R. M. D. ENGINEERING COLLEGE

(An Autonomous Institution)
Kavaraipettai
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

REGULATION 2021

S.No	Course ID	Course Code	Course Name	Course #	Course Outcomes: Upon the completion of the course, a student can able to
1	CS201	21MA302	DISCRETE MATHEMATICS	C201.1	Examine the validity of the arguments
				C201.2	Demonstrate various proof techniques and application of principles.
				C201.3	Apply graph theory techniques to solve real life problems.
				C201.4	Identify algebraic techniques to formulate and solve group theoretic problems.
				C201.5	Utilize the significance of lattices and Boolean algebra in computer science and engineering
2	CS202	21CS301	DIGITAL PRINCIPLES AND SYSTEM DESIGN (LAB INTEGRATED)	C202.1	Design and implement digital circuits using simplified Boolean functions
				C202.2	Analyze, design and implement combinational circuits
				C202.3	Analyze, design and implement synchronous and asynchronous sequential circuits
				C202.4	Understand Programmable Logic Devices
				C202.5	Develop HDL code for combinational and sequential circuits
3	CS203	21CS302	OBJECT ORIENTED PROGRAMMING	C203.1	Explain the object oriented programming concepts and fundamentals of Java
				C203.2	Develop Java programs with the packages, inheritance, interfaces & exceptions
				C203.3	Build Java applications with I/O streams, threads and generics classes
				C203.4	Apply strings and collections in applications
				C203.5	Develop interactive Java applications using swings and event handling mechanism
4	CS204	21CS303	SOFTWARE ENGINEERING	C204.1	Summarize software engineering principles and activities involved in building large software programs
				C204.2	Describe the process of requirements gathering and analysis

				C204.3	Illustrate the design process.
				C204.4	Analyse the various testing methods
				C204.5	Apply estimation techniques, schedule project activities and compute pricing.
5	CS205	21IT403	DATABASE MANAGEMENT SYSTEMS	C205.1	Implement SQL and effective relational database design concepts
				C205.2	Map ER model to Relational model to perform database design effectively
				C205.3	Compare and contrast various indexing strategies in different database systems
				C205.4	Implement queries using normalization criteria and optimization techniques
				C205.5	Analyze how advanced databases differ from traditional databases.
				C205.6	Design and deploy an efficient and scalable data storage node for varied kind of application requirements
6	CS206	21GE301	UNIVERSAL HUMAN VALUES 2: UNDERSTANDING HARMONY	C206.1	Become more aware of themselves, and their surroundings (family, society, nature)
				C206.2	Become more responsible in life, and in handling problems with sustainable solutions, while keeping human relationships and human nature in mind
				C206.3	Have better critical ability.
				C206.4	Become sensitive to their commitment towards what they have understood (human values, human relationship, and human society).
				C206.5	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
7	CS207	21CS311	OBJECT ORIENTED PROGRAMMING LABORATORY	C207.1	Develop and implement Java programs for simple applications that make use of classes, packages and interfaces
				C207.2	Develop and implement Java programs with collections, exception handling, regular expressions and multithreading
				C207.3	Design applications using file processing and event handling
8	CS208	21IT412	DATABASE	C208.1	Apply typical data definitions and manipulation commands

