AMRUTVAHINI COLLEGE OF ENGINEERING, SANGAMNER

Department Of Computer Engineering

Course Outcomes

Second Year – 2024 Course			
Course Code	**Course Name**	**Course Outcomes**	
Semester - I			
PCC-201-COM	Data Structures	CO1	Classify abstract data types and analyze algorithm efficiency using time, space complexity, and asymptotic notations.
		CO2	Apply and compare various array-based searching and sorting algorithms in terms of efficiency, stability, and use cases.
		CO3	Design and implement linear data structures such as stacks, queues, and linked lists for solving real-life data handling problems.
		CO4	Analyse different hashing techniques and collision resolution strategies for optimized data retrieval.
		CO5	Apply tree and graph data structures to model real-world hierarchical and networked systems,
PCC-202-COM	Object Oriented programming and Computer Graphics	CO1	Apply fundamental programming constructs, object oriented constructs in Java for Implementing an application.
		CO2	Apply fundamental object oriented constructs like class, objects, array of objects in Java for Implementing an application
		CO3	Apply object-oriented features like Inheritance, Polymorphism, Dynamic binding, Excep- tion handling, multi-threading in Java for implementing an application
		CO4	Understand basic concepts in computer graphics and implement them by applying object oriented features
		CO5	Understand mathematical foundation in 2D, 3D Transformation, Projections and imple-ment them by applying object oriented features
PCC-203-COM	Operating Systems	CO1	Analyze the fundamentals of Operating Systems, including types, structures, system calls, and basic Linux commands
		CO2	Apply process scheduling and synchronization to optimize CPU utilization in modern operating systems
		CO3	Identify the mechanism for dealing with deadlocks and concurrency concerns
		CO4	Apply techniques of memory management to solve memory management problems
		CO5	Illustrate I/O and file management policies

PCC-204-COM	Data Structures Laboratory	CO1	Analyze and implement basic searching and sorting techniques to solve real-life problems efficiently.
		CO2	Apply stack and queue data structures to develop systems for real-time tasks like undo-redo and event handling.
		CO3	Construct and manipulate different types of linked lists for managing dynamic datasets.
		CO4	Demonstrate tree and graph traversals and evaluate graph-based algorithms such as DFS, BFS, and MST in real-world contexts.
		CO5	Design data structure-based solutions using a suitable data structure to solve domain-specific application problems.
PCC-205-COM	Object Oriented programming and Computer Graphics Laboratory	CO1	To apply fundamental programming constructs in Java for implementing an application
		CO2	To apply fundamental object oriented constructs in Java for implementing an application
		CO3	To apply object-oriented features like Inheritance, Polymorphism, Dynamic binding, exception handling, multi-threading in Java for implementing an application
		CO4	To implement basic concepts in computer graphics by applying object oriented features
		CO5	To implement 2D, 3D transformations, and Projections by applying object-oriented features
OEL-220-COM	Digital Marketing	CO1	Learn and understand the basic Concepts of Digital marketing
		CO2	Apply digital marketing tools for suitable applications
		CO3	Examine the various social media and design Advertising campaigns
		CO4	Learn search engine optimization (SEO) techniques and apply it for suitable applications to increase page views.
		CO5	Explore YouTube digital advertising.
OEL-220-COM	Digital Finance	CO1	Learn and understand the basic concepts of Digital finance.
		CO2	Apply Digital Payments, Fintech Trends and Neo banking models.
		CO3	Illustrate Block chain, Cryptocurrencies and DeFi Systems.
		CO4	Discuss the role of AI/ML for financial analytics.
		CO5	Apply Cybersecurity and Compliance strategies for digital finance.
		CO1	Understand and apply key concepts of

MDM-230-COM	Digital Electronics & Logic Design		Boolean algebra, binary number systems and simplification techniques for Boolean functions
		CO2	Study the design and operation of combinational circuits in digital systems
		CO3	Understand and apply the design and operation of various sequential circuits in digital systems
		CO4	Understand the design and implementation of FSMs and ASMs for sequential circuits, and study logic families
		CO5	Explore the fundamentals and applications of programmable logic devices (PLDs) in digital circuit design
EEM-240-COM	Entrepreneurship Development	CO1	Describe the role of entrepreneurship in economic growth and the startup ecosystem
		CO2	Apply creative techniques to viable business ideas based on customer needs
		CO3	Develop a basic business model using tools like the Business Model Canvas through market research
		CO4	Implement basic marketing strategies for start-ups
		CO5	Deliver a concise business pitch using storytelling and effective communication techniques
VEC-250-COM	Universal Human Values and Professional Ethics	CO1	Recognize the concept of self-exploration as the process of value education and see they have the potential to explore on their own right
		CO2	Explore the human being as the coexistence of self and body to see their real needs / basic aspirations clearly
		CO3	Explain relationship between one self and the other self as the essential part of relationship and harmony in the family
		CO4	Interpret the interconnectedness, harmony and mutual fulfilment inherent in the nature and the entire existence and draw ethical conclusions in the light of Right understanding
CEF-260-COM	Community Engagement Project	CO1	Identify and Analyze local community needs and challenges by engaging with stake-holders and evaluating real-world problems
		CO2	Design and Implement practical, creative, and context-specific solutions using engineering principles to address community issues
		CO3	Reflect and Evaluate the effectiveness of their interventions and articulate lessons learned through reports and presentations

