



MANAKULA VINAYAGAR INSTITUTE OF TECHNOLOGY

Kalitheerthalkuppam, Puducherry- 605 107.

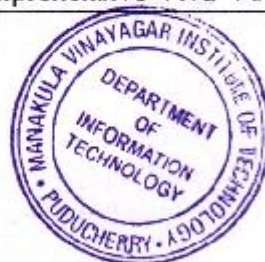
DEPARTMENT OF INFORMATION TECHNOLOGY

Regulation 2013-17

S. No	Code	Name of The Subject
1.	C101	Mathematics – I
2.	C102	Physics
3.	C103	Chemistry
4.	C104	Basic Electrical and Electronics Engineering
5.	C105	Engineering Thermodynamic
6.	C106	Computer Programming
7.	C107	Computer Programming lab
8.	C108	Engineering Graphics
9.	C109	Basic Electrical & Electronics Laboratory
10.	C110	Mathematics – II
11.	C111	Material Science
12.	C112	Environmental Science
13.	C113	Basic Civil and Mechanical Engineering
14.	C114	Engineering Mechanics
15.	C115	Communicative English
16.	C116	Physics Laboratory
17.	C117	Chemistry Laboratory
18.	C118	Workshop Practice
19.	C119	NSS / NCC
20.	C201	Mathematics - III
21.	C202	Electronics Devices and Circuits
22.	C203	Data Structures
23.	C204	Object Oriented Programming
24.	C205	Digital System Design
25.	C206	Computer Organization
26.	C207	Data Structures Laboratory
27.	C208	Electronics Devices and Circuits Lab
28.	C209	Digital system design Laboratory
29.	C210	Mathematics -IV
30.	C211	Communication Engineering-I
31.	C212	Design and Analysis of Algorithms
32.	C213	Microprocessors and Microcontrollers
33.	C214	Java Programming
34.	C215	System Software
35.	C216	Algorithm Laboratory
36.	C217	Microprocessor and Microcontrollers Lab
37.	C218	Java Laboratory
38.	C219	Physical Education



39.	C301	Communication Engineering-II
40.	C302	Software Engineering
41.	C303	Operating Systems
42.	C304	Database Management Systems
43.	C305	Theory of Computation
44.	C306	Computer Hardware and Trouble shooting
45.	C307	Communication Engineering Lab
46.	C308	Operating Systems Laboratory
47.	C309	Database Management Systems Lab
48.	C310	General Proficiency - I
49.	C311	Computer Network
50.	C312	Web Technology
51.	C313	Artificial Intelligence
52.	C314	Information coding Technique
53.	C315	Object Oriented analysis and Design
54.	C316	User Interface Design
55.	C317	Computer Network Laboratory
56.	C318	Web Technology Laboratory
57.	C319	Mini Project
58.	C320	General Proficiency - II
59.	C401	Mobile Computing
60.	C402	Web service and xml
61.	C403	Cryptography and Network security
62.	C404	Software Testing
63.	C405	Big Database
64.	C406	Mobile Computing Laboratory
65.	C407	WSX Laboratory
66.	C408	Project Work (Phase I)
67.	C409	Seminar
68.	C410	Training / Industrial Visit
69.	C411	Professional Ethics
70.	C412	Distributed Computing
71.	C413	Data Mining
72.	C414	Project Work (Phase-II)
73.	C415	Comprehensive Viva-Voce



COURSE OUTCOME

FIRST SEMESTER

Course Name:C101	
MATHEMATICS –I	
C101.1	Learn the evaluation policy of Curvature, evolutes and some special functions like Gamma & Beta function
C101.2	Able to evaluate double integrals and triple integrals, which are used to evaluate area and volume of defined and undefined shapes
C101.3	Able to find equation of straight line of shortest distance, equation of plane, angle between straight lines.
C101.4	Gain the knowledge to solve first order differential equation arising in Engineering
C101.5	Gain the knowledge to solve higher order differential equation and able to form mathematical & physical interpretation of its solution
C101.6	Acquire knowledge of Differential and Integral Calculus concepts which are very much essential to solve the problems occurring in the areas of Engineering and Technology.

Course Name:C102	
PHYSICS	
C102.1	Understand the concepts of ultrasonic production ,detection applications and acoustical properties of buildings.
C102.2	Learn the light properties like interference ,diffraction and polarization and study their parameters like resolving power ,dispersive power of optical devices.
C102.3	Understand the basic operating principles of laser, its applications, optical fiber, and its types, transmission characteristics, applications of optical fibers.
C102.4	Study the wave mechanics concepts through wave equations and applying the knowledge of barrier penetration problem in designing electronic devices like tunnel diode.
C102.5	Understand nuclear properties ,power production through reactors and gain knowledge of fusion reactors which is under research.
C102.6	Expose the students to different areas of physics which have direct relevance and applications to different Engineering disciplines, to understand the concepts of physics and its significant contributions in the transformed modern-day society.

Course Name:C103	
CHEMISTRY	
C103.1	To Impart the students in-depth in the discipline of water technology and develop innovative methods to produce soft water for industrial use and potable water at cheaper cost.
C103.2	Fundamentals and formation of polymers with its properties and engineering applications of polymers such as conducting polymers can be understood.
C103.3	Students are able to Illustrate the practical importance of electrochemistry for solving challenges and design of batteries.
C103.4	This unit implicit the concept of corrosion and insist the students to apply their knowledge for protection of different metals from corrosion.



C103.5	Guide the students to gain the knowledge about the cooling curves, phase diagrams, alloys and their practical importance.
C103.6	Strengthen the fundamentals of chemistry and then build an interface of theoretical concepts with their industrial/engineering applications.

Course Name:C104	
BASIC ELECTRICAL AND ELECTRONICS ENGINEERING	
C104.1	Ability to solve the circuit connections, conversion techniques and to understand the basic concepts in AC circuits.
C104.2	Ability to gain the knowledge in power measurements and to solve the mesh and nodal analysis in AC and DC circuits.
C104.3	Ability to understand the operating principles of stationary, rotating machines and power plant.
C104.4	Understand the basic operation, function and applications of PN junction diode, transistor and transducer.
C104.5	Understand the basic operation and function of logic gates flip flops, registers and
C104.6	Gain knowledge on various communication systems and network models.