			MANAGEMENT SYSTEMS LABORATORY	C208.2	Design applications to test Nested and Join Queries
				C208.3	Implement simple applications that use Views
				C208.4	Implement applications that require a Front-end Tool
				C208.5	Critically analyze the use of Tables, Views, Functions and Procedures
9	CS209	21CS312	Mini Project	C209.1	Identify the problem domain, collect and review the literature, and define the problem
				C209.2	Analyse the engineering problems and apply appropriate modern software tools/technologies
				C209.3	Develop creative solutions to problems and conceive innovative approaches in developing and designing of software systems for the development of society and the engineering profession
				C209.4	Analyses the impact of professional engineering solutions on ethics, society, and the environment as a responsible software professional or team player.
				C209.5	Write high quality engineering documents that can be understandable by both technical and nontechnical people.
				C209.6	Understand the need for further knowledge and continuously work on improving own knowledge through learning latest tools and technologies used in the field of IT/ITES
10	CS210	21CS313	APTITUDE AND CODING SKILLS – I	C210.1	Develop vocabulary for effective communication and reading skills
				C210.2	Build the logical reasoning and quantitative skills
				C210.3	Develop error correction and debugging skills in programming
11	CS211	21MA313	PROBABILITY AND STATISTICS	C211.1	Understand the fundamental knowledge of modern probability theory and standard distributions.
				C211.2	Categorize the probability models and function of random variables based on one and two dimensional random variables
				C211.3	Employ the concept of testing the hypothesis in real life problems
				C211.4	Implement the analysis of variance for real life problems.
				C211.5	Apply the statistical quality control in engineering and management problems
12	CS212	21CS401	COMPUTER	C212.1	Explain the basic principles and operations of digital computers.

			ARCHITECTURE	C212.2	Design Arithmetic and Logic Unit to perform fixed and floating point operations
				C212.3	Develop pipeline architectures for RISC Processors.
				C212.4	Summarize Various Memory systems & I/O interfacings
				C212.5	Recognize Parallel Processor and Multi Processor Architectures
13	CS213	21CS402	DESIGN AND ANALYSIS OF ALGORITHM	C213.1	Analyse the efficiency of recursive and non-recursive algorithms mathematically
				C213.2	Analyse the efficiency of brute force, divide and conquer, decrease and conquer, Transform and conquer algorithmic techniques
				C213.3	Implement and analyse the problems using dynamic programming and greedy technique algorithmic techniques
				C213.4	Solve the problems using iterative improvement technique for optimization.
				C213.5	Compute the limitations of algorithmic power and solve the problems using backtracking and branch and bound technique.
14	CS214	21CS403	INTERNET PROGRAMMING	C214.1	Construct a basic website using HTML and Cascading Style Sheets
				C214.2	Build dynamic web page with validation using Java Script objects and by applying different event handling mechanisms
				C214.3	Develop server side programs using Servlets and JSP
				C214.4	Construct simple web pages in PHP and to represent data in XML format
				C214.5	Apply AJAX and web services to develop interactive web applications
15	CS215	21CS404	OPERATING SYSTEMS	C215.1	Implement the basic concepts of operating systems and process
				C215.2	Analyse various CPU scheduling algorithms and thread mechanism
				C215.3	Implement the concepts of process synchronization and deadlocks
				C215.4	Design various memory management schemes to given situation
				C215.5	Implement various I/O and file management techniques.
16	CS216	21EC441	MICROPROCESSORS AND INTERFACING	C216.1	Acquire knowledge of basic architecture, operation, programming of microprocessor.8086

			(LAB INTEGRATED)	C216.2	Summarize the design of basic and multiprocessor systems and their bus timings.
				C216.3	Design the 8086 interfaces with memory, I/O and other peripheral chips
				C216.4	Describe the basic architecture and programming of microcontroller 8051
				C216.5	Apply programming concepts to implement microcontroller interfaces for different applications
				C216.6	Design and construct Microprocessor and Microcontroller based systems
17	CS217	21CS411	INTERNET PROGRAMMING LABORATORY	C217.1	Create web pages using HTML/XML and style sheets
				C217.2	Design user interfaces using Java frames and applets
				C217.3	Develop dynamic web pages using server-side scripting and PHP programming
				C217.4	Build applications with AJAX
18	CS218	21CS412	OPERATING SYSTEMS LABORATORY	C218.1	Practice system calls and shell programming
				C218.2	Implement various CPU scheduling algorithms
				C218.3	Build inter process communication deadlock detection and avoidance algorithms
				C218.4	Design page replacement and disk scheduling algorithms
				C218.5	Implement file allocation strategies
19	CS219	21CS413	INTERNSHIP	C219.1	Construct the company profile by compiling the brief history, management structure, products / services offered, key achievements and market performance for his / her organization of internship.
				C219.2	Assess its Strengths, Weaknesses, Opportunities and Threats (SWOT)
				C219.3	Determine the challenges and future potential for his / her internship organization in particular and the sector in general.
				C219.4	Test the theoretical learning in practical situations by accomplishing the tasks assigned during the internship period
				C219.5	Apply various soft skills such as time management, positive attitude and communication skills during performance of the tasks assigned in internship

