the significance of human experience as reflected in the works of Romantic writers.
- CO 2 Foster the sorties of adventure as well as deep faith in God and nature.
- CO 3 Understand the gradual changes from reason to emotion in British Literature.
- CO 4 Understand the prominence of logic and reason in the 18th century British Literature.
- CO 5 Understand the prominence of the historical background and the literary development.

Shakespeare (U21ELC304)

- CO 1 Identify, explicate, and respond to key themes and elements in Shakespearean drama, as presented in both written and spoken form.
- CO 2 Analyze Elizabethan culture and its influence on the West both creatively and philosophically.
- CO 3 Identify the organization of Shakespearean drama, using Aristotle's Poetics as a framework.
- CO 4 Identify a range of literary techniques relevant to the study of a dramatic text.
- CO 5 Respond to key themes and elements in Shakespearean drama.




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The Age of Tennyson (U21ELC305)

- CO 1 Students should be able to analyze a variety of works including poetry and novel.
- CO 2 With both central and more obscure texts from the Romantic period.
- CO 3 Interpret texts creatively in relation to their historical and cultural contexts.
- CO 4 Evaluate and compare various thematic perspectives and styles with English Romanticism.
- CO 5 Interpret the influence of Tennyson's early poetry on Pre-Raphaelite Brotherhood.

British Literature: The 20th Century (U21ELC406)

- CO 1 Comprehend of literary, society, cultural, biographical and historical background of the greatest writings in British literature.
- CO 2 Identify key elements that are distinctive to literary achievement of writers in the Romantic, Victorian and Modernist periods of British literary history.
- CO 3 Reflect and write analytically about the literary works and their contexts.
- CO 4 Develop their own skills of literary critical analysis.
- CO 5 Understand and successfully deploy a range of terms and concepts integral to literary studies.

Literary Theory (U21ELC507)

- CO 1 Demonstrate familiarity with the history of literary theory in the West, including prominent theorists and critics, important schools and movements, and the historical and cultural contexts important to those theories.
- CO 2 Demonstrate an understanding of key concepts in literary theory.
- CO 3 Explain to others the meaning, significance, and value of specific literary theoretical works.
- CO 4 Use literary theoretical concepts to develop your own interpretations of literary texts.
- CO 5 Analyze specific literary theories in order to distinguish them from other theories and to identify the structure and logic of their arguments.

Diasporic Literature (U21ELC508)

- CO 1 Get an understanding of issues of Diaspora, location, history and geography in literature and awareness of the relationship between literary texts and their historical, political and cultural contexts.
- CO 2 Gain an insight into the complex traumatic and fragmented history of South Asia, which led to territorial, national and cultural reformulations, which in turn shaped modern South Asian cultural imaginaries of home identity and belonging.

Indian Writing in English (U21ELC509)

- CO 1 Understand the masterpieces in Indian Writing in English.



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- CO 2 Enable to make a comparative study of English literature and Indian Literature.
- CO 3 Understanding of the socio cultural aspect would have been reached.
- CO 4 Understand the growth of Indian writing in English in the context of India's contact with English.
- CO 5 Aware of the superstitious practices prevalent in Indian Society.

American Literature (U21ELC510)

- CO 1 Understand how the great American themes of self-reliance individualism, sin and redemption were shaped through its rich and varied literature.
- CO 2 Gain knowledge about how multiculturalism was shaped through its rich literature.
- CO 3 Learn some aspects of American English usage and diction.
- CO 4 Gain an understanding of how society, culture and politics affect literature.
- CO 5 Understand the historical background of American literature and the American dream.

English Critical Tradition (U21ELC611)

- CO 1 Analyze the evolution literary theories from Greek to Modern age.
- CO 2 examine how theory and criticism has shaped the discipline we study.
- CO 3 Emphasis is on the continuity of key ideas in the history of criticism.
- CO 4 Write formal and informal responses to literary and critical theory that demonstrate engagement, reflective thought, effective inquiry, perception of patterns in language features, and responsible generalization.
- CO 5 Recognize and critique the argument underlying critical writings.


Popular Literature (U21ELC612)

- CO 1 Explain with representative literary and cultural texts within a significant number of historical, geographical, and cultural contexts.
- CO 2 Apply critical and theoretical approaches to the reading and analysis of literary and cultural texts in multiple genres.
- CO 3 Identify, analyze, interpret and describe the critical ideas, values, and themes that appear in literary and cultural texts and understand the way these ideas, values, and themes inform and impact culture and society, both now and in the past.
- CO 4 Write analytically in a variety of formats, including essays, research papers, reflective writing, and critical reviews of secondary sources.
- CO 5 Ethically gather, understand, evaluate and synthesize information from a variety of written and electronic sources.

NEW LITERATURES (U21ELC613)

- CO 1 Possess a coherent knowledge and a critical understanding of postcolonial literature and its key historical, cultural and theoretical developments.
- CO 2 Compare, discuss and explain interconnections and functions of postcolonial literature and its contexts, including comparative and interdisciplinary issues




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- CO 3 Critically evaluate arguments and assumptions about postcolonial literature, texts, and modes of interpretation.
- CO 4 Communicate arguments effectively and show a degree of independent thinking in so doing.




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B.Sc., GEOGRAPHY

EARTH SYSTEM SCIENCE (U21GC101)

- CO 1** Understand the functioning of Earth systems in real time and analyze how the natural and anthropogenic operating factors affects the development of landforms
- CO 2** Students will able to demonstrate the knowledge of origin of the earth with suitable theories.
- CO 3** They know about the interior and exterior parts of the earth.
- CO 4** Students know about the continental drift and how the continents are formed, plate tectonics and the movements of plates and its impact on the Earth.

MAP SCALE AND REPRESENTATION OF RELIEF (U21GC102P)

- CO 1** Understand the functioning of Earth systems in real time and analyze how the natural and anthropogenic operating factors affects the development of landforms
- CO 2** Students will able to demonstrate the knowledge of origin of the earth with suitable theories.
- CO 3** They know about the interior and exterior parts of the earth.
- CO 4** Students know about the continental drift and how the continents are formed, plate tectonics and the movements of plates and its impact on the Earth.

