



R.M.K. ENGINEERING COLLEGE

(An Autonomous Institution)

R.S.M Nagar, Kavaraipettai, Gummidipoondi Taluk, Thiruvallur District, Tamil Nadu- 601206

Affiliated to Anna University, Chennai / Approved by AICTE, New Delhi/Accredited by NAAC with A+ Grade

An ISO 21001:2018 Certified Institution / All the Eligible UG Programs are accredited by NBA, New Delhi



Department of Computer Science and Design

Course Outcomes

4 th (EVEN) Semester 2023-24

Sl. No.	Semester	Theory/ Practical	Course Code / Course Name
1	4	Theory with Practical	Probability and Statistics
2	4	Theory with Practical	Web Development Frameworks
3	4	Theory with Practical	Design and analysis of algorithms
4	4	Theory with Practical	Human Computer Interaction
5	4	Theory with Practical	Design Programming
6	4	Theory with Practical	Professional Elective I(Augmented and Virtual Reality)
7	4	Practical	Product Development Lab - 4
8	4	Practical	Aptitude and Coding Skills II
9	4	Practical	Mini Project and Design Thinking Lab
10	4	Practical	Yoga/ Personality Development (Non Credit)
11	4	Theory with Practical(Honours Degree)	Data Science Using Python

Sl. No	Semester	Theory/ Practical/ Honour Degree/ Minor Degree	Course Code / Course Name
1	6	Theory with practical	20CS601-Compiler Design (Lab integrated)
2	6	Theory with practical	20CD601- Computer Networks (Lab Integrated)
3	6	Theory with practical	20CS932- Mobile Computing (Lab Integrated)

4	6	Theory with practical	20CD904- UI/UX Design (Lab Integrated)
5	6	Theory with practical	20CS920- Block chain Technologies
6	6	Practical	20CS614- Advanced Aptitude and Coding Skills-II
7	6	Practical	20CD612- Internship
8	6	Honour Degree	20AI501- Data Exploration and Visualization (Lab Integrated)
9	6	Honour Degree	20AI703- Deep Learning Techniques (Lab Integrated)
10	6	Minor Degree	20EC907-Sensors and Actuator Devices
11	6	Minor Degree	20EC959-Image and Video Analytics

EVEN Semester 2023-24

4rd Semester – B.E. Computer Science and Design

22MA401-PROBABILITY AND STATISTICS			
Cos	Course Outcome: Upon completion of the course, the students will be able to:		
	CO1: Calculate the statistical measures of standard distributions		
	CO2: Compute the correlation & regression for two dimensional random variables.		
	CO3: Apply the concept of testing the hypothesis.		
	CO4: Implement the concept of analysis of variance for various experimental designs.		
	CO5: Demonstrate the control charts for variables and attributes		

22CS402- WEB DEVELOPMENT FRAMEWORKS			
Cos	Course Outcome: Upon completion of the course, the students will be able to:		
	CO1: Write Web API/RESTful API application programming interface to communicate with Spring boot as a serverside technology		
	CO2: Build single page applications using REACT as a reusable UI component technology as client side technology		
	CO3: Build applications using Node Js as serverside technologies		
	CO4: Able to develop a web application using latest Angular Framework		
	CO5: Apply various Angular features including directives, components, and services.		

22CD401- HUMAN COMPUTER INTERACTION			
Cos	Course Outcome: Upon completion of the course, the students will be able to:		

CO1: Enumerate the basic concepts of human, computer interactions
CO2: Inspect software design process in human computer interaction
CO3: Examine various models and theories related to human computer interaction
CO4: Build meaningful user interface
CO5: Establish the different levels of communication across the application stakeholders

22CS303- DESIGN AND ANALYSIS OF ALGORITHMS

Cos	Course Outcome: Upon completion of the course, the students will be able to:
CO1:	Solve mathematically the efficiency of recursive and non-recursive algorithms
CO2:	Design and Analyse the efficiency of divide and conquer and transform and conquer algorithmic techniques
CO3:	Implement and analyse the problems using dynamic programming
CO4:	Solve the problems using and greedy technique and iterative improvement technique for optimization
CO5:	Compute the limitations of algorithmic power and solve the problems using backtracking and branch and bound technique

22CD402- DESIGN PROGRAMMING

Cos	Course Outcome: Upon completion of the course, the students will be able to:
CO1:	Learn about Blender interface
CO2:	Understand Texture Mapping and Rendering
CO3:	Analyse Text to Mesh Object and Curve conversion
CO4:	Know the scripting fundamentals
CO5:	Understand accessing game objects

Professional Elective I

22CD918- AUGMENTED AND VIRTUAL REALITY

Cos	Course Outcome: Upon completion of the course, the students will be able to:
CO1:	Understand Augmented Reality.
CO2:	Explore different input and output devices used in Virtual Reality system.
CO3:	Model the VR system
CO4:	To learn about Google Toolkit's and Scene Graph
CO5:	Apply VR in various fields

Honours Degree in Artificial Intelligence and Data science

22AI302 – DATA SCIENCE USING PYTHON

Cos Course Outcome: Upon completion of the course, the students will be able to:

CO1: Explain the fundamentals of data science.

CO2: Experiment python libraries for data science.

CO3: Apply and implement basic classification algorithms

CO4: Implement clustering and outlier detection approaches

CO5: Present and interpret data using visualization tools in Python

Laboratory

22ME411-PRODUCT DEVELOPMENT LAB - 4

Cos Course Outcome: Upon completion of the course, the students will be able to:

CO 1: Identify the real-time problems through literature

CO 2: Develop feasible solutions for the problems.