Course Name:C105	
ENGINEERING THERMODYNAMICS	
C105.1	Study about basic concepts of engineering thermodynamic principles and various system and properties of engineering thermodynamics. Student can understand the thermodynamic axioms and ability to solve the problems in real world.
C105.2	At end of this subjects can able to know the various flow process of thermodynamics and its derivatives. Can improve the numerical analysis of various flow processes in engineering thermodynamics. Students can develop the problem solving methodology and adopt this for various mechanical systems to know its behaviour.
C105.3	Can able to understand the role of heat pumps as energy systems and ability to analyse the efficiency of various heat engines .Students can able to understand the heat engine process and get a mastery of solving practical problems in real world.
C105.4	Students gain the in-depth knowledge of various process of different gas power cycles and ability to solve different types of practical problems in real world and can able to analyse the various gas power cycles efficiency numerically.
C105.5	Can able to understand the role of refrigeration as energy system. Students gain the in depth knowledge of working of various refrigeration system and use of refrigerant in refrigeration system. Ability to analyse the efficiency of different types of refrigeration system.
C105.6	To develop an intuitive understanding of underlying physical mechanism and a mastery of solving practical problems in real world.

Course Name:C106	
COMPUTER PROGRAMMING	
C106.1	Have a deeper knowledge on the evolution of computers, components and its applications, have an awareness of internet, role of information technology, word processing and worksheets.
C106.2	Know about various problem solving techniques, program development cycle, basics tokens of C program and its structure
C106.3	Learn about various control statements, declaration and initialization of arrays, functions, storage classes and string functions

C106.4	Became familiar on structure, pointers and its manipulation.
C106.5	Know about Preprocessors, command line arguments and various file operations.
C106.6	How programming can be applied to real math problems.

Course Name:C107 (P)	
COMPUTER PROGRAMMING LAB	
C107.1	Study the basic DOS commands such as copy, move, delete, make directory with the help of command line.
C107.2	To solve problems using algorithm and flowchart.
C107.3	To solve problems of arithmetic and logical expressions.
C107.4	Can develop programs for searching and sorting using arrays and pointers
C107.5	To build functions using recursion.
C107.6	Students will get the practical knowledge and to implement various technique in C programming using branching, looping, arrays, structures and pointers and file concepts.

Course Name:C108 (P)	
ENGINEERING GRAPHICS	
C108.1	Students will be able to know and understand the conventions and the methods of engineering drawing.
C108.2	Student's ability to perform basic sketching techniques will improve.
C108.3	To provide sound knowledge about projection and section of solids.
C108.4	Students will be able to draw orthographic projections and isometric projections.
C108.5	Acquired knowledge about 2D modelling through AUTO CAD software.
C108.6	Students will be able to improve their visualization skills so that they can apply these skills in developing new products.

Course Name:C109 (P)	
BASIC ELECTRICAL AND ELECTRONICS ENGINEERING LAB	
C109.1	Understand the tools, accessories and various types of joints which are needed for electrical wiring
C109.2	Ability to design the various types of wiring like staircase, tube light, fan, doctors room and godown wiring and controlling of lamp from different places.
C109.3	Ability to implement the application of diode and transistor by constructing the rectifiers with and without filters and RC coupled amplifier.
C109.4	Ability to verify the Kirchoff's law, Demorgan's theorem and implementation of digital functions using logic gates
C109.5	Ability to measure the voltages, frequency and phase sequence in cathode ray oscilloscope
C109.6	Gain knowledge in domestic wiring and application of electronics device in the field of electrical engineering.



SECOND SEMESTER

Course Name:C110	
MATHEMATICS – II	
C110.1	Find the Eigen values and Eigen vectors of a matrix and use Cayley-Hamilton Theorem for finding the inverse of a matrix.
C110.2	understand the statements of Stoke's Theorem and Gauss Divergence Theorem and be aware of applications of these theorems in Engineering Field.
C110.3	Compute the Laplace Transform of a Continuous function and familiar with its basic properties, including the initial and final value theorems.
C110.4	Compute the Inverse Laplace Transform and solving integral equations and differential equation with initial conditions.
C110.5	Determine the Fourier Transform, Fourier Cosine and Sine Transform of elementary functions, properties of transforms and its applications in engineering.
C110.6	Acquire knowledge of matrix algebra technique, vector calculus, Laplace and Fourier Transform which are very much essential to solve the problems occurring in the areas of Engineering and Technology.

Course Name:C111	
MATERIAL SCIENCE	
C111.1	Students will understand the concept of crystallography –crystal structure and defects in the crystalline solids
C111.2	Students will understand about the dielectric poalarization mechanism and how the frequency and temperature effects the polarization. It also make the student to understand about dielectric loss when a dielectric is subjected to an ac field. Student will understand about the dielectric materials such as piezo,pyro and fero electric
C111.3	The outcome of third unit make the student to understand about the basic concepts of magnetic materials and different magnetic materials like dia,para , ferro, antiferro and ferri materials and for the better understanding the idea has been extended to domain theory of ferromagnetism. The student will understand about the ferrites and its application to magnetic materials.
C111.4	Students can understand some of the basic concepts of semiconductor and the effect of temperature to the Fermi level in the intrinsic concentration. Students will understand about halleffect and its application. Students will understand about superconductors, properties of superconductor and types of superconductor
C111.5	Students will understand some of the basic concepts of glass its preparation ,properties and its application concentration. Students will understand about liquid crystal display and its types. Students will understand about nanomaterials and its application. Students will understand about carbon nano tubes.
C111.6	To understand the importance of material science as a subject that revolutionized modern day technologies and revolutionized modern day technologies which lead to the development of new materials and devices for all branches of engineering



Course Name:C112	
ENVIRONMENTAL SCIENCE	
C112.1	Students will get sufficient knowledge about the available natural resources and they can apply their knowledge in designing the techniques which require optimum use of natural resources in future.
C112.2	Realize the importance of ecosystem and biodiversity for maintaining ecological balance.
C112.3	To identify the causes and effects of air pollution and to draw the conclusions concerning personal methods of reducing air pollution. To develop awareness about the role of ozone layer, importance of rain water harvesting and climate change.
C112.4	To acquire the sufficient knowledge about water pollution and its causes, effects. Therefore, students can design the environmental friendly processes/design in Engineering.
C112.5	Ability to consider issues of environment and sustainable development in his personal and professional undertakings
C112.6	Provides a comprehensive knowledge in environmental science, environmental issues and the management from an interdisciplinary perspective.

