AMRUTVAHINI COLLEGE OF ENGINEERING, SANGAMNER

Department Of Computer Engineering

Course Outcomes

Second Year – 2019 Course			
Course Code	**Course Name**	**Course Outcomes**	
Semester - I			
210241	Discrete Mathematics	CO1	Design and analyse real world engineering problems by applying set theory, propositional logic and to construct proofs using mathematical induction
		CO2	Specify, manipulate and apply equivalence relations; construct and use functions and apply these concepts to solve new problems
		CO3	Calculate numbers of possible outcomes using permutations and combinations; to model and analyse computational processes using combinatorics.
		CO4	Understand fundamental concept of graph and solve computing problems using appropriate algorithms.
		CO5	Model tree and solve computing problems using appropriate algorithms
		CO6	Analyse the properties of binary operations, apply abstract algebra in coding theory and evaluate the algebraic structures.
210242	Fundamentals of Data Structures	CO1	Apply programming skills to solve given problem efficiently by choosing suitable data structure & algorithmic strategies.
		CO2	Comprehend concept of array & use it in context of applications like polynomial & sparse matrices.
		CO3	Evaluate computational efficiency of different algorithms for searching and sorting and choose the most efficient one for the application
		CO4	Demonstrate use of sequential data structure- Linked lists to store and process data.
		CO5	Describe concept of stack & write a program to solve computational problems using stack.
		CO6	Understand and apply principles of queue to solve computational problems.

210243	Object Oriented Programming	CO1	Apply constructs- sequence, selection and iteration; classes and objects, inheritance, use of predefined classes from libraries while developing software.
		CO2	Design object-oriented solutions for small systems involving multiple objects.
		CO3	Use virtual and pure virtual function and complex programming situations.
		CO4	Apply object-oriented software principles in problem solving.
		CO5	Analyse the strengths of object-oriented programming.
		CO6	Develop the application using object oriented programming language (C++).
210244	Computer Graphics	CO1	Identify and recognize the basic terminologies and concepts of Computer Graphics and apply to develop elementary graphics operations
		CO2	Understand and illustrate concepts of windowing and clipping and filling polygons.
		CO3	Illustrate and apply concepts of 2-D and 3-D transformations, and projections to develop computer graphics programs.
		CO4	Understand and differentiate color models, lighting, shading models and hidden surface elimination for creating computer graphics applications.
		CO5	Comprehend and Create graphics programs using concepts of curve and Fractals.
		CO6	Understand, apply and create effective programs using concepts of animation and gaming.
210245	Digital Electronics and Logic Design	CO1	Simplify Boolean Expressions using K Map.
		CO2	Design and implement combinational circuits.
		CO3	Design and implement sequential circuits.
		CO4	Develop simple real-world application using ASM and PLD.
		CO5	Choose appropriate logic families IC packages as per the given design specifications.
		CO6	Explain organization and architecture of computer system

210246	Data Structures Laboratory	CO1	Use algorithms on various linear data structure using sequential organization to solve real life problems.
		CO2	Analyse problems to apply suitable searching and sorting algorithm to various applications.
		CO3	Analyse problems to use variants of linked list and solve various real life problems.
		CO4	Design and implement stack for different real time applications.
		CO5	Solve various real-time problems by using queues.
		CO6	Implement different set theory operations using data structures.
210247	OOP and Computer Graphics Laboratory	CO1	Understand basic object oriented program constructs and apply it solve problems.
		CO2	Understand and apply the concepts like inheritance, polymorphism, exception handling and generic structures for implementing reusable programming codes.
		CO3	Analyse the concept of file and apply it while storing and retrieving the data from secondary storages.
		CO4	Analyse and apply computer graphics algorithms for line-circle drawing, scan conversion and polygon filling with the help of object oriented programming concepts.
		CO5	Understand and apply the concept of windowing, clipping, curves, fractals, animation.
		CO6	Apply logic to implement graphics algorithms, animation and gaming programs using OpenGL.
210248	Digital Electronics Laboratory	CO1	Learn the basics of gates.
		CO2	Construct basic combinational circuits and verify their functionalities
		CO3	Apply the design procedures to design basic sequential circuits
		CO4	Learn about counters
		CO5	Learn about flip flop
		CO6	To understand the basic digital circuits and to verify their operation

