COURSE OUTCOMES

The Institution has adopted OBE approach and accordingly programe Educational Objectives(PEOs).Program outcomes(Pos).programme Specific outcome(PSOs)and outcomes(Cos) Are developed.Curriculum plan with deployment strategies will be prepared and implemented to attain the outcomes.The following table lists course outcomes for the courses developed For the curriculum being implemented from the academic year 2022-26.

Communicative English (C111)	**CO1**	Understand past culture, tradition, speaking English in reallife situations
	CO2	infer and interpret the admonitions of a father to his daughter, answering a series of questions, greetings and leave takings
	CO3	Recognize Stephen Hacking's contribution, writing letters on various contexts , writing cover letters, CVs, E-mail etiquette
	CO4	Understand Wangari Maathai's hard work, permissions, Requesting , Inviting.
	CO5	Understand formal writing academic proposals, researcharticles, Technical Vocabulary
	CO6	Understand the importance of soft skills, scientific and Technical English
Mathematics-I (C112)	**CO1**	Discuss the Mean value theorems and nature of the curve
	CO2	Solve First order Linear differential equations and model law of growth and decay problems
	CO3	Solve the Higher order linear Differential Equations with non-homogeneous terms
	CO4	Model physical phenomena of LCR series circuit andSimple Harmonic Motion.
	CO5	Determine the extreme values for the function of several variables.
	CO6	Compute double and triple integrals to find Area and Volume.
Applied Chemistry (C113)	**CO1**	Explain Volumetric Analysis with different indicators
	CO2	Calculate the hardness of water by EDTA method
	CO3	Calculate the alkalinity of water sample by HCl solution
	CO4	Analyze the quantity of ions in organic solutions
Programming For Problem Solving Using C (C114)	**CO1**	Apply the fundamentals of C Programming for Problem solving**.**
	CO2	Identify the appropriate Decision statement and Loops for a given Problem.
Computer Engineering Workshop (C115)	**CO1**	Identify the peripherals of a computer
	CO2	Demonstrate Virtual machine setup and operating system installation.
	CO3	Describe various UNIX commands, HTML Tags and IOT fundamentals
	CO4	Discuss various Text Editors, Microsoft Word, Power Point, Microsoft Excel & LaTeX
	CO5	Construct the projection of solids on different orientations
	CO6	Transform the Front, Top & Side views to isometric views and vice-versa
English Communication Skills Lab (C116)	**CO1**	Identify 44 sounds of language and develop correct pronunciation learning Phonetics
	CO2	Demonstrate language functions: LSRW Skills
	CO3	Develop and practice correct accent, intonation, andrhythm to get acquaintance with language.
	CO4	Develop speaking skills thr1ough participation in activitiesand vocabulary

