Sri SAIRAM COLLEGE OF ENGINEERING
Anekal, Bengaluru

ISO 9001:2015 certified Institution
Approved by AICTE, New Delhi
Affiliated to Visvesvaraya Technological University
www.sairamce.edu.in

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
2017 SCHEME-CO's

Course Code	Course Name	CO Code	CO
17MAT31	ENGINEERING MATHEMATICS-III	CO1	Know the use of periodic signals and Fourier series to analyze circuits and system communication.
		CO2	Explain the general linear system theory for continuous-time signals and digital signal processing using the Fourier transforms and Z-transform.
		CO3	Employ appropriate Numerical methods to solve algebraic and transcendental equations.
		CO4	Apply Greens theorem, Divergence theorem and Stokes theorem in various applications in the field of elector-magnetic and gravitational fields and fluid flow problems.
		CO5	Determine the externals of functionals and solve the simple problems of the calculus of variations.
17CS32	ANALOG AND DIGITAL ELECTRONICS	CO1	Understand the fundamental concepts and techniques used in digital electronics.
		CO2	Understand and examine the structure of various number systems and its application in digital design.
		CO3	Understand, analyze and design various combinational and sequential circuits.
		CO4	Understand the simplification of Algebraic Expressions using Q-M method.
		CO5	Design Decoders, Multiplexers, De-multiplexer, Comparators, and latches.
17CS33	DATA STRUCTURES AND APPLICATIONS	CO1	Understanding the linear and non-linear data structures
		CO2	Implementing Sorting and searching operations, File structures.
		CO3	Implement Applications of Linked lists – Polynomials, Sparse matrix representation
		CO4	Implement all the applications of Data structures in a high-level language.
		CO5	Design and apply appropriate data structures for solving computing problems
17CS34	COMPUTER ORGANIZATIONS	CO1	Acquire knowledge of the basic structure of computers & machine instructions and programs, Addressing Modes, Assembly Language, Stacks, Queues and Subroutines.
		CO2	Acquire knowledge of Memory system basic Concepts, Semiconductor RAM Memories, Static memories, Asynchronous DRAMS, Read Only Memories, Cache Memories and Virtual Memories.
		CO3	Acquire knowledge of Some Fundamental Concepts of Basic Processing Unit, Execution of a Complete

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			Instruction, Multiple Bus Organization, Hardwired Control and Micro programmed Control.
		CO4	Apply the knowledge gained in the design of Computer. Design and evaluate performance of memory systems
		CO5	Understand the importance of life-long learning
17CS35	UNIX AND SHELL PROGRAMMING	CO1	Explain multi user OS UNIX and its basic features
		CO2	Design and develop shell programming.
		CO3	Design and develop communication terminology.
		CO4	Design and develop UNIX File I/O and UNIX Processes
		CO5	Perl script writing
17CS36	DISCRETE MATHEMATICAL STRUCTURES	CO1	Make use of propositional and predicate logic in knowledge representation and truth verification.
		CO2	Demonstrate the application of discrete structures in different fields of computer science.
		CO3	Solve problems using recurrence relations and generating functions.
		CO4	Apply different mathematical proofs, techniques in proving theorems.
		CO5	Compare graphs, trees and their applications.
17CSL37	ANALOG AND DIGITAL ELECTRONICS LABORATORY	CO1	Demonstrate various Electronic Devices like Cathode ray Oscilloscope, Signal generators, Digital Trainer Kit, Multimeters and components like Resistors, Capacitors, Op amp and Integrated Circuit.
		CO2	Understand the simplification of Algebraic Expressions using K-Map and design Adder, Subtractor & Multiplexers.
		CO3	Design and demonstrate the various types of conveters, Parity generators.
		CO4	Understand the simulation package to design circuits
		CO5	Design and demonstrate various types of counters
17CSL38	DATA STRUCTURES LABORATORY	CO1	Analyze and Compare various linear and non-linear data structures
		CO2	Code, debug and demonstrate the working nature of different types of data structures and their applications
		CO3	Implement, analyze and evaluate the searching and sorting algorithms
		CO4	Choose the appropriate data structure for solving real world problems
		CO5	Solve problem involving graphs, trees and heaps
17KKM39/49	KANNADA MANASU	CO1	Understand Kannada as administrative Language, Patra Vyavahara & Kannada vyakarana.
		CO2	Become Familiar about Da. Ra. Bendre, Dr. Sir. M Vishveshvaraya, Shivarama Karanth & Kuvempu.BGL