CLIMATOLOGY (U21GC203)

- CO 1** Understand the basic concepts and provide essential background for further studies in weather and climate.
- CO 2** Explain the causes of atmospheric instability and disturbances, climate variability and climate change.

CLIMATIC DATA ANALYSIS (U21GC204P)

- CO 1** Describe the climatic data using diagrams.
- CO 2** Draw suitable diagrams to represent climatic data.
- CO 3** Interpret Indian weather reports.

GEOMORPHOLOGY (U21GC305)

- CO 1** Differentiate geomorphic agents and their work on the Earth's Surface
- CO 2** Understand various landforms of the earth surface



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APPRECIATION AND INTERPRETATION OF TOPOSHEETS (U21GC306P)

- CO 1** Student would able to understand various signs and symbols that used in Indian topographical maps and independently interpret physical and cultural features of an area using topo sheets.

CARTOGRAPHY (U21GC407)

- CO 1** After completion of course the students will understand thoroughly the arts and science of map making.
- CO 2** Students able to design the map with proper cartographic procedures.

MAP PROJECTION (U21GC408P)

- CO 1** After completion of course the students will understand thoroughly the arts and science of map making.
- CO 2** Students able to design the map with proper cartographic procedures.

OCEANOGRAPHY (U21GC509)

- CO 1** The students will having the knowledge about the significance of ocean and resources
- CO 2** Students will understand the causes and consequences of ocean waves, tides and currents.


HUMAN GEOGRAPHY (U21GC510)

- CO 1** Understand the basic concepts in various sub-fields of human geography
- CO 2** Appreciate the growth, distribution and composition of population in different parts of the world.
- CO 3** Analyze the types and patterns of rural and urban settlements, urbanization and related issues in India and other regions of the world.

GEOGRAPHY OF RESOURCES (U21GC511)

- CO 1** The students will have ability to explain the production and distribution of agricultural crops, minerals, basic industrial products, patterns of major transport types and the impacts of world trade and globalization.




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SURVEYING (U21GC512P)

- CO 1** The students will have ability to make use of proper tools and surveying methods for ground data collection.
- CO 2** The course will enable students to handle a range of surveying instruments to measure distance, height and angle of physical features on the ground.

GEOINFORMATICS (U21GC613)

- CO 1** Understand the principles of remote sensing and characteristics of different satellite sensors.
- CO 2** Understand the components of GIS and various geospatial data models.
- CO 3** Apply the knowledge of remote sensing and GIS to various problems on earth surface.


GEOGRAPHY OF INDIA (U21GC614)

- CO 1** The students will have a proper understanding of the physical, cultural, economic and demographic aspects of India which will help them to pursue it for competitive exams.

REMOTE SENSING IMAGE INTERPRETATION (U21GC615P)

- CO 1** The students will have practical ability to interpret the aerial and satellite images and to extract physical and cultural features for different geographical problems.




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B.A HISTORY

HISTORY OF INDIA UPTO 1206 A.D. (U2IHSC101)

- CO 1 Perceive various sources to study of Ancient India.
- CO 2 Know about the development and the achievements of man in the Stone Age.
- CO 3 Understand the glory of Indian history in the age of Harappan Civilization.
- CO 4 Comprehend the history of Vedic period.
- CO 5 Understand the philosophy of Jainism and Buddhism.

HISTORY OF INDIA 1206 A.D TO 1526 A.D (U2IHSC202)

- CO 1 Understand early dynasties of Sultans in India
- CO 2 Grasp territorial expansion of Sultanate Period.
- CO 3 Understand the administrative setup of Sultanate from central to local level.
- CO 4 Know the system of trade & commerce during the period of Sultanate .
- CO 5 Understand the nature of village community & the relationship between the different sections of society.

HISTORY OF TAMILNADU UPTO 1565 A.D (U2IHSC203)

- CO 1 Know the Socio – Economic Condition of the Sangam Age.
- CO 2 Emergence of the Empires in Tamilnadu.
- CO 3 Understand the glory of Tamilnadu under the Cholas.
- CO 4 Know the advent of Islam in Tamilnadu.
- CO 5 Useful to appear in the NET/ SET Examination.

HISTORY OF INDIA 1526 A.D TO 1757 A.D (U2IHSC304)

- CO 1 Identify the Condition of India Under Mughals .
- CO 2 Evaluate the administration of the Mughals.
- CO 3 Analyse the Contribution of the Mughals to the Art and Architectural development.
- CO 4 Understand the necessary of the emergence of Maratha power.
- CO 5 Acquire knowledge on the European settlements.

HISTORY OF TAMILNADU FROM 1565 A.D to 2000 A.D (U2IHSC305)

- CO 1 Evaluate the Socio – economic cultural condition under the Nayaks.
- CO 2 Know the social reform movement in Tamil Nadu.
- CO 3 Recognize the role of Tamil Nadu in the Freedom Movements.
- CO 4 Analyse the development of education, press, literature, Industries etc.



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CO 5 Understand the various government contributed to the economic growth of Tamil Nadu.

HISTORY OF BRITISH ADMINISTRATION FROM A.D 1757 TO A.D 1947 (U2IHSC406)

CO 1 British contribution to the Indian Administration and its impact.

CO 2 Evaluate the reforms of various Governor Generals.

CO 3 Understand the growth of Civil Services in India.

CO 4 Analyse the participation Indians in the administration under British rule.

CO 5 Assess the central legislature development under the British rule.

THE INDIAN NATIONAL MOVEMENT (U2IHSC507)

CO 1 Identify the early attempts of freedom Movements.

CO 2 Understand the growth of nationalism.

CO 3 Evaluate the role of Indian National Congress.

CO 4 Analyse the Contributions of the great leaders to the freedom Movement.

CO 5 Understand the role of revolutionaries, Press and literature in the freedom Movement.

HISTORY OF WORLD CIVILIZATIONS (U2IHSC508)

CO 1 To know about the past centuries and Civilizations of the world.

CO 2 To understand the contribution of various civilizations to the world.

CO 3 Compare the Major legacies of clerical civilizations in the earlier period.

CO 4 Understand the impact of Roman Civilization.

CO 5 know how the Chinese civilization promote their culture through the ages.

