R.M.K. ENGINEERING COLLEGE

[An Autonomous Institution]

R.S.M Nagar, Kavaraipettai, Gummidipoondi Taluk, Thiruvallur District, Tamil Nadu- 601 206

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

An ISO 9001:2015 Certified Institution / All the Eligible UG Programs are accredited by NBA, New Delhi.

Department of Computer Science and Design

Course Outcomes

ODD Semester 2022-2023

Sl. No.	Semester	Theory/ Practical	Course Code / Course Name
1.	3	Theory	20MA302 - Discrete Mathematics
2.	3	Theory	20AI301 - Digital Principles and Computer Architecture
3.	3	Theory	20IT403 - Database Management Systems
4.	3	Theory	20CS302 - Object Oriented Programming
5.	3	Theory	20CB505 - Design Thinking
6.	3	Theory	20GE301 - Universal Human Values-2: Understanding Harmony
7.	3	Practical	20IT412 - Database Management Systems Laboratory
8.	3	Practical	20CS311 - Object Oriented Programming Laboratory
9.	3	Practical	20CS312 - Mini Project
10.	3	Practical	20CS313 - Aptitude and Coding Skills – I

EVEN Semester 2022-2023

Sl. No.	Semester	Theory/ Practical	Course Code / Course Name
1.	4	Theory	20MA402 - Probability and Statistics
2.	4	Theory	20CS907 - Human Computer Interaction
3.	4	Theory	20CS402 - Design and Analysis of Algorithms
4.	4	Theory	20CD401 - Design Programming(Lab Integrated)
5.	4	Theory	20CD402 - Information Design and Visualization
6.	4	Theory	20CD403 - Operating System Design
7.	4	Practical	20CD411 - Information Design and Visualization Laboratory
8.	4	Practical	20CD412 - Operating System Design Laboratory
9.	4	Practical	20CD413 - Internship
10.	4	Practical	20CS414 - Aptitude and Coding Skills – II

ODD Semester 2022-2023

3rd Semester – B.E. Computer Science and Design

20MA302 – Discrete Mathematics	
Cos	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1	: Examine the validity of the arguments.
CO2	: Demonstrate various proof techniques and application of principles.
CO3	: Apply graph theory techniques to solve real life problems.
CO4	: Identify algebraic techniques to formulate and solve group theoretic problems.
CO5	: Utilize the significance of lattices and Boolean algebra in computer science and engineering.

20AI301 - Digital Principles And Computer Architecture	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1	: Simplify complex Boolean functions.
CO2	: Implement digital circuits using combinational logic ICs and PLDs
CO3	: Understand and execute programs based on 8086 microprocessor
CO4	: Design Multiprocessor circuits.
CO5	: Design and interface I/O circuits

20IT403 – Database Management Systems	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1	: Implement SQL and effective relational database design concepts.
CO2	: Map ER model to Relational model to perform database design effectively
CO3	: Compare and contrast various indexing strategies in different database systems
CO4	: Implement queries using normalization criteria and optimization techniques
CO5	: Analyze how advanced databases differ from traditional databases.
CO6	: Design and deploy an efficient and scalable data storage node for varied kind of application requirements

20CS302 – Object Oriented Programming	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1	**:** Explain the object oriented programming concepts and fundamentals of Java
CO2	**:** Develop Java programs with the packages, inheritance, interfaces and exceptions
CO3	**:** Build Java applications with I/O streams, threads and generics classes
CO4	**:** Apply strings and collections in applications
CO5	**:** Develop interactive Java applications using swings and event handling mechanism

20CB505– Design Thinking	
Cos	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1	**:** Understand the phases of design thinking process.
CO2	**:** Conduct an immersion activity to create an empathy map
CO3	**:** Define the key problems of the personas created.
CO4	**:** Apply the ideation phase steps to present the prototype ideas
CO5	**:** Create a prototype with value propositions and test the prototype

20GE301– Universal Human Values 2: Understanding Harmony	
Cos	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1	**:** Would become more aware of themselves, and their surroundings (family, society, nature).
CO2	**:** Would become more responsible in life, and in handling problems with sustainable solutions, While keeping human relationships and human nature in mind.
CO3	**:** Would have better critical ability.
CO4	**:** Would become sensitive to their commitment towards what they have understood (human values, human relationship and human society.)
CO5	**:** Would be able to apply what they have learnt to their own self in different day-to-day settings in real life, at least a beginning would be made in this direction.