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Applied Physics Lab (C117)	**CO1**	Determine wavelength, Thickness, Radius of curvature of lens and dispersive power by using interference, diffraction concepts.
	CO2	Outline the characteristics of various semiconductingdevices**.**
	CO3	Identify the behavioural aspects of magnetic and electricfields.
	CO4	Make use of Photoelectric effect to estimate Plancks Constant
Programming For Problem Solving Using C Laboratory (118)	**CO1**	Gains Knowledge on various concepts of a C language.
	CO2	Able to draw flowcharts and write algorithms.
	CO3	Able to design and development of C problem solvingskills.
	CO4	Able to design and develop modular programming skills.
	CO5	Able to trace and debug a program.
Mathematics-II (C121)	**CO1**	Solve the system of linear algebraic equations using Matrix techniques.
	CO2	Reduce the Quadratic form to canonical form**.**
	CO3	Compute the approximate roots of algebraic and transcendental equations using Iterative methods
	CO4	Solve the system of linear algebraic equations using Jacobi and Gauss Seidel methods.
	CO5	Apply various interpolation methods to estimate the unknown values from a known data value.
	CO6	Apply numerical integral techniques to different Engineering problems and solve the first order ordinarydifferential equations using numerical techniques.
Applied Chemistry (C122)	**CO1**	Explain about fabrication of plastic and recycling of e waste.
	CO2	Explain types of batteries and control methods ofcorrosion**.**
	CO3	Determine the preparation of Non elemental semiconducting materials
	CO4	Determine the synthesis of nano materials and its applications.
	CO5	Analyze spectroscopic instrumentations and compareresources of energy**.**
	CO6	Discuss molecular machines and molecular motors
Using P Problem Solvingython (C123)	**CO1**	Develop essential programming skills in computerprogramming concepts like data types, containers
	CO2	Apply the basics of programming related to conditionalexecution, loops in the Python language
	CO3	Able to Identify the difference between lists, Dictionaries
	CO4	Develop programs by using functions, modules, andpackages.
	CO5	Solve coding tasks related to File operations.
	CO6	Identify various errors and exceptions in the programdevelopment and build the GUI application
Basic Electrical Engineering (C124)	**CO1**	Understand the principle of operation, constructionaldetails and characteristics of DC Machines.
	CO2	Understand the constructional details, principle of operation and performance of the single phase transformers.
	CO3	Understand principle of operation, construction and detailsof synchronous generator.
	CO4	Understand principle of operation, construction and detailsof synchronous motors.
	CO5	Understand the principle of operation, constructionaldetails and performance of 3-phase induction motors
	CO6	Understand the principle of operation of various singlephase motors

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Digital Logic Design (C125)	**CO1**	Define different number systems, binary addition and subtraction, 2's complement representation and operations withthis representation.
	CO2	Understand the different switching algebra theorems and apply them for logic functions. An ability to define the Karnaugh map for a few variables and perform an algorithmic reduction oflogic functions.
	CO3	Design various logic gates starting from simple ordinarygates to complex programmable logic devices & arrays
	CO4	Design various sequential circuits in flip-flops.
	CO5	Design various sequential circuits in registers.
	CO6	Design various sequential circuits in counters.
Python ProgrammingLab (C126)	**CO1**	Develop programs by using concepts like data types,variables, and containers
	CO2	Express proficiency in the handling of strings andfunctions.
	CO3	Implement Conditionals and Loops for Python Programs
	CO4	Use functions and represent Compound data using Lists,Tuple's and Dictionaries
	CO5	Identify the commonly used operations involving filesystems and regular expressions
	CO6	Able to Read and write data from & to files in Python
Applied Chemistry Lab (C127)	**CO1**	Explain Volumetric Analysis with different indicators
	CO2	Calculate the hardness of water by EDTA method
	CO3	: Calculate the alkalinity of water sample by HCl solution
	CO4	Analyze the quantity of ions in organic solutions
Digital Logic Design Lab (C128)	**CO1**	Illustrate the basics of gates
	CO2	Design the basic digital circuits and any digital design in real time applications
	CO3	Construct basic combinational circuits and verify their functionalities
	CO4	Design 4-bit comparator and verify its operation
	CO5	Design 3 to 8 decoder using gates
	CO6	Apply the design procedures to design basic sequential circuits
Mathematics- III (C211)	**CO1**	Compute Line, Surface, Volume Integrals Using Green's, Stoke's and Divergence Theorems
	CO2	Use Laplace Transform Methods to Solve Initial Value Problems for Constant Coefficient Linear Ordinary Differential Equations.
	CO3	Discuss The Expansion of a Given Periodic Function by Fourier Series in The Given Interval.
	CO4	Solve Engineering Problems Using Fourier Transformsand Inverse Fourier Transforms.
	CO5	Apply A Range of Techniques ao Solve First and Second Order Linear Partial Differential Equations.
	CO6	Model Physical Phenomena of Heat and Wave Equations by Using Partial Differential Equations**.**

