



2nd year

Third semester

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

Course outcomes:

C201.1	Able to solve higher order Diff. Eq.
C201.2	Able to find Laplace Transform of function and how to solve Diff. Eq. using L.T.
C201.3	Able to solve Difference Eq. using Z-transform
C201.4	Able to solve Partial Diff. Eq. & Fourier transform of a function
C201.5	Able to understand the knowledge how to solve complex integration along closed curve
C201.6	Able to understand the knowledge of relation between Line, Surface & Volume intragation

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

Course outcomes :

C202.1	Able to understand concept of Object Oriented Programming & Java Programming Constructs.
C202.2	Able to understand basic concepts of Java such as operators, classes, objects, inheritance, packages ,Enumeration and various keywords.
C202.3	Able to understand the concept of exception handling and Input/Output operations.
C202.4	Able to design the applications of Java & Java applet.
C202.5	Able to Analyze & Design the concept of Event Handling and Abstract Window Toolkit.

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

Course outcomes:

C203.1	Able to understand the basic electronic device Semi conductor diode and zener diode and its applications.
C203.2	Able to understand the working of transistors, its various configuration and their applications
C203.3	Able to design simple circuits containing non-linear elements such as transistors using the concepts of load lines, operating points and incremental analysis.
C203.4	Able to understand the various types of Transistors and their various application.
C203.5	Able to understand the concept of amplitude , frequency and oscillation broadly .
C203.6	Able to understand the basic concepts of electronic device Field Effect Transistors and its applications.

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

C204.1	Able to understand basic terminology, formal logic, Notation and its application.
C204.2	Able to understand the theory of inference and Predicate Calculus.
C204.3	Able to specify and manipulate basic mathematical objects such as sets, functions and induction to recursion.
C204.4	Able to understand the basic concepts of Algebraic Structures & Groups.
C204.5	Able to understand the concept of of lattices & Boolean algebra and their function.
C204.6	Able to understand the basic concept graphs, trees and related algorithms.

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

C205.1	Able to understand the relationship between instruction set architecture, system architecture, addressing methods, program sequencing, memory operations and their roles in the development of the computer.
C205.2	Able to learn the fundamental of Processing unit .Analysis of various classes of instruction, Hardwired control and the program sequencing.
C205.3	Able to understand how interrupts are used to implement I/O control and data transfers. various types of buses in Computer systems.
C205.4	Able to understand Semiconductor RAM and ROM memories, Cache memories and Virtual memories and their hierarchy.
C205.5	Able to understand the binary number representation along with its operations like Addition, Subtraction, Multiplication and Division of binary numbers.
C205.6	Able to 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 from DS listed below:

C206.1	Able to understand the representation and use of primitive data types, built in data structure and allocation, use in memory.
C206.2	Able to understand the concept of stack, link list, Memory allocation & garbage collection and applications of Data Structures.
C206.3	Able to understand the concepts of tree, graph and their implementation using basic data structure & algorithms.

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

Course outcomes:

C207.1	Able to understand the characteristics and operation of different analog ICs.
C207.2	Able to understand the applications of above ICs in the design of electronic circuits.
C207.3	Able to understand basics knowledge about digital ICs and digital systems and able to represent numerical values in various number systems.
C207.4	Able to learn various digital techniques to solve Boolean expression.
C207.5	Able to design combinational circuits and analyze sequential digital circuits like decoders, encoders, multiplexers, and de-multiplexers including arithmetic circuits.
C207.6	Able to design sequential circuits and analyze sequential digital circuits like flip-flops, registers, counters

Course name: Object Oriented Programming (OOP) (4KS03)

Course outcomes:

C208.1	Able to understand the basics of OOP and Object oriented approach to design software.
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C208.2	Able to design and Implement programs using classes and objects, operator overloading.
C208.3	Able to specify the types of inheritance and use them in programs.
C208.4	Able to analyze polymorphic behavior of objects, details of friend function and virtual base class.
C208.5	Able to understand the command line argument and file related operations.
C208.6	Able to understand the class template, function template and template libraries.

