Department of Computer Science and Design
K. K. Wagh Institute of Engineering Education and Research
Hirabai Haridas Vidyanagari, Amrut Dham, Panchavati, Nashik-422003

Course Outcomes

SY BTech Computer Science and Design
Sem I(2022 Pattern)

COM222001: Fundamentals of Data Structures

CO1 Describe the fundamental concepts and terminology of data structures and algorithms, including arrays, linked lists, stacks, queues and searching and sorting algorithms

CO2 Demonstrate the ability to choose and implement appropriate data structures such as Array, linked list, stack and queue to solve a given problem

CO3 Implement algorithms for array and linked list processing such as insertion, and deletion using C++

CO4 Use stack and / or queue to solve the given problem

CO5 Compare different searching and sorting algorithms based on their performance, strengths, and limitations.

COM222002: Computer Graphics

CO1 Explain basic concepts of computer graphics to generate line, circle and polygon

CO2 Use polygon filling and polygon clipping algorithms

CO3 Apply geometric transformations on 2D and 3D objects

CO4 Make use of color models and hidden surface removal algorithms for rendering 2D/3D objects

CO5 Develop graphical applications using Curves and Fractals

COM222003: Discrete Mathematics

CO1 Solve problems using propositional logic and number theory

CO2 Use relations or functions to solve problems

CO3 Apply graph theory to represent data and solve associated problems

CO4 Apply the concepts of trees to generate minimum spanning tree and prefix code

CO5 Use algebraic structures to solve problems

COM222004: Digital Electronics and Logic Design

CO1 Solve the problem of minimization using K Map and Quine Mc-Clusky method of Boolean expression

CO2 Build combinational circuits using AND-OR logic

CO3 Build combinational circuits using SSI and MSI logic

CO4 Explain applications of Flip Flops, registers and shift registers

CO5 Develop sequential logic circuits using Flip Flops and MSI logic

COM222005: Programming Paradigms and Java Programming

CO1 Remember and describe various programming paradigms

CO2 Make use of appropriate data types and control structures in Java to solve a given problem

CO3 Apply object oriented constructs in Java

CO4 Make use of exception handling and multithreading in Java

CO5 Compare and contrast Functional and Logic programming

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COM222006: Design Thinking

CO1 Explain stages and process of design thinking
CO2 Identify the methods to empathize and define the problem
CO3 Apply the ideation techniques for problem solving
CO4 Construct the prototype to evaluate a design
CO5 Apply testing techniques to improve the performance

COM222007: Data Structures Lab

CO1 Demonstrate the ability to choose and implement appropriate data structures such as Array, linked list, stack, queue and Hash Tables to solve a given problem
CO2 Implement an algorithms for array and linked list operations such as insertion, and deletion etc using C++
CO3 Make use of stack and / or queue to solve the given problem
CO4 Apply the hash table, concepts of collision resolution methods to solve the given problem

COM222008: Digital Electronics Lab

CO1 Solve the problem of minimization using K Map and Quine Mc-Clusky method of Boolean expression
CO2 Build combinational circuits using AND-OR logic
CO3 Build combinational circuits using SSI and MSI logic
CO4 Explain applications of Flip Flops, registers and shift registers
CO5 Develop sequential logic circuits using Flip Flops and MSI logic

COM222009: Programming Paradigms and Computer Graphics Lab

CO1 Demonstrate Object Oriented Programming features like inheritance, data abstraction, encapsulation, and polymorphism to solve various computing problems
CO2 Illustrate the use of exception handling and multithreading in Java
CO3 Compare and contrast Functional and Logic programming
CO4 Apply basic concepts of computer graphics to generate line, circle and polygon
CO5 Make use of algorithms for polygon filling and clipping
CO6 Apply geometric transformations on 2D objects
CO7 Develop graphical applications using Curves and Fractals