HISTORY OF EUROPE FROM 1453 A.D. TO 1789 A.D. (U2IHSC509)

CO 1 Analyse the value of Geographical discoveries.

CO 2 Understand the renaissance in Europe.

CO 3 Assess the Enlightened despotism in Europe.

CO 4 Evaluate the condition of Europe in the eve of French Revolution.

CO 5 Analyse the role of French intellectuals to the French revolution.

HISTORY OF U.S.A. FROM 1776 A.D. To 1900 A.D. (U2IHSC510)

CO 1 Understand the causes for the American war of Independence.

CO 2 Assess the great leaders and their achievements to make USA as a strong nation.

CO 3 Evaluate the role of Lincoln in the Civil war .

CO 4 Analyse the rise of USA as a world imperialistic power.

CO 5 Observe the impact of the reconstruction for the social change in



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America.

HISTORY OF ENGLAND FROM A.D. 1603 TO A.D.1914 (U2IHSC611)

- CO 1 Understand the struggle for the powers of parliament in England.
- CO 2 Know the restoration of Monarchy.
- CO 3 To gain a knowledge about revolution and reform movements.
- CO 4 Understand the role of Prime Ministers in England.
- CO 5 Understand the relationship of England with other countries in Europe.


HISTORY OF EUROPE FROM 1789 A.D.To 1945 A.D. (U2IHSC612)

- CO 1 Realise the importance of French Revolution.
- CO 2 Assess the role of Napoleon I the History of France and Europe.
- CO 3 Understand the problem of Eastern Questions.
- CO 4 Analyse the Unification of Italy and Germany.
- CO 5 Evaluate the Russian revolution and its impact.

CONSTITUTIONAL HISTORY OF INDIA FROM A.D 1773 To A.D.1950 (U2IHSC613)

- CO 1 Understand the growth of legislature under British.
- CO 2 Know the impact of Government of India Act of 1858.
- CO 3 Observe the features of the Act of 1919.
- CO 4 Understand the significance of the 1935 Act.
- CO 5 Assess the role of Constituent Assembly in the making of Constitution.




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B.Sc Mathematics

DIFFERENTIAL AND INTEGRAL CALCULUS (U21MC101)

- CO 1** Find higher derivatives of given function by using Leibnitz's theorem.
- CO 2** Study the knowledge on curvature with its properties in both Cartesian and polar form.
- CO 3** Evaluate indefinite integrals and reduction formulae.
- CO 4** Classify and solve the change of order of integration.
- CO 5** Use Beta and Gama functions to solve their properties.

PROGRAMMING IN C (U21MC102)

- CO 1** Describe the concept of structure oriented programming and understand various C-tokens.
- CO 2** Illustrate with examples the idea of conditional statements and looping statements.
- CO 3** Categorize one dimensional, two dimensional arrays.
- CO 4** Differentiate various 'function prototypes' and demonstrate nesting of functions.
- CO 5** Distinguishes the idea of structures and unions, structure and arrays.

ANALYTICAL GEOMETRY 3D AND TRIGONOMETRY (U21MC203)

- CO 1** Gain through knowledge about angle between two skew lines.
- CO 2** Find equation of Spheres satisfying given conditions.
- CO 3** Gain knowledge in the expansion of trigonometry functions.
- CO 4** Expose various concepts of inverse trigonometry.
- CO 5** Accurately identify and apply properties of logarithmic and exponential functions, Gregory's series.

PROGRAMMING IN C – LAB (U21MC204P)

- CO 1** Execute simple programs using input/output and conditional statements.
- CO 2** Execute simple programs using looping statements.
- CO 3** Execute simple programs using one-dimensional and two dimensional arrays.
- CO 4** Execute simple programs using strings.



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CO 5 Execute simple programs using structures.

THEORY OF EQUATIONS AND VECTOR CALCULUS (U21MC305)

- CO 1 Get the knowledge to find the relation between roots and coefficients of equations in Horner's method and Newton's method.
- CO 2 Understand the reciprocal equation and quotient, remainder of equation and removal terms in equation.
- CO 3 Understand the important definitions and basic concepts in vector and scalar function.
- CO 4 Solve the integration of vector using methods of line, surface and volume of integral.
- CO 5 Understand the concept of Gauss divergence theorem, Green's theorem, Stokes's theorem.

MATHEMATICAL STATISTICS (U21MC306)

- CO 1 Collect, Classify and tabulate a given data and study graphical and diagrammatic representation through, Bar diagram, Pie diagrams, Histograms, Frequency polygon.
- CO 2 Understand measures of central tendency, viz., Mean, Median, Mode and Geometric mean, Harmonic mean. Workout the simple problems in discrete and continuous series.
- CO 3 Calculate Karl Pearson, Rank correlation and lines of regression.
- CO 4 Compute Binomial, Poisson and Normal Distribution.
- CO 5 Relationship among t, chi-square distribution and analyze small sample test.


SEQUENCES AND SERIES (U21MC407)

- CO 1 An ability to work within an axiomatic framework sequence and limit.
- CO 2 A detailed understanding of how Cauchy's criterion for the convergence of real and complex sequences and series follows from the completeness axiom and the ability to explain the steps in standard mathematical notation.
- CO 3 Knowledge of some simple techniques for testing the convergence of sequences and series and confidence in applying them.
- CO 4 Familiarity with a variety of well-known sequences and series, with a developing intuition about the behavior of new ones.
- CO 5 An understanding of how the elementary functions can be defined by power series, with an ability to deduce some of their easier properties.

MATHEMATICAL STATISTICS PRACTICAL (USING SPSS) (U21MC408P)

- CO 1 Calculate average, Median, Mode, Standard deviation of the given collection data.




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- CO 2 Find the correlation between the two variables between -1 and +1.
- CO 3 Get conclusion (or) result.
- CO 4 Fitting of Binomial, Poisson and Normal distribution.
- CO 5 Find the Students t-distribution and Chi-square test for Goodness of fit.

