

CO FOR COMPUTER SCIENCE ENGG.

2nd year

Third semester:

Course name :- MATHEMATICS – III (M-III) (3KS01)

Course outcomes:

CO201.1	Able to solve higher order Diff. Eq.
CO201.2	Understand to find Laplace Transform of function and how to solve Diff. Eq. using L.T.
CO201.3	Able to solve Difference Eq. using Z-transform
CO201.4	Able to solve Partial Diff. Eq. & Fourier transform of a function
CO201.5	Understand how to solve complex integration along closed curve
CO201.6	Understand the relation between Line, Surface & Volume integration

Course name: PROGRAMMING METHODOLOGY (PM) (3KS02)

Course outcomes :

CO202.1	Understand concept of Object Oriented Programming & Java Programming Constructs.
CO202.2	Able to understand basic concepts of Java such as operators, classes, objects, inheritance, packages, Enumeration and various keywords.
CO202.3	Understand the concept of exception handling and Input/Output operations.
CO202.4	To design the applications of Java & Java applet.
CO202.5	To analyze & design the concept of Event Handling and Abstract Window Toolkit.

Course name: ELECTRONIC DEVICES AND CIRCUITS(EDC) (3KS03)

Course outcomes:

CO203.1	Understand the basic electronic device Semi conductor diode and zener diode and its applications.
CO203.2	Understand the working of transistors, its various configuration and their applications.
CO203.3	To design simple circuits containing non-linear elements such as transistors using the concepts of load lines, operating points and incremental analysis.
CO203.4	Understand the various types of Transistors and their various application.
CO203.5	Understand the concept of amplitude , frequency and oscillation broadly .
CO203.6	Understand the basic concepts of electronic device Field Effect Transistors and its applications.

Course name : DISCRETE STRUCTURE(DIS) (3KS04)

Course outcomes:

CO204.1	To understand basic terminology, formal logic, Notation and its application.
CO204.2	Able to understand the theory of inference and Predicate Calculus.
CO204.3	Able to specify and manipulate basic mathematical objects such as sets, functions and induction to recursion.
CO204.4	Able to understand the basic concepts of Algebraic Structures & Groups.
CO204.5	Understand the concept of lattices & Boolean algebra and their function.
CO204.6	To understand the basic concept graphs, trees and related algorithms.

Course name: COMPUTER ORGANIZATION (CO) (3KS05)

Course outcomes:

CO205.1	Understand the relationship between instruction set architecture, system architecture, addressing methods, program sequencing, memory operations and their roles in the development of the computer.
CO205.2	To learn the fundamental of Processing unit .Analysis of various classes of instruction, Hardwired control and the program sequencing.
CO205.3	Understand how interrupts are used to implement I/O control and data transfers. various types of buses in Computer systems.
CO205.4	Understand Semiconductor RAM and ROM memories, Cache memories and Virtual memories and their hierarchy.
CO205.5	Understand the binary number representation along with its operations like Addition, Subtraction, Multiplication and Division of binary numbers.
CO205.6	Understand various peripheral devices like Input and Output devices of Computer systems, Online storage devices and also communication devices.

Fourth semester:

Course name: DATA STRUCTURE (DS) (4KS01)

Course outcomes:

CO206.1	Understand the representation and use of primitive data types, built in data structure and allocation, use in memory.
CO206.2	Study of stack, link list, Memory allocation & garbage collection and applications of Data

	Structures.
CO206.3	Understand the concepts of tree, graph and their implementation using basic data structure & algorithms.