COM222010: Python Programming Lab

CO1 Use the core concepts to write a python program
CO2 Apply control structure and loops to build a solution for a given problem
CO3 Develop python program for string manipulation
CO4 Build a solution for a given problem using lists, sets, tuples, dictionaries
CO5 Develop programs using functions

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Sem II(2022 Pattern)

SMH222111: Applied Mathematics –III

CO1 Understand basic concept of Statistic
CO2 Understand basic concept of probability distribution
CO3 Apply the basic concepts of statistics to real life problems
CO4 Apply the basic concepts of probability distribution theory to real life problems
CO5 Analyze real life problems by using theory of statistics and Probability distribution

COM222012: Advanced Data Structures

CO1 Make use of non-linear data structures such as graph and trees to solve a given problem
CO2 Use different representations of symbol table
CO3 Apply the hash table and its collision resolution methods and different file handling techniques
CO4 Use efficient indexing techniques and multiway search trees to store and maintain data
CO5 Analyze an algorithm used for solving a given problem

COM222013: Operating systems

CO1 Illustrate the concept of systems software
CO2 Illustrate the concept of process scheduling algorithms to solve scheduling problems
CO3 explain the concepts of deadlock and illustrate the techniques to detect, prevent and avoid the deadlock
CO4 Demonstrate the use of page replacement algorithms for memory management
CO5 Explain the concept of I/O management techniques
CO6 Demonstrate the use of Linux commands and basic shell utilities

CSD222014: Computer Networks

CO1 Summarize fundamental concepts of computer network, architectures, models, technologies and security aspects
CO2 Illustrate functions of HTTP, DNS and SMTP protocols.
CO3 Explain the Transport Layer functions such as port addressing, socket programming Connection Management, Error and Flow control mechanism
CO4 Demonstrate routing protocols and mechanisms
CO5 Apply concepts of framing, error detection and control at data link layer

COM222015: Software Engineering and Project Management

CO1 Identify appropriate process model for software development.
CO2 Model software requirements for software development.
CO3 Make use of emerging trends for software project management.
CO4 Utilize project metrics for software project estimation and process improvement
CO5 Analyze software risks involved in project development.

COM222016: Client Side Technology

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CO1 Build web pages using HTML
CO2 Apply CSS for styling web pages
CO3 Use of Java Script for web development
CO4 Use Angular for web development
CO5 Use front-end frameworks for web development

COM222017: Advanced Data Structures Lab

CO1 Make use of non-linear data structures such as graph and trees to solve a given problem
CO2 Use different representations of symbol table
CO3 Apply the hash table and it's collision resolution methods and different file handling techniques
CO4 Use efficient indexing techniques and multiway search trees to store and maintain data
CO5 Analyze an algorithm used for solving a given problem

COM222018: Operating Systems Lab

CO1 Demonstrate the use of control flow statements and basic shell commands
CO2 Illustrate the concept of process scheduling algorithms to solve scheduling problems
CO3 Compare algorithms for deadlock detection, prevention and avoidance
CO4 Demonstrate the use of page replacement algorithms
CO5 Describe Linux commands and utilities such as grep, tr, sed, awk

CSD222019: Computer Networks Lab

CO1 Summarize fundamental concepts of computer network, architectures, models, technologies and security aspects
CO2 Illustrate functions of HTTP, DNS and SMTP protocols.
CO3 Explain the transport layer functions such as port addressing, socket programming, Connection management, Error and flow control mechanism.
CO4 Demonstrate routing protocols and mechanisms
CO5 Apply concepts of framing, error detection and control at data link layer

COM222020: Project Based Learning - Client Side Technology

CO1 Explain concept of digital marketing
CO2 Illustrate basics of Segmentation, Targeting and Positioning to Digital Marketing
CO3 Explain how social media platforms and its facets are used to achieve organizational marketing objectives
CO4 Demonstrate the marketing on the social media platforms
CO5 Illustrate applications of web analytics and content management in marketing