ABSTRACT ALGEBRA (U21MC509)

- CO 1 Classify and apply the Groups, Permutation groups and their properties.
- CO 2 Identify different algebraic structures, isomorphic and Homomorphism structure.
- CO 3 Understands the fundamental concepts of the algebraic structures such as Rings and subrings.
- CO 4 Understand Ideals, quotient rings and Homomorphism of rings.
- CO 5 Learn about various concepts of Unique factorization domain and Polynomial rings.

REAL ANALYSIS (U21MC510)

- CO 1 Apply mathematical concepts and principles to perform numerical and symbol computations.
- CO 2 Use technology appropriately to investigate and solve mathematical problems.
- CO 3 To recognize mathematics related problems, asses their solvability and solve them with in a specified time frame.
- CO 4 Analysis Riemann integral derivates and fundamental theorem of calculus.
- CO 5 Understand Taylor's theorem and Binomial theorem concept.

MECHANICS (U21MC511)

- CO 1 Get the knowledge about forces help the students in daily life.
- CO 2 Understand the concepts of force with moment of a force, Reduction of coplanar forces into a force and couple.
- CO 3 Deep analyzing the laws of Friction.
- CO 4 Understand kinematics such as relative velocity, components of velocity and acceleration. Learn about Newton's Laws of motion.
- CO 5 Find out the various properties of simple harmonic motion, simple pendulum & projectile.



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DIFFERENTIAL EQUATIONS (U21MC512)

- CO 1** Evaluate first order differential equations including separable, homogeneous, exact and linear.
- CO 2** Identify the type of given differential equations and select and apply the appropriate analytical techniques for finding the solution of first order and second higher order differential equations.
- CO 3** Solve non homogeneous equations.
- CO 4** Solve first order differential equations utilizing the standard techniques for separable, exact, linear, homogeneous or Bernoulli cases.
- CO 5** Solve higher order differential equations using reduction of order, undermine coefficients or variation of parameters.

COMPLEX ANALYSIS (U21MC613)

- CO 1** Understand the significance of differentiability and analytical of complex function leading to the Cauchy-Riemann equations.
- CO 2** Solve analytic function as a mapping on the plane, Mobius or bilinear transformation.
- CO 3** Learn the role on Cauchy theorem and Cauchy's integral formulas in evaluation of closed integrals. Apply Cauchy Inequality, Liouville's theorem, Fundamental theorem of algebra and Morera's theorem.
- CO 4** Learn Taylor's series and Laurent's series expansion of analytic function.
- CO 5** Classify the nature of singularity, poles and Residues and application of Cauchy's Residue theorem.

GRAPH THEORY (U21MC614)

- CO 1** Define basic notions in graph theory and account for the theory of paths and the degree of connectedness of a graph.
- CO 2** Account the basic properties of trees and fundamental circuits.
- CO 3** After learning the course the students should be able to solve problems involving vertex



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connectivity, edge connectivity.

CO 4 Define the vector spaces of a graph and Galois fields.

CO 5 Understand the matrix representation of graphs.

LINEAR ALGEBRA (U21MC615)

CO 1 Identify the concepts of vector spaces in linear transformations and their properties.


CO 2 Learn about the rank and nullity of linear transformations.

CO 3 Understand the basic concepts of orthogonal complement.

CO 4 Apply the basic concepts of types of matrices.

CO 5 Learn the role on Cayley Hamilton theorem and solve the problems in eigen values and eigen vectors.




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B.Sc., PHYSICS

PROPERTIES OF MATTER AND SOUND- U21PHC101

- CO1 Study the elastic behavior and working of torsional pendulum.
- CO2 Learning the basic concepts of elasticity, surface tension, viscosity and sound
- CO3 Understand the concepts of properties of matter and to recognize their applications in our day to day life.
- CO4 Learn streamline and turbulent flow of liquids. Acquire knowledge about sound and reverberation.
- CO5 Study the basic properties of sound waves and their propagation in different media.

MECHANICS AND RELATIVITY- U21PHC203

- CO1 Understand and define the laws involved in mechanics
- CO2 Learn the concept of conservation of energy, momentum, angular momentum and apply them to basic problems.
- CO3 Write the expression for the moment of inertia about the given axis of symmetry for different uniform mass distributions.
- CO4 Understand the utility of equation of continuity of flow and their applications.
- CO5 Understand the special theory of relativity and their impact on the mass and energy of moving objects.
- CO6 Understand the concepts of Mechanic to recognize their applications in various real life problems.

THERMAL AND STATISTICAL PHYSICS-U21PHC305

- CO1 Comprehend the basic concepts and laws of thermodynamics.
- CO2 Describe the thermodynamics potentials and their physical interpretations.
- CO3 Understand concepts of entropy and the associated theorems.
- CO4 Differentiate between principles and methods to produce low temperature to liquefy air, helium and hydrogen.
- CO5 Learn the basic aspects of radiation, solar constant and energy.
- CO6 Understand the concepts of classical (Maxwell- Boltzman) and quantum (Bose and Fermi) statistics and their applications.
- CO7 Solving problems based on heat transfer, entropy and thermal radiation.

OPTICS-U21PHC407

- CO1 Understand different types of aberration in lenses and methods of solving them.
- CO2 Correlate the principle of interference in the field of spectroscopy.
- CO3 Acquire knowledge on the principle and construction of optical instruments.
- CO4 Analyze the application of polarization in our day to day life.
- CO5 Get exposure to modern experiments methods in solving physical phenomena.
- CO6 Demonstrate experiments related to optical activity and polarization.
- CO7 Demonstrate the application of diffraction.



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ALLIED PHYSICS-U213AAPH1

- CO1 LEARN THE BSIC CONCEPT OF ELECTRICITY , SOUND, MECHANICS, THERMAL PHYSICS AND OPTICS.
- CO2 Calculate the centre of gravity of objects with different geometry.
- CO3 Describe the production of Ultrasonic waves and applications.
- CO4 Analyze different types of spectra.
- CO5 To understand the importance of fiber optics communication in comparison to conventional communication system.

ALLIED PHYSICS-III –U214AAPH3

- CO1 Gain knowledge of electric and magnetic field.
- CO2 To be able to sketch an atom and indicate the location of the nucleus, the shell and the electronic orbital.
- CO3 Able to calculate the maximum number of electron that can occupy a specific shell.
- CO4 Demonstrate familiarity with basic electronic components and use them to design simple electronic circuit.
- CO5 The ability to understand analyze and design various combinational sequential circuits.
- CO6 To understand and examine the structure of various number system and its application in digital circuits.


