3.1.1 Course Outcomes:

Course Outcomes for First Year First Semester Course		
Course Title with Code	**CO'S**	**Statement**
C101 English	CO1	understand social or transactional dialogues spoken by native speakers of English and identify the context, topic, and pieces of specific information
	CO2	ask and answer general questions on familiar topics and introduce oneself/others
	CO3	employ suitable strategies for skimming and scanning to get the general idea of a text and locate specific information
	CO4	recognize paragraph structure and be able to match beginnings/endings/headings with paragraphs
	CO5	form sentences using proper grammatical structures and correct word forms
C102 Mathematics - I	CO1	Utilize mean value theorems to real life problems
	CO2	Solve the differential equations related to various engineering fields
	CO3	Familiarize with functions of several variables which is useful in optimization
	CO4	Apply double integration techniques in evaluating areas bounded by region (L3)
	CO5	Students will also learn important tools of calculus in higher dimensions. Students will become familiar with 2- dimensional and 3-dimensional coordinate systems (L5)
C103 Applied Chemistry	CO1	Explain the preparation, properties and applications of the rmoplastics, thermo settings, elastomers and conducting polymers
	CO2	Know the importance of various materials and their uses in the construction of batteries and fuel cells.
	CO3	To acquire the knowledge of nano-materials, refractories,lubricants and cement
	CO4	Assess the quality of various fuels.
	CO5	Understand the importance of water andits usage in various industries.

C104 Fundamentals of Computer Science	CO1	Illustrate the concept of input and output devices of Computers and how it works and recognize the basic terminology used in computer programming.
	CO2	Recognize the Computer networks, types of networks and topologies.
	CO3	Summarize the concepts of Operating Systems and Databases.
	CO4	Recite the Advanced Computer Technologies like Distributed Computing & Wireless Networks.
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C105 Engineering Drawing	CO1	The student will learn how to visualize 2D & 3D objects.
C106 English Lab	CO1	identify the context, topic, and pieces of specific information from social or transactional dialogues spoken by native speakers of English and speak clearly on a specific topic using suitable discourse markers in informal discussions (L3)
	CO2	take notes while listening to a talk/lecture; to answer questions in English; formulate sentences using proper grammatical structures and correct word forms; and use language effectively in competitive examinations (L3)
	CO3	Write summaries based on global comprehension of reading/listening texts; produce a coherent write-up interpreting a figure/graph/chart/table; and use English as a successful medium of communication.
C107 Applied Chemistry Lab	CO1	Estimate the amount of metal ions present in different solutions(L5)
	CO2	Analyze the quality parameters of water (L4)
	CO3	Determine the strength of different solutions by using different instrumentation techniques (L5)
C108 IT Workshop	CO1	Assemble and disassemble components of a PC
	CO2	Construct a fully functional virtual machine, Summarize various Linux operating system commands,
	CO3	Secure a computer from cyber threats, Learn and practice programming skill in Github, Hackerrank, Codechef, and HackerEarth etc.
	CO4	Recognize characters & extract text from scanned images, Create audio files and podcasts
	CO5	Create video tutorials and publishing, Use office tools for documentation, Build interactive presentations, Build websites, Create quizzes & analyze responses.

