

SEMESTER – I

MAJ1

DIGITAL DESIGN AND ANALYSIS

Course Outcomes: After the completion of the course

- ✓ **Knowledge acquired:**
 - Basic knowledge of digital logic and digital circuits,
 - Overall idea about how computers function and the internal building blocks of a computer.
 - Knowledge about how operations are performed in a computer
 - A thorough understanding of the fundamental concepts and techniques used in digital electronics.

- ✓ **Skills gained:**
 - Application of the knowledge of digital logic to understand digital electronics circuits.
 - The ability to understand, analyze and design various combinational and sequential circuits.
 - To understand and examine the structure of various number systems and its application in digital design.

- ✓ **Competency Developed:**
 - Ability to identify basic requirements for a design application and propose a cost-effective solution.
 - The ability to identify and prevent various hazards and timing problems in a digital design.
 - Ability and skill to develop/build, and troubleshoot digital circuits.

MAJ2

PROGRAMMING IN C

Course Outcomes: After the completion of the course

- ✓ **Knowledge acquired:**
 - Knowledge about program development and implementation
 - Syntax of C programming language
 - Knowledge about how humans interact with computers through a language.

- ✓ **Skills gained:**
 - Problem solving skills
 - Logical thinking to approach a problem
 - Building programs for different problems at hand.

- ✓ **Competency Developed:**
 - Applying the skills learnt to model real world problems
 - Facility in solving real life problems by thinking logically and outside of box.
 - Ease of switching to any other programming language

BASIC PROGRAMMING IN PYTHON

Course Outcomes: After the completion of the course

- ✓ **Knowledge Acquired:**
 - Fundamental Concepts: Students acquire knowledge of fundamental programming concepts such as variables, data types, loops, conditionals, and functions in Python.
 - Data Structures: They learn about essential data structures like lists, tuples, dictionaries, and sets, understanding their usage and implementation.

- ