CODE	SUBJECT	Course	Course Outcomes Description
C101	Mathematics-1	C101.1	Define first-order differential equation, linear differential equation and Bernoulli's equation to find solution for electrical circuits.
		C101.2	Interpret linear differential equation of higher order, homogeneous equation with constant co-efficient, Euler - Cauchy equation and solutions by variations of parameter to model electric circuits.
		C101.3	Solve series solutions of differential equations, power series method, Lagenders polynomials and Bessel's function to solve complex engineering problems.
		C101.4	Illustrate first-order differential equation, linear differential equation and Bernoulli's equation to find solution for electrical circuits.
		C101.5	Evaluate linear equation and vector space.
		C101.6	Derive the asymptote and curvature problems.
C102	Chemistry	C102.1	A basic idea about chemical reactions, its feasibility, rate, Effect of catalyst on reaction rate.
		C102.2	Understand the fundamental concepts on fuels as a branch of Industrial Chemistry.
		C102.3	Demonstrate the bulk properties and processes using phase Rule for different Component System.
		C102.4	Analyse an introductory idea about Corrosion and its Sources.
		C102.5	Formulate the application of Nanomaterial in the Medical and research field
		C102.6	Review ideas about New materials and its related areas.
C103	Basics Mechanical Engineering	C103.1	Define the concepts & laws of thermodynamics.
		C103.2	Understand basic components and common configuration of robots.
		C103.3	Apply principles of thermodynamics to steam power plant, air compressor, refrigerator, heat pump & I.C Engine.
		C103.4	Demonstrate the working principle of belt, rope, gear, coupling, clutch and brakes.
		C103.5	Calculate enthalpy, specific volume, internal energy & dryness fraction of different types of steam using Steam table.
		C103.6	Design working of Various instruments used for measuring temperature, pressure, flow,strain ,force & torque.
C104	Basic Electrical Engineering	C104.1	Calculate energy consumption in electrical systems.
		C104.2	Basic knowledge about the Electric and Magnetic circuits, electromagnetism.
		C104.3	Understand & demonstrate fundamentals of electromagnetism for working of Single-Phase transformer & electrostatics.

		C104.4	Apply knowledge of ac fundamentals to analyze series & parallel ac circuits.
		C104.5	Use the concept of poly phase ac circuit to analyze three phase star, delta circuits.
		C104.6	Apply the network theorems to analyze dc circuits.
C105	Communicative English	C105.1	Define various elements and concepts related to communicative English.
		C105.2	Describe EIE and RP in English Language
		C105.3	Perform for effective workplace communication
		C105.4	Illustrates the significance of professional writing
		C105.5	Relate the students of the nuances of soft skills
		C105.6	Derive the importance of Emotional Intelligence
C106	Programming for Problem Solving using C	C106.1	Acquire knowledge about the basic concept of writing a program.
		C106.2	Role of constants, variables, identifiers, operators, type conversion and other building blocks of C Language.
		C106.3	Use of conditional expressions and looping statements to solve problems associated with conditions and repetitions.
		C106.4	Role of Functions involving the idea of modularity.
		C106.5	Concept of Array, Structures, Self- referential structure, Unions and other derived data types and their applications.
		C106.6	Concept of Physical File I/O and File Handling.
C107	Chemistry Lab	C107.1	Define Titration through standardisation of KMnO4
		C107.2	Illustrate the procedure of determination of Flash point, Fire point, Viscosity of lubricating oil .
		C107.3	Estimate the amount of Fe2+, Ca2+, Total Hardness, Percentage of available Chlorine in a given sample.
		C107.4	Evaluate Hardness of water by Titration Method
		C107.5	Formulate Dissolved Oxygen level in a sample of water.
		C107.6	Validate the amount of individual alkali present in a mixture and
C108	Basics of Mechanical Engineering Lab	C108.1	Understand & apply the concepts of thermodynamics to steam power plants,refrigerators& air conditioners. .
		C108.2	Identify various types of I.C Engine & cycles of operation.
		C108.3	Calculate Velocity ratio of Gear & Belt drive.
		C108.4	Understand the importance of different parts & systems in Automobiles.
		C108.5	Apply Bernouli's principle to the venturi meter.
C109	English Language Lab	C109.1	Understand the importance of clarity, precision, conciseness and coherence in one's use of language both oral and written.
		C109.2	Communicate fluently and accurately with four skills:- Speaking, Listening, Writing& Reading.
		C109.3	Confident in verbal and nonverbal communication by means of practice