Course name: - Assembly language Programming (ALP) (4KS04)

Course outcomes:

C209.1	Able to acquired knowledge about Microprocessors and its need to study about history and architecture of processors.
C209.2	Able to understand the instruction set and addressing modes of processor.
C209.3	Able to design the programs for processor using different 8086 programming instructions.
C209.4	Able to understand subroutines, stacks and related instructions, segments & assembly language programs.
C209.5	Able to understand I/O interface of 8086 by using 8255.
C209.6	Able to understand the interrupts controller of 8086 by using 8259.

Course name: Theory of Computation (TOC) (4KS05)

Course outcomes:

C210.1	Understand the fundamental mathematical , regular languages and finite automata
C210.2	Able to describe and transform regular expressions and grammars.
C210.3	Able to understand the concept and design of push-down automata.
C210.4	Able to understand the design and types of Turing machine
C210.5	Able to understand decidable and undecidable problems and languages.
C210.6	Able to understand recursive enumerable languages, recursive function theory and Problems on recursive function

3rd year

Fifth semester

Course name: Data Communication (DC) (5KS01)

Course outcomes:

C301.1	Able to understand basic principles of Data communication, networks, protocol, standard topology and signals.
C301.2	Able to solve mathematical problems on signal conversion and understand concepts of interface, modem, transmission media.
C301.3	Able to understand and apply various multiplexing, error detection and correction techniques.
C301.4	Able to understand various data links controls mechanisms & protocols.
C301.5	Able to understand ethernet networks and integrated service digital networks.
C301.6	Able to understand various Frame relay concepts & algorithms.

Course name: - File Structure and Data Processing (FSDP) (5KS02)

Course outcomes:

C302.1	Able to explain the importance of file structures & show how various kind of secondary storage devices stores data.
C302.2	Able to understand various file access and organization techniques.
C302.3	Able to understand the concepts of data compression and application of searching, sorting and indexing.
C302.4	Able to demonstrate and understand how merging provides basis for sorting large files.
C302.5	Able to apply the concept of B-Tree for indexing.
C302.6	Able to analyze and implement different hashing techniques for accessing data.

Course name : System Software (SS) (5KS03)

Course outcomes :

C303.1	Able to identify and understand different phases and passes of compiler and their functioning.
C303.2	Able to understand the concept of syntax analysis and to solve the problems of predictive parsing.
C303.3	Able to differentiate between top down and bottom up parsing and understand syntax directed translation techniques.
C303.4	Able to apply code optimization and code generation techniques.

Course name:-Switching Theory and Logic Design (STLD) (5KS04)

Course outcomes:

C304.1	Able to describe fundamentals of VHDL programming .
C304.2	Able to apply VHDL programming for functioning of digital logic circuits.
C304.3	Able to perform the minimization of digital logic circuits.
C304.4	Able to design combinational logical circuits.
C304.5	Able to understand the basic concepts of code convertors, encoder, decoder, parity generator & checker.
C304.6	Able to design sequential logical circuits

Course name: -Internet Communication Network (ICN) (5FEIT05)

Course outcomes:

C305.1	Able to understand the importance of computer network and the network topology.
C305.2	Able to know the importance of computer fundamentals.
C305.3	Able to understand the Concept OSI layers.
C305.4	Able to analyze the addressing entities of a network with implementation of TCP, UDP protocols.
C305.5	Able to understand the introduction to router configuration.
C305.6	Able to understand the concept of routing protocol.

Course name: - Communication Skills (CS) (5KS05)

Course outcomes:

C306.1	Able to understand importance of communication and positive effect of good communication.
C306.2	Able to understand importance of listening and speaking in communication. and should take the training of listening.
C306.3	Able to understand importance of reading and writing and using communication in our professional life.

Sixth semester

Course name: - Operating System (OS) (6KS01)

Course outcomes:

C307.1	Able to describe process management and concepts of threading, multitasking,IPC.
C307.2	Able to differentiation of various scheduling algorithms and identify the reasons of deadlock and their remedial measures in an operating system.
C307.3	Able to describe various memory management techniques.
C307.4	Able to understand representation of file system interface.
C307.5	Able to Analyze of disk scheduling algorithms for efficient utilization.
C307.6	Able to apply the concepts of operating system to study Linux.