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Oops Through C++ (C212)	**CO1**	Compare Differences Between Procedure and Object Oriented Programming and Able to Know Key Concepts of Object Oriented Programming
	CO2	Understanding About How to Build Programs Using Oops and Constructors, Destructors
	CO3	Determine Different Types of Inheritance and Operator Overloading
	CO4	Demonstrate Familiarity with Pointers and Binding
	CO5	Analyze the Concepts of Exception Handling and Able to Write Programs
	CO6	Understand the Key Concepts of Templates & Standard Template Library
Operating Systems (C213)	**CO1**	Define the Different Types of Computer Architecturesand Various Generations of Operating Systems, Services, functions of Operating System And System Calls
	CO2	Define the Concept of Process and Thread and AnalyzeVarious CPU Scheduling Algorithms and Compare Their performance. Describe Inter Process Communication andAbout Process Synchronization
	CO3	Compare and Contrast Various Memory Management Mechanisms
	CO4	Apply Various Page Replacement Techniques
	CO5	Apply Various File Management Systems, Disk Scheduling Algorithms and Discuss Concepts of Deadlocks, Various Techniques To Handle Deadlocks.
	CO6	Demonstrate the Various Method of Providing System Protection and System Security for Windows and Linux
Software Engineering (C214)	**CO1**	Explain software Process and Process Models
	CO2	Explain Requirement Analysis and Specification and Software Design
	CO3	Construct Functional Oriented Software Design and Identify User Interface Design
	CO4	Develop Coding and Testing Software
	CO5	Explain Software Reliability and Quality Management
	CO6	Evaluate Software Maintenance and Reuse
Mathematical Foundations of Computer Science (C215)	**CO1**	Discuss the Validity of Logical Argument.
	CO2	Use Logical Notations to Formulate and Reason About Fundamental Concept Such as Sets, Relations and Functions**.**
	CO3	Explain the Concept Permutation, Combination, Binomial and Multiple Coefficients.
	CO4	Apply Various Properties of Integers Including the Primes and Unique Factorization.
	CO5	Solve and Formulate Generating Function and Recurrence Functions
	CO6	Identify Various Graphs, Types of Graphs and PropertiesOf Graphs

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Oops Through C++ Lab (C216)	**CO1**	Use Programming Construction Solving Problems.
	CO2	Apply Object Oriented Techniques to Solve Problems.
	CO3	Apply Object Oriented Techniques to Solve Problems.
	CO4	Apply Exception Handling Technique to Handle VariousErrors.
	CO5	Develop Programs Using Inline, Friend Functions, Reference Variable, This Pointer, Operator Overloading, Static and Dynamic Binding, Template and STL
	CO6	Demonstrate the Use of Various Oops Concepts with TheHelp of Programs**.**
Operating SystemsLab (C217)	**CO1**	Apply the scheduling algorithms for the given problemand apply multi programming for given problem
	CO2	Experiment algorithms for deadlock avoidance, detection, file allocation strategies and page replacement
	CO3	Demonstrate various Unix commands and vi editor, Bashshell, Bourne shell and C shell, Linux file system, Environment variables.
	CO4	Use various system calls for file copying and for variouscommand execution
	CO5	Build Programs for Process Communication, ProcessSynchronization and for thread execution
Software Engineering lab (C218)	**CO1**	Understand to do requirement elicitation and prepareSRS documentation
	CO2	Can draw the E-R diagrams, DFD, CFD
	CO3	Can have knowledge on COCOMO model
	CO4	Can have knowledge on FP oriented estimation model
	CO5	Can able to draw UML diagrams
	CO6	Can write Test cases for different scenarios by analyzing
Probability & Statistics (C221)	**CO1**	Define Complex Variation and Function Also State and Prove Cauchy Integral Theorem
	CO2	Explain Line Integral and Also Use Expand Taylor's and Laurent Series Expression
	CO3	Explain the Concept of Probability and Probability Distributions. Also Calculate Mean and Variance of Different Probability Distributions.
	CO4	Differentiate the Concept of Sampling and Non-Sampling Procedures
	CO5	Predict Confidence Interval Estimation and Determination Of Sample Size