Semester – II			
PCC-206-COM	Database Management systems	CO1	Explain the fundamentals of database management systems, including data models, ER modeling, and database design
		CO2	Develop and execute SQL and PL/SQL programs to manage and manipulate relational data
		CO3	Apply normalization techniques to improve database design and ensure data integrity
		CO4	Analyze transaction management concepts and concurrency control techniques for reliable database systems
		CO5	Evaluate NoSQL database types and explain their suitability for handling unstructured data
PCC-207-COM	Discrete Mathematics	CO1	Apply and analyze concepts of set theory, propositional logic, and logical proofs
		CO2	Evaluate and construct mathematical models using relations and functions
		CO3	Design and implement tree structures and solve problems using network flow algorithms
		CO4	Analyze and develop problem-solving strategies using graph theory concepts
		CO5	Apply counting principles and algebraic structures to solve discrete mathematical problems
PCC-208-COM	Computer Organization & Microprocessor	CO1	Understand and analyze computer system design and historical development of computers and foundational architectures like Von Neumann and Harvard
		CO2	To design and optimize internal, and external memory systems for high-performance computing
		CO3	To understand fundamental knowledge of the 8086 microprocessor architecture, programming model, addressing modes, and instruction set
		CO4	To understand memory management, I/O operations and interrupt handling, including address translation, memory banks and interrupt controllers
		CO5	To explore the multiprocessor systems, Flynn's Taxonomy and RISC design principles, including memory architectures
PCC-209-COM	Database Management Laboratory	CO1	Apply the concepts of database design by creating E-R diagrams and converting them into relational models
		CO2	Develop and execute SQL queries for data manipulation, transaction control, and access

			management using DML, DCL, and TCL commands
		CO3	Analyze and implement SQL operations, including joins, views, subqueries, stored procedures, and triggers, to optimize data retrieval and integrity
		CO4	Design and Implement CRUD operations in MongoDB, demonstrating an understanding of NoSQL database concepts and their practical applications
PCC-210-COM	Microprocessor Laboratory	CO1	Understand and apply various addressing modes and instruction set to implement assembly language programs
		CO2	Apply logic to implement code conversion
		CO3	Analyze and apply logic to demonstrate processor mode of operation
OEL-221-COM	Project Management	CO1	Explain the principles of project management
		CO2	Use project management concepts to real-world scenarios
		CO3	Apply agile project management.
		CO4	Discuss the importance of risk management, quality control, and stakeholder management in projects
		CO5	Demonstrate skills in project planning, execution, and control
MDM-231-COM	Internet of Things	CO1	Explain IoT concepts, architecture, protocols, enabling technologies, and applications.
		CO2	Identify and interface sensors, actuators, and IoT development boards.
		CO3	Analyze IoT access technologies and communication protocols for data exchange.
		CO4	Apply cloud computing services to support IoT data storage, processing, and visualization.
		CO5	Develop IoT applications for smart cities, agriculture, healthcare, industry, and environment.
VSE-270-COM	Web Development	CO1	Explain the fundamentals of Internet architecture, protocols, servers, clients, and HTTP-based client–server interaction
		CO2	Design and develop static and dynamic web pages using HTML elements such as forms, tables, hyperlinks, and images
		CO3	Apply CSS and Bootstrap concepts to style and structure responsive web pages using selectors and components
		CO4	Implement client-side interactivity using JavaScript and DOM manipulation for validation and user interaction
		CO5	Develop server-side applications using PHP to process form data and manage data storage

AEC-281-COM	Modern Indian Language (Marathi/ Hindi)	CO1	Understand and explain the role of Marathi language in personality development, society, democracy, and media.
		CO2	Apply Marathi language skills in practical activities such as dialogues, presentations, object descriptions, and group performances.
		CO3	Analyze and create written content including newspaper summaries, blogs, reports, professional letters, and reviews.
		CO4	Demonstrate effective communication, teamwork, and cultural awareness through debates, role-plays, skits, competitions, and literary/film reviews.
EEM-241-COM	Engineering Product Design	CO1	Use the design thinking technique to identify and characterize user-centric problems and generate innovative product concepts
		CO2	Create and present working prototypes while taking accessibility, sustainability, and usability into account
		CO3	Collaborate in groups to properly study, evaluate, and communicate the entire product design process in order to document and present it
VEC-251-COM	Environmental Studies	CO1	Illustrate the interdependence of ecosystems through activity-based exploration
		CO2	Analyze the role of natural resources in sustainable development using real-world data
		CO3	Investigate biodiversity threats and conservation strategies through surveys and projects
		CO4	Create awareness tools or reports promoting sustainability based on their findings