APPLIED PHYSICS-1 –U213APH1

- CO1 THE use Gauss law and apply it to real orld problems.
- CO2 Explain the basic principles of capacitors.
- CO3 Have in depth knowledge about magnetic potential and different types of magnetic materials.
- CO4 Explain the laws that underlie the properties of electric circuit element and basic principles of Potentiometer, Carey foster’s bridge etc.,
- CO5 Understand the operation of such as series an parallel resonance circuits.

APPLIED PHYSICS-III- U214APH3

- CO1 Convert between different number system which are used in digital communication and digital devices.
- CO2 Have a thorough knowledge of transistor and FET and its applications in Amplifier, oscillator etc.
- CO3 Analyze different type of digital electronic circuits using logic gates.
- CO4 Ability to use OP-amp as summer, subtractor, differentiator, integrator etc.,
- CO5 Design and explain analog to digital conversion.




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ELECTRICITY AND MAGNETISM-U21PHC509

- CO1 Explain the basic physics of capacitors and resistors.
- CO2 Predicts the behavior of simple and complex DC circuits using the fundamental conservation laws.
- CO3 Explain the basic electric and magnetic interactions due to charged particles and currents.
- CO4 Describe how the electric interactions due to single or collection of charged particles are embodied in the concepts of electric field and the electric potential.
- CO5 Predict the motion of charge particles in electric and magnetic fields
- CO6 Write a project on an application or on a natural phenomenon based on the fundamental law of electricity and magnetism.
- CO7 Understand the necessity of electricity and magnetism in transportation technology.
- CO8 Understand the occurrence of loss in energy due to charged particles.

ATOMIC PHYSICS-U21PHC510

- CO1 Know about the positive ray analysis.
- CO2 Solve Einstein Photoelectric equation.
- CO3 Understand the Quantum numbers including their physical significance and quantum Mechanical state of hydrogen atom.
- CO4 Know the origin of fine structure in atomic spectra
- CO5 Acquire the knowledge about the x-rays and its characteristics.
- CO6 Understand the periodic table from the view point of the electronic structure.

BASIC ELECTRONICS-U21PHC511

- CO1 Acquire the knowledge about construction and working of transistors.
- CO2 Understand the ideas and basics of operational Amplifiers.
- CO3 Gain in-depth knowledge of designing switching circuits.
- CO4 Designing of circuits using op-Amps.
- CO5 To analyze analog electronic devices.
- CO6 Explore the avenue of employment in small scale electronic companies.


SPECTROSCOPY AND LASER PHYSICS –U21PH5MBE1:1

- CO1 Impart knowledge related to the concepts of spectroscopy.
- CO2 Analyze the prerequisites in a molecule towards its rotational and vibrational activity
- CO3 Understand the properties of laser and its applications.
- CO4 To study the structure of new molecules based on Microwave spectroscopy/IR & Raman spectroscopy.

BIOPHYSICS AND BIOMEDICAL INSTRUMENTATION- U21PH5MBE1:2

- CO1 Illustrate the basic principle and techniques to understand the biological problem.
- CO2 Identify the physical principles responsible for maintaining the basic cellular function




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- CO3 Appraise the importance of various biophysical techniques.
- CO4 Practices the techniques of Chromatography and Spectroscopy

MATERIALS SCIENCE-U21PH5MBE1:3

- CO1 Understand the fundamental structure and related properties of individual materials.
- CO2 Get knowledge about the superconducting materials and Nanomaterials.
- CO3 Gain knowledge about the smart and mechanical behavior of materials.

WAVE MECHANICS AND NUCLEAR PHYSICS-U21PH613

- CO1 Understand wave particle duality.
- CO2 Solve the time dependent and independent schrodinger equations
- CO3 Acquire knowledge of the nuclear physics.
- CO4 Understand the concepts of fission and fusion process and the basic properties of the nuclear and fusion reactions.
- CO5 Understand the nuclear structure and radio activity and its applications.
- CO6 Understand the nature of elementary particles and their fundamental interactions.

SOLID STATE PHYSICS-U21PH614

- CO1 Understand the relationships between crystal structure and their defects.
- CO2 Understand and utility of x-ray diffraction measurements in determining crystalline structures.
- CO3 Examine the success and failure of free electron theory, the origin of band gap and Hall effect.
- CO4 Extend their knowledge to understand the nature of super conductivity.
- CO5 Explore new areas of research in modern engineering materials and allied fields of science and technology.
- CO6 Outline the importance of solid state physics in the modern society.

INTEGRATED ELECTRONICS –U21PH6MBE2:1

- CO1 Understand various number systems and design logic circuits
- CO2 Acquire knowledge about fabrication of integrated circuits.
- CO3 Design Combinational and sequential logic circuits independently.
- CO4 Enhance their knowledge in semiconductor memories.
- CO5 Learn the architecture of microprocessor and its applications.

ELECTRONIC COMMUNICATION-U21PH6MBE2:2

- CO1 Apply the knowledge of statistical theory of communication and explain the conventional communication system.



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- CO2 Apply the knowledge of signals and system and evaluate the performance of communication system in the presence of noise.
- CO3 Apply the knowledge of electronics and describe the error control codes like block code, cyclic code.
- CO4 Describe and analyze the communication system with spread spectrum modulation.
- CO5 Design as well as conduct experiments, analyze and interpret the result to provide valid conclusions.

OPTO ELECTRONICS AND FIBER OPTIS-U21PH6MBE2:3

- CO1 Explain the basic concepts of optical transmitting and receiving.
- CO2 Describe different opto-electronic devices.
- CO3 Elucidate different methods of photonics.
- CO4 Describes selection of the appropriate optical fiber sensors for industrial application.
- CO5 Understand the application of fiber optics in communication system.

'C'- LANGUAGE-U21PH6MBE3:1

- CO1 Understand the basic ideas of C programming.
- CO2 Gain knowledge about library functions and arrays.
- CO3 Understand the function, structure and concept of files.
- CO4 To code mathematical problems in C.
- CO5 To write the source code in C for unknown problems.