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			Swamy.
		CO3	Collected information about poets & Authors like Triveni, Su. Ram Ekkundi, P Lankesh, K.P Poornachandra Tejaswi Gandi story by Besagara halli Ramanna.
		CO4	Analyse the works of Belgiya haadu by Siddalingaiah, Ella hudugiyara kanassu & story Neeru.
		CO5	Understand Parisara Lekhana, Vrutthi shikshanadalli Kannada madyama & Konave gowda.
17KKL39/49	17KKL39/49-KANNADA KALI	CO1	To Read and understand the simple words in Kannada language, meaning in English ,equivalent words in english, grammar, form the sentences in kannada language, dialogue creation, learn about epics.
		CO2	To learn Kannada for Communication ,enquiries, sentence formation, request writing, conversations and meaning in English, adjectives.
		CO3	To learn creating present tense kannada sentences, potential forms, no-past continuous , imperative,understanding and answering.
		CO4	Learn to form Past tense sentences, discussing about a film, describing brindavan garden.
		CO5	To learn to converse routine activities of a student, grammar, present, past and perfect negations, reflexive, telephonic conversations, and to create some interest on Kannada Language and Literature.
17MAT41	ENGINEERING MATHEMATICS-IV	CO1	Solve first order ordinary differential equation arising in flow problems using single step and multi-step numerical methods.
		CO2	Solve second order ordinary differential equation arising in flow problems using single step numerical methods and Illustrate problems of potential theory, quantum mechanics and heat conduction by employing notions and properties of Bessel's functions and Legendre's polynomials.
		CO3	Explain the concepts of analytic functions, residues, poles of complex potentials and describe conformal and Bilinear transformation arising in field theory and signal processing.
		CO4	Develop probability distribution of discrete, continuous random variables and joint probability distribution occurring in digital signal processing, information theory and design engineering.
		CO5	Demonstrate testing of hypothesis of sampling distributions and illustrate examples of Markov chains related to discrete parameter stochastic

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			process.
17CS42	OBJECT ORIENTED CONCEPTS	CO1	Explain the Object –Oriented concepts and JAVA
		CO2	Develop computer programs to solve Object – Oriented programming, real world problems in Java
		CO3	Interpret and design the Classes, Exception Handling, Inheritances for resolving run-time errors and handle large data set using file I/O in Java
		CO4	Interpret and design the multithreaded programming, Event Handling for resolving run-time errors with Java programs
		CO5	Develop simple GUI interfaces for a computer program to interact with users, and to Comprehend the event-based GUI handling principles using Applets and Swings
17CS43	DESIGN AND ANALYSIS OF ALGORITHM	CO1	Define the methods and notations used to analyze efficiency of algorithm
		CO2	Illustrating computational solutions to problems like sorting, searching etc.. by different methods
		CO3	Using techniques like greedy method to solve graph, tree etc problems
		CO4	Applying the concept of dynamic programming to solve various problems
		CO5	Evaluating problems using backtracking, NP method etc.,
17CS44	MICROPROCESSOR AND MICROCONTROLLER	CO1	Differentiate between microprocessors and microcontrollers, also can explain the fundamentals about microprocessors
		CO2	Develop assembly language code to solve problems
		CO3	Explain interfacing of various devices to x86 family
		CO4	Demonstrate interrupt routines for ARM
		CO5	Write programs using ARM instructions
17CS45	SOFTWARE ENGINEERING	CO1	Outline software engineering principles and activities involved in building large software programs.
		CO2	Identify ethical and professional issues and explain why they are of concern to software engineers.
		CO3	Describe the process of requirements gathering, requirements classification, requirements specification and requirements validation.
		CO4	Recognize the importance of software maintenance and describe the intricacies involved in software evolution.
		CO5	Apply estimation techniques, schedule project activities and compute pricing.
17CS46	DATA	CO1	Explain the functions of OSI & TCP/IP model ,

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	COMMUNICATION		Identify the different types of network topologies and protocols
		CO2	Analyze the functions of physical layers& basic computer network Technology, Describe different types of switching network & Convert Data using different transmission techniques
		CO3	Detect and correct errors using different techniques and discuss various functions of data link layer protocols
		CO4	Analyze different media access control protocol& wired and wireless LAN Ethernet
		CO5	Demonstrate different types of wireless network & Discriminate IPV4 & IPV6
17CSL47	DESIGN AND ANALYSIS OF ALGORITHM LABORATORY	CO1	Design and implement various algorithms in JAVA
		CO2	Implement a variety of sorting algorithms such as quick sort and Merge sort.
		CO3	Design algorithms using appropriate design techniques (brute-force, greedy, dynamic programming, etc.
		CO4	Employ various design strategies and Algorithms for problem solving.
		CO5	Implement a variety of algorithms such as graph related, combinatorial, etc., in a high level language.
17CSL48	MICROPROCESSORS LABORATORY	CO1	Describe the fundamental of assembly level programming of microprocessors and microcontroller
		CO2	Examine the programming proficiency using the various addressing modes and data transfer instruction of the target microprocessor/ microcontroller
		CO3	To provide practical exposure to the students on design and coding knowledge on ARM.
		CO4	To give the knowledge and practical exposure on connectivity and execute of interfacing devices with 8086 kit like LED & LCD displays, Keyboards, Stepper Motors, DAC/ADC, and various other devices.
		CO5	To give the knowledge and practical exposure on connectivity and execute of interfacing devices with ARM kit like LED& LCD displays, Stepper Motors and various other devices.
17CPH39/49	Constitution of India, Professional Ethics and Human Rights	CO1	Learn in details with examples To assimilate and get familiarized with basic information about Indian constitution
		CO2	Specify in details with examples provide overall legal literacy to the young technograts to manage complex societal issues in the present scenario.

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		CO3	Learn the characteristics of To identify their individual roles and ethical responsibilities towards society.
		CO4	Specify in depth To understand engineering ethics & responsibilities
		CO5	Deliberate in details with application, if applicable, To understand engineering ethics & responsibilities, through the learning of these topics students will be able to understand human rights/ values and its implications in their life.