Course name:- ANALOG & DIGITAL (ADIC)(4KS02)

Course outcomes:

CO207.1	Understand the characteristics and operation of different analog ICs.
CO207.2	Understand the applications of above ICs in the design of electronic circuits.
CO207.3	Understand basics knowledge about digital ICs and digital systems and able to represent numerical values in various number systems.
CO207.4	Able to learn various digital techniques to solve Boolean expression.
CO207.5	Able to design combinational circuits and analyze sequential digital circuits like decoders, encoders, multiplexers, and de-multiplexers including arithmetic circuits.
CO207.6	Able to design sequential circuits and analyze sequential digital circuits like flip-flops, registers, counters

Course name: OOP (4KS03)

Course outcomes:

CO208.1	Understand the basics of OOP and Object oriented approach to design software.
CO208.2	To design and implement programs using classes and objects, operator overloading.
CO208.3	Able to specify the types of inheritance and use them in programs.
CO208.4	Able to analyze polymorphic behavior of objects, details of friend function and virtual base class.
CO208.5	Understand the command line argument and file related operations.
CO208.6	Understand the class template, function template and template libraries.

Course name: - ALP (4KS04)

Course outcomes:

CO209.1	Able to acquire knowledge about Microprocessors and its need to study about history and architecture of processors.
CO209.2	Understand the instruction set and addressing modes of processor.
CO209.3	Design the programs for processor using different 8086 programming instructions.
CO209.4	Understand subroutines, stacks and related instructions, segments & assembly language programs.
CO209.5	Understand I/O interface of 8086 by using 8255.
CO209.6	Understand the interrupts controller of 8086 by using 8259.

Course name: TOC (4KS05)

Course outcomes:

CO210.1	Understand the fundamental mathematical , regular languages and finite automata
CO210.2	Able to describe and transform regular expressions and grammars.
CO210.3	Understand the concept and design of push-down automata.
CO210.4	Understand the design and types of Turing machine
CO210.5	Understand decidable and undecidable problems and languages.
CO210.6	Understand recursive enumerable languages, recursive function theory and Problems on recursive function

3rd year

Fifth semester:

Course name: DC (5KS01)

Course outcomes:

CO301.1	To Study basic principles of Data communication, networks, protocol, standard topology and signals.
CO301.2	Able to solve mathematical problems on signal conversion and understand concepts of interface, modem, transmission media.
CO301.3	Understand and apply various multiplexing, error detection and correction techniques.

CO301.4	Understand various data links controls mechanisms & protocols.
CO301.5	Understand ethernet networks and integrated service digital networks.
CO301.6	Understand various Frame relay concepts & algorithms.

Course name: - FSDP (5KS02)

Course outcomes:

CO302.1	Ability to explain the importance of file structures & show how various kind of secondary storage devices stores data.
CO302.2	Understand various file access and organization techniques.
CO302.3	Understand the concepts of data compression and application of searching, sorting and indexing.
CO302.4	Demonstrate and understand how merging provides basis for sorting large files.
CO302.5	To apply the concept of B-Tree for indexing.
CO302.6	To analyze and implement different hashing techniques for accessing data.

course name : System Software (5KS03)

Course outcomes :

CO303.1	Identify and understand different phases and passes of compiler and their functioning.
CO303.2	Understand the concept of syntax analysis and to solve the problems of predictive parsing.
CO303.3	To differentiate between top down and bottom up parsing and understand syntax directed translation techniques.
CO303.4	To apply code optimization and code generation techniques.

Course name:-STLD (5KS04)

Course outcomes:

CO304.1	Describe fundamentals of VHDL programming .
CO304.2	To apply VHDL programming for functioning of digital logic circuits.

CO304.3	To perform the minimization of digital logic circuits.
CO304.4	Able to design combinational logical circuits.
CO304.5	To understand the basic concepts of code convertors, encoder, decoder, parity generator & checker.
CO304.6	Able to design sequential logical circuits.

Course name: - ICN (5FEIT05)

Course outcomes:

CO305.1	To understand the importance of computer network and the network topology.
CO305.2	Ability to know the importance of computer fundamentals.
CO305.3	To understand the Concept OSI layers.
CO305.4	To analyze the addressing entities of a network with implementation of TCP, UDP protocols.
CO305.5	To understand the introduction to router configuration.
CO305.6	To understand the concept of routing protocol.