C++ PROGRAMMING-U21PH6MBE3:2

- CO1 Choose appropriate data structures to represent data items in real world problems.
- CO2 Analyze the time and space complexities.
- CO3 Design programs using a variety of data structures such as stacks, queues, hash tables, binary trees, search trees, heaps, graphs, and B-trees.
- CO4 Analyze and implement various kinds of searching and sorting techniques.
- CO5 Developing the programs for unknown problems.

ELECTRICAL APPLIANCES-U214PHSE1

- CO1 Analysis of single phase AC circuits, and determining the power in these circuits.
- CO2 Have in depth knowledge of the fundamentals of electricity.
- CO3 Identity the type of electrical machine used for that particular application.
- CO4 Awareness of electrical shocks and short circuit and its impact.
- CO5 Acquire knowledge about electronic cooling appliances.
- CO6 Study different meters and instrument for measurement of electronic quantities.




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PHYSICS MADE EASY-U21PH3NME1:1

- CO1 To learn the various source of renewable energy.
- CO2 Understand the principle and mechanism of simple machines.
- CO3 Understand the earth and its relation to the solar system and universe.
- CO4 Apply Doppler effect to understand simple problems in our day to life.
- CO5 To Understand the operation of microscope.

ENERGY PHYSICS-U21PH3NME1:2

- CO1 Understand the various types of energy
- CO2 To learn the renewable and nonrenewable sources.
- CO3 Gain knowledge about Biomass energy and conversion process
- CO4 Acquire in depth knowledge of Geothermal energy.

SIMPLE APPLIANCES-U21PH4NME2:1

- CO1 Acquire knowledge on simple introduction to electrical appliances and precautions in handling them.
- CO2 Understand basics of wiring system.
- CO3 Expertise on simple electrical measuring instruments.
- CO4 Creates n awareness on maintaining simple electronic devices and cooling appliances.
- CO5 Develop skill in working with electric motors.
- CO6 Develop skill in earthing and giving insulation in electric circuits.


PHOTOGRAPHY-U21PH4NME2:2

- CO1 Discuss the history of Photography, moving images and photo Journalism
- CO2 Demonstrate a brief understanding of news values, photo journalism and sources.
- CO3 Explain various types of cameras its components and accessories
- CO4 Discuss the legal and ethical aspects of photography and photojournalism.
- CO5 Assess the importance of digital technology in photography

MEDICAL PHYSICS-U214PHSE2

- CO1 Understand static, dynamic and frictional forces in the body.
- CO2 Get knowledge about the pressure in skull, eye and urinary bladder.
- CO3 Acquire in depth knowledge of various therapeutic devices.
- CO4 Understand the nature of ideas of ultrasonic propagation.
- CO5 Gain knowledge about the pacemaker and how it is works and analyze external and internal pacemaker.
- CO6 The information will teach the student about the normal and cancer cells.
- CO7 Describe laser based blood cell counting
- CO8 Perform research on the ultrasonic diathermy and its applications.




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AUDIO AND VIDEO SYSTEMS-U214PHSE3

- CO1 Understand the basic concepts of audio and video systems.
- CO2 Understand the characteristics of sound.
- CO3 Acquire in depth knowledge about the microphone and loud speakers.
- CO4 Enable the student to understand the basic operation of for television
- CO5 Understand the operation of TV cameras.
- CO6 Learn trouble shooting in Audio and Video equipments.




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இக்கால இலக்கியம் (U21TLC101)

- CO 1 இலக்கியவளர்ச்சியை அறிந்துகொள்ளுதல்.
- CO 2 காலத்திற்கு ஏற்ற பண்பாடு, சமூக, அரசியல் வளர்ச்சியை அறிந்துகொள்ளுதல்
- CO 3 ஒவ்வொரு கால நிலையிலும் மனிதவளர்ச்சி சார்ந்து இலக்கியத்தின் வளர்ச்சியை தெரிந்துகொள்ளுதல்
- CO 4 படைப்பாளர்களின் படைப்புத் திறனை அறிந்துகொள்ளுதல்.
- CO 5 மனிதவளத்தில் இலக்கியத்தின் தேவையை அறிதல்.

சிற்பிலக்கியம் (U21TLC102)

- CO 1 ஒரு செயலை செய்யத் தொடங்கும் முன் இறைவனை போற்றிப்பாடுகின்ற பாங்கினை அறிந்துகொள்ள பயன்படுகிறது.
- CO 2 சிற்பிலக்கியங்கள் இயற்கை வளத்தினை உணர்த்துகின்றன.
- CO 3 சிற்பிலக்கியத்தின் எளிமை, இனிமை, கவித்துவம் போன்றவற்றை மாணவர்கள் அறிந்துகொள்ள உதவுகிறது.
- CO 4 சேர, சோழ, பாண்டிய அரசர்கள் பற்றிய வரலாற்றுச் செய்திகளை அறிய முடிகிறது.

யாப்பும் அணியும் (U21TLC203)

- CO 1 கி.மு. 2 ஆம் நூற்றாண்டிலிருந்து 21 ஆம் நூற்றாண்டு வரையிலான தமிழ் இலக்கியங்கள் பற்றி அறிதல்.
- CO 2 பழந்தமிழர் மக்களின் வாழ்க்கை முறைகளை சங்க இலக்கியம் மூலம் தெரிந்துகொள்ளுதல்
- CO 3 அரசியல் முறைகளையும், அறத்தின் மேம்பாடு பற்றியும் அறிந்துகொள்ளுதல்.
- CO 4 வழிபாட்டு முக்கியத்துவமும் அதனால் ஏற்படும் நன்மை பற்றியும் சைவ, வைணவ அடியார்களின் பாடல்கள் மூலம் புரிந்துகொள்ளுதல்.
- CO 5 தமிழ் இலக்கியங்களைப் படிப்பதற்கு முன் அதனை முழுமையாகத் தெரிந்துகொள்வதற்கு இந்நூல் முன்னோடியாகப் பயன்படுதல்.