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Database Management Systems (C222)	**CO1**	Define the Basic Concepts of Database Management Systems
	CO2	Classify and Illustrate Relational Model, Conceptual Designs, Key Constraints, Various Relational Calculus And Various Set Operations
	CO3	Develop Queries Related to DBMS Using SQL
	CO4	Categorize Different Types of Functional Dependencies And Normalization Techniques
	CO5	Summarize Concepts Related To Transactions And Concurrency Control
	CO6	Compare Various Storage Techniques.
Formal Languages And Automata Theory (C223)	**CO1**	Define The Mathematical Principles Behind Theoretical Computer Science
	CO2	Differentiate And Give Examples For The Different Types Of Automata Concepts
	CO3	Correlate The Different Types Of Automata To Real World Applications Using Context Free Grammars
	CO4	Apply Context Free Grammars Normal Forms Conversion
	CO5	Choose And Design Appropriate Automata For The Different Requirements Outlined By Theoretical Computer Science
	CO6	Identify The Different Computational lems And Their Associated Complexity
Java Programming (C224)	**CO1**	Describe Data Types, Variables, Operators, Strings And Simple Programs And Java Programming Environment
	CO2	Explain Control Statements And Arrays With Example Programs
	CO3	Discuss Classes, Objects Creation And Methods And Constructor Overloading
	CO4	Describe Inheritance And Interfaces With Example Programs
	CO5	Apply The Concepts Packages And Create The Packages And Exception Handling With Examples
	CO6	Solve Problems Using Multithreading And Java Database Connectivity.
Managerial Economics and Financial Accountancy (C225)	**CO1**	Knowing What Are Economic Principles
	CO2	Understanding The Relations Between Supply And Demand Of Products
	CO3	Remembering The Economic Principles And Its Influence In Daily Life
	CO4	To Learn How To Maintain The Book Of Accounts Relating To Debit And Credit Transactions
	CO5	Knowing The Allocation Of Capital Or Resources In Various Business Activities
	CO6	To Learn How To Apply The Economic Principles To Make Good Decisions

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Database Management System Lab (C226)	**CO1**	Ability To Design Database Schema For A Given Application And Apply Normalization
	CO2	Ability To Acquire Skills In Using Sql Commands For Data Definition And Data Manipulation
	CO3	Develop Queries Related To Dbms Using Sql
	CO4	Ability To Develop Solutions For Database Applications Using Procedures
	CO5	Create Sql Programs Using Functions, Cursors And Triggers
	CO6	Extend Normalization For The Development Of Application Software's
R Programming Lab (C227)	**CO1**	Explain Taking Input From The User And Displaying Values And Objects Information
	CO2	Explain To Use Mathematical And Different Predefined Functions
	CO3	Applying The Concepts Of Vectors, Matrices And Arrays In R
	CO4	Explain Concepts Of Lists And Nested Lists And Its Operations
	CO5	Explain The Concepts Of Factors And Levels Of Factors
	CO6	Analyze The Concepts Of Vectors, Lists, Arrays And Perform Operations
Java Programming Lab (C228)	**CO1**	Able To Evaluate Default Value Of Primitive Data Type, Operations , Expressions , Control Flow, Strings.
	CO2	Able To Write Programs Using Abstract Classes.
	CO3	Able To Determine Class, Objects, Methods, InheritanceAnd Polymorphism
	CO4	Able To Write Multithreaded Programs
	CO5	Able To Implement Exception Handling Mechanism ForVarious Problems
	CO6	Able To Create Packages And Develop Gui ApplicationsUsing Applets
Computer Networks (C311)	**CO1**	Provide a comprehensive knowledge about Protocols architectures and their services
	CO2	Make them understand the principles and issues of keyprotocols
	CO3	Support in analyzing the applications of various network layers
	CO4	Provide knowledge regarding web services, mail services and underlying protocols
	CO5	Support in gaining conceptual knowledge of various Networking Algorithms