		C109.4	Create a lively and familiar communicative learning environment in the workplace.
		C109.5	Use the dictionary skills to find the correct pronunciation of words and perform various phonemic transcriptions.
C110	Workshop	C110.1	Identify the various tools and tackles used in workshop.
		C110.2	Understand fitting theory in engineering.
		C110.3	Demonstrate the working principle of lathe machine.
		C110.4	Analyse the various methods of welding technology.
		C110.5	Compare the mechanism of shaper machine, milling machine and drilling machine etc.
C111	Mathematics-II	C111.1	Define Laplace Transform to get the solution to differential equation, convolution and Integral equation.
		C111.2	Interpret the concepts of Fourier series, Fourier transform, Fourier Integral
		C111.3	Solve beta function and error function to get solutions of complex real life problem.
		C111.4	Illustrate the scalar and vector problems.
		C111.5	Evaluate line integral and double integration problems
		C111.6	Formulate the techniques of combine the problems using Gauss divergence and Stoke's theorem
C112	Physics	C112.1	Define the concepts of quantum mechanics.
		C112.2	Understand the basic features of different oscillatory systems, waves and related properties and properties of different types of solids.
		C112.3	Apply vector calculus in electromagnetic waves.
		C112.4	Analyse the application of quantum mechanics to various physical problems.
		C112.5	Compare interference and diffraction.
		C112.6	Justify the applications of LASER and Optical fibre in various fields.
C113	Basic Civil Engineering	C113.1	Define importance of Civil Engineering and List various construction materials.
		C113.2	Understand surveying and describe their types and the equipments used in it.
		C113.3	Demonstrate and identify different soils and its properties
		C113.4	Analyse fundamentals of Irrigation Engineering.
		C113.5	Plan and design roads
		C113.6	Revise various aspects of Transportation Engineering
C114	Engineering Mechanics	C114.1	Understand the concept of rigid body mechanics and various laws associated to rigid body, friction and its effect on a rigid body in equilibrium point of view.
		C114.2	Understand about force, effect of force on a rigid body and force algebra, projectile motion and rotational rigid body.
		C114.3	Understand the concept of free body diagram and its importance to engineering mechanics.

		C114.4	Understand the concept of frame (truss) and different techniques to solve a truss problem.
		C114.5	Understand the concept Centre of Gravity, Moment of Inertia, momentum, work, energy and impact.
		C114.6	Understand the concept of virtual work,dynamics and how it applicable to a rigid body.
C115	Basic Electronics Engineering	C115.1	Remember various laws and Theorems associated with electrical circuit.
		C115.2	Explain the concept of AC circuit.
		C115.3	Apply fundamental concepts of different types of Electrical machines.
		C115.4	Compare the different operations of FET and MOSFET circuits
		C115.5	Analyse functional details and operation of OP-AMP circuits.
		C115.6	Design the different digital circuits using logic gates
C116	Physics Lab	C116.1	Define acceleration due to gravity , different moduli of elasticity & surface tension.
		C116.2	Explain the phenomena like interference and diffraction in Newton's rings and for a plane diffraction grating.
		C116.3	Estimate the value of acceleration due to gravity and moduli of elasticity of different materials.
		C116.4	Differentiate the characteristic curve of PN diode and Bipolar junction transistor & charge and discharge time of a condenser connected in RC circuit.
		C116.5	Propose different frequencies for resonance for the vibrations in a stretched string using tuning forks.
		C116.6	Justify a project work on topics having different branches of physics.
C117	Programming for Problem Solving using C Lab	C117.1	Remember basic understanding of computer and basic concepts of programming to execute.
		C117.2	Understand the prospective, concepts and algorithm to develop a solution to problem.
		C117.3	Learn to concise and precise on implementing pseudo code in general to develop actual code.
		C117.4	Illustrate the derived data type array, function and pointer in programs.
		C117.5	Select the user defined data type structure, union and Enum for problem solving.
		C117.6	Develop file using different file handling functions.
C118	Electrical and Electronics Engineering Lab	C118.1	Calculate energy consumption in electrical systems.
		C118.2	Basic knowledge about the Electric and Magnetic circuits, electromagnetism.