Course Name:C113	
BASIC CIVIL AND MECHANICAL ENGINEERING	
C113.1	Understand the building classification as per National building code.
C113.2	Get the idea about construction procedure for various components of the building.
C113.3	Students understand the principles of surveying, construction procedure for roads, bridges and dams.
C113.4	Understand and working of Internal and external combustion system
C113.5	Student will be able know Non-Conventional Energy Systems
C113.6	Student will be able to know types Metal Joining
C113.7	Students can able to gain skills about construction and building components provided with various principles and also about various engine, Energy & joints.

Course Name:C114	
ENGINEERING MECHANICS	
C114.1	Understand the basic laws of mechanics and resolution of forces using different methods.
C114.2	Learn and apply the knowledge on analysis of forces acting on the trusses and effect of friction force on bodies.
C114.3	Learn about the centroid and moment of inertia for plane and solid figures.
C114.4	Understand the three laws of motion, principles of dynamics for particles.
C114.5	The student will able to analyse the laws of motion for rigid bodies.
C114.6	The student will able to analyse the effects of forces acting on the bodies in practical situation.



Course Name: C115	
COMMUNICATIVE ENGLISH	
C115.1	To make the students understand the concepts of LSRW skills.
C115.2	To improve their communication skills by making them understand the communication process
C115.3	To make the students develop their skills by involving in many activities related to the development of the English language
C115.4	To make the students understand the different formats used in business and in organisations.
C115.5	Students were able to develop their spoken skills by making them to involve in many activities related to it.
C115.6	The students will be developing the four important skills i.e listening, reading, writing and speaking skills for making good communication in the language.

Course Name: C116(P)	
PHYSICS LAB	
C116.1	Student will understand how to find the thickness of the specimen and also to find the radius of curvature using the phenomenon of interference
C116.2	Student can understand to find the specific rotatory power of an optical active solution using the principle of polarization
C116.3	Students can analyse the bad conductor and the rubber tube by the principle of thermal conductivity .
C116.4	Students can able to determine the Refractive index and dispersive of the solid and quartz prism . Student will acquire knowledge to find the wavelength and number of lines in the grating by the principle of optics
C116.5	Students acquire knowledge about the magnetometer and jolly method of determining the pressure coefficient of air at constant volume.
C116.6	The students can able to understand the different phenomenon of optics such as interference ,polarization that correlates between the theory and practical Stuents will understand about the thermal conductivity ,magnetism and also the determination of pressure coefficient of air at constant volume.

Course Name: C117(P)	
CHEMISTRY LAB	
C117.1	To Impart the students in-depth in the discipline of water technology and develop innovative methods to produce soft water for industrial use and potable water at cheaper cost.
C117.2	Fundamentals and formation of polymers with its properties and engineering applications of polymers such as conducting polymers can be understood.
C117.3	Students are able to Illustrate the practical importance of electrochemistry for solving challenges and design of batteries.
C117.4	This unit implicit the concept of corrosion and insist the students to apply their knowledge for protection of different metals from corrosion.
C117.5	Guide the students to gain the knowledge about the cooling curves, phase diagrams, alloys and their practical importance.
C117.6	Strengthen the fundamentals of chemistry and then build an interface of theoretical concepts with their industrial/engineering applications.



Course Name: C118(P)	
WORKSHOP PRACTICE LAB	
C118.1	Understand and comply with workshop safety regulations.
C118.2	Student will be able to make various joints in the given object with the available work material.
C118.3	Student will be able to know how much a joint will take for the assessment of time
C118.4	Students can able to Identify the hand tools and instruments.
C118.5	Students can able to gain knowledge about various operations carried out in sheet
C118.6	Students can able to gain skills about various tools used in welding to make simple joints.

Course Name: C119		Year of Study: 2013-2014
NSS		
C119.1	To create awareness in social and environmental issues.	
C119.2	To participate in relief and rehabilitation work during natural calamities	
C119.3	To develop some proposals for local slum area development and waste disposal.	
C119.4	To create team work among students and produce efficient results.	
C119.5	The students were taught to operate scientific Instruments or Advanced software.	
C119.6	To motivate the students to prepare the professional and scientific reports.	

THIRD SEMESTER

Course Name: C201	
MATHEMATICS –III	
C201.1	Identify complex variable function. Apply C.R equations for testing of Analyticity of the complex function.
C201.2	Construct conformal mappings between regions. Solve problems on bilinear transformation and find the Taylor's and Laurent's series.
C201.3	Analyze the complex functions with reference to their analyticity, integration using Cauchy's integral theorem and Cauchy's Residue theorem.
C201.4	Express any periodic function as Fourier series, Fourier Sine and Cosine series.
C201.5	Finding Fourier series for numerical values of any function.
C201.6	Interpret and use the basic concepts of analytic function, Taylor and Laurent series, Singularities, residues, conformal mapping, Fourier series and harmonic analysis.

Course Name: C202	
ELECTRONIC DEVICES AND CIRCUIT	
C202.1	Acquire Knowledge on basic electronic devices like junction diode, Zener diode and its applications.
C202.2	Students can understand the different types biasing of BJT and FET
C202.3	To understand the Operation of different power amplifiers with its analysis.



C202.4	Student would have a clear knowledge about feedback concepts through operations of various oscillator circuits.
C202.5	To learn about the overview of Operational amplifiers and its applications.
C202.6	Analyze the behavior of various devices and Gain knowledge in biasing of BJT, FET. Also understand the practical applications of various circuits.