நன்னூல் எழுத்ததிகாரம் (காண்டிகையுரை) (U21TLC304)

- CO 1 எழுத்துப் பிறப்பு, எழுத்து வகைகள், சொல்லாக்கங்களை அறிதல், பிழையின்றி எழுதுவதற்குப் பழகுதல்.

பக்தி இலக்கியம் (U21TLC305)

- CO 1 பக்தி உணர்வைப் பெறச் செய்தல்.
- CO 2 சமய ஒருமைப்பாட்டை வளர்த்தல்.
- CO 3 சமயமத நல்லிணக்க உணர்வை பெறச் செய்தல்.
- CO 4 இறைவனின் பெருமைகளை பக்தி இலக்கியங்கள் வழி அறிய செய்தல்
- CO 5 சாதி, சமய, மொழி வேறுபாடின்றி பழகுதல்




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நன்னூல் சொல்லதிகாரம் (காண்டிகையுரை) (U21TLC406)

- CO 1 மக்கள் வாழ்க்கையில் கலைகள் பெறுமிடத்தை அறிந்துபயன்பெறல்.
CO 2 இசையின் பயனை தெரிந்துகொள்ளல்.
CO 3 காலந்தோறும் இருந்தகலைத்திறனை அறிந்துகொள்ளல்.
CO 4 நாடகக்கலையின் சிறப்பை அறிதல்.

நம்பியகப்பொருள் (U21TLC507)

- CO 1 பழந்தமிழர்களின் அகம் சார்ந்த வாழ்வியல் கூறுகளின் கட்டமைப்புகளை இலக்கண வழி கற்று அறிந்துகொள்ளல்.

காப்பியங்கள் (U21TLC508)

- CO 1 காப்பியநயம் உணர்த்தல்.
CO 2 பண்பாடு அறிதல்.
CO 3 காப்பியங்கள் குறித்த அறிவுத் திறனைப் பயன்படுத்தி போட்டித் தேர்வுகளில் வெற்றிபெறல்.
CO 4 அக்கால வாழ்வியல் நெறி, சமுதாய வாழ்வு அறிதல்.

தமிழ்மொழிவரலாறு (U21TLC509)

- CO 1 பண்டைத் தமிழ்மொழியின் வரலாற்றைத் தெளிவாக உணர்த்தல்.
CO 2 கல்வெட்டுகளின் சிறப்பைப் புரிந்துகொள்ளல்.
CO 3 அடிப்படை இலக்கணம் பற்றியச் செய்திகளை அறிந்துகொள்ளல்.
CO 4 காலந்தோறும் தமிழ்மொழியின் வளர்ச்சி நிலையை அறிதல்.
CO 5 தமிழில் பிறமொழிச் சொற்களின் கலப்பினைத் தெரிந்துகொள்ளல்.

இலக்கியத் திறனாய்வு (U21TLC510)

- CO 1 இலக்கிய ஆய்வின் அணுகுமுறைகளையும் அவற்றின் பயன்களையும் அறிதல்.
CO 2 இலக்கியப் படைப்பாக்கத்திற்கு கண்டறிதல்.
CO 3 இலக்கியப் படைப்பின் இன்றைய போக்கு அறிதல்.

புறப்பொருள் வெண்பாமாலை (U21TLC611)

- CO 1 போர் முறைகள் - போர் காட்சிகள் தெரிதல்
CO 2 படைமாண்பு, வீரர்கள், மறவர்கள், போர்த்திறம் உணர்த்தல்
CO 3 போர்க்களகாட்சி, போரின் அழிவு உணர்த்தல்
CO 4 தமிழரின் வாழ்வில் புறத்திணை பெறுமிடத்தைத் தெரிந்துகொள்ளுதல்
CO 5 புறத்திணைக் கூறுகளை அறியச் செய்தல்




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அற இலக்கியம் (U2ITLC612)

- CO 1 வாழ்க்கைக்குவேண்டியஒழுக்கங்களைஅறிந்து பயன் பெறல்.
- CO 2 அறக்கோட்பாடுகளைஉணர்தல்.
- CO 3 பெரியோரின் பண்புஉணர்தல்.
- CO 4 வாழ்வின் பெருமை,பழமை,தெரிதல்.
- CO 5 வருவாய் அறிந்துதிட்டமிடல்.
- CO 6 ஒழுக்கமேம்பாடுகருத்துஉணர்தல்
- CO 7 நட்புஅறிதல்,நட்பின் பெருமைதெரிதல்.

சங்க இலக்கியம் (U2ITLC613)

- CO 1 இயற்கையோடு இயைந்துவாழ்ந்தபழந்தமிழனின் அகவாழ்வுபுறவாழ்வுதனைஉணர்ச் செய்தல்.
- CO 2 சங்க இலக்கியங்களை இயற்றியஆண்பால்,பெண்பால் புலவர்களின் வரலாறு,அவர்களின் புலமைத்திறன் எடுத்துக்காட்டல் பழங்காலமக்கள் வாழ்ந்த இயற்கை சூழல்,சமுதாயச் சூழல் அவ்வக்காலமக்களின் வாழ்வியல் நெறிகள்,சான்றோர் பொதுமக்களின் பண்புநலன்கள்,பழக்கவழக்கம்,நம்பிக்கை,பண்பாடு ஆடை,அணிகலன்கள்,உணவுமுறைகள் ஆகியவற்றை இன்றையதலைமுறையினருக்குபயிற்றுவிப்பதோடுஅப்பாடல்கள் குறித்தஅறிவுத்திறனைமேம்படுத்திபோட்டித் தேர்வுகளில் வெற்றிபெறச் செய்வது இப்பாடத்தின் பயனாகஅமைகிறது.




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B.Sc. ZOOLOGY

INVERTEBRATA-U21ZC101

- CO1 Acquire knowledge of importance of systematics, taxonomy, general taxonomic rules on animal classification and structural organization of invertebrate animals.
- CO2 Gain knowledge on salient features of phyla such as Protozoa, Porifera, Coelentrata, Platyhelminthes, Annelida, Arthropoda, Mollusca and Echinodermata.
- CO3 Know invertebrates that gave rise to the modern day vertebrates and interpret the gradual emergence of life on earth.
- CO4 Learn the larvae of crustacean and their significance.
- CO5 Understand the role of water vascular system in echinodermata. Appreciate the economic values of each phylum of invertebrate.

