

AMRUTVAHINI COLLEGE OF ENGINEERING, SANGAMNER**Department Of Computer Engineering****Course Outcomes**

Third Year – 2024 Course			
Course Code	Course Name	Course Outcomes	
Semester - I			
PCC301COM	Artificial Intelligence	CO1	Explain fundamental concepts of Artificial Intelligence, Agents and ethical implications of AI in real-world scenarios
		CO2	To formulate real-world problems as state-space search models and implement appropriate heuristic, local, and online search algorithms
		CO3	To model real-world competitive and constraint-based problems and implement adversarial search algorithms and CSP techniques
		CO4	To represent real-world knowledge using propositional and first-order logic and apply Inference techniques and derive logical conclusions in knowledge-based AI systems
		CO5	To apply AI planning techniques for solving classical planning problems and Relate them to real-world industrial AI applications
PCC302COM	Computer Networks	CO1	Explain the fundamental concepts of computer networks, layered architecture, and physical transmission media
		CO2	Apply error detection, correction, and reliable data transfer techniques at the data link layer.
		CO3	Apply error detection, correction, and reliable data transfer techniques at the data link layer.
		CO4	Compare and evaluate transport layer protocols (TCP, UDP, SCTP, RTP) and mechanisms for congestion control and QoS
		CO5	Demonstrate understanding of application layer protocols (HTTP, DNS, Email, FTP, TELNET, DHCP, SNMP) and emerging network applications
PCC303COM	Theory of Computation	CO1	Apply the knowledge of basics of mathematics and logic for designing Finite Automata and its variants

		CO2	Construct regular expression to present regular language and understand pumping lemma and Myhill–Nerode Theorem for RE.
		CO3	Design Context Free Grammars and learn to simplify the grammar
		CO4	Construct appropriate computational models to solve given problems using Pushdown Automaton model
		CO5	Able to design Turing Machines for various computational problems and understand different classes of problems, classify and analyze them
PCC304COM	Artificial Intelligence Lab	CO1	Explain and differentiate fundamental concepts, components, and techniques of Artificial Intelligence, including intelligent agents and AI methodologies
		CO2	Design and implement AI algorithms for state-space search, heuristic search, reasoning, and basic learning tasks using programming tools
		CO3	Model real-world problems as AI problems and apply appropriate AI techniques to obtain optimal or near-optimal solutions
		CO4	To apply AI planning techniques for solving solve classical planning problems and relate them to real-world industrial AI applications
PCC305COM	Computer Networks Lab	CO1	Compare and analyze OSI and TCP/IP reference models, topologies, transmission media, and LAN/WAN configurations using simulation tools
		CO2	Apply error detection and correction techniques, subnetting, and IP addressing schemes to design efficient and reliable networks
		CO3	Simulate and implement transport layer protocols (Go-Back-N, Selective Repeat, TCP/UDP sockets) and client-server applications such as file transfer and DNS lookup
		CO4	Configure and evaluate routing protocols and services while capturing and analyzing traffic
		CO5	Work collaboratively on a mini-project to design, implement, and analyze a networking solution, demonstrating innovation, teamwork, and professional skills in laboratory practice.

PEC321COM	Elective 1	CO1	Understand basics of data mining and apply appropriate data preprocessing techniques.
		CO2	Understand basics of data warehouse and to perform logical modelling of data warehouse.
		CO3	Understand and apply Association Rule Mining and Clustering Techniques
		CO4	Understand and apply appropriate data mining algorithm to solve the problems, and explore the patterns in the data
		CO5	Understand some of the advanced data mining techniques
PEC322COM	Elective 1 Lab	CO1	
		CO2	
		CO3	
		CO4	
		CO5	
		CO6	
MDM331COM	Robotics and Automation	CO1	UNDERSTAND basic concepts of robotics
		CO2	SELECT appropriate drive & sensors for Robotic applications
		CO3	To COMPARE and SELECT robot and end effectors as per application
		CO4	To know about the fundamentals of robot programming and applications
OLE341COM	Open Elective	CO1	
		CO2	
		CO3	
		CO4	
		CO5	
		CO6	
ELC342COM	Technical Seminar	CO1	Identify and select emerging and relevant technical topics through a literature survey
		CO2	Analyze and synthesize information from research papers, journals, and credible sources
		CO3	Demonstrate effective technical communication skills through oral presentation
		CO4	Prepare a structured technical report following academic writing standards
		CO5	Use modern tools (presentation software, plagiarism checkers, referencing tools) for seminar preparation.
Semester – II			
PCC351COM	Machine Learning	CO1	Apply fundamental Machine Learning concepts in various learning paradigms and real-world engineering applications
		CO2	Make use of various types of regression