Course Name: 203	
DATA STRUCTURES	
C203.1	To gain knowledge on basic data structures and the various sorting algorithm
C203.2	To understand the concept of Linked list and the various operation performed in it.
C203.3	Students gain knowledge about stack & queue, circular queue, double ended queue and its application
C203.4	To Gain knowledge on non linear and advance data structure Tree & graph
C203.5	To Gain knowledge on advance search techniques
C203.6	To use appropriate data structure in programming and the various ways of implementing it

Course Name: C204	
OBJECT ORIENTED PROGRAMMING	
C204.1	Able to use object oriented programming language like C++ and associated libraries to develop object oriented programs.
C204.2	Able to apply concepts of operator -overloading, constructors and destructors.
C204.3	Able to understand templates and exception handling in C++.
C204.4	Able to understand and apply various object oriented features like inheritance, data abstraction, encapsulation and polymorphism to solve various computing problems
C204.5	Able to understand I/O formatted and unformatted and file handling
C204.6	Analyze and design a problem using an object-oriented approach and also implement the problem using C++ programming Language

Course Name: C205	
DIGITAL SYSTEM DESIGN	
C205.1	Gained knowledge of number systems, logic families and Boolean algebra to the analysis and design of simplified Circuits.
C205.2	Identified, formulate, and solve engineering problems in the area of digital logic Combinational circuit design.
C205.3	Identified, formulate, and solve engineering problems in the area of digital logic Sequential circuit design.
C205.4	Able to design Complex Sequential circuit in terms of Consideration of Memory and Programmable logic
C205.5	Learned techniques, skills, and modern engineering tools such as logic works and VHDL, necessary for engineering practice.
C205.6	Designed a digital system, component or process to meet desired needs within realistic constraints



Course Name:206	
COMPUTER ORGANIZATION	
C206.1	To understand the basic operation of a computer
C206.2	Can understand Single & Multiple Bus Organization
C206.3	Familiar with Pipelining and Performance Considerations
C206.4	Understands Memory System
C206.5	Can understand the I/O System
C206.6	Can be familiar with the Von Neumann architecture, parallel, pipelined, superscalar, and RISC/CISC architectures.

Course Name: C207	
DATA STRUCTURES LAB	
C207.1	Understanding the basic concepts of Object Oriented Programming concepts
C207.2	Student will be able to handle operations like searching, insertion, deletion, traversing mechanism etc. on various data structures
C207.3	Student will be able to analyze the time and space efficiency of the given problem and will be familiar with various sorting algorithms
C207.4	Students will be able to use linear data structures like stacks, queues , linked list and capable to identify the appropriate data structure for given problem
C207.5	Students will have an ability to implement various applications of linear data structures
C207.6	Students will have an ability to identify and implement the data structure which is more suitable for developing a given application

Course Name: C208	
ELECTRONIC DEVICES AND CIRCUITS LAB	
C208.1	Student can able to understand the basic circuits in Electronics like Amplifiers, Oscillators, Operational amplifier.
C208.2	Student can able to understand VI characteristics of semiconductor devices like diode, BJT and UJT.
C208.3	To create team work among students and produce efficient results
C208.4	The students were taught to operate scientific instruments are advanced software
C208.5	To motivate the students to prepare a professional and scientific reports
C208.6	To make the students get developed and practice the observational skills

Course Name: C209	
DIGITAL LAB	
C209.1	Able to understand fundamental operations on digital circuits.
C209.2	Understood How to apply the concepts of basic combinational logic circuits.
C209.3	Understood How to apply the concepts of basic sequential logic circuits.
C209.4	Understood How to apply the concepts of basic combinational logic circuits by using
C209.5	Understood How to apply the concepts of basic sequential logic circuits by Using VHDL
C209.6	Students will able to understand basic operations of digital circuits, combinational logic circuits and sequential circuits



FOURTH SEMSTER

Course Name: C210	
MATHEMATICS-IV	
C210.1	Formulate and solve partial differential equation.
C210.2	Derive and obtain the solution of wave equation and boundary value problems.
C210.3	Derive and obtain the solution of heat equation and boundary value problems.
C210.4	Apply least square method to fit various curves for the given data Investigate the
C210.5	Calculation of Analysis of Variance and explain the use of the Chi-squared test and its calculation.
C210.6	Acquire basic understanding of the most common partial differential equations, and to solve boundary value problems for Laplace's equation, the heat equation, the wave

Course Name: C211	
COMMUNICATION ENGINEERING I	
C211.1	To Gain knowledge about various modulation and demodulation techniques of Amplitude modulation
C211.2	Clear understanding of angle modulation schemes and the generation and demodulation of FM waves
C211.3	To study about the performance of various transmitters and receivers used in AM and
C211.4	Ability to understand the need for pulse modulation and digital modulation system and their generation and demodulation techniques
C211.5	To acquire knowledge about various types of antennas used in communication
C211.6	To impart knowledge about the concepts of different analog modulation systems, the need for pulse modulation systems and to gain a clear idea on concept and applications of different types of antennas

Course Name: C212	
DESIGN AND ANALYSIS OF ALGORITHMS	
C212.1	Students will be able to Analyze / compare the given algorithm for problem solving and also able to compute the time complexity/space complexity of any recursive/non
C212.2	Students gain in-depth knowledge in characteristics of divides and conquers and greedy method for the relevant problem to solve
C212.3	Students gain in-depth knowledge in characteristics of dynamic programming and how it's implemented for the overlapping sub problem solving.
C212.4	Students gain in-depth knowledge in various tree traversal techniques and backtracking methods and how to adopt this technique for solving related problems
C212.5	Students gain in-depth knowledge in branch and bound algorithm design and strategy and how to apply these in maximization problem.
C212.6	Solve any given problem using the fundamental design techniques and Analyze / compare the given algorithm



Course Name: C213	
MICROPROCESSORS AND MICROCONTROLLERS	
C213.1	Able to understand pin diagram and architecture in 8085
C213.2	Able to understand a software and hardware interrupts in 8085 and DMA Controller.
C213.3	Able to understand memory mapping and addressing in 8085 and RS32 interface.
C213.4	Able to understand pin diagram and architecture in 8086.
C213.5	Able to understand Microcontroller and Developing various I/O programs for 9085, 8086 and 8051.
C213.6	Understanding the inner working components of the microprocessor and

Course Name: C214	
JAVA PROGRAMMING	
C214.1	Student learns to create the simple java program using object, static, constructor, overloading and inner class
C214.2	Understand and use the concepts of overriding, interface, packages and abstract classes in java programming
C214.3	Understand how to handle the Exception and creation of user defined exception and thread, deadlock concepts
C214.4	Generate the application using applet, awt and controls
C214.5	Implement the simple project using data base connectivity and RMI
C214.6	Students can able to design, code, test, and debug JAVA language programs.