					organization.
				C219.6	Analyze the functioning of internship organization and recommend changes for improvement in processes
20	CS220	21CS414	APTITUDE AND CODING SKILLS – II	C220.1	Develop advanced vocabulary for effective communication and reading skills
				C220.2	Build an enhanced level of logical reasoning and quantitative skills.
				C220.3	Develop error correction and debugging skills in programming.
				C220.4	Apply data structures and algorithms in problem solving
21	CS301	21CS501	COMPUTER NETWORKS	C301.1	Understand the fundamental concepts of computer networks and physical layer
				C301.2	Gain knowledge of various protocols and techniques used in the data link layer
				C301.3	Learn the network layer services and network layer protocols
				C301.4	Understand the various protocols used in the transport layer
				C301.5	Analyze the various application layer protocols
22	CS302	21CS503	THEORY OF COMPUTATION	C302.1	Construct automata for any pattern.
				C302.2	Create regular expressions for finite automata
				C302.3	Write Context free grammar for any construct
				C302.4	Design computation solutions using Turing machines
				C302.5	Analyze whether a problem is decidable or not
23	CS303	21CS502	ARTIFICIAL INTELLIGENCE	C303.1	Understand the fundamental knowledge of modern probability theory and standard distributions
				C303.2	Categorize the probability models and function of random variables based on one- and two-dimensional random variables
				C303.3	Employ the concept of testing the hypothesis in real life problems
				C303.4	Implement the analysis of variance for real life problems
				C303.5	Apply the statistical quality control in engineering and management problems
24	CS304	21CS929	GOOGLE CLOUD COMPUTING FOUNDATIONS	C304.1	Describe the different ways a user can interact with Google Cloud
				C304.2	Discover the different compute options in Google Cloud and implement a variety of structured and unstructured storage models
				C304.3	Discuss the different application managed service options in the cloud and

					outline how security in the cloud is administered in Google Cloud
				C304.4	Demonstrate how to build secure networks in the cloud and identify cloud automation and management tools
				C304.5	Discover a variety of managed big data services in the cloud
25	CS305	21AM002	DATA EXPLORATION, FEATURE ENGINEERING AND VISUALIZATION	C305.1	Explain the overview of exploratory data analysis and phases involved in data analytics
				C305.2	Explore in-depth knowledge in EDA techniques
				C305.3	Apply the visualization techniques in data
				C305.4	Describe the methods of time series analysis
				C305.5	Represent the data in tree and hierarchical formats
26	CS306	21CS511	NETWORKS LABORATORY	C306.1	Understand the various networking commands in different OS and troubleshoot it
				C306.2	Perform error detection & correction and flow control mechanisms in network programming
				C306.3	Program with raw sockets for network protocol implementation
				C306.4	Understand the usage of various network programming APIs and application layer protocols
				C306.5	Simulate various network protocols and analyze their behaviour in the network
27	CS307	21CS514	ARTIFICIAL INTELLIGENCE LABORATORY	C307.1	Implement search strategies
				C307.2	Implement and execute gaming algorithms
				C307.3	Design programs for Constraint satisfaction problems
				C307.4	Experiment the simple projects using AI Concepts
28	CS308	21CS512	ADVANCED APTITUDE AND CODING SKILLS - I	C308.1	Develop vocabulary for effective communication and reading skills
				C308.2	Build the logical reasoning and quantitative skills
				C308.3	Develop error correction and debugging skills in programming
29	CS309	21CS513	MINI PROJECT AND DESIGN THINKING PRACTICES LABORATORY	C309.1	Understand the design thinking process and able to visualize the problem
				C309.2	Analyse the problem using innovation tools
				C309.3	Design a prototype for an identified problem solution
				C309.4	Testing and evaluate strategies in improving the solution
				C309.5	Apply the innovation ideas to real-world applications.

HoD/CSE