210249	Business Communication Skills	CO1	Express effectively through verbal/oral communication and improve listening skills
		CO2	Write precise briefs or reports and technical documents.
		CO3	Prepare for group discussion / meetings / interviews and presentations.
		CO4	Explore goal/target setting, self-motivation and practicing creative thinking.
		CO5	Operate effectively in multi-disciplinary and heterogeneous teams through the knowledge of team work, Inter-personal relationships, conflict management and leadership qualities.
		CO6	Express effectively through verbal/oral communication and improve listening skills
210250	Humanity and Social Science	CO1	Aware of the various issues concerning humans and society.
		CO2	Aware about their responsibilities towards society.
		CO3	Sensitized about broader issues regarding the social, cultural, economic and human aspects, involved in social changes.
		CO4	Understand the nature of the individual and the relationship between self and the community.
		CO5	Understand major ideas, values, beliefs, and experiences that have shaped human history and cultures.
		CO6	Aware of the various issues concerning humans and society.
Semester – II			
207003	Engineering Mathematics III	CO1	Solve Linear differential equations, essential in modeling and design of computer-based systems.
		CO2	Apply concept of Fourier transform and Z-transform and its applications to continuous and discrete systems and image processing.
		CO3	Apply Statistical methods like correlation and regression analysis and probability theory for data analysis and predictions in machine learning.
		CO4	Solve problems related to probability & probability distributions.
		CO5	Solve Algebraic and Transcendental equations and System of linear equations using numerical techniques.
		CO6	Obtain Interpolating polynomials, numerical differentiation and integration, numerical solutions of ordinary differential equations used in modern scientific computing.

210252	Data Structures and Algorithms	CO1	Identify and articulate the complexity goals and benefits of a good hashing scheme for real- world applications.
		CO2	Understand trees & its type and apply it for solving problems in various domains.
		CO3	Learn basic concept of graph & algorithms to find shortest path.
		CO4	Demonstrate concept of dynamic programming in types of search trees
		CO5	Use efficient indexing methods and multi-way search techniques to store and maintain data.
		CO6	Use appropriate modern tools to understand and analyse the functionalities confined to the secondary storage
210253	Software Engineering	CO1	Analyse software requirements and formulate design solution for software.
		CO2	Design applicable solutions in one or more application domains using software engineering approaches that integrate ethical, social, legal and economic concerns.
		CO3	Apply new software models, techniques and technologies to bring out innovative and novelistic solutions for the growth of the society in all aspects and evolving into their continuous professional development.
		CO4	Model and design User interface and component-level.
		CO5	Identify and handle risk management and software configuration management.
		CO6	Utilize knowledge of software testing approaches, approaches to verification and validation. Construct software of high quality –software that is reliable, and that is reasonably easy to understand, modify and maintain efficient, reliable, robust and cost-effective software solutions.
210254	Microprocessor	CO1	Exhibit skill of assembly language programming for application
		CO2	Classify processor architecture
		CO3	Illustrate advance feature of 80386 microprocessor is Memory Management
		CO4	Understand the protection mechanism
		CO5	Compare and contrast different processor modes
		CO6	Differentiate between Microprocessor and microcontroller

210255	Principles of Programming Languages	CO1	Make use of basic principles of programming languages.
		CO2	Develop a program with Data representation and Computations.
		CO3	Develop programs using Object Oriented Programming language : Java
		CO4	Develop application using inheritance, encapsulation, and polymorphism.
		CO5	Demonstrate Multithreading for robust application development.
		CO6	Develop a simple program using basic concepts of Functional and Logical programming paradigm.
210256	Data Structures and Algorithms Laboratory	CO1	Understand the ADT/libraries, hash tables and dictionary to design algorithms for a specific problem.
		CO2	Choose most appropriate data structures and apply algorithms for graphical solutions of the problems.
		CO3	Apply and analyse non-linear data structures to solve real world complex problems.
		CO4	Apply and analyse algorithm design techniques for indexing, sorting, multi-way searching, file organization and compression.
		CO5	Analyse the efficiency of most appropriate data structure for creating efficient
		CO6	Implement different operations on files.
210257	Microprocessor Laboratory	CO1	Understand and apply various addressing mode and instruction set to implement assembly language programming
		CO2	Apply logic to implement code conversion
		CO3	Analyse and apply logic to demonstrate processor mode of operation
		CO4	Apply logic to get the address from protected mode using GDTR, IDTR, LDTR register
		CO5	Apply logic to implement FAR PROCEDURE
		CO6	Apply logic and implement OS commands

210258	Project Based Learning II	CO1	Identify the real life problem from societal need point of view.
		CO2	Choose and compare alternative approaches to select most feasible one.
		CO3	Analyse and synthesize the identified problem from technological perspective
		CO4	Design the reliable and scalable solution to meet challenges
		CO5	Evaluate the solution based on the criteria specified
		CO6	Inculcate long life learning attitude towards the societal problems
210259	Code of Conduct	CO1	Understand the basic perception of profession, professional ethics, various moral and social issues, industrial standards
		CO2	Aware of professional rights and responsibilities of an engineer, responsibilities of an engineer for safety and risk benefit analysis.
		CO3	Understand the impact of the professional Engineering solutions in societal and Environmental contexts
		CO4	Acquire knowledge about various roles of engineers in variety of global issues and able to apply ethical principles to resolve situations that arise in their professional lives.
		CO5	Learn code of ethics and role of professional ethics in engineering field.
		CO6	Demonstrate the knowledge of, and need for sustainable development.