Course Name: C215	
SYSTEM SOFTWARE	
C215.1	Understand the relationship between system software and machine architecture
C215.2	Understand the design and implementation of Assemblers
C215.3	Have in depth Working knowledge of the major phases of Loading linking and compiling.
C215.4	Able to understand Design and Usages of Macro Processor.
C215.5	Understand the Implementation of Compiler and how Error will be handled using Handler.
C215.6	Student understands the core concepts of assembler, loader and compilers

Course Name: C216	
ALGORITHMS LAB	
C216.1	Students will understand and design an effective algorithm for various types of searching and sorting using divide and conquer Technique.
C216.2	Student will get the practical knowledge to implement various shortest path and spanning tree algorithms in a high level language and to analyze the performance of various algorithms.
C216.3	Student will implement various search and traversal methods like BFS, DFS and compare the performance and complexity of recursive algorithm.
C216.4	Student will get the practical knowledge to implement Backtracking technique for the problems like N-Queen, Sum of Subset, and Hamiltonian Cycle, Graph coloring and
C216.5	Understanding the Bounding techniques to kill the non promising nodes using the search space tree and to implement LIFO and FIFO.

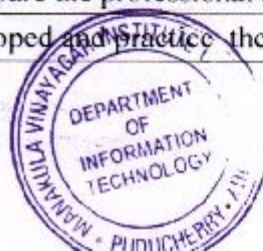


C216.6	Understanding the problem given and design the algorithm using various algorithm design techniques such as Divide and Conquer algorithms, Dynamic Programming, Backtracking Algorithms, Greedy method and Graph Traversal Algorithms, Branch and Bound.
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Course Name: C217	
MICROPROCESSORS AND MICROCONTROLLERS LAB	
C217.1	To Design and implement programs on 8085 microprocessor with assembly language of instruction sets.
C217.2	To Design and implement programs on 8086 microprocessor with assembly language of instruction sets.
C217.3	To Design interfacing circuits with 8085 microprocessor with assembly language of instruction.
C217.4	To Design and implement 8051 microcontroller instruction with assembly language.
C217.5	By understanding the Key concepts of 8051 microcontroller architecture, various types of instructions. Design interfacing circuits with 8086 microprocessor with assembly language.
C217.6	To Understand the concepts related to I/O and memory interfacing of the assembly language.

Course Name: C218	
JAVA LAB	
C218.1	Students understand knowledge of the structure and model of the Java programming language
C218.2	Can able to write programs in Java covering the object oriented concepts.
C218.3	Develop software in the Java programming language
C218.4	propose the use of certain technologies by implementing them in the Java programming language to solve the given problem
C218.5	Can able to write programs covering advanced concepts in java like thread handling, applets, RMI and JDBC
C218.6	Students choose an engineering approach to solving problems, starting from the acquired knowledge of programming

Course Name: C219	
PHYSICAL EDUCATION	
C219.1	Physical education majors demonstrate understanding of how individuals learn and develop and can provide opportunities that support students' physical, cognitive, social, and emotional development
C219.2	Physical education majors demonstrate an understanding of individual and group motivation and behavior by creating safe learning environments that encourage positive social interaction, active engagement in learning, and self-motivation
C219.3	To create team work among students and produce efficient results.
C219.4	The students were taught to operate Advanced playing kits.
C219.5	To motivate the students to prepare the professional and scientific reports.
C219.6	To make the students get developed and practice the observational skills



FIFTH SEMESTER

Course Name: C301	
COMMUNICATION ENGINEERING II	
C301.1	Able to learn and understand Satellite orbits, antenna look angles, different parameters influencing the satellite system. Able to analysis satellite link budget .
C301.2	Able to understand different types of Spread spectrum techniques and CDMA principle of operation and application.
C301.3	Able to understand Cell concept, frequency reuse techniques, handoff mechanism, effect of cell splitting and cell sectoring on system capacity..
C301.4	Able to study and understand Evolution of mobile communication, architecture of 2G, B2G and 3G systems.
C301.5	Able to learn and understand advantages of fiber optics, types of optical fibers and modes, losses affecting the fiber link. Able to analysis fiber link budget calculation.
C301.6	Ability to understand and analyze operation and application of various types of communication systems

Course Name: C302	
SOFTWARE ENGINEERING	
C302.1	Ability to apply basic knowledge and understanding of the analysis, synthesis and design of complex systems and to produce a high quality software that meets or exceeds customer expectations
C302.2	Evaluate a project to develop the scope of work, provide accurate cost estimates and to plan the various activities and to Identify the resources required for a project and to produce a work plan and resource schedule.
C302.3	Understand to Construct a design consisting of a collection of modules and Exploit well-known design pattern
C302.4	Can find problems early in the development life cycle. This includes both bugs in the programmer's implementation and flaws or missing parts of the specification for the unit and understand various test cases.
C302.5	Understand the safety cases and how system reliability can be measured and how reliability growth models can be used for reliability prediction
C302.6	Ability to apply basic knowledge and understanding of the analysis, synthesis and design of complex systems and to Develop, maintain and evaluate large-scale software systems Produce efficient, reliable, robust and cost-effective software solutions

Course Name: C303	
OPERATING SYSTEMS	
C303.1	A high-level understanding of the structure of operating systems, applications, and knowledge of the services provided by operating systems. Exposure to details of maior OS components.
C303.2	A clear understanding of program, process and thread. Able to realize the need for Process Synchronization and the various constructs for Process Synchronization.
C303.3	Demonstrate competence in recognizing and using operating system features to handle deadlock situation and storage management.