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Design and Analysis of Algorithms (C32)	**CO1**	Analyze the performance of a given algorithm, denote its time complexity using the asymptotic notation forrecursive and non-recursive algorithm.
	CO2	List and describe various algorithmic approaches and Solve problems using divide and conquer &greedy Method
	CO3	Synthesize efficient algorithms dynamic programming approaches to solve in common engineering design situations.
	CO4	Analyze the performance of dynamic programming approaches
	CO5	Organize important algorithmic design paradigms andmethods of analysis: backtracking, branch and bound algorithmic approaches
	CO6	Demonstrate NP- Completeness theory ,lower bound theory and String Matching
Data Warehousingand Data Mining (C313)	**CO1**	Illustrate the importance of Data Warehousing and its functionalities and Design schema for real time datawarehousing applications.
	CO2	Identify the scope and necessity of Data Mining
	CO3	Demonstrate on various Data PreprocessingTechniques and Process raw data to make it suitable for various datamining algorithms.
	CO4	Choose appropriate classification technique to performclassification, model building and evaluation.
	CO5	Make use of association rule mining techniques viz.A priori and FP Growth algorithms and analyze on frequent Item sets generation.
	CO6	Identify and apply various clustering algorithm,interpret, evaluate and report the result.
Renewable Energy Sources (C314)	**CO1**	Understand solar radiation data, PV cell and its I-V &P-V characteristics, storage.
	CO2	Describe the concepts of Wind Energy Conversion &its applications
	CO3	Explain the principle of biomass conversiontechnologies.
	CO4	Outline the principle of geothermal energy.
	CO5	Discuss the principle of Ocean Thermal Energy Conversion (OTEC), motion of waves, tides and power associated with it.
	CO6	Summarize the concepts of chemical energy sources such as Fuel cell, Hydrogen energy and Magento Hydro-Dynamic (MHD) power generation.
Software Project Management (C315)	**CO1**	Understand about how to plan and manage projectScope and deliverables
	CO2	Understand different life cycle phases and processArtifacts
	CO3	Perform Periodic Status Assessments and Estimatecheck points
	CO4	Apply Project Control and Process instrumentationTechniques
	CO5	Implement a emerging Software Engineeringmethodology
	CO6	Define quality measures planning and management ofquality

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Data Warehousing and Data Mining Lab (C316)	**CO1**	Design a data mart or data warehouse for any organization
	CO2	Demonstrate the working of WEKA Data Mining/Machine Learning Toolkit
	CO3	Extract knowledge using data mining techniques and enlist various algorithms used in information analysis of Data Mining Techniques
	CO4	Demonstrate the working of algorithms for data mining tasks such as association rule mining, classification for realistic data
	CO5	Implement and Analyze on knowledge flow application on data sets
	CO6	Apply the suitable visualization techniques to output analytical results
Computer Networks Lab (C317)	**CO1**	Learning basic concepts of networking and acquire practical knowledge
	CO2	Understanding Data Link Layer protocols with practical implementation
	CO3	Gain knowledge about Ethernet/Internet Working
	CO4	Practically analyzing the network layer algorithms in routing data
	CO5	Understanding the Network Simulator and its application
	CO6	Understanding with implementation about various broadcasting techniques in computer networks
Machine Learning (C321)	**CO1**	Illustrate the fundamentals of Artificial Intelligence (AI),Machine Learning & Statistical Learning.
	CO2	Analyze Various Supervised Learning Techniques(Classification & Regression)
	CO3	Examine Various Ensemble Learning Techniques & Random Forests
	CO4	Explain different Support Vector Machine Methods
	CO5	Illustrate about Unsupervised Learning Techniques
	CO6	Explain the concepts of Neural Networks & Deep Learning
Compiler Design (C322)	**CO1**	Classify different Phases and passes of Compiler and specifying different types of Tokens by Lexical Analyzer andalso able to use the Compiler tools LEX, YAAC
	CO2	Build Parsers and its types
	CO3	Construction of LL, SLR, CLR and LALR Parse table
	CO4	Construct the intermediate code representations and generation
	CO5	Explain the Run time environment concepts
	CO6	Apply for various optimization techniques for Data flowAnalysis