		C118.3	Understand & demonstrate fundamentals of electromagnetism for working of Single-Phase transformer & electrostatics.
		C118.4	Apply knowledge of ac fundamentals to analyze series & parallel ac circuits.
		C118.5	Use the concept of poly phase ac circuit to analyze three phase star, delta circuits.
		C118.6	Apply the network theorems to analyze dc circuits.
C119	Basics Civil Engineering Lab	C119.1	State shape and size of brick.
		C119.2	Identify comprehensive strength of brick.
		C119.3	Demonstrate strength of Mortar
		C119.4	Analyse chain Surveying.
		C119.5	Plan compass surveying.
		C119.6	Justify modern surveying by use of Total station.
C120	Engineering Graphics & Design Lab	C120.1	List out the equipment required for engineering drawing.
		C120.2	Explain the concept of different angle of projection.
		C120.3	Apply projection rule in points, line, planes and solids.
		C120.4	Illustrate the concept of development theory on different solids.
		C120.5	Relate engineering drawing to AUTO CAD.
C201	Digital Logic Design	C201.1	Define the combinational and sequential circuit operation.
		C201.2	Explain a counter having a specified count sequence using state diagrams and state table
		C201.3	Apply the HDL for all digital circuits.
		C201.4	Analyse the layout of various digital circuit.
		C201.5	Design digital circuits, use standard laboratory instrumentation to verify the operation of the circuits, and use PC-based electronic circuit simulation software.
		C201.6	Validate combinational logic circuits using programmable logic devices.
		C202.2	Describe basic object oriented features.
		C202.3	Explain the correlation between object and class.
		C202.4	Determine inheritance and wrapper classes to achieve code reusability.
		C202.5	Perform web applications using Applets and collection frame work.
		C202.6	Design and create GUI based event driven programmes using Swing and JavaFX.
C203	Data Structure	C203.1	Identify and implement asymptotic notations of an algorithm to analyse the consumption of resources (time/space).
		C203.2	Discuss the concept of linear data structure and their sequential representation in programming.
		C203.3	Demonstrate linear data structure and their linked representation in terms of programming.

		C203.4	Analyse various searching and sorting techniques such as linear search, binary search, bubble sort, insertion sort, quick sort and heap sort using C programming.
		C203.5	Evaluate and compare tree traversal techniques.
		C203.6	Design a real life application through linear data structure using dynamic memory allocation.
C204	Problem Solving and python programming lab	C204.1	Interpret the fundamental Python syntax and semantics and be fluent in the use of Python control flow statements.
		C204.2	Express proficiency in the handling of strings and functions.
		C204.3	Determine the methods to create and manipulate Python programs by utilizing the data structures like lists, dictionaries, tuples and sets.
		C204.4	Identify the commonly used operations involving file systems and regular expressions.
		C204.5	Articulate the Object-Oriented Programming concepts such as encapsulation, inheritance and polymorphism as used in Python.
		C204.6	To develop the ability to write database applications in Python
C205	Discrete Mathematics	C205.1	Outline Sets and their algebra, duality, power sets and partitions, Principle of Strong Mathematical Induction and Product sets.
		C205.2	Explain Solving problems using Recurrence Relations, Pigeon-Hole Principle and Invertible Functions.
		C205.3	Solve various numeric and generating functions.
		C205.4	Analyse solution of recurrence relations by the method of generating functions, divide and conquer algorithms
		C205.5	Evaluate problems using groups, Rings and Boolean Algebra (Lattice, Principle of duality etc.)
		C205.6	Design graphs and trees to formulate solutions for real life problems.
C206	Engineering Economics	C206.1	Define all the fundamental and technical terms used in engineering economics : general concepts of micro and macroeconomic including theory of demand, law of demand, elasticity of demand etc
		C206.2	Understand the elasticity of demand and supply.
		C206.3	Solve cost and revenue based problems using Break Even Analysis approach.
		C206.4	Analyze the functioning of Banks and concepts of Inflation.
		C206.5	Evaluate banking structures and various financial services.
		C206.6	Formulate the depreciation using different methods like Straight line method, Declining balance method.
C207	Digital Logic Design Lab	C207.1	State the truth table of basic gates, universal gates and exclusive gates.