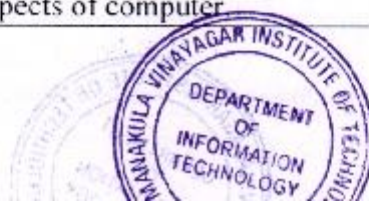


C303.4	Have an insight into real and virtual memory management techniques and also Understanding of file system implementation and free space management.
C303.5	Understand the concepts of data input/output, storage, file management and differentiate in Linux and Windows XP Operating systems
C303.6	Understand and analyze implementation of: processes, , scheduling resource control, physical and virtual memory, I/O and files management

Course Name: C304	
DATA BASE MANAGEMENT SYSTEMS	
C304.1	Student understand the concept of database and basic key concepts and can design the entity relationship diagram and know the basic commands DDL,DML,DCL,TCL
C304.2	Understand the concept of how to use query commands (eg create, delete, insert, update etc.)
C304.3	Student understand the concept of normalization and how to avoid the duplications in the table and create a database without the duplicate records
C304.4	Student know the internal of the storage and retrival components of a database
C304.5	Student knows how the ACID properties are achieved. Understand the concept of transaction processing, concurrent transaction processing and recovery from failures.
C304.6	Students understand the database concept and how to implement application in real time using database.

Course Name: C305	
THEORY OF COMPUTATION	
C305.1	Able to Understand basic concepts of deterministic and non-deterministic finite
C305.2	Learned the concept of Regular Expression roles in compiler Design and applications of Regular Language.
C305.3	Gained knowledge on Turing machines, computability and complexity.
C305.4	Able to solve problems using formal language and basic concepts of PDA
C305.5	Able to Understand the importance of Space & Time computation on Automaton.
C305.6	Gained the Knowledge on importance Automata languages & Computations

Course Name: C306	
COMPUTER HARDWARE AND TROUBLESHOOTING	
C306.1	Understand various CPU types, Power Supply Units and motherboards and related components.
C306.2	Understand various of cable and connected and MODEM types
C306.3	Understand function of keyboard and Printer types.
C306.4	Understand hard disk, floppy disk, CD and DVD with recording.
C306.5	Demonstrate the installation and configuration of peripheral devices.
C306.6	The students will have theoretical exposure as well as hands on exposure to know about the hardware aspects of computer



Course Name: C307

COMMUNICATION ENGINEERING LAB

C307.1	Able to understand, analyze and verify the working of analog communication systems
C307.2	Able to understand, analyze and verify the working of digital communication systems
C307.3	Able to understand, analyze and verify the working of pulse modulation systems
C307.4	Able to simulate and analyze performance of satellite, fiber and mobile communication systems
C307.5	Able to simulate and analyze propagation models and antenna radiation characteristics.
C307.6	Ability to verify experimentally the working of different communication systems. Ability to use simulation tools to analyze the performance of different communication systems.

Course Name: C308

OPERATING SYSTEMS LAB

C308.1	Studying the basic Shell Programming and applying it UNIX operating environment.
C308.2	Build 'C' program for process and file system management using system calls
C308.3	Choose the best CPU scheduling algorithm for a given problem instance
C308.4	Identify the performance of various page replacement algorithms
C308.5	Develop algorithm for the storage systems- file allocation strategies
C308.6	Understanding the Operating System concepts and studying it using Simulation Programs using C Language

Course Name: 309

DATA BASE MANAGEMENT SYSTEMS LAB

C309.1	To Understand the various basic Database concepts
C309.2	To implement various DDL, DML, DQL, DTL and DCL commands
C309.3	To Implement Various Query types
C309.4	To study procedural query language to implement functions, procedures, cursors,
C309.5	To implement database connectivity for a given relational schema
C309.6	Understanding the Database concepts by Design and Developing Applications using Oracle Software

Course Name: C310

General Proficiency -I

C310.1	Students will understand the basic communication theory.
C310.2	Students will develop and ensure the personality development and soft skills.
C310.3	Students will enhance their writing skills
C310.4	Speaking Skills of the students will be developed by doing communication activities
C310.5	Students gain the knowledge to solve numerical and verbal aptitude
C310.6	Students will develop confidence on how to face an interview by practicing the above mentioned points



SIXTH SEMSTER

Course Name: C311	
COMPUTER NETWORKS	
C311.1	Understand the Layered Architecture of Computer Networks and Distinguish packet switching and circuit switching Techniques in internet
C311.2	Apply the knowledge earned into various application level services like email, www, ftp and multimedia networking.
C311.3	Analysis the effective transport layer connection management, flow control and congestion control mechanism.
C311.4	Learn the knowledge about various network protocols and algorithms.
C311.5	Understand the data link-layer functionalities, protocols, and services.
C311.6	Understand the Layered Architecture of Computer Networks and Acquire the required skill to design simple computer networks

Course Name: C312	
WEB TECHNOLOGY	
C312.1	Understand the basic web concepts, web process models and web sites with its types.
C312.2	Learn the working function of Web search engine and able to design website using HTML tags and Scripting languages
C312.3	Acquire the knowledge about XML documents and ActiveX concepts
C312.4	Obtain the knowledge about network principles like sockets, protocol handlers and RMI.
C312.5	Obtain the knowledge of networking and security issues and also Firewall technologies
C312.6	The objective of the course is to understand and able to create the web application using

Course Name: C313	
ARTIFICIAL INTELLIGENCE	
C313.1	Understand existing AI projects, how intelligent agents map different search strategies for a problem.
C313.2	Understand different Knowledge Representation schemes for typical AI problems.
C313.3	Able to apply AI techniques for uncertainty Management.
C313.4	Able to implement a typical AI problem to be solved Using Machine Planning, Learning Techniques.
C313.5	Implement a futuristic AI application.
C313.6	Capability to develop intelligent systems.