CHORDATA- U21ZC203

- CO1 Impart conceptual knowledge of vertebrates and understand the emergence and diversity of chordates. Interpret the gradual emergence of life on earth.
- CO2 Understand different classes of chordates, levels of organization and evolutionary relationship between different subphyla and classes, within and outside the phylum.
- CO3 Acquire knowledge of diversity in animals, making students understand about their distinguishing features and appreciate similarities and differences in life functions among various groups of animals in Phylum Chordata
- CO4 Learn about migratory birds, flight and flightless adaptations of birds and their importance.
- CO5 Comprehend the physiological systems of chordates

CELL BIOLOGY- U21ZC305

- CO1 Understand the basic fundamental principles of cell biology.
- CO2 Understand the structure and functions of various cell organelles and how there is a coordination in the basic unit of life
- CO3 Understand and gain knowledge about the cells and their functions.
- CO4 Acquire knowledge about the types of cell division and their significance.
- CO5 Learn the cell cycle and characters of cancer cell lines.


ENVIRONMENTAL BIOLOGY- U21ZC407

- CO1 Understand the basic theories and principles of ecology.
- CO2 Learn current environmental issues based on ecological impacts.
- CO3 Gain critical understanding of human impacts on environment.
- CO4 Develop positive attitude towards biodiversity and conservation.
- CO5 Understand how animals are adapted to their habit and habitat.

VERMITECHNOLOGY- U214ZOSE1

- CO1 Acquire knowledge of classification and characteristics of earthworms.
- CO2 Learn the biology of earthworm and species selection for vermicompost
- CO3 Understand the importance of traditional and modern vermicomposting.




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- CO4 Understand and acquire knowledge of vermiculture.
- CO5 Understand the role on economic importance of vermicompost for agriculture and horticulture, self employment and get finance assistance from funding agencies.

EVOLUTION- U21ZC509

- CO1 Understand the Origin of Life through several Theories proposed by Biologists
- CO2 Learn the significance fossils through Geological Times
- CO3 Gain knowledge on the types of evolution through the factors influencing speciation, isolating mechanism, mimicry & coloration
- CO4 Learn the impact of mutation through mathematical application
- CO5 Acquire knowledge on the distribution of animals and human evolution.

DEVELOPMENTAL BIOLOGY AND IMMUNOLOGY- U21ZC510

- CO1 Understand the basic concepts and events in developmental biology.
- CO2 Acquire the information on types of eggs, and gain knowledge how life is forming from a cell and organs are forming from a ball of cells during organogenesis.
- CO3 Some related topics like metamorphosis, regeneration and concept of test tube baby are made to understand.
- CO4 Understand the immune system, immune cell, immunogen, antibodies, antigen – antibody interaction.
- CO5 Acquire knowledge of immune response, types of grafts, autoimmunity and hypersensitivity.


ANIMAL PHYSIOLOGY- U21ZC511

- CO1 Understand the physiological properties of bio molecules and understanding digestion, absorption and assimilation of food.
- CO2 Learn the mechanism of respiration and blood circulation in man.
- CO3 Detailed understanding of excretion in man and osmoregulation of freshwater, marine and terrestrial animals.
- CO4 Acquires a clear understanding of structure, mechanism of muscles contraction, transmission of nerve impulses and photo and phono-receptors.
- CO5 Gain knowledge on the structure, function of endocrine glands and regulation of reproduction in man.

BIostatISTICS- U21Z5MBE1:1

- CO1 Acquire the knowledge of biostatistics and sampling.
- CO2 Understand the processing and presentation of data.
- CO3 Learn to measure the central tendency and variance
- CO4 Understand the measures of dispersions, correlation and regression.
- CO5 Understand the hypothesis of testing, ANOVA and basics of SPSS.




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GENETICS AND MOLECULAR BIOLOGY- U21ZC613

- CO1 Gain the knowledge of genetics and its interactions, multiple alleles, linkage and crossing over.
- CO2 Acquire knowledge of sex determination, sex-linked, limited, influenced inheritance and extra chromosomal inheritance.
- CO3 Understand and acquire the knowledge of human genetics, inborn error metabolisms, eugenic and eugenics.
- CO4 Understand about the DNA, gene concept, DNA structure, RNA-DNA replication.
- CO5 Understand the transcription, gene expression and its regulation of prokaryotes, Lac operon model.

MICROBIOLOGY AND BIOTECHNOLOGY- U21ZC614

- CO1 Understand the classification, structure of microbes and culture techniques of bacteria.
- CO2 Acquire exhaustive knowledge of recombinant bacteria and medical microbiology, and equip the students to get job opportunity in these fields of biotechnological, microbiological and medical laboratories and companies.
- CO3 Understand and acquire the knowledge of cloning vector, artificial chromosome preparation, gene transfer techniques and equip the students to get job opportunity in these fields of biotechnological companies.
- CO4 Gain knowledge of blotting techniques, antibody productions and learn the stem cell technology.
- CO5 Understand the developments of gene therapy, drug designing and vaccine production.


BIOCHEMISTRY- U21Z6MBE2:1

- CO1 Learn unique properties and biological importance of water, acquires clear understanding about pH, acid-base balance and biological importance of body buffer.
- CO2 Understand the structure, classification and metabolism of carbohydrates.
- CO3 Acquires a clear understanding of structure, classification and metabolism of proteins and amino acids.
- CO4 Learn the structure, classification, and metabolism of lipids and nucleic acids.
- CO5 Understand of mechanism, kinetics, regulation of enzymes and hormones.

HUMAN NUTRITION- U21Z6MBE3:1

- CO1 Understand the nutrition and physiological importance of biochemical properties.
- CO2 Acquire knowledge about role of water, determination of energy values, direct and indirect calorimetry and basal metabolic rate.
- CO3 Gain the knowledge of nutritional value of foods and value of common Indian recipes
- CO4 Learn the effect of cooking process on the nutritive value of foods and its requirements for infants, pregnant and lactating mothers.
- CO5 Understand the faulty food habits, health education and malnutrition.




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