

**DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING**
**Course Outcomes-2018 Scheme**

SL.NO	Subject Code	Course code	Course Outcomes
1	ENGINEERING MATHEMATICS 18MAT11	C101.1	Apply the knowledge of calculus to solve problems related to polar curves and its application in determining the bentness of a curve.
		C101.2	Learn the motion of partial differentiation to calculate the rate of change of multivariate functions, composite functions and Jacobians.
		C101.3	Apply the concept of change of order of integration and variables to evaluate multiple integrals and their usage in computing the area and volumes.
		C101.4	Solve first order linear/nonlinear differential equation analytically using standard methods.
		C101.5	Make use of Matrix theory for system of linear equations and compute Eigen values and Eigen vectors required for Matrix diagonalization process.

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2	ENGINEERING CHEMISTRY 18CHE12	C102.1	Use of free energy in equilibria, rationalize bulk properties and processes using thermodynamic consideration, electrochemical energy systems
		C102.2	Causes and effects of corrosion of metals and control of corrosion. Modification of surface properties of metals to develop resistance to corrosion, wear, tear, impact etc by electroplating and electroless plating.
		C102.3	Production and consumption of energy for industrialization of country and living standards of people. Electrochemical and concentration cells. Classical, Modern batteries and fuel cells. Utilization of solar energy for different useful forms of energy.
		C102.4	Environmental pollution, waste management and water chemistry.
		C102.5	Different techniques of instrumental methods of analysis. Fundamentals principles of nanomaterials.

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3	C PROGRAMMING FOR PROBLEM SOLVING 18CPS13	C103.1	Illustrate simple algorithms from the different domains such as mathematics, physics, etc.
		C103.2	Construct a programming solution to the given problem using C
		C103.3	Identify and correct the syntax and logical errors in C programs.

		C103.4	Modularize the given problem using functions and structures.
		C103.5	Introduction to Pointers and structures

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4	BASIC ELECTRONICS 18ELN14	C104.1	Describe the operation of diodes, BJT, FET and Operational Amplifiers.
		C104.2	Design and explain the construction of rectifiers, regulators, amplifiers and oscillators.
		C104.3	Describe general operating principles of Scars and it's application.
		C104.4	Explain the working and design of Fixed voltage IC regulator using 7805 and A stable oscillator using Timer IC 555.
		C104.5	Explain the different number system and their conversions and construct simple combinational and sequential logic circuits using Flip-Flops.
		C104.6	Describe the basic principle of operation of communication system and mobile phones

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5	ELEMENTS OF MECHANICAL ENGINEERING 18EME15	C105.1	Identify different sources of energy and their conversion process.
		C105.2	Explain the working principle of hydraulic turbines, pumps, IC engines and refrigeration.
		C105.3	Recognize various metal joining processes and power transmission elements.
		C105.4	Understand the properties of common engineering materials and their applications in engineering industry.
		C105.5	Discuss the working of conventional machine tools, machining processes, tools and accessories.

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6	ENGINEERING CHEMISTRY LAB 18CHEL16	C106.1	Handling different types of instruments for analysis of materials using small quantities of materials involved for quick and accurate results
		C106.2	Carrying out different types of titrations for
		C106.3	Analyse and interpret data of the experiments.

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7	C PROGRAMMING LAB 18CPL17	C107.1	Write algorithms, flowcharts and program for simple problems.
		C107.2	Correct syntax and logical errors to execute a program.
		C107.3	Write iterative and wherever possible recursive programs.
		C107.4	Demonstrate use of functions, arrays, strings.
		C107.5	Introduction to pointers and structures

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8	TECHNICAL ENGLISH 18EGH18	C108.1	Understand and apply the Fundamentals of Communication Skills in their communication skills.
		C108.2	Identify the nuances of phonetics, intonation and enhance pronunciation skills
		C108.3	To impart basic English grammar and essentials of language skills as per present requirement.
		C108.4	Understand and use all types of English vocabulary and language proficiency.
		C108.5	Adopt the Techniques of Information Transfer through presentation.