Course Name: C314	
INFORMATION CODING TECHNIQUES	
C314.1	Acquire Knowledge on basics of information and entropy with its properties, and various Coding theorems to implement the greater efficiency in coding.
C314.2	Apply logical thinking to know about the various coding for data and voice.
C314.3	To understand about the different types of image and video compression techniques like JPEG & MPEG
C314.4	Student would have a clear knowledge about the Error control coding and to understand the different correction codes.



C314.5	To learn about the overview of Various encryption techniques and to understand about the different types of algorithms.
C314.6	Acquire knowledge on implementation of various coding techniques and to have knowledge to implement different cryptographic algorithms and various code generation

Course Name: C315	
USER INTERFACE DESIGN	
C315.1	Students understand the how to achieve the users goal through UID and also understand create software not to be in complex and most relevant in mechanical object.
C315.2	Understand the techniques for maintaining flow and factors consider to efficiently creating the design
C315.3	Understand how to use dialog boxes and mouse and drag and drop and understand the effect occur while performing action.
C315.4	Understand how menu fit into grand scheme of UID and how to use gizmos and drag and
C315.5	Student will understand the how to handle the exception and installation and configuration and personalization in design part
C315.6	The students learn concepts of user interface and used for web applications, human interfaces and for multimedia interfaces.

Course Name: C316	
OBJECT ORIENTED ANALYSIS AND DESIGN	
C316.1	Understands Object Oriented Methodologies UML models
C316.2	Understands the UML diagrams
C316.3	Understands about Object Oriented Analysis and Design Axioms
C316.4	Familiar about Object Oriented Design
C316.5	Understands about Design patterns and how to use design pattern
C316.6	Acquire the skills to apply Industry recommended Unified Modeling Language Practices for OOAD and document them effectively

Course Name: C317	
COMPUTER NETWORKS LAB	
C317.1	To understand and Familiarize with transmission media, connector, Hubs, Switches and installation of NIC.
C317.2	Implementation of client server applications with TCP/UDP Socket Programming in a standalone machine and in a network
C317.3	Students will be able to implement and compare the various routing algorithms and able to handle errors using CRC and hamming code techniques.
C317.4	Students will able to design remote system and implement it using RMI,RCE,RCP techniques
C317.5	Students will understand the installation and working with simulation tools like NS2 and Glomosim
C317.6	Students will able to learn networking concepts and able to develop a network



Course Name: C318	
WEB TECHNOLOGY LAB	
C318.1	Understanding the history of the internet and related internet concepts that are vital in understanding web development.
C318.2	Demonstrate the important HTML tags for designing static pages and separate design for content using Cascading Style Sheet.
C318.3	Students will be able to write a server side java application called Servlet to catch form data sent from client, process it and store it on database.
C318.4	Students will be able to write a server side java application called JSP to catch form data sent from client and store it on database
C318.5	Use the Web application development software tools i.e Ajax, PHP, XML, Servlets, JSP etc. and identify the environments currently available on the market to design web sites.
C318.6	Have a Good grounding of Web Application Terminologies, Internet Tools, E – Commerce and other web services.

Course Name: C319	
MINI PROJECT	
C319.1	Identify the problem which needs to be provided a solution.
C319.2	Define the problem statement and carryout design for it.
C319.3	Show an attitude of team work and independent working on problems.
C319.4	Analyze, Design the experimental information using open source software.
C319.5	Implement and process the experimental information using open source software.
C319.6	Create a mini project report.

Course Name: C320	
General Proficiency - II	
C320.1	Students will be able to differentiate the words and spellings of English language used in various countries.
C320.2	Students would have developed their writing skills. They would know how to write a letter and prepare a resume.
C320.3	This unit helped the students to develop their oral skills. Students will gain confidence in speaking the language. Students will develop as how to tackle a situation.
C320.4	Students would have got a gist as how to be a groomed professional in the technical world.
C320.5	The students will have an idea as how to reason out the answers for logical questions in the future exams.
C320.6	The students will develop their communication skill and will be able to handle situations at times.



SEVENTH SEMESTER

Course Name: C401	
MOBILE COMPUTING	
C401.1	To Gain knowledge basic knowledge in mobile communication
C401.2	To Gain the knowledge on various emerging wireless network standards
C401.3	To Gain the knowledge on various mobile networking protocols
C401.4	To Gain the knowledge on various mobile data management model
C401.5	To Gain the knowledge on various mobile computing model
C401.6	To Gain basic knowledge in mobile computing and emerging wireless network standards

Course Name: C402	
WEB SERVICES AND XML	
C402.1	Understand the basics and benefits of XML, XML Processing techniques, XML Presentation and XML Transformation techniques
C402.2	Analyze the problems associated with tightly coupled distributed software architecture
C402.3	Learn the Web services building block
C402.4	Learn about SOA Platform basics and its API's in J2EE and .Net
C402.5	Understand about web service - business process execution language, security, policy and implement e-business solutions using XML based web services
C402.6	The objective of the course is to understand the benefits of XML, web services and SOA and also learn about how to develop e-business applications using these technologies

Course Name: C403	
CRYPTOGRAPHY AND NETWORK SECURITY	
C403.1	Students will be able to understand security issues, services and Mechanisms & also solve and relate mathematic concepts behind the cryptographic algorithms [R/A]
C403.2	Students will be able to explain the fundamental cryptographic system, concepts of Private and public key crypto system and number theory Concepts with examples [UA]
C403.3	Students will be able to learn the various message authentication and digital signature techniques
C403.4	Students will be able analyze protocols for various network security systems with cryptographic tools [A]
C403.5	Students will be able to Understand wireless network security issues and protocols
C403.6	On successful completion of this course students will be able to Use appropriate methods in security and Learn various methods of implementing security.