Sixth semester:

Course name : Operating System (6KS01)

Course outcomes :

CO307.1	Describe process management and concepts of threading, multitasking,IPC.
CO307.2	To differentiate various scheduling algorithms and identify the reasons of deadlock and their remedial measures in an operating system.
CO307.3	Describe various memory management techniques.
CO307.4	Understand representation of file system interface.
CO307.5	To analyze disk scheduling algorithms for efficient utilization.
CO307.6	To apply the concepts of operating system to study Linux.

Course name: - Database System (6KS02)

Course outcomes:

CO308.1	Differentiate Database management system and file processing system. Study of different data models.
CO308.2	Describe fundamental elements of relational data models and masters the basics of SQL.
CO308.3	Understand the concepts of integrity, security and normalization approach.
CO308.4	To develop skills for query processing and optimization.
CO308.5	Identify the basic issues of transaction processing.
CO308.6	Understand concepts of concurrency control and recovery system.

Course name:-CRM (6KS03)

Course outcomes:

CO309.1	Analyze basic structure of system management, IT services, recruitment in IT company.
CO309.2	Apply seven 'R's of availability and understand principles of performance and tuning, problem management
CO309.3	Describe the concept of storage management and network management.
CO309.4	Able to apply configuration management for effective capacity planning.
CO309.5	Apply Strategic Security and facilities management.
CO309.6	Able to integrate system management processes.

Course Name: COMPUTER ARCHITECTURE (6KS04)

Course Outcome:

CO310.1	To Understand basic fundamental concepts of computer organization and its relevant operations.
CO310.2	To discuss the operation of the arithmetic unit including the algorithms, different addressing modes and implementation of fixed-point and floating-point addition, subtraction, multiplication & division.

CO310.3	To Study Processor Structure and function and its relevance to classical and modern problems of computer design.
CO310.4	Understand RISCs and CISC and the impact of instruction set architecture on cost-performance of computer design.
CO310.5	Understand control unit operation and its implementation, concepts towards microinstruction sequencing and execution.
CO310.6	Understand Parallel processing of multiple processors, its operations, structure, performance and key skills of constructing cost-effective computer systems.

Course name: - EC(6FEIT05)

Course outcomes:

CO311.1	To understand Demonstration of the foundations and importance of E-commerce.
CO311.2	Analyze the impact of E-commerce on business models and strategy.
CO311.3	Describe the network infrastructure and security needed for E-commerce.
CO311.4	Students will able to understand how to build an E-Commerce Web Site
CO311.5	To understand the online security and electronic payment systems.
CO311.6	Students will able to understand Internet trading relationships including Business to Consumer, Business-to-Business, Intra-organizational.

Course name :- Professional ethics (6KS06)

Course outcomes:

CO312.1	Able to understand and follow professional ethics and responsibilities.
CO312.2	Understand hacking , Hacker Ethics and Property rights in Computer Software
CO312.3	Understand different Social values and technological issues.

4th year

Seventh Semester:

Course Name: - DSP (7KS01)

Course outcomes:

CO401.1	To understand the use of DSP over ASP and different types of discrete-time signals and their representation.
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CO401.2	To understand the correlation between different types of signals and use of difference equations in designing digital system.
CO401.3	To illustrate the use of Z-transform in design of digital systems.
CO401.4	To illustrate the use of Fourier transforms and discrete time Fourier transforms in design of digital systems.
CO401.5	To design digital filter & understand the concept of classification of filters.
CO401.6	To study different types of filter realization techniques.

Course name :- CN (7KS02)

Course outcomes:

CO402.1	Able to visualize layered approach to networking and understand various application layer protocols.
CO402.2	To understand transport layer concepts, protocols & services.
CO402.3	To demonstrate the basic understanding of network layer, routing principles, IPv6.
CO402.4	To develop fundamental understanding of Link layer, multiple access protocol, LAN addresses & ARP, CSMA / CD, PPP details.
CO402.5	To describe basic concepts and algorithms of cryptography including Hash functions , digital signatures, SSL, SET & IPsec.
CO402.6	To develop mechanism for effective network management and understand basic concepts of firewall.