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9	ENGINEERING MATHEMATICS II 18MAT21	C109.1	Solve first order linear/nonlinear differential equations analytically using standard methods.
		C109.2	Explain various physical models through higher order differential equations and solve such linear ordinary differential equations.
		C109.3	Understand a variety of partial differential equations and solution by exact methods/method of separation of variables.
		C109.4	Describe the applications of infinite series and obtain series solution of ordinary differential equations.
		C109.5	Apply the knowledge of numerical methods in the models of various physical and engineering phenomena.
		C109.6	Environmental pollution, waste management and water chemistry.
		C109.7	Different techniques of instrumental methods of analysis. Fundamental's principles of nanomaterials.

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10	ENGINEERING PHYSICS 18PHY22	C110.1	Understand various types of oscillations and the implications, the role of Shockwaves in various fields and recognize the elastic properties of materials for engineering

			applications
		C110.2	Realize the inter relation between time varying electric field and magnetic field, the transverse nature of the EM waves and the role in optical fibre communication.
		C110.3	Compute Eigen values, Eigen function, momentum of atomic and subatomic particles using Time independent 1-D Schrodinger's wave equations.
		C110.4	Apprehend the theoretical background of laser, construction and working of different types of lasers and its applications in different fields
		C110.5	Under various electrical and thermal properties like conductors, semiconductors and dielectrics using different theoretical models

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11	BASIC ELECTRICAL ENGINEERING 18ELE23	C111.1	Analyse A.C and D.C Circuit
		C111.2	Explain the principle of operation and construction of single-phase transformers.
		C111.3	Explain the principle of operation and construction of DC Machines and Synchronous Machines.
		C111.4	Explain the principle of operation and construction of 3 phase Induction Motors.
		C111.5	Discuss the concept of electrical wiring, circuit protecting devices and earthing.

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12	ELEMENTS OF CIVIL ENGG AND MECHANICS 18CIV24	C112.1	Mention the applications of various fields of Civil Engineering.
		C112.2	Compute the resultant of given force system subjected to various loads.
		C112.3	Comprehend the action of Forces, Moments and other loads on systems of rigid bodies and compute the reactive forces that develop as a result of the external loads
		C112.4	Locate the Centroid and compute the Moment of Inertia of regular and built-up sections.
		C112.5	Express the relationship between the motion of bodies and analyse the bodies in motion.

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13	ENGINEERING GRAPHICS 18EGDL25	C113.1	Prepare Engineering drawings as per BIS conventions mentioned in the relevant codes
		C113.2	Produce computer generated drawings using CAD software.
		C113.3	Use the knowledge of orthographic projections to represent Engineering information / concepts and present the same in

			the form of drawings
		C113.4	Convert Pictorial and isometric views of simple objects to orthographic views.
		C113.5	Convert pictorial and isometric views of simple objects to orthographic views.

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14	ENGG PHYSICS LAB 18PHYL26	C114.1	Apprehend the concepts of interference of light, diffraction of light, Fermi energy and magnetic effect of current
		C114.2	Understand the principles of operations of optical fibres and semiconductor devices such as Photo diode, and NPN transistor using simple circuits.
		C114.3	Determine elastic moduli and moment of inertia of given materials with the help of suggested procedures
		C114.4	Recognize the resonance concept and its practical applications
		C114.5	Understand the importance of measurement procedure, honest recording and representing the data, reproduction of final results

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15	BASIC ELECTRICAL ENGG. LAB 18ELEL27	C115.1	Identify the common electrical components and measuring instruments used for conducting experiments in the electrical laboratory.
		C115.2	Compare Power factor of Lamps.
		C115.3	Determine impedance of electrical circuit and power consumed in 3-phase load.
		C115.4	Determine earth resistance and understand two way and three ways of control of lamps

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16	TECHNICAL ENGLISH 18EGH28	C116.1	Understand and apply the Fundamentals of Communication Skills in their communication skills.
		C116.2	Identify the nuances of phonetics, intonation and enhance pronunciation skills.
		C116.3	To impart basic English grammar and essentials of language skills as per present requirement.
		C116.4	Understand and use all types of English vocabulary and language proficiency.
		C116.5	Adopt the Techniques of Information Transfer through presentation.

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17	TRANSFORM CALCULUS, FOURIER SERIES & NUMERICAL METHOD 18MAT31	C201.1	Use Laplace transform and inverse Laplace transform in solving differential/ integral equation arising in network analysis, control systems and other fields of engineering.
		C201.2	Demonstrate Fourier series to study the behaviour of periodic functions and their applications in system communications, digital signal processing and field theory.
		C201.3	Make use of Fourier transform and Z-transform to illustrate discrete/continuous function arising in wave and heat propagation, signals and systems.
		C201.4	Solve first and second order ordinary differential equations arising in engineering problems using single step and multistep numerical methods
		C201.5	Determine the extremals of functionals using calculus of variations and solve problems arising in dynamics of rigid bodies and vibrational analysis.