C109 Environmental Science	CO1	Able to Understand The concepts of the ecosystem
	CO2	Able to Understand The natural resources and their importance
	CO3	Able to learn The biodiversity of India and the threats to bio diversity, and Apply conservation practices
	CO4	Able to learn Various attributes o the pollution and their impacts
	CO5	Able to Understand Social issues both rural and urban environment
	CO6	Able to Understand About environmental Impact assessment and Evaluate the stages involved in EIA
C110 Mathematics – II	CO1	develop the use of matrix algebra techniques that is needed by engineers for practical applications
	CO2	solve system of linear algebraic equations using Gauss elimination, Gauss Jordan, Gauss Seidel
	CO3	evaluate approximating the roots of polynomial and transcendental equations by different algorithms
	CO4	apply Newton's forward & backward interpolation and Lagrange's formulae for equal and unequal intervals
	CO5	apply different algorithms for approximating the solutions of ordinary differential equations to its analytical computations
C111 Mathematics – III	CO1	Interpret the physical meaning of different operators such as gradient, curl and divergence (L5)
	CO2	Estimate the work done against a field, circulation and flux using vector calculus (L5)
	CO3	Apply the Laplace transform for solving differential equations (L3)
	CO4	Find or compute the Fourier series of periodic signals (L3)
	CO5	Know and be able to apply integral expressions for the forwards and inverse Fourier transform to a range of non-periodic waveforms (L3)
	CO6	Identify solution methods for partial differential equations that model physical processes
C112 Applied Physics	CO1	Explain the concept of polarization in dielectric materials.
	CO2	summarize various types of polarization of dielectrics
	CO3	interpret Lorentz field and Claussius- Mosotti relation in dielectrics.
	CO4	classify the magnetic materials based on susceptibility and their temperature dependence.
	CO5	explain the applications of dielectric and magnetic materials .

	CO6	Apply the concept of magnetism to magnetic devices.
C113 Programming for Problem Solving using C	CO1	To write algorithms and to draw flowcharts for solving problems
	CO2	To convert flowcharts/algorithms to C Programs, compile and debug programs
	CO3	To use different operators, data types and write programs that use two-way/ multi-way selection
	CO4	To select the best loop construct for a given problem
	CO5	To design and implement programs to analyze the different pointer applications
	CO6	To decompose a problem into functions and to develop modular reusable code
	CO7	To apply File I/O operations
C114 Digital Logic Design	CO1	An ability to define different number systems, binary addition and subtraction, 2's complement representation and operations with this representation.
	CO2	An ability to understand the different switching algebra theorems and apply them for logic functions.
	CO3	An ability to define the Karnaugh map for a few variables and perform an algorithmic Reduction of logic functions.
	CO4	Students will be able to design various logic gates starting from simple ordinary gates to complex programmable logic devices & arrays.
	CO5	Students will be able to design various sequential circuits starting from flip-flop to registers and counters.
C115 Applied Physics Lab	CO1	Operate optical instruments like micro scope and spectrometer (L2)
	CO2	Determine thickness of apaper with the concept of interference (L2)
	CO3	Estimate the wave length of different colors using diffraction grating and resolving power(L2)
	CO4	Plot the intensity of them a gnetic field of circular coilc arryingc urrent with distance(L3)
	CO5	Determine magnetic susceptibility of them at erial and its losses byB-Hcurve(L3)

	CO6	Determine the resistivity of the given semi conductor using four probe method (L3)
	CO7	Identify the type of semi conductor., n-type or p-type using hall effect (L3)
	CO8	Calculate the band gap of a given semiconductor(L3)
C116 Communication Skills Lab	CO1	Prioritize information from reading texts after selecting relevant and useful points(L3)
	CO2	Paraphrase short academic texts using suitable strategies and conventions (L3)
	CO3	Make formal structured presentations on academic topics using PPT slides with relevant graphical elements (L3)
	CO4	Participateingroupdiscussions using appropriate conventions and language strategies (L3)
	CO5	prepare a CV with a cover letter to seek ternship/job(L2) collaborate with a partner to make presentations and Project Reports(L2)
C117 Programming for Problem Solving using C Lab	CO1	Gains Knowledge on various concepts of a C language.
	CO2	Able to draw flowcharts and write algorithms.
	CO3	Able design and development of C problem solving skills.
	CO4	Able to design and develop modular programming skills.
	CO5	Able to trace and debug a program
C118 Engineering Exploration Project	CO1	Application of Engineering Principles
	CO2	Design and Prototyping
	CO3	Problem Identification and Solution Development
	CO4	Experimentation and Testing
	CO5	Teamwork and Collaboration
	CO6	Communication and Reporting
	CO7	Ethical, Environmental, and Societal Considerations
	CO8	Innovation and Creativity