Course name is Design and analysis of Algorithm (7KS03)

Course outcomes from DAA listed below:

CO403.1	To analyze different scenarios for running time of algorithms using asymptotic notations and Design using Recursion.
CO403.2	To apply divide and conquer strategy for design of various algorithms.
CO403.3	To develop algorithms for well known problems using greedy methods.
CO403.4	To describe and apply dynamic-programming approach for designing graph and matrix based algorithms.
CO403.5	To understand the concept of backtracking for traversal and search algorithms.
CO403.6	To apply the knowledge earned to determine the efficiency of algorithms considering time and space tradeoffs.

Course name :- OOAD (7KS04)

Course outcomes:

CO404.1	Ability to show the importance of modeling concept for object oriented development in system.
CO404.2	Differentiate advance object-oriented approach from the traditional approach for design and development of System.
CO404.3	Apply Unified Modeling Language (UML) for representation of an object-oriented system using different modeling views.
CO404.4	Ability to construct various UML models For Various development stages of System using the appropriate UML notation.
CO404.5	Analyze and apply design issues to rectify the performance and good system design that is recognized by various object relationships like inheritance, association, whole-part and dependency.
CO404.6	Understand the role and function of each UML model in software development using object-oriented approach.

Course name :- we (7KS05)

Course outcomes:

CO405.1	To understand the basic concepts and prior knowledge of web engineering and diagnose the web development issues and networking fundamentals.
CO405.2	To define various steps for developing web pages using HTML and formatting web pages using Cascading Style Sheets.
CO405.3	To design and validate XML document using DTD.
CO405.4	To understand the limitations of DTD and the structure of XML schema.
CO405.5	To design dynamic and interactive web pages by embedding JavaScript code in HTML and to validate user input using JavaScript.
CO405.6	To understand the applications of CGI, Alternatives and enhancements in CGI.

Eighth semester:

Course name: Artificial Intelligence (8KS01)

Course outcomes :

CO406.1	Understand the basic fundamentals and learning methods in AI.
CO406.2	Apply basic AI algorithms to solve the problems.
CO406.3	To apply AI in real time game playing approaches.

CO406.4	Analyze how uncertainty is being tackled in the knowledge representation and reasoning process.
CO406.5	Understand the concepts of structural representation of knowledge
CO406.6	To understand various steps in NLP and master the skills, techniques in machine learning

Course name :-ES(8KS02)

Course outcomes:

CO407.1	Understand the differences between the general computing system and the embedded system also recognize its classification.
CO407.2	Understand the various components of embedded system and apply it to real time systems.
CO407.3	Understand the architecture and concepts of 8051 Microcontrollers.
CO407.4	To implement fundamental Programming paradigms of 8051 Microcontroller .
CO407.5	Understand Programming in embedded C.
CO407.6	Design of real time embedded systems using the concepts of RTOS.

Course name:-SE (8KS03)

Course outcomes:

CO408.1	Understand the different process models and project management concepts.
CO408.2	Develop skills for cost estimation for software development and understand the software risks.
CO408.3	Enhance teamwork ability in project scheduling and apply the concepts of software quality assurance.
CO408.4	To relate and outline system engineering and product engineering process .
CO408.5	Apply requirement mapping strategies for development of software.
CO408.6	Apply the knowledge of various software testing methods in software development process.

Course name : Network security (8KS04)

Course outcomes:

CO409.1	Understand security concepts, security threats, security services and mechanisms to counter them.
CO409.2	Apply the modular arithmetic and fundamental properties of finite field to cryptographic techniques.
CO409.3	Develop an understanding of security policies (such as authentication, integrity and confidentiality), as well as protocols to implement such policies in the form of message exchanges.
CO409.4	Describe the basic concepts of IPSec and Web security protocols like SSL, TLS and SET.
CO409.5	Make assessment on network management security and evaluate their strengths.
CO409.6	Identify and classify system security threats like viruses and develop security model to prevent , detect and recover from attacks.