Course Name: C404	
SOFTWARE TESTING	
C404.1	To learn about Testing Principles and Defect classes
C404.2	Understands Test case Design and White Box approach
C404.3	Understands levels of Testing and how to OO Systems
C404.4	Familiar about Test Management Group and Testing Skills
C404.5	Understands about Test Automation and types of reviews
C404.6	Understands and executes the responsibility of the software testing personal and producing error free software

Course Name: C405	
MANAGEMENT CONCEPTS AND STRATEGIES	
C405.1	It will help to understand the management concepts and ethics and social responsibility of Business and Organization.
C405.2	To educate and learn the decision making process and organization culture
C405.3	To know about the different human resource management functions and procedures.
C405.4	To learn about the different motivational theories and Leadership Qualities.
C405.5	To have an impact about the productivity and overall preventive and control measures.
C405.6	To enhance the different managerial and leadership skills and different functions of management

Course Name: C406	
MOBILE COMPUTING LAB	
C406.1	Use appropriate mobile communication tools for various mobile application
C406.2	Learn various issues of mobile computing
C406.3	Use appropriate mobile communication for various issues of mobile computing
C406.4	Study of GSM architecture and signaling techniques
C406.5	Study of WAP & WML architecture
C406.4	Understand guidelines, design principles and experience in developing Mobile application.

Course Name: C407	
WEB SERVICES AND XML LAB	
C407.1	Use appropriate web development tools for various web application
C407.2	Understand the XML presentation and Transformation technologies and also Java and .Net API for Programming Web services
C407.3	Students understand about Web services offer as a new and evolving paradigm for building distributed applications.
C407.4	Develop distributed applications in popular platform independent technologies for any business domain.
C407.5	Students should learn about methods of Web service coordination, composition and security and policy as well as dealing with states in Web services.
C407.6	Develop Web services using the various advanced Computer languages and applications.



Course Name: C408	
PROJECT WORK (PHASE I)	
C408.1	Motivate the students to select application related projects.
C408.2	Student study the reference papers from various domain and select the domain of their project
C408.3	Student have a detailed survey on the selected domain and identify the base paper and give the presentation on their survey
C408.4	Student identified the problem formulation of their existing work and gave the presentation
C408.5	Student submitted phase I project work which was reviewed by a committee consisting of Project coordinator
C408.6	Student performed survey, identified the base paper, identified the problem formulation and gave the presentation

Course Name: C409	
Seminar	
C409.1	Analyze critically chosen seminar topic for substantiated conclusions
C409.2	Apply the concepts of design and modelling learnt to be seminar topic chosen and explore possible new ideas.
C409.3	Use the appropriate techniques, resources and modern engineering tools necessary for conducting seminar work.
C409.4	Explore possible avenues where computer science and engineering solutions may yield social benefit.
C409.5	Communicate clearly, fluently, and cogently both in written and spoke contexts.
C409.6	Analyze critically chosen seminar topic for substantiated conclusions

Course Name: C410	
Training /Industrial Visit	
C410.1	Ability to demonstrate the use, interpretation and application of an appropriate international engineering standard in a specific situation.
C410.2	Ability to analyze a given engineering problem, identify an appropriate problem solving methodology, implement the methodology and propose a meaningful solution.
C410.3	Ability to apply prior acquired knowledge in problem solving.
C410.4	Ability to work in new technology based on industrial requirements.
C410.5	Ability to work in a team and to take initiatives.
C410.6	Ability to effectively communicate solution to problems (oral, visual, written) and manage a project within a given time frame.



EIGHTH SEMESTER

Course Name: C411	
PROFESSIONAL ETHICS	
C411.1	The students must be able to understand the basic perception of profession, professional ethics, various moral & social issues
C411.2	The students will aware of professional rights and responsibilities of an engineer also able to understand the responsibilities of an engineer for safety and risk benefit analysis.
C411.3	The students will acquire knowledge about various roles of engineers in variety of global issues
C411.4	They also able to apply ethical principles to resolve situations that arise in their professional lives.
C411.5	Students will understand the industrial standards, code of ethics and role of professional ethics in engineering field.
C411.6	Students understand the core values that shape the ethical behavior of an engineer and Exposed awareness on professional ethics and human values.

Course Name: C412	
DISTRIBUTED COMPUTING	
C412.1	Students understands the characteristics of Distributed Computing and Internet
C412.2	Students understands the OS layer and Architecture
C412.3	Students understands about Sun NFS and AFS, Time and global clocks
C412.4	Students understands about Transactions, Clocks and Distributed Shared Memory.
C412.5	Students understands about Distributed Multimedia Systems, Web Services and CORBA Architecture
C412.6	Learn the resource management techniques and file management in distributed environment.


Course Name: C413	
DATA MINING	
C414.1	Able to understand steps and usage of data mining and data mining Tools.
C414.2	Able to understand OLAP, OLTP and data ware house life cycle and meta data.
C414.3	Able to understand data cleaning and integration and transformation.
C414.4	Able to understand decision tree, Bayesian classification and outlier analysis.
C414.5	Able to understand k-means, neural network and graph mining case studies.
C414.6	Evolving multidimensional intelligent model from a typical system, representation of multi dimensional data for a data warehouse, discovering the knowledge imbedded in the high dimensional system, finding the hidden interesting patterns in data



Course Name: C414	
Project Phase - II	
C417.1	Student installed and learnt the software simulation tool
C417.2	System architecture is designed and Implementation of two modules done
C417.3	Review-1 conducted
C417.4	Implementation of remaining modules and proposed work of the project done and review 2 conducted
C417.5	Demonstration of project and performance analysis is shown to the review committee in final viva. Presentation and publication of research project is also done in conference / Journal
C417.6	Implemented the project and Performance analysis is done and the demonstration of implementation is presented to review committee and also it is published in conference/Journal

Course Name: C415	
Comprehensive Viva	
C418.1	Demonstrate knowledge in the program domain.
C418.2	Present his views cogently and precisely. Exhibit professional etiquette suitable for career progression
C418.3	Exhibit the strength and grip on the fundamentals of the subjects studied in the previous semesters
C418.4	Demonstrate an understanding of advanced topics
C418.5	Comprehend for all the courses studied in the entire programme
C418.6	Ability to understand in-depth concepts of all the courses in curriculum




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Handwritten signature and printed name: **S. SIVANANDAN, M.B.B.S.**