		C207.2	Explain the various Boolean Expression using universal gates.
		C207.3	Demonstrate various sequential circuit operations like latch and flip-flop.
		C207.4	Analyse VHDL code for various combinational and sequential circuit.
		C207.5	Design and test various combinational Circuits using Gates.
		C207.6	Justify various Registers using flipflop.
C208	Object Oriented Programming using JAVA Lab	C208.1	Define object oriented features, such as abstraction, inheritance, polymorphism for writing an effective program.
		C208.2	Explain different looping constructs for efficient programming.
		C208.3	Perform class and object concepts for the construction of programming.
		C208.4	Illustrate inheritance concepts for reusability of the code.
		C208.5	Implement exception handling to write robust programmes.
		C208.6	Design web based applications using applets.
C209	Data Structure Lab	C209.1	Identify and implement asymptotic notations of an algorithm to analyze the consumption of resources (time/space).
		C209.2	Discuss the concept of linear data structure and their sequential representation in programming.
		C209.3	Demonstrate linear data structure and their linked representation in terms of programming.
		C209.4	Analyze various searching and sorting techniques such as linear search, binary search, bubble sort, insertion sort, quick sort and heap sort using C programming.
		C209.5	Evaluate and compare tree traversal techniques.
		C209.6	Design a real life application through linear data structure using dynamic memory allocation.
C210	Data communication	C210.1	Define modern network architectures from a design and performance perspective.
		C210.2	Describe the basics and challenges of network communication.
		C210.3	Implement network programming using TCP/IP.
		C210.4	Analyze the operation of the protocols that are used inside the Internet.
		C210.5	Evaluate various types of transmission media with real time applications
		C210.6	Investigation on Application layer and Presentation layer paradigms and protocols.
C211	Evaluation Of Internship	C211.1	State the functioning of organization and observe changes for self improvement.
		C211.2	Explain how the internship placement site fits into a broader career field.

		C211.3	Apply appropriate workplace behaviors in a professional setting.
		C211.4	Solve real life challenges in the workplace by analysing work environment and conditions, and selecting appropriate skill sets acquired from the course
		C211.5	Evaluate the internship experience in terms of personal, educational and career needs.
		C211.6	Develop ideas for suitable startups to become successful entrepreneur.
C212	Mathematics III	C212.1	Define complex number.
		C212.2	Discuss complex Analytic function.
		C212.3	Interpret complex integral function.
		C212.4	Evaluate numerical differential equation .
		C212.5	Deduce the probability theory.
		C212.6	Review the statistical techniques.
C213	Computer Organization & Architecture	C213.1	Recall the basic structure and operational oncepts of computer.
		C213.2	Summarize the execution of machine instructions and design of the arithmetic and logic unit.
		C213.3	Solve arithmetic and logical operation using different techniques.
		C213.4	Classify different types of memory such as main memory, cache memory ,secondary memory and virtual memory.
		C213.5	Compare different types of microprocessor and Assembly Language Programming.
		C213.6	Design a logical diagram for a specified RAM
C214	Design & Analysis of Algorithms	C214.1	Define the various algorithm analysis methods and the asymptotic time complexities of various statements with its correctness'
		C214.2	Explain important algorithmic design paradigms (divide-and-conquer, greedy method, dynamic-programming and Backtracking) and apply when an algorithmic design situation calls for it.
		C214.3	Demonstrate the major graph algorithms and Employ graphs to model engineering problems when appropriate.
		C214.4	Apply different data structures for problem solving and pick an appropriate data structure for a design situation.
		C214.5	Compare the classes P, NP, and NP Complete and be able to prove that a certain problem is NP-Complete.
		C214.6	Familiarizing students with specific algorithms for a number of important computational problems design and development.
C215	Digital Signal Processing	C215.1	Understand the mathematical operation on discrete signals.