Course name: - Database System (DBS) (6KS02)

Course outcomes:

C308.1	Able to differentiate Database management system and file processing system. Study of different data models.
C308.2	Able to describe fundamental elements of relational data models and masters the basics of SQL.
C308.3	Able to understand the concepts of integrity, security and normalization approach.
C308.4	Able to develop skills for query processing and optimization.
C308.5	Able to identify the basic issues of transaction processing.
C308.6	Able to understand concepts of concurrency control and recovery system.

Course name:- Computer Resource Management (CRM) (6KS03)

Course outcomes:

C309.1	Able to analyze basic structure of system management, IT services, recruitment in IT company.
C309.2	Able to apply seven ‘R’s of availability and understand principles of performance and tuning, problem management
C309.3	Able to describe the concept of storage management and network management.
C309.4	Able to apply configuration management for effective capacity planning.
C309.5	Able to apply Strategic Security and facilities management.
C309.6	Able to integrate system management processes.

Course name:- COMPUTER ARCHITECTURE (CA) (6KS04)

Course Objectives:

C310.1	Able to understand basic fundamental concepts of computer organization and its relevant operations.
C310.2	Able 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.
C310.3	Able to Study Processor Structure and function and its relevance to classical and modern problems of computer design.
C310.4	Able to understand RISCs and CISC and the impact of instruction set architecture on cost-performance of computer design.
C310.5	Able to understand control unit operation and its implementation, concepts towards microinstruction sequencing and execution.
C310.6	Able to understand Parallel processing of multiple processors, its operations, structure, performance and key skills of constructing cost-effective computer systems.

Course name: - E-Commerce (EC) (6FEIT05)

Course outcomes:

C311.1	Able to demonstrate an understanding of the foundations and importance of E-commerce.
C311.2	Able to analyze the impact of E-commerce on business models and strategy.
C311.3	Able to describe the network infrastructure and security needed for E-commerce.
C311.4	Able to understand how to build an E-Commerce Web Site

C311.5	Able to understand the online security and electronic payment systems.
C311.6	Able to understand Internet trading relationships including Business to Consumer, Business-to-Business, Intra-organizational.

Course name :- Professional Ethics (PE) (6KS06)

Course outcomes:

C312.1	Able to understand and follow professional ethics and responsibilities.
C312.2	Able to understand hacking , Hacker Ethics and Property rights in Computer Software
C312.3	Able to understand different Social values and technological issues.

4th year

Seventh Semester

Course Name: - Digital Signal Processing (DSP) (7KS01)

Course outcomes:

C401.1	Able to understand the use of DSP over ASP and different types of discrete-time signals and their representation.
C401.2	Able to understand the correlation between different types of signals and use of difference equations in designing digital system.
C401.3	Able to illustrate the use of Z-transform in design of digital systems.
C401.4	Able to illustrate the use of Fourier transforms and discrete time Fourier transforms in design of digital systems.
C401.5	Able to design digital filter & understand the concept of classification of filters.
C401.6	Able to study different types of filter realization techniques.

Course name :- Computer Networks (CN)(7KS02)

Course outcomes:

C402.1	Able to visualize layered approach to networking and understand various application layer protocols.
C402.2	Able to understand transport layer concepts, protocols & services.
C402.3	Able to demonstrate the basic understanding of network layer, routing principles,IPv6.
C402.4	Able to develop fundamental understanding of Link layer,multiple access protocol, AN addresses & ARP, CSMA / CD, PPP details.
C402.5	Able to describe basic concepts and algorithms of cryptography including Hash functions , digital signatures, SSL, SET & IPsec.

C402.6	Able to develop mechanism for effective network management and understand basic concepts of firewall.
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Course name : Design and analysis of Algorithm (DAA) (7KS03)

Course outcomes :

C403.1	Able to analyze different scenarios for running time of algorithms using asymptotic notations and Design using Recursion.
C403.2	Able to apply divide and conquer strategy for design of various algorithms.
C403.3	Able to develop algorithms for well known problems using greedy methods.
C403.4	Able to describe and apply dynamic-programming approach for designing graph and matrix based algorithms.
C403.5	Able to understand the concept of backtracking for traversal and search algorithms.
C403.6	Able to apply the knowledge earned to determine the efficiency of algorithms considering time and space tradeoffs.