			models for predictive modeling and data analysis
		CO3	Identify different types of classification problems, including binary, multiclass, balanced, and imbalanced classification
		CO4	Analyze clustering algorithms for grouping similar data points and ensemble learning techniques for improving model performance
		CO5	Distinguish reinforcement learning from supervised and unsupervised learning approaches
PCC352COM	Software Engineering and Modelling	CO1	Explain software engineering principles and software development life cycle models
		CO2	Analyze and document software requirements using standard practices
		CO3	Design software systems using UML-based software modelling techniques
		CO4	Apply project management, testing, and quality assurance techniques
		CO5	Understand and evaluate modern and advanced trends in software engineering
PCC353COM	Machine Learning Lab	CO1	Apply feature engineering, dimensionality reduction techniques, and multiple linear regression to prepare datasets for predictive modelling
		CO2	Demonstrate the use of polynomial regression, regularization techniques, and logistic regression for regression and classification modelling using suitable datasets
		CO3	Make use of Support Vector Machine classifiers, K-Means clustering, and DBSCAN to perform classification and clustering on suitable datasets
		CO4	Evaluate predictive modelling and simple decision-making tasks using ensemble learning techniques and the Q-Learning algorithm
PCC354COM	Software Engineering and Modelling Lab	CO1	Perform feasibility analysis and project estimation for software systems
		CO2	Develop SRS document using standard IEEE format
		CO3	Design UML diagrams using modelling tools
		CO4	Prepare and execute software test cases and quality plans
		CO5	Apply Agile methodology and version control tools in software development

		CO6	Develop a mini-project using complete SDLC approach
PEC361COM	Elective II	CO1	Explain and demonstrate the working principles of system software components, particularly assemblers
		CO2	Analyze and describe the design and functioning of macroprocessors, loaders, and linkers in program execution
		CO3	Design and implement basic lexical analyzers and parsers to identify tokens, recognize grammar structures, and handle simple program errors
		CO4	Analyze and differentiate the various phases of a compiler, interpreter, and debugger
		CO5	Explain and evaluate the roles of device drivers, system utilities, runtime systems, and virtualization tools in modern computing environments
		CO6	Develop a mini-project using complete SDLC approach
PEC362COM	Elective III	CO1	Understand fundamental concepts of Data Science, Big Data, and the Data Analytics Life cycle
		CO2	Apply inferential statistical techniques to analyze datasets
		CO3	Implement predictive analytics models using Python programming
		CO4	Analyze text data using text mining techniques and evaluate machine learning models using standard metrics
		CO5	Implement data visualization using visualization tools in Python programming
		CO6	Design and implement Big Databases using the Hadoop ecosystem
PEC363COM	Elective III Lab	CO1	
		CO2	
		CO3	
		CO4	
		CO5	
		CO6	
	Green Computing	CO1	Explain environmental impacts of computing and the need for green IT solutions
		CO2	Analyze green business processes, enterprise architecture, and sustainable information systems
		CO3	Evaluate energy-efficient techniques used in data centres and communication networks
		CO4	Apply sustainability metrics, regulatory standards, and AI-based approaches to

			optimize energy consumption in computing systems
VSE372COM	Solar Technology and Maintenance	CO1	Apply safe installation, wiring, commissioning, and performance measurement of basic solar PV systems
		CO2	Analyze the impact of environmental/operational factors on solar PV efficiency and diagnose common faults
		CO3	Evaluate the effectiveness of maintenance and troubleshooting procedures for solar PV components and systems
		CO4	Create simple practical solutions or documentation for improving solar system performance via mini-projects
ELC381COM	Internship / OJT	CO1	Apply theoretical knowledge to solve real-world engineering problems
		CO2	Demonstrate technical competency in tools/technologies used in industry
		CO3	Exhibit professional ethics and teamwork
		CO4	Prepare technical reports and deliver effective presentations on industrial training experience
		CO5	Analyze industrial processes and suggest feasible improvements or innovations