CO 3: Evaluate the methods to develop solutions to the problem.

CO 4: Analyze the business opportunities for a new product.

CO 5: Prepare a detailed report for the experimental dissemination.

22CS411- APTITUDE AND CODING SKILLS – II

Cos Course Outcome: Upon completion of the course, the students will be able to:

CO1: Develop advanced vocabulary for effective communication and reading skills.

CO2: Build an enhanced level of logical reasoning and quantitative skills.

CO3: Develop error correction and debugging skills in programming.

CO4: Apply data structures and algorithms in problem solving.

22CS412- MINI PROJECT AND DESIGN THINKING LAB

Cos Course Outcome: Upon completion of the course, the students will be able to:

CO1: Understand the design thinking process and able to visualize the problem

CO2: Analyse the problem using innovation tools

CO3: Design a prototype for an identified problem solution

CO4: Testing and evaluate strategies in improving the solution

CO5: Apply the innovation ideas to real-world applications

6th Semester – B.E. Computer Science and Design

20CS601- COMPILER DESIGN (LAB INTEGRATED)

COs Course Outcome: The students, after the completion of the course, the students will be

CO1 : Understand the different phases of compiler

CO2 : Perform tokenization and parsing for programs

CO3 : Generate intermediate code representation for any source programs

CO4 : Analyze the different techniques used for assembly code generation

CO5 : Implement code optimization techniques with simple code generators

20CD601- COMPUTER NETWORKS (LAB INTEGRATED)

COs Course Outcome: The students, after the completion of the course, are expected to

CO1 : Understand the fundamental concepts of computer networks and physical layer.

CO2 : Gain knowledge of various protocols and techniques used in the data link layer.

CO3 : Learn the network layer services and network layer protocols.

CO4 : Understand the various protocols used in the transport layer.

CO5 : Analyze the various application layer protocols.

20CS932- MOBILE COMPUTING (LAB INTEGRATED)

COs Course Outcome: The students, after the completion of the course, are expected to

CO1 : Explain the basics of mobile computing and multiplexing techniques.

CO2 : Illustrate the generations of telecommunication systems in wireless networks.

CO3 : Determine the functionality of MAC, network layer and identify a routing protocol for a given Adhoc network.

CO4 : Explain the functionality of mobile Transport and Application layers.

CO5 : Understand the usage of different mobile platforms and implement applications.

20CD904 - UI/UX DESIGN (LAB INTEGRATED)	
COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Understand the principles of User Interface (UI) Design in order to design with intention
CO2	Learn the effective User eXperience (UX) and the psychology behind user decision making.
CO3	Understand the importance of UX process and user Psychology.
CO4	Elucidate the implications for designing web application with multimedia effects.
CO5	Create Wireframe and Prototype.

20CS920- BLOCK CHAIN TECHNOLOGIES	
COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Understand the technology components of Blockchain and how it works behind the scenes.
CO2	Understand the Bitcoin and its limitations by comparing with other alternative coins.
CO3	Develop deep understanding of the Ethereum model, its consensus model, code execution.
CO4	Understand the architectural components of a Hyperledger and its development framework.
CO5	Explore the alternative blockchains and its emerging trends.

Laboratory

20CS614- ADVANCED APTITUDE AND CODING SKILLS - II	
COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Develop advanced vocabulary for effective communication and reading skills.
CO2	Build an enhanced level of logical reasoning and quantitative skills.
CO3	Develop error correction and debugging skills in programming.
CO4	Develop error correction and debugging skills in programming.

Honour Degree in Artificial Intelligence and Data science

20AI501-DATA EXPLORATION AND VISUALIZATION (LAB INTEGRATED)

COs Course Outcome: The students, after the completion of the course, are expected to

CO1 : Explain the overview of exploratory data analysis and phases involved in data analytics.

CO2 : Explore in-depth knowledge in EDA techniques.

CO3 : Apply the visualization techniques in data.

CO4 : Describe the methods of time series analysis.

CO5: Represent the data in tree and hierarchical formats.

20AI703-DEEP LEARNING TECHNIQUES (LAB INTEGRATED)

COs Course Outcome: The students, after the completion of the course, are expected to

CO1 : Explain the basics of deep neural networks.

CO2 : Describe advanced deep learning models.

CO3 : Understand and Implement CNN and RNN architectures of deep neural networks.

CO4 : Learn autoencoders in neural networks.

CO5 : Apply deep generative models to solve real world problems.

Minor Degree in Internet of Things

20EC907-SENSORS AND ACTUATOR DEVICES

COs Course Outcome: The students, after the completion of the course, are expected to

CO1 : Build schematic for IoT solutions with sensors.

CO2 : Design and develop IoT based sensor systems.

CO3 : Select the appropriate sensors for various industrial applications

CO4 : Evaluate the wireless sensor technologies for IoT.

CO5 : Design and develop an IoT Prototype project

CO6 : Identify the IoT networking components with respect to sensors.

20EC959-IMAGE AND VIDEO ANALYTICS

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Understand the requirements of image processing
CO2	Illustrate the principles and techniques of digital image in applications related to digital imaging system.
CO3	Demonstrate the image recognition and motion recognition.
CO4	Understand the fundamentals of digital video processing.
CO5	Illustrate the motion estimation, segmentation and modelling.
CO6	Design and Analysis of video processing in application.