		C215.2	Sketch the magnitude and phase response of DFT, Inverse DFT and FFT of discrete time signals.
		C215.3	Calculate linear and circular convolution of discrete sequences.
		C215.4	Implement Z transform and inverse Z transform of discrete signals
		C215.5	Model IIR and FIR filter using window techniques
		C215.6	Understand the applications of DSP in speech processing and spectrum analysis.
C216	Formal Language & Automata Theory	C216.1	Define the knowledge of basic kinds of finite automata and their capabilities. (Knowledge)
		C216.2	Illustrate mathematical proofs for computation and algorithms.
		C216.3	Describe regular and Context-free Language with model.
		C216.4	Analyze key notions, such as algorithm, computability, P,NP,NPC, decidability, and complexity through problem solving.
		C216.5	Evaluate the relevance of the Church-Turing thesis.
		C216.6	Design finite automata, push down automata, Turing machines, formal languages & grammars.
C217	Organizational Behaviour	C217.1	Outline the development of the field of organizational behaviour and explain the micro and macro approaches.
		C217.2	Explain different models used to explain individual behaviour related to motivation and rewards.
		C217.3	Demonstrate skills required for working in groups (team building).
		C217.4	Analyze the various leadership styles and the role of leaders in a decision making process.
		C217.5	Compare organizational cultures and describe its dimensions and to examine various organizational designs.
		C217.6	Compose the implementation of organizational change.
C218	Computer Organization & Architecture Lab	C218.1	Identifying the various components of PC.
		C218.2	Discuss about the different troubleshooting of a dot matrix printer using LX 1050+ Printer Trainer Module
		C218.3	Demonstrate the functions of SMPS using SMPS Trainer Kit
		C218.4	Illustrate different troubleshooting of CPU using CPU Trainer Module.
		C218.5	Compare the assembly language program of 8085 and 8086 architecture.
		C218.6	Design of digital circuits (H/A, F/A, Decoder & Encoder) in VHDL using Active VHDL.
C219	Design & Analysis of Algorithms Lab	C219.1	Analyse and compare running times of algorithms using asymptotic analysis.
		C219.2	To demonstrate understanding of algorithmic design paradigms such as divide-and-conquer, dynamic-programming, greedy, backtracking etc

		C219.3	Apply the algorithms design techniques to solve greedy problem.
		C219.4	Ability to analyze and implement shortest path problem.
		C219.5	Demonstrate the efficiency of algorithms using polynomial problem.
		C219.6	Implement minimum spanning tree and analyze time complexity.
C220	Analog Electronic Circuits	C220.1	Define semiconductor device and different operating condition and their performance parameter.
		C220.2	To understand of small signal amplifier design using linear transistor models.
		C220.3	Illustrate working principle of different electronic circuit and their application in real life.
		C220.4	Analyze the performance parameter of the system.
		C220.5	Employ mathematical and graphical analysis considering different practical issues modeling of semiconductor device.
		C220.6	Recognize different signal processing circuit and the use in industrial, real life, modern control system application.
C221	Formal Language & Automata Theory Lab	C221.1	Understand the abstract model of finite automaton.
		C221.2	Implement the conversions of finite automaton.
		C221.3	Design the abstract model of Push Down Automaton.
		C221.4	Evaluate the parsing algorithm for some specific context free grammars.
		C221.5	Analyze abstract model of Turing Machine and the power to recognize the language.
		C221.6	Explain the application of machine models.
C301	Operating System	C301.1	Define Operating system, process, critical section, semaphore, monitor, thread, deadlock, virtual memory, file, protection and security.
		C301.2	Explain Operating system functions and services, process control block and process cycle, Describe characteristics for deadlock deadlock handling strategies, paging, segmentation, different file systems.
		C301.3	Solve problems on cpu scheduling, dead lock avoidance, paging and disk scheduling.
		C301.4	Analyze different operating system structures and different CPU scheduling algorithms, file structures.
		C301.5	Compare paging and segmentation, page replacement algorithms, disk scheduling mechanisms.
		C301.6	Prepare a list of functionality requirement specification of an operating system for a real world scenario.
C302	Computer Graphics	C302.1	Define different line drawing and circle drawing algorithms.
		C302.2	Discuss basic transformations between coordinate systems.
		C303.3	Determine various computer graphics tools and techniques.
		C302.4	Categorize between different projection systems.

		C302.5	Evaluate various algorithms of 2D and 3D transformations on different types of objects.
		C302.6	Create interactive computer graphics using different animations.
C303	Advanced Computer Architecture	C303.1	Define microprocessor, microcontroller, pipelining and interconnection network.
		C303.2	Describe the various stages of pipelining and different interconnection network mechanisms.
		C303.3	Demonstrate the performance enhancements by using concepts of pipelines, dynamic scheduling, branch prediction, caches, and vector processors.
		C303.4	Analyze modern architectures such as Super Scalar, VLIW (very large instruction word), multi-core and multi-cpu systems.
		C303.5	Evaluate the effectiveness of different mapping techniques for cache and page replacement algorithms or reducing page faults.
		C303.6	Design a hypothetical message passing system using any suitable interconnection structure.
C304	Advanced JAVA Programming	C304.1	Remembering the basic programming concepts of network interface.
		C304.2	Understanding the concept of client-server communication.
		C304.3	Demonstrate some database driven programs.
		C304.4	Analyze some API based programs such as Servlet.
		C304.5	Create advanced web based applications using Java.
		C304.6	Develop and deploy Enterprise Wide applications using Java's component technology.
C305	Data base management system	C305.1	Outline the basic concepts of data base systems and identify different data base architecture schemas, data models.
		C305.2	Interpret the components of E R model and describe the storage architecture.
		C305.3	Demonstrate relational algebra, relational calculus and apply them in database design.
		C305.4	Analyze and illustrate the different normal forms and classify their utility in data base design.
		C305.5	Determine the properties of transaction processing, concurrency control and timestamp methods.
		C305.6	Design and Create relational database from different case studies and formulate the uses of distributed database, parallel database, data ware housing, data mining & Big data.
C306	Operating System Lab	C306.1	Remember and use of various Linux commands and UNIX system calls.
		C306.2	Interpret the commands using different parameters.
		C306.3	Demonstrate the submission of small problems using shell programming and implement various OS algorithms.
		C306.4	Analyze the shared memory and message queue communication among processes.

		C306.5	Evaluate their performance of different page replacement algorithms with respect to page fault through simulation.
		C306.6	Build one program to check whether there will be deadlock or not for any given real world problem.
C307	Computer Graphics Lab	C307.1	Outline the difference between DDA and Bresenham's Line drawing algorithms .
		C307.2	Discuss circle drawing and line clipping algorithm using different programming techniques.
		C307.3	Model 2D transformation and 3D transformation in "C" programming.
		C307.4	Illustrate the boundary fill algorithm, seed fill algorithm and flood fill algorithm in different programming techniques .
		C307.5	Contrast the Bezier curve and B-Spline curve in OpenGL.
		C307.6	Create interactive computer graphics using virtual reality.
C308	Data base management system Lab	C308.1	Define data model and Schemas in RDBMS.
		C308.2	Describe SQL, DDL, DML and DCL SQL statements to perform different operations.
		C308.3	Apply DDL, DML statements on a Problem domain.
		C308.4	Classify different DML statements like Aggregate function, Joins, Nested Queries
		C308.5	Determine the uses of procedures, cursors, sub programs etc in PL/SQL.
		C308.6	Design and Create a complete Database and develop different DML statements for execution.
C309	Software Engineering	C309.1	Identify the requirement of software engineering in designing, development, testing and deployment of a real life software project.
		C309.2	Understand software life cycle model for systematic development of a project.
		C309.3	Ability to develop, maintain, efficient, reliable and cost effective software solutions.
		C309.4	Illustrate to identify the minimum requirements for the development of application.
		C309.5	Select different software testing approaches such as unit testing and integration testing.
		C309.6	Design a prototype of a software application using SDLC concept.
C310	Optimization in Engineering	C310.1	Apply basic concepts of mathematics to formulate an optimization problem.
		C310.2	Analyze and appreciate variety of performance measures for various optimization problems.
		C310.3	To understand importance of optimization in different sectors.
		C310.4	To understand the theory of optimization methods and algorithms developed for solving various types of optimization problems.

		C310.5	To develop and promote research interest in applying optimization techniques in problems of Engineering and Technology.
		C310.6	To apply the mathematical results and numerical techniques of optimization theory to concrete Engineering problems.
C311	Compiler Design	C311.1	Define various phases of compiler, code optimization techniques and machine code generation.
		C311.2	Classify top down & bottom up parsing.
		C311.3	Demonstrate DAG for intermediate code generation.
		C311.4	Analyze the knowledge of parser by parsing LL parser and LR parser.
		C311.5	Implementing code optimization by removing redundant and unreachable codes.
		C311.6	Analyze & Design Run time environments and Syntax directed translations.
C312	Wireless Sensor Networks	C312.1	Define the fundamental knowledge on basics of wireless sensor networks and network simulator tool
		C312.2	Describe the various wireless standards and protocols.
		C312.3	Implement hypotheses and data into actionable predictions
		C312.4	Compare different range of routing algorithms along with their strengths and weaknesses.
		C312.5	Evaluate document and transfer the results and effectively communicate the Findings using visualization techniques.
		C312.6	Design a WSN based hardware project for social need.
C313	Numerical Methods	C313.1	Knowledge of error and it's used in different Numerical method and explore the knowledge for solving any type of one variable equation by Numerical technique.
		C313.2	Knowledge of matrix and linear algebraic equations and technique for solving it by Numerical method.
		C313.3	Students can know about Interpolation and derive it from a tabular data.
		C313.4	Students can solve any type of definite integral with a suitable error.
		C313.5	Knowledge of differential equations and technique of getting solution of IVP by numerical method.
		C313.6	Students can differentiate IVP & BVP and method for solving a BVP problem by Numerical
C314	Software Engineering Lab	C314.1	Outline the SRS for different functional and non-functional requirements.
		C314.2	Understand the software engineering methodologies involved in the phases for software development.
		C314.3	Solve the DFD of various models.
		C314.4	Ability to develop product startup and implementing software process models in software engineering methods.
		C314.5	Select the various testing tools for software mechanisms.

		C314.6	Build project management tool like MS Project or Gantt Project.
C315	Summer Internship	C315.1	Define the applications of engineering concepts and principles learned in classroom.
		C315.2	Describe the processes and products manufactured in the industries.
		C315.3	Demonstrate interpersonal skill by communicating directly with industrial personnel.
		C315.4	Illustrate the awareness of the engineering and technological aspects.
		C315.5	Choose the roles and ethics of engineers in the industries.
		C315.6	Formulate the impacts of industrial processes on health, safety, environment and society
C316	Future Ready Contributor Develop model Lab	C316.1	Improve the employability of students by giving them the right work ethic and thinking that employers are looking for.
		C316.2	Improve their ability to engage better in the workplace and to be able to handle the challenges that come up there.
		C316.3	Widen their choices of career and success, so that they are able to open up more opportunities for themselves and take up unconventional career pathways.
		C316.4	Build their confidence with which they can go into any job and contribute meaningfully.
		C316.5	Enable them recognize how they as technical professionals, can participate and make a positive contribution to their communities and to their state.
		C316.6	Build their career-worthiness and help them develop into future-ready contributors with ability to navigate a career in a volatile, changing world.
C317	Essence of Indian Knowledge Tradition-1	C317.1	Introduction to Indian Knowledge System.
		C317.2	Imparting basic principles of thought process, reasoning and inferencing.
		C317.3	Ability to understand, connect up and explain basics of Indian Traditional knowledge modern scientific perspective.
		C317.4	To apply in Indian perspective of modern scientific world-view and basic principles of Yoga and holistic health care system.
C318	Compiler Design Lab	C318.1	Understand the working of lex and Yacc compiler for debugging of programs.
		C318.2	Understand and define the role of lexical analyzer, use of regular expression and transition diagrams.
		C318.3	Understand and use Context free grammar, and parse tree construction.
		C318.4	Learn & use the new tools and technologies used for designing a compiler.
		C318.5	Develop program for solving parser problems.

		C318.6	Learn how to write programs that execute faster
C401	Cryptography and Network security	C401.1	Identify various Cryptographic Techniques
		C401.2	Describe network security services and mechanisms.
		C401.3	Solve mathematic concepts behind the cryptographic algorithms.
		C401.4	Illustrate various public key cryptography techniques.
		C401.5	Implement Hashing and Digital Signature techniques.
		C401.6	Build system level security applications.
C402	Software Project Management	C402.1	Define roles and responsibilities by software project management process group.
		C402.2	Describe the purpose and benefits of project management.
		C402.3	Illustrate reports and oral presentations.
		C402.4	Analyze a project and implement a solution by working in groups.
		C402.5	Evaluate quality management and process improvement in the context of software development projects.
		C402.6	Design and formulate risk management techniques of IS projects.
C403	Internet of Things	C403.1	Identify the IoT networking components with respect to OSI layer.
		C403.2	Summarize schematic for IoT solutions
		C403.3	Demonstrate and develop IoT based smart environment.
		C403.4	Illustrate the IoT protocols and software.
		C403.5	Justify cloud computing for developing IOT based application.
		C403.6	Develop a real time system prototype by using Arduino or node MCU.
C404	Green Technology	C404.1	Enlist different concepts of green technologies in a project
		C404.2	Understand the principles of Energy efficient technologies
		C404.3	Estimate the carbon credits of various activities
		C404.4	Identify the importance of life cycle assessment
		C404.5	Recognize the benefits of green fuels with respect to sustainable development.
		C404.6	To impart knowledge on the methods of reducing CO2 levels in atmosphere.
C405	Seminar	C405.1	Outline the topics on modern technology; prepare implementation of the same as the presentation.
		C405.2	Understanding the technologies used by extracting the new things to be implemented by reviewing the journals/research papers.
		C405.3	Sketch the application of the technology for the use of the mankind.
		C405.4	Analyze and correlate the new technology with the subject of interest for further study.

		C405.5	Evaluate , plan and reframe the technology with the communication skills for a better explanation and presentation.
		C405.6	Modify and design the concept into the realistic world.
C406	Minor Project	C406.1	Define problems and suggest a feasible, cost effective, eco friendly solution for the benefit of the society.
		C406.2	Discuss relation of the project to the literature & Engineering knowledge.
		C406.3	Demonstrate properly to complete the project within the scheduled time.
		C406.4	Analyze project with proper methodology and team spirit.
		C406.5	Evaluate and validate the project.
		C406.6	Generate thesis/ project report as per standard norm.
C407	Enterpreneurship Development	C407.1	Outline the business environment in order to identify business opportunities.
		C407.2	Understand the legal and financial conditions for starting a business venture.
		C407.3	Apply the knowledge on enterprise and design business plans those are suitable for funding by considering all dimensions of business.
		C407.4	Analyze the effectiveness of different entrepreneurial strategies.
		C407.5	Evaluate the basic performance indicators of entrepreneurial activity.
		C407.6	Generate the importance of marketing and management in small businesses venture.
C408	Major Project	C408.1	Define problems and suggest a feasible, cost effective, eco friendly solution for the benefit of the society.
		C408.2	Discuss relation of the project to the literature & Engineering knowledge.
		C408.3	Demonstrate properly to complete the project within the scheduled time.
		C408.4	Analyze project with proper methodology and team spirit.
		C408.5	Evaluate and validate the project.
		C408.6	Generate thesis/ project report as per standard norm.