C119 Constitution of India	CO1	Understand historical background of the constitution making and its importance for building a democratic India.
	CO2	Understand the functioning of three wings of the government i.e., executive, legislative and judiciary.
	CO3	Understand the value of the fundamental rights and duties for becoming good citizen of India.
	CO4	Analyze the decentralization of power between central, state and local self-government.
	CO5	Apply the knowledge in strengthening of the constitutional institutions like CAG, Election Commission and UPSC for sustaining democracy.
C201 Mathematical Foundations of Computer Science	CO1	Demonstrate skills in solving mathematical problems
	CO2	Comprehend mathematical principles and logic
	CO3	Demonstrate knowledge of mathematical modeling and proficiency in using mathematical software
	CO4	Manipulate and analyze data numerically and/or graphically using appropriate Software
	CO5	Communicate effectively mathematical ideas/results verbally or in writing
C202 Software Engineering	CO1	Ability to transform an Object-Oriented Design into high quality, executable code
	CO2	Skills to design, implement, and execute test cases at the Unit and Integration level
	CO3	Compare conventional and agile software methods
C203 Python Programming	CO1	Develop essential programming skills in computer programming concepts like data types, containers
	CO2	Apply the basics of programming in the Python language
	CO3	Solve coding tasks related conditional execution, loops
	CO4	Solve coding tasks related to the fundamental notions and techniques used in object oriented programming
C204 Data Structures	CO1	Summarize the properties, interfaces, and behaviors of basic abstract data types
	CO2	Discuss the computational efficiency of the principal algorithms for sorting & searching
	CO3	Use arrays, records, linked structures, stacks, queues, trees, and Graphs in writing programs
	CO4	Demonstrate different methods for traversing trees
C205 Object Oriented Programming through C++	CO1	Classify object oriented programming and procedural programming
	CO2	Apply C++ features such as composition of objects, operator overloads, dynamic memory allocation, inheritance and polymorphism, file I/O, exception handling

	CO3	Build C++ classes using appropriate encapsulation and design principles
	CO4	Apply object oriented or non-object oriented techniques to solve bigger computing problems
C206 Computer Organization	CO1	Develop a detailed understanding of computer systems
	CO2	Cite different number systems, binary addition and subtraction, standard, floating-point, and micro operations
	CO3	Develop a detailed understanding of architecture and functionality of central processing unit
	CO4	Exemplify in a better way the I/O and memory organization
	CO5	Illustrate concepts of parallel processing, pipelining and inter processor communication
C207 Python Programming Lab	CO1	Write, Test and Debug Python Programs
	CO2	Use Conditionals and Loops for Python Programs
	CO3	Use functions and represent Compound data using Lists, Tuples and Dictionaries
	CO4	Use various applications using python
C208 Data Structures through C++ Lab	CO1	Apply the various OOPs concepts with the help of programs
	CO2	Use basic data structures such as arrays and linked list.
	CO3	Programs to demonstrate fundamental algorithmic problems including Tree Traversals, Graph traversals, and shortest paths
	CO4	Use various searching and sorting algorithms
C209 Essence of Indian Traditional Knowledge	CO1	Understand the concept of Traditional knowledge and its importance
	CO2	Know the need and importance of protecting traditional knowledge
	CO3	Know the various enactments related to the protection of traditional knowledge
	CO4	Understand the concepts of Intellectual property to protect the traditional knowledge
C210 Employability Skills- I*	CO1	Establish effective communication with employers, supervisors, and co-workers
	CO2	Identify to explore their values and career choices through individual skill assessments
	CO3	Adapts positive attitude and appropriate body language
	CO4	Interpret the core competencies to succeed in professional and personal life