Course name :- Object Oriented Analysis and Design (OOAD) (7KS04)

Course outcomes:

C404.1	Able to show the importance of modeling concept for object oriented development in system.
C404.2	Able to differentiate advance object-oriented approach from the traditional approach for design and development of System.
C404.3	Able to apply Unified Modeling Language (UML) for representation of an object-oriented system using different modeling views.
C404.4	Able to construct various UML models For Various development stages of System using the appropriate UML notation.
C404.5	Able to 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.
C404.6	Able to understand the role and function of each UML model in software development using object-oriented approach.

Course name :- Web Engineering (WE) (7KS05)

Course outcomes:

C405.1	Able to understand the basic concepts and prior knowledge of web engineering and diagnose the web development issues and networking fundamentals.
C405.2	Able to define various steps for developing web pages using HTML and formatting web pages using Cascading Style Sheets.
C405.3	Able to design and validate XML document using DTD.
C405.4	Able to understand the limitations of DTD and the structure of XML schema.
C405.5	Able to design dynamic and interactive web pages by embedding JavaScript code in HTML and to validate user input using JavaScript.
C405.6	Able to understand the applications of CGI, Alternatives and enhancements in CGI.

Eighth semester

Course name: Artificial Intelligence (AI)(8KS01)

Course outcomes:

C406.1	Able to understand the basic fundamentals and learning methods in AI.
C406.2	Able to apply basic AI algorithms to solve the problems.
C406.3	Able to apply AI in real time game playing approaches.
C406.4	Able to analyze how uncertainty is being tackled in the knowledge representation and reasoning process.
C406.5	Able to understand the concepts of structural representation of knowledge
C406.6	Able to understand various steps in NLP and master the skills, techniques in machine learning

Course name :-Embedded System (ES) (8KS02)

Course outcomes:

C407.1	Able to understand the differences between the general computing system and the embedded system also recognize its classification.
C407.2	Able to understand the various components of embedded system and apply it to real time systems.
C407.3	Able to understand the architecture and concepts of 8051 Microcontrollers.
C407.4	Able to implement fundamental Programming paradigms of 8051 Microcontroller .
C407.5	Able to understand Programming in embedded C.
C407.6	Able to design of real time embedded systems using the concepts of RTOS.

Course name:-Software Engineering (SE) (8KS03)

Course outcomes:

C408.1	Able to understand the different process models and project management concepts.
C408.2	Able to develop skills for cost estimation for software development and understand the software risks.
C408.3	Able to enhance teamwork ability in project scheduling and apply the concepts of software quality assurance.
C408.4	Able to relate and outline system engineering and product engineering process .
C408.5	Able to apply requirement mapping strategies for development of software.
C408.6	Able to apply the knowledge of various software testing methods in software development process.

Course name : Network Security (NS) (8KS04)

Course outcomes:

C409.1	Able to understand security concepts, security threats, security services and mechanisms to counter them.
C409.2	Able to apply the modular arithmetic and fundamental properties of finite field to cryptographic techniques.
C409.3	Able to 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.
C409.4	Able to describe the basic concepts of IPsec and Web security protocols like SSL, TLS and SET.
C409.5	Able to make assessment on network management security and evaluate their strengths.
C409.6	Able to identify and classify system security threats like viruses and develop security model to prevent , detect and recover from attacks.



JAWAHARLAL DARDA INSTITUTE OF ENGINEERING & TECHNOLOGY, YAVATMAL



Department of Computer Science & Engineering

Programme Outcomes (PO)

SESSION 2014-15,15-16,16-17

1. **Graduates will know the knowledge of mathematics, science and engineering.**
2. **Graduates will able to design and conduct experiments as well as to analyze and interpret data.**
3. **Graduates will apply process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health, and safety, manufacturability and sustainability.**
4. **Graduates will able to function on multidisciplinary teams.**
5. **Graduates will able to identify, formulate and solve engineering problems.**
6. **Graduates will able to understand professional & ethical responsibility.**
7. **Graduates will able to communicate effectively.**
8. **Graduates will demonstrate the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental and societal context.**
9. **Graduates able to reorganize the need and ability to engage in lifelong learning.**
10. **Graduates will apply knowledge on contemporary issues.**
11. **Graduates will able to use techniques, skills and modern engineering tools necessary for engineering practice.**

12. **Graduate will demonstrate an ability to participate and succeed in competitive examinations like GATE, GRE.**