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Cryptography AndNetwork Security (C323)	**CO1**	Understand network security services model and describe a security services and mechanisms with a clear understandingof its importance
	CO2	Discuss the cryptographic techniques to illustrate symmetric and asymmetric cryptography
	CO3	Summarize the number of secret key and public key cryptographic algorithms
	CO4	Demonstrate integrity ,authentication and implement hash and digital signature techniques
	CO5	Apply network security applications of Email security, Web security and IP security(PGP,S/MIME,SSL,IP Security,etc)
	CO6	Understand security threats and counter measures toimplement system level security applications
Mobile Computing (C324)	**CO1**	Interpret the basic concepts, principles in mobile computing, Cellular system and develop new protocols related to mobile environment.
	CO2	Apply various access control techniques for Efficient and scalable Mobile Communication.
	CO3	Illustrate Mobile IP, packet delivery and Dynamic Host Configuration Protocols.
	CO4	Design and develop a lightweight network stack, Solve any new technical issue related to this new paradigm.
	CO5	Summarize data delivery mechanisms, data dissemination and data Synchronization and develop new mobile applications.
	CO6	Develop new wireless applications protocol model and/or algorithms/protocols and wireless telephone applications
Meanstack Development (C325)	**CO1**	Build static web pages using HTML5.
	CO2	Apply JavaScript to embed programming interface for web pages and also to perform Client side validations.
	CO3	Build a basic web server using Node.js, work with Node Package Manager (NPM) and recognize the need for Express.js.
	CO4	Develop JavaScript applications using typescript and work with document database using MongoDB.
	CO5	Apply typescript for strict typing in applications and perform CRUD operations using MongoDB.
	CO6	Utilize Angular JS to design dynamic and responsive web pages.
Machine LearningLab (C326)	**CO1**	Develop Python Programs for FIND-S Algorithm, Candidate Elimination Algorithm and Decision Tree Based ID3Algorithm
	CO2	Develop a program for Bias, Variance, Remove duplicates , Cross Validation, Categorical Encoding, One-hot Encoding, a) Linear Regression b) Logistic Regression c) Binary Classifier
	CO3	Build an Artificial Neural Network by implementing theBack propagation algorithm, k-Nearest Neighbor algorithm, Locally Weighted Regression algorithm
	CO4	Apply naïve Bayesian Classifier, EM algorithm to clustera Heart Disease Data Set
	CO5	Write programs for Data Analysis for classification usingPandas & Matplotlib, Construct Bayesian network using medical data
	CO6	Implement Support Vector Machines and PrincipleComponent Analysis

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Compiler Design Lab (C327)	**CO1**	Demonstrate the working of LEX and YAAC compilerfor debugging of programs
	CO2	Illustrate and use Context Free Grammar, and Parse treeconstruction
	C03	Solve and use the new Tools and Technologies used fordesigning compiler
	CO4	Develop program for solving parser problems
	CO5	Simplify how to write programs that execute faster
Meanstack Stack Technologies - I (C328)	**CO1**	Develop professional web pages of an application usingHTML elements like lists, navigations, tables, various form elements, embedded media which includes images, audio, video and CSS Styles.
	CO2	Utilize JavaScript for developing interactive HTML webpages and validate form data.
	CO3	Build a basic web server using Node.js and also workingwith Node Package Manager (NPM).
	CO4	Build a web server using Express.js
	CO5	Apply typescript for strict typing in applications
	CO6	Utilize API to fetch API in designing web pages.
Cryptography & Network Security (C411)	**CO1**	Identify information security goals, classical encryption techniques and acquire fundamental knowledge on the concepts of finite fields and numbertheory.
	CO2	Compare various symmetric cryptographic techniques to solve problems related to confidentiality and authentication.
	CO3	Apply the concepts of Message digest algorithm& digital signature algorithm for verifying the integrityand authentication of an application
	CO4	Utilize the services provided by the PGP, S/MIME & SSL and estimate the performance of firewalls and security protocols.
	CO5	Explain the concept of cryptographic utilities and authentication mechanisms to design secureapplications.
UML & Design Patterns (C41)	**CO1**	Construct a design consisting of a collection ofmodules.
	CO2	Examine well-known design patterns (such as Iterator, Observer, Factory and Visitor).
	CO3	Distinguish between different categories of design patterns.
	CO4	Ability to understand and apply common design patterns incremental/iterative development
	CO5	Identify appropriate patterns for design of given problem.
	CO6	Design the software using Pattern Oriented Architectures