C211 Probability and Statistics	CO1	Classify the concepts of data science and its importance (L4) or (L2)
	CO2	Interpret the association of characteristics and through correlation and regression tools (L4)
	CO3	Make use of the concepts of probability and their applications (L3)
	CO4	Apply discrete and continuous probability distributions (L3)
	CO5	Design the components of a classical hypothesis test (L6)
	CO6	Infer the statistical inferential methods based on small and large sampling tests (L4)
C212 Java Programming	CO1	Able to realize the concept of Object Oriented Programming & Java Programming Constructs
	CO2	Able to describe the basic concepts of Java such as operators, classes, objects, inheritance, packages, Enumeration and various keywords
	CO3	Apply the concept of exception handling and Input/ Output operations
	CO4	Able to design the applications of Java & Java applet
	CO5	Able to Analyze & Design the concept of Event Handling and Abstract Window Toolkit
C213 Operating Systems	CO1	Describe various generations of Operating System and functions of Operating System
	CO2	Describe the concept of program, process and thread and analyze various CPU Scheduling Algorithms and compare their performance
	CO3	Solve Inter Process Communication problems using Mathematical Equations by various methods
	CO4	Compare various Memory Management Schemes especially paging and Segmentation in Operating System and apply various Page Replacement Techniques
	CO5	Outline File Systems in Operating System like UNIX/Linux and Windows
C214 Database Management Systems	CO1	Describe a relational database and object-oriented database
	CO2	Create, maintain and manipulate a relational database using SQL
	CO3	Describe ER model and normalization for database design

	CO4	Examine issues in data storage and query processing and can formulate appropriate solutions
	CO5	Outline the role and issues in management of data such as efficiency, privacy, security, ethical responsibility, and strategic advantage
C215 Formal Languages and Automata Theory	CO1	Classify machines by their power to recognize languages.
	CO2	Summarize language classes & grammars relationship among them with the help of Chomsky hierarchy
	CO3	Employ finite state machines to solve problems in computing
	CO4	Illustrate deterministic and non-deterministic machines
	CO5	Quote the hierarchy of problems arising in the computer science
C216 Java Programming Lab	CO1	Evaluate default value of all primitive data type, Operations, Expressions, Control-flow, Strings
	CO2	Determine Class, Objects, Methods, Inheritance, Exception, Runtime Polymorphism, User defined Exception handling mechanism
	CO3	Illustrating simple inheritance, multi-level inheritance, Exception handling mechanism
	CO4	Construct Threads, Event Handling, implement packages, developing applets
C217 UNIX Operating System Lab	CO1	To use Unix utilities and perform basic shell control of the utilities
	CO2	To use the Unix file system and file access control
	CO3	To use of an operating system to develop software
	CO4	Students will be able to use Linux environment efficiently
	CO5	Solve problems using bash for shell scripting
C218 Database Management Systems Lab	CO1	Utilize SQL to execute queries for creating database and performing data manipulation operations
	CO2	Examine integrity constraints to build efficient databases
	CO3	Apply Queries using Advanced Concepts of SQL
	CO4	Build PL/SQL programs including stored procedures, functions, cursors and triggers
C219 Professional Ethics & Human Values	CO1	Identify and analyze an ethical issue in the subject matter under investigation or in a relevant field
	CO2	Identify the multiple ethical interests at stake in a real-world situation or practice
	CO3	Articulate what makes a particular course of action ethically defensible
	CO4	Assess their own ethical values and the social context of problems
	CO5	Identify ethical concerns in research and intellectual contexts, including academic integrity, use and citation of sources, the