Laboratory

20IT412 - Database Management Systems Laboratory	
Cos	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1:	Apply typical data definitions and manipulation commands.
CO2:	Design applications to test Nested and Join Queries
CO3:	Implement simple applications that use Views
CO4:	Implement applications that require a Front-end Tool
CO5:	Critically analyze the use of Tables, Views, Functions and Procedures

20CS311 - Object Oriented Programming Laboratory	
Cos	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1:	Develop and implement Java programs for simple applications that make use of classes, Packages and interfaces.
CO2:	Develop and implement Java programs with collections, exception handling, regular Expressions and multithreading.
CO3:	Design applications using file processing and event handling.

20CS312- Mini Project	
Cos	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1:	Define the problem statement, study of requirements; study related Literature and the possible feasibilities.
CO2:	Demonstrate a sound technical knowledge of their selected project domain.
CO3:	Analyze the problem statement and design the architecture and modules for the proposed System
CO4:	Implement the problem and test the project with various test cases
CO5:	Demonstrate the knowledge, skills and attitudes of a software professional
CO6:	To take up challenging real world problems and find solution using appropriate methodology.

20CS313-Aptitude And Coding Skills – I	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1:	Develop vocabulary for effective communication and reading skills.
CO2:	Build the logical reasoning and quantitative skills.
CO3:	Develop error correction and debugging skills in programming.

EVEN Semester 2022-2023

4th Semester B.E. Computer Science and Design

20MA402- Probability And Statistics	
Cos	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1:	Understand the fundamental knowledge of modern probability theory and standard Distributions.
CO2:	Categorize the probability models and function of random variables based on one and two Dimensional random variables.
CO3:	Employ the concept of testing the hypothesis in real life problems.
CO4:	Implement the analysis of variance for real life problems.
CO5:	Apply statistical quality control in engineering and management problems.

20CS907- Human Computer Interaction	
Cos	**Course Outcome : The students, after the completion of the course, are expected 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.

20CS402- Design And Analysis Of Algorithms	
Cos	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1:	Analyze the efficiency of recursive and non-recursive algorithms mathematically
CO2:	Explain brute force and divide and conquer design techniques.
CO3:	Apply dynamic programming and greedy techniques for solving various problems.
CO4:	Use iterative improvement technique to solve optimization problems
CO5:	Examine the limitations of algorithmic power and handle it in different problems.

20CD401- Design Programming (Lab Integrated)	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1:	Learn about Blender interface
CO2:	Understand Texture Mapping and Rendering
CO3:	Analyze Text to Mesh Object and Curve conversion
CO4:	Know the scripting fundamentals
CO5:	Understand accessing game objects

20CD402- Information Design And Visualization	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1:	Identify the characteristics of Design Fundamentals
CO2:	Understand the design controlling process.
CO3:	Apply the python libraries for Visualization
CO4:	Examine the data visualization process
CO5:	Describe the methods of a visualization model

20CD403- Operating System Design	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1:	Understand the basics of Operating Systems
CO2:	Understand deadlock, prevention and avoidance algorithms.
CO3:	Compare and contrast various memory management schemes.
CO4:	Understand the functionality of file systems and Perform administrative tasks on Linux Servers.
CO5:	Compare iOS and Android Operating Systems.

Laboratory

20CD411- Information Design And Visualization Laboratory	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1:	Apply adobe illustrator for image techniques
CO2:	Implement transformation process in computer design
CO3:	Apply fundamentals of data visualization with python libraries
CO4:	Implement basic classification algorithms with visualization techniques
CO5:	Apply Real time dataset using visualization tools.

20CD412- Operating System Design Laboratory	
COs	**Course Outcome : The students, after the completion of the course, are expected to ….**
CO1:	Compare the performance of various CPU Scheduling Algorithms
CO2:	Implement Deadlock avoidance and Detection algorithms.
CO3:	Implement Semaphores and Create processes and implement IPC
CO4:	Analyze the performance of the various Page Replacement Algorithms.
CO5:	Implement File Organization and File Allocation Strategies.

20CS414- 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:	Apply data structures and algorithms in problem solving.