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Machine Learning (C41)	**CO1**	Identify machine learning techniques suitable for a given problem
	CO2	Evaluate the performance of an algorithm used in an ML model.
	CO3	Apply probability approximations and frameordered and unordered rules for given machine learning problem.
Embedded Systems (C414)	**CO1**	Describe the differences between the general computing system and the embedded system, also recognize the classification of embedded systems.
	CO2	Implement the technological aspects of embedded systems through interfacing of analog and digital blocks, subsystems and user interfacing
	CO3	Understanding the Embedded Firmware design approaches.
	CO4	Analyze the design specifications for system design, types of RTOS and implementation of real time scheduling algorithms
	CO5	Understand the Design metrics, design trade-offs and Software aspects of embedded systems
	CO6	Explain about life cycle of embedded design and its testing
Mobile Computing (C415)	**CO1**	Describe the fundamental concepts of Mobile Computing, Adhoc network and GSM Architecture
	C02	Discuss the importance of MAC and Mobile IP.
	CO3	Compare Traditional TCP and Modified TCP.
	CO4	Summarize the database issues, Data Dissemination and Synchronization in mobile environment.
	C05	Identify the various protocol & platforms for mobile computing.
Cyber Security & Forensics (C416)	**CO1**	Explain the cyber security and security management methods to maintain security protection.
	CO2	Illustrate the nature of secure software development and operating systems
UML Lab (C417)	**CO1**	Discover Use Cases, events, Installation of Rational Rose
	CO2	Develop Class Diagrams
	CO3	Develop Use case diagrams
	CO4	Develop system sequence diagrams and high-level sequence diagrams
	CO5	Develop sample diagrams for – use case packages, Component diagrams
	CO6	Develop sample diagrams for - state chart diagrams, activity diagrams and deployment diagrams

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Management Organizational Behaviour (C421)	**CO1**	Outline the concepts of management and organization Nature and Importance of Management, Functions of Management.
	CO2	Apply the Human Resource Management (HRM) Concepts of HRM, Basic functions of HR Manager
	CO3	Analyze the concept of Strategic Management and Contemporary Strategic Issues
	CO4	Explain the Perception, Perceptual process and Impression management
	CO5	Understand the process Personality development and Theories of Motivation
	CO6	Analyze the Group Dynamics and Stages of Group Development, Group Behavior and Group Performance Factors
Entrepreneur-ship (C422)	**CO1**	To understand the entrepreneurial competence.
	CO2	To gain knowledge about the entrepreneurial environment and policies
	CO3	To understand the business plan and its preparation.
	CO4	To analyze the project and its capital with budgeting profile preparation.
	CO5	To apply finance, human resources, marketing strategies to launch a small business.
	CO6	To analyze and evaluate the small business.
DevOps (C423)	**CO1**	Analyze agile software development process model
	CO2	Describe Dev Ops & Dev SecOps methodologies and their key concepts
	CO3	Synthesize the tool stack implementation of Dev Ops
	CO4	Illustrate the types of version control systems, continuous integration tools, continuous monitoring tools
	CO5	Assemble complete private infrastructure using version control systems and CI/CD tools
	CO6	Collect the knowledge of maturity model, Maturity Assessment
Project	**CO1**	Identify socio technical problems and their feasibility.
	CO2	Apply a suitable software development Model for the real-world problem.
	CO3	Design engineering solutions to complex problems by utilizing a systematic approach.
	CO4	Solve the real-life problems by using the Various tools, techniques, and coding practices.
	CO5	Take part in written and verbal Communication with professional and community at large.
	CO6	Analyze the stakeholder expectations ensure successful project outcomes.

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