		objective presentation of data, and the treatment of human subjects
	CO6	Demonstrate knowledge of ethical values in non-classroom activities, such as service learning, internships, and field work
	CO7	Integrate, synthesize, and apply knowledge of ethical dilemmas and resolutions in academic settings, including focused and interdisciplinary research.
C220 Socially Relevant Project*	CO1	Use scientific reasoning to gather, evaluate, and interpret ideas
	CO2	Analyze and design solutions to solve the ideas
	CO3	Use one or more creative tools to complete the projects
C301 Data Warehousing and Data Mining	CO1	Design a Data warehouse system and perform business analysis with OLAP tools
	CO2	Apply suitable pre-processing and visualization techniques for data analysis
	CO3	Apply frequent pattern and association rule mining techniques for data analysis
	CO4	Apply appropriate classification techniques for data analysis
	CO5	Apply appropriate clustering techniques for data analysis
C302 Computer Networks	CO1	Illustrate the OSI and TCP/IP reference model
	CO2	Analyze MAC layer protocols and LAN technologies
	CO3	Design applications using internet protocols
	CO4	Implement routing and congestion control algorithms
	CO5	Develop application layer protocols
C303 Compiler Design	CO1	Design, develop, and implement a compiler for any language
	CO2	Use LEX and YACC tools for developing a scanner and a parser
	CO3	Design and implement LL and LR parsers
	CO4	Design algorithms to perform code optimization in order to improve the performance of a program in terms of space and time complexity
	CO5	Apply algorithms to generate machine code
C304 Artificial Intelligence	CO1	Outline problems that are amenable to solution by AI methods, and which AI methods may be suited to solving a given problem
	CO2	Apply the language/framework of different AI methods for a given problem

	CO3	Implement basic AI algorithms- standard search algorithms or dynamic programming
	CO4	Design and carry out an empirical evaluation of different algorithms on problem formalization, and state the conclusions that the evaluation supports
C305 Software Testing Methodologies	CO1	Identify and understand various software testing problems, apply software testing knowledge and engineering methods and solve these problems by designing and selecting software test models, criteria, strategies, and methods
	CO2	Design and conduct a software test process for a software project
	CO3	Analyze the needs of software test automation
	CO4	Use various communication methods and skills to communicate with their teammates to conduct their practice-oriented software testing projects
	CO5	Basic understanding and knowledge of contemporary issues in software testing, such as component-based, web based and object oriented software testing problems
	CO6	Write test cases for given software to test it before delivery to the customer and write test scripts for both desktop and web based applications
C306 Computer Networks Lab	CO1	Apply the basics of Physical layer in real time applications
	CO2	Apply data link layer concepts, design issues, and protocols
	CO3	Apply Network layer routing protocols and IP addressing
	CO4	Implement the functions of Application layer and Presentation layer paradigms and Protocol
C307 AI Tools & Techniques Lab	CO1	Identify problems that are amenable to solution by AI methods
	CO2	Identify appropriate AI methods to solve a given problem
	CO3	Use language/framework of different AI methods for solving problems
	CO4	Implement basic AI algorithms
	CO5	Design and carry out an empirical evaluation of different algorithms on problem formalization, and state the conclusions that the evaluation supports
C308 Data Mining Lab	CO1	Extend the functionality of R by using add-on packages
	CO2	Examine data from files and other sources and perform various data manipulation tasks on them
	CO3	Code statistical functions in R
	CO4	Use R Graphics and Tables to visualize results of various statistical operations on data