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18	DATA STRUCTURES AND APPLICATIONS 18CS32	C202.1	Explain different types of data, basic operations, recursive algorithms and representations of various Data structures
		C202.2	Apply the knowledge of stacks and queues in real world problem solving
		C202.3	Explain and implement singly linked list and doubly linked list implementation in real world problem solving
		C202.4	Implement header linked list, graphs and tree data structure in simple real time projects
		C202.5	Understand and apply different search, sort algorithms, hashing functions, files and its organization in real world problems

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19	ANALOG AND DIGITAL ELECTRONICS 18CS33	C203.1	Design and analyse application of analogy circuits using photo devices, timer IC, power supply and regulator IC and op-amp. Explain the basic principles of A/D and D/A conversion circuits and develop the same.
		C203.2	Simplify digital circuits using Karnaugh Map, and Quine-McClusky Methods
		C203.3	Explain Gates and flip flops and make us in designing different data processing circuits, registers and counters and compare the types.
		C203.4	Develop simple HDL programs, VHDL Description for Combinational Circuits

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20	COMPUTER ORGANISATION 18CS34	C204.1	Explain the basic organization of a computer system.
		C204.2	Demonstrate functioning of different sub systems, such as processor, Input/output, and memory.

		C204.3	Understand the concept of RAM, ROM and cache memories
		C204.4	Design and analyse simple arithmetic and logical units.
		C204.5	Illustrate hardwired control and micro programmed control, pipelining, embedded and other computing systems.

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21	SOFTWARE ENGINEERING 18CS35	C205.1	Outline software engineering principles and activities involved in building large software programs. Identify ethical and professional issues and explain why they are of concern to software engineers. Describe the process of SDLC
		C205.2	Describe the process of requirements gathering, requirements classification, requirements specification and requirements validation. Differentiate system models, use UML diagrams and apply design patterns
		C205.3	Discuss the distinctions between validation testing and defect testing.
		C205.4	Recognize the importance of software maintenance and describe the intricacies involved in software evolution. Apply estimation techniques, schedule project activities and compute pricing.
		C205.5	Project planning, Project scheduling and Quality management

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22	DISCRETE MATHEMATICAL STRUCTURES 18CS36	C206.1	Use propositional and predicate logic in knowledge representation and truth verification.
		C206.2	Demonstrate the application of discrete structures in different fields of computer science.
		C206.3	Solve problems using recurrence relations and generating functions.
		C206.4	Application of different mathematical proofs techniques in proving theorems in the courses.
		C206.5	Compare graphs, trees and their applications.

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23	ANALOG AND DIGITAL ELECTRONICS LAB 18CS37	C207.1	Use appropriate design equations / methods to design the given circuit.
		C207.2	Examine and verify the design of both analog and digital circuits using simulators.
		C207.3	Make use of electronic components, ICs, instruments and tools for design and testing of circuits for the given the appropriate inputs.
		C207.4	Compile a laboratory journal which includes; aim, tool/instruments/software/components used, design equations used and designs, schematics, program listing,

			procedure followed, relevant theory, results as graphs and tables, interpreting and concluding the findings
		C207.5	Understand the working and implementation of ALU

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24	DATA STRUCTURES LAB 18CS38	C208.1	Analyse and to develop the program on linear data structures, implementing the basic operations using data structures array and to perform string Operations
		C208.2	To develop the program and implement the operations using stack, Queue.
		C208.3	To develop the program and implement the operations insertions, Deletion using Linked List.
		C208.4	To design and develop and algorithm to do basic operations using trees and graph
		C208.5	To perform the operations on File using the data structure Hash Table

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25	COMPLEX ANALYSIS, PROBABILITY AND STATISTICAL METHODS 18MAT41	C209.1	Use the concepts of analytic function and complex potentials to solve the problems arising in electromagnetic field theory.
		C209.2	Utilize conformal transformation and complex integral arising in aerofoil theory, fluid flow visualization and image processing.
		C209.3	Apply discrete and continuous probability distributions in analyzing the probability models arising in engineering field.
		C209.4	Make use of the correlation and regression analysis to fit a suitable mathematical model for the statistical data.
		C209.5	Construct joint probability distributions and demonstrate the validity of testing the hypothesis.

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26	DESIGN AND ANALYSIS OF ALGORITHM 18CS42	C210.1	Analyse a given algorithm and express its time and space complexities in asymptotic notations
		C210.2	Design algorithms using appropriate design strategies like Divide and Conquer Strategy
		C210.3	Solve Optimization problems using Greedy strategy
		C210.4	Compare Dynamic Programming and Divide and Conquer Strategies
		C210.5	Design efficient algorithms using Back Tracking and Branch Bound Techniques for solving problems. classify computational problems into P, NP, NP-Hard and NP-Problem



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27	OPERATING SYSTEM 18CS43	C211.1	Summarize the basic concepts and functions of operating system, Analyse different process scheduling algorithms and measure their performance
		C211.2	Understand various threading models, Calculate the performance of various CPU scheduling algorithms
		C211.3	Analyse various deadlock methods and memory management schemes, Explain various memory management schemes
		C211.4	Interpret various paging techniques, Understand organization of files and directories.
		C211.5	Interpret different methods of secondary storage, Show the Design principles of OS w.r.t Linux

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28	MICROCONTROLLER AND EMBEDDED SYSTEMS 18CS44	C212.1	Describe the architectural features and instructions of ARM microcontroller.
		C212.2	Apply the knowledge gained for Programming ARM for different applications.
		C212.3	Interface external devices with ARM microcontroller and interpret the basic hardware components and their selection method based on the characteristics and attributes of an embedded system.
		C212.4	Able to explain about embedded systems, characteristics, details and implementation.
		C212.5	Illustrate the need of real time operating system for embedded system.

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29	OBJECT ORIENTED PROGRAMMING 18CS45	C213.1	Explain the object-oriented concepts using C++ and JAVA.
		C213.2	To understand fundamentals of object-oriented programming in Java which includes defining classes, invoking methods, using class libraries.
		C213.3	To create Java application programs using sound OOP practices such as interfaces, constructors, inheritance, APIs and error exception handling and able to understand the use of Packages and Interface in java.
		C213.4	Able to develop and understand exception handling, multithreaded applications with synchronization in real world problem solving.
		C213.5	Develop simple GUI interfaces for a computer program to interact with users, and to comprehend the event-based GUI handling principles using Applets and swings.

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30	DATA COMMUNICATIONS 18CS46	C214.1	Recognize the importance of data communication, the Layered architecture of Open System Interconnection (OSI) and Transmission Control Protocol / Internet Protocol (TCP/IP) models
		C214.2	Understand conversion of signals from Digital to Digital, Analog to Digital & Digital to Analog conversion, bandwidth utilization techniques.
		C214.3	Analyse conversion of signals from Digital to Digital, Analog to Digital & Digital to Analog conversion, bandwidth utilization techniques.
		C214.4	Interpret the operations of Channelization protocols, Random Access protocols and Wired & Wireless.
		C214.5	Realize the working of 802.11, Cellular Telephony, Bluetooth, IPv4 and IPv6 Addresses.

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31	DESIGN AND ANALYSIS OF ALGORITHMS LABORATORY 18CSL47	C215.1	Design and implement various algorithms using the basic concepts of JAVA
		C215.2	Implementing the algorithms using Divide and conquer methods
		C215.3	Designing of the programs using greedy method
		C215.4	Apply the Greedy method and dynamic programming for finding the shortest path
		C215.5	Designing the program using backtracking and apply the same for Sum of subset, Hamiltonian path

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32	MICRO-CONTROLLER AND EMBEDDED SYSTEMS 18CSL48	C216.1	Explain ARM7 instruction set and gain the knowledge how assembly language works.
		C216.2	Develop and implement the program written in ARM7 assembly language instructions.
		C216.3	Analyze the functioning of hardware devices
		C216.4	Interface various hardware to ARM microcontroller
		C216.5	Conduct and Test on an ARM7TDMI/LPC2148 evaluation board using evaluation version of Embedded 'C' & Keil Uvision-4 tool/compiler

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33	MANAGEMENT & ENTREPRENEURSHIP FOR IT INDUSTRY 18CS51	C301.1	Explain the principles of management & organisation
		C301.2	Discuss on planning, staffing, Directing & Controlling
		C301.3	Understand and explain the of Entrepreneur

		C301.4	Understand Project Identification and Selection, Enterprise Resource Planning and their importance
		C301.5	Infer the importance of Intellectual Property Rights and relate the Institutional Support

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34	COMPUTER NETWORKS AND SECURITY 18CS52	C302.1	Explain principles of application layer protocols
		C302.2	Recognize transport layer services and infer UDP and TCP protocols
		C302.3	Classify routers, IP and Routing Algorithms in network layer
		C302.4	Analyze the Network Security, the various encryption, decryption and key exchange algorithms.
		C302.5	Analyse the Multimedia Networking and Network Management

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35	DATABASE MANAGEMENT SYSTEMS 18CS53	C303.1	Identify, analyse and define database objects and Design an ER model for a given example from real world description
		C303.2	Design and enforce integrity constraints on a database using SQL and RDBMS.
		C303.3	Develop complex queries using SQL to retrieve the required information from database.
		C303.4	Apply suitable normal forms to normalize the given database
		C303.5	Analyse transaction processing and determine the roles of concurrency control in database design.

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36	AUTOMATA THEORY AND COMPUTABILITY 18CS54	C304.1	To acquire fundamental understanding of the core concepts in automata theory and theory of computation
		C304.2	Learn how to translate between different models of computation
		C304.3	Design Grammars and Automata for different language classes and become knowledgeable about restricted models of computation and their relative powers
		C304.4	Develop skills in formal reasoning and reduction of a problem to a formal model, with an emphasis on semantic precision and conciseness
		C304.5	Classify a problem with respect to different models of computation

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37	APPLICATION DEVELOPMENT USING PYTHON 18CS55	C305.1	Demonstrate proficiency in handling of loops and creation of functions.
		C305.2	Identify the methods to create and manipulate lists, tuples and dictionaries.
		C305.3	Discover the commonly used operations involving regular expressions and file system.
		C305.4	Interpret the concepts of Object-Oriented Programming as used in Python.
		C305.5	Determine the need for scraping websites and working with CSV, JSON and other file formats.

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38	UNIX PROGRAMMING 18CS56	C306.1	Understand the basic concepts of UNIX Architecture, File system and basic commands.
		C306.2	Understand the basic file system commands, concepts of Shell programming.
		C306.3	Understand the concepts UNIX API's and process control.
		C306.4	Understand the concepts of process accounting, ser identification and different IPC mechanisms.
		C306.5	Understand signal handling mechanism, daemon characteristics, coding rules and error logging.

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39	COMPUTER NETWORKS LAB 18CSL57	C307.1	Understand and demonstrate the working of error detection techniques.
		C307.2	Understand and demonstrate the working of different concepts for finding shortest route.
		C307.3	Understand and demonstrate the client/server communication
		C307.4	Understand and demonstrate the concept of encryption and decryption
		C307.5	Implement, analyse and evaluate networking protocols in NS2/ NS3 and JAVA programming language.

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40	DBMS LABORATORY WITH MINI PROJECT 18CSL58	C308.1	Apply the basic concepts of database systems.
		C308.2	Utilize the knowledge of basics of SQL and construct queries using SQL.
		C308.3	Use commercial relational database system (Oracle) by writing Queries using SQL
		C308.4	Design and build a simple database system and demonstrate competence with the fundamental tasks involved with modelling, designing, and implementing a DBMS
		C308.5	Work successfully on a team by design and development of a database application system as part of a team.

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41	FILE STRUCTURES 18IS61	C309.1	Discuss appropriate file structure for storage representation.
		C309.2	Organize different file structures in the memory
		C309.3	Illustrate a suitable sorting technique to arrange the data and Construct b-tree
		C309.4	Construct and illustrate prefix b+ tree
		C309.5	Explain hashing and extendable hashing techniques for better performance to a given problem

SL.NO	Subject Code	Course code	Course Outcomes
42	SOFTWARE TESTING 18IS62	C310.1	Discussion on Testing terminologies, software development and testing life cycle, Understanding of Software quality attributes, metrics, identifying and generating test cases with different types of testing
		C310.2	Understanding the concepts of Boundary value analysis, equivalence class testing, decision tables, fault-based testing and etc
		C310.3	Understanding the concepts mutation analysis. Define/use testing, DD path, Scaffolding, slice-based testing.
		C310.4	Understanding basic principles of process framework and handling risks
		C310.5	Understanding basics of analyse test plans and types of testing, understanding various levels of testing in SATM

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43	WEB TECHNOLOGY APPLICATIONS 18CS63	C311.1	Adapt HTML and CSS syntax and semantics to build web pages
		C311.2	Construct and visually format tables and forms using HTML and CSS

		C311.3	Develop Client-Side Scripts using JavaScript and Server-Side Scripts using PHP to generate and display the contents dynamically.
		C311.4	Appraise the principles of object-oriented development using PHP
		C311.5	Inspect JavaScript frameworks like jQuery and Backbone which facilitates developer to focus on core features.

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44	CLOUD COMPUTING AND ITS APPLICATIONS 18CS643	C312.1	Understand the general concept of cloud and virtualization.
		C312.2	Understand the cloud computing architecture and Aneka cloud computing platform.
		C312.3	Understand concurrent computing and high throughput computing.
		C312.4	Understand data intensive computing and map reduce programming.
		C312.5	Understand cloud computing platforms and applications.

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45	Supply Chain Management 18ME653	C313.1	Understand the framework and scope of supply chain management.
		C313.2	Build and manage a competitive supply chain using strategies, models, techniques and information technology.
		C313.3	Plan the demand, inventory and supply and optimize supply chain network.
		C313.4	Understand the emerging trends and impact of IT on Supply chain.

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46	SOFTWARE TESTING LABORATORY 18ISL66	C314.1	List out the requirements for the given problem
		C314.2	Design and implement the solution for given problem in any programming language(C, C++,JAVA)
		C314.3	Derive test cases for any given problem
		C314.4	Apply the appropriate testing technique for the design of flow graph
		C314.5	Create appropriate document for the software artefact

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47	FILE STRUCTURES LABORATORY WITH MINI PROJECT 18ISL67	C315.1	Apply the concepts of Unix IPC to implement a given function.
		C315.2	Apply the different concepts of file structures for given programs

		C315.3	Write a program to manage operations on given file system.
		C315.4	Demonstrate hashing and indexing techniques
		C315.5	Apply the concepts of file system to produce the given application.

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48	MOBILE APPLICATION DEVELOPMENT 18CSMP68	C316.1	Create, test and debug Android application by setting up Android development environment.
		C316.2	Implement adaptive, responsive user interfaces that work across a wide range of devices.
		C316.3	Infer long running tasks and background work in Android applications.
		C316.4	Demonstrate methods in storing, sharing and retrieving data in Android applications.
		C316.5	Infer the role of permissions and security for Android applications

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49	ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING 18CS71	C401.1	Understand the theory of Artificial intelligence and Machine Learning.
		C401.2	Understand the Knowledge representation issues and concept learning.
		C401.3	Apply decision tree learning and artificial neural networks.
		C401.4	Apply Bayesian learning using bayes theorem, naive bayes classifier and EM Algorithm.
		C401.5	Apply Instance based learning and reinforcement learning.

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50	BIG DATA AND ANALYTICS 18CS72	C402.1	Understand fundamentals of Big Data analytics.
		C402.2	Investigate Hadoop framework and Hadoop Distributed File system.
		C402.3	Illustrate the concepts of NoSQL using MongoDB and Cassandra for Big Data.
		C402.4	Demonstrate the MapReduce programming model to process the big data along with Hadoop tools.
		C402.5	Use Machine Learning algorithms for real world big data.

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51	SOFTWARE ARCHITECTURE AND DESIGN PATTERN	C403.1	Design and implement codes with higher performance and lower complexity and aware of code qualities needed to keep code flexible

	18CS731	C403.2	Experience core design principles and be able to assess the quality of a design with respect to these principles.
		C403.3	Capable of applying these principles in the design of object-oriented systems.
		C403.4	Demonstrate an understanding of a range of design patterns. Be capable of comprehending a design presented using this vocabulary.
		C403.5	Be able to select and apply suitable patterns in specific contexts

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52	ROBOTIC PROCESS AUTOMATION DESIGN 18CS745	C404.1	Understand the basic concepts of RPA.
		C404.2	Describe various components and platforms of RPA.
		C404.3	Describe the different types of variables, control flow and data manipulation techniques.
		C404.4	Understand various control techniques and OCR in RPA.
		C404.5	Describe various types and strategies to handle exception.