	CO5	Apply the knowledge of R gained to data Analytics for real life applications
C309 Employability Skills - II*	CO1	Recite the corporate etiquette
	CO2	Make presentations effectively with appropriate body language
	CO3	Be composed with positive attitude
	CO4	Apply their core competencies to succeed in professional and personal life
C310 Web Technologies	CO1	Illustrate the basic concepts of HTML and CSS & apply those concepts to design static web pages
	CO2	Identify and understand various concepts related to dynamic web pages and validate them using JavaScript
	CO3	Outline the concepts of Extensible markup language & AJAX
	CO4	Develop web Applications using Scripting Languages & Frameworks
	CO5	Create and deploy secure, usable database driven web applications using PHP and RUBY
C311 Distributed Systems	CO1	Elucidate the foundations and issues of distributed systems
	CO2	Elucidate the foundations and issues of distributed systems
	CO3	Illustrate the Mutual Exclusion and Deadlock detection algorithms in distributed systems
	CO4	Describe the agreement protocols and fault tolerance mechanisms in distributed systems
	CO5	Describe the features of peer-to-peer and distributed shared memory systems
C312 Design and Analysis of Algorithms	CO1	Describe asymptotic notation used for denoting performance of algorithms
	CO2	Analyze the performance of a given algorithm and denote its time complexity using the asymptotic notation for recursive and non-recursive algorithms
	CO3	List and describe various algorithmic approaches
	CO4	Solve problems using divide and conquer, greedy, dynamic programming, backtracking and branch and bound algorithmic approaches
	CO5	Apply graph search algorithms to real world problems
	CO6	Demonstrate an understanding of NP- Completeness theory and lower bound theory
C313 PE-II –Information Retrieval System	CO1	Understanding of Information Retrieval Fundamentals
	CO2	Implementation of Search Algorithms
	CO3	Use of Data Structures in Information Retrieval

	CO4	Evaluation of Information Retrieval Systems
	CO5	Use of Databases and NoSQL in Information Retrieval
C314 OE-1-Principles of Communication	CO1	Understand Communication Models and Theories
	CO2	Develop Verbal and Non-Verbal Communication Skills
	CO3	Write Clear and Concise Messages
	CO4	Communicate Effectively in Professional and Team Settings
	CO5	Understand Ethical and Cultural Considerations in Communication
C315 MEFA	CO1	Understand the Basic Principles of Managerial Economics and Apply Them to Business Decisions
	CO2	Analyze the Impact of Market Structures on Pricing and Output Decisions
	CO3	Utilize Financial Analysis Tools to Assess the Performance and Viability of Business Decisions
	CO4	Apply Cost-Volume-Profit (CVP) Analysis for Decision-Making in Pricing and Production
	CO5	Evaluate Investment Projects Using Capital Budgeting Techniques
C316 Web Technologies Lab	CO1	Design and Develop Static Web Pages Using HTML and CSS
	CO2	Implement Dynamic Web Pages Using JavaScript
	CO3	Build Web Applications Using Server-Side Scripting Languages (e.g., PHP, Node.js)
	CO4	Integrate Databases with Web Applications Using SQL and NoSQL
	C05	Deploy and Host Web Applications on a Web Server
C317 Industrial Training / Skill Development Programme	CO1	Gain Practical Exposure to Industry Practices and Work Culture
	CO2	Develop Technical Skills Relevant to Industry Requirements
	CO3	Improve Problem-Solving and Analytical Skills in Real-World Contexts
	CO4	Enhance Communication and Interpersonal Skills in a Professional Environment
	C05	Understand and Apply Industry Standards, Safety Practices, and Ethical Responsibilities
C401 Cryptography and Network Security	CO1	Compare and apply different encryption and decryption techniques to solve problems related to confidentiality and authentication
	CO2	Apply the knowledge of cryptographic checksums and evaluate the performance of different message digest algorithms for verifying the integrity of varying message sizes.
	CO3	Apply different digital signature algorithms to achieve

		authentication and create secure applications
	CO4	Apply network security basics, analyze different attacks on networks and evaluate the performance of firewalls and security protocols like SSL, IPSec, and PGP
	CO5	Apply the knowledge of cryptographic utilities and authentication mechanisms to design secure applications
C402 UML & Design Patterns	CO1	Illustrate software design with UML diagrams
	CO2	Design software applications using OO concepts
	CO3	Identify various scenarios based on software requirements
	CO4	Apply UML based software design into pattern based design using design patterns
	CO5	Illustrate the various testing methodologies for OO software
C403 Machine Learning	CO1	Identify machine learning techniques suitable for a given problem
	CO2	Solve the problems using various machine learning techniques
	CO3	Apply Dimensionality reduction techniques
	CO4	Design application using machine learning techniques
C404 Open Elective -II (Inter Disciplinary)- Embedded System	CO1	Understand the Architecture and Operation of Embedded Systems
	CO2	Design and Develop Embedded Software for Microcontrollers
	CO3	Interface Embedded Systems with External Devices and Sensors
	CO4	Implement Real-Time Operating Systems (RTOS) for Embedded Systems
	CO5	Analyze and Optimize Embedded Systems for Power, Performance, and Cost Efficiency
C405 Professional Elective-III-Software Project Management	CO1	Apply the process to be followed in the software development life-cycle models.
	CO2	Apply the concepts of project management & planning
	CO3	Implement the project plans through managing people, communications and change
	CO4	Conduct activities necessary to successfully complete and close the Software projects
	CO5	Implement communication, modeling, and construction & deployment practices in software development.
C406 Professional Elective-IV-Cloud Computing	CO1	Interpret the key dimensions of the challenge of Cloud Computing
	CO2	Examine the economics, financial, and technological implications for selecting cloud computing for own organization
	CO3	Assessing the financial, technological, and organizational capacity of employer's for actively initiating and installing cloud-based applications
	CO4	Evaluate own organizations' needs for capacity building and training in cloud computing related IT areas

	CO5	Illustrate Virtualization for Data-Center Automation
C407 UML Lab	CO1	Know the syntax of different UML diagrams
	CO2	Create use case documents that capture requirements for a software system
	CO3	Create class diagrams that model both the domain model and design model of a software system
	CO4	Create interaction diagrams that model the dynamic aspects of a software system
	CO5	Write code that builds a software system
	CO6	Develop simple applications
C408 Project- I	CO1	Identify and Define a Research Problem in the Chosen Area of Study
	CO2	Conduct a Literature Review and Identify Existing Solutions
	CO3	Develop a Conceptual Design or Approach for the Solution
	CO4	Develop a Detailed Project Plan and Timeline for Implementation
	CO5	Demonstrate Effective Communication and Documentation Skills
C409 IPR & Patents	CO1	IPR Laws and patents pave the way for innovative ideas which are instrumental for inventions to seek Patents
	CO2	Student get an insight on Copyrights, Patents and Software patents which are instrumental for further advancements
C410 Management and Organizational Behavior	CO1	After completion of the Course the student will acquire the knowledge on management functions, global leadership and organizational structure
	CO2	Will familiarize with the concepts of functional management that is HRM and Marketing of new product developments
	CO3	The learner is able to think in strategically through contemporary management practices
	CO4	The learner can develop positive attitude through personality development and can equip with motivational theories
	CO5	The student can attain the group performance and grievance handling in managing the organizational culture
C411 Open Elective- III (Inter Disciplinary)-	CO1	Identify and Define a Research Problem in the Chosen Area of Study
	CO2	Conduct a Literature Review and Identify Existing Solutions

Internship	CO3	Develop a Conceptual Design or Approach for the Solution
	CO4	Develop a Detailed Project Plan and Timeline for Implementation
	CO5	Demonstrate Effective Communication and Documentation Skills
C412 Professional Elective-V Devops	CO1	Enumerate the principles of continuous development and deployment, automation of configuration management, inter-team collaboration, and IT service agility
	CO2	Describe DevOps & DevSecOps methodologies and their key concepts
	CO3	Illustrate the types of version control systems, continuous integration tools, continuous monitoring tools, and cloud models
	CO4	Set up complete private infrastructure using version control systems and CI/CD tools
C413 Project- II	CO1	Implement and Develop the Solution Based on the Conceptual Design from Project-I
	CO2	Integrate and Test the Components to Develop a Fully Functional System
	CO3	Conduct System Validation and Performance Analysis
	CO4	Optimize the System for Power, Performance, and Cost
	CO5	Communicate the Results Effectively through Documentation and Presentation

Coordinator **HOD** **Principal**