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53	ENERGY AND ENVIRONMENT 18ME751	C405.1	Understand energy scenario, energy sources and their utilization.
		C405.2	Understand various methods of energy storage, energy management and economic analysis.
		C405.3	Analyse the awareness about environment and eco system.
		C405.4	Understand the environment pollution along with social issues and acts.

SL.NO	Subject Code	Course code	Course Outcomes
54	PROJECT WORK PHASE-I 18CSP77	C406.1	Highlight the objectives of the project by considering the ethics and social impact.
		C406.2	Compare and contrast with existing solutions and exemplify the scenarios to identify the subsystems.
		C406.3	Implement the subsystems using appropriate tools and methods.
		C406.4	Organize and integrate the subsystems to achieve the desired objectives and validate the results with different test scenarios.
		C406.5	Compose and present the project report, while emphasizing objectives, methods and testing approaches used to build the solution.



SL.NO	Subject Code	Course code	Course Outcomes
55	ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING LABORATORY 18CSL76	C407.1	Write a Program for A* And AO* Heuristic Search Programs
		C407.2	Design following algorithms Find-s and candidate Elimination algorithms using concept learning algorithm
		C407.3	Write a program to demonstrate the working of the decision tree based ID3. Build Artificial Neural Network to Implement Backpropagation algorithm.
		C407.4	Design following algorithms Bayes algorithm, EM algorithm using machine learning concepts.
		C407.5	Design following algorithms by making use of Data sets in implementing the machine learning algorithms such as KNN and Locally weighted regression)

SL.NO	Subject Code	Course code	Course Outcomes
56	INTERNET OF THINGS 18IS81	C408.1	Interpret the impact and challenges posed by IOT networks leading to new architectural models.
		C408.2	Compare and contrast the deployment of smart objects and the technologies to connect them to network.
		C408.3	Appraise the role of IOT protocols for efficient network communication.
		C408.4	Elaborate the need for data analytics and security in IOT.
		C408.5	Illustrate different sensor technologies for sensing real world entities and identify the applications of IOT industry.

SL.NO	Subject Code	Course code	Course Outcomes
57	STORAGE AREA NETWORK 18CS822	C409.1	Evaluate storage architectures and key data Centre elements in classic, virtualized, and cloud environments
		C409.2	Explain physical and logical components of a storage infrastructure including storage subsystems, RAID, and intelligent storage systems
		C409.3	Describe storage networking technologies such as FC SAN, IP SAN, FCoE and NAS
		C409.4	Articulate business continuity solutions—backup and replication, and archive for managing fixed content
		C409.5	Describe information security requirements and solutions, and identify parameters for managing and monitoring storage infrastructure in classic, virtualized, and cloud environments

SL.NO	Subject Code	Course code	Course Outcomes
58	PROJECT WORK PHASE-II 18CSP83	C410.1	Highlight the objectives of the project by considering the ethics and social impact.

		C410.2	Compare and contrast with existing solutions and exemplify the scenarios to identify the subsystems.
		C410.3	Implement the subsystems using appropriate tools and methods.
		C410.4	Organize and integrate the subsystems to achieve the desired objectives and validate the results with different test scenarios.
		C410.5	Compose and present the project report, while emphasizing objectives, methods and testing approaches used to build the solution.

SL.NO	Subject Code	Course code	Course Outcomes
59	TECHNICAL SEMINAR 18CSS84	C411.1	Identify associated topic of relevance and review the technologies relevant to the topic selected
		C411.2	Develop ability to comprehend multi-disciplinary engineering technological concept within ethical, environmental and social contexts.
		C411.3	Write technical document related to the topic using suitable tools to help convey the topic in focus
		C411.4	Manage time and verbal interaction and continuously develop the ability to address the queries through supporting explanation in public and professional dialogue.
		C411.5	Expose students to explore thinking ability and motivate towards research and innovation.

SL.NO	Subject Code	Course code	Course Outcomes
60	INTERNSHIP 18CSI85	C412.1	Identify engineering processes relevant to the industry
		C412.2	Understand the usage of modern technologies & tools in the field of Information Science Engineering
		C412.3	Demonstrate ethical conduct and professional accountability while working in a team for the benefit of society.
		C412.4	Adapt communication & Presentation skills
		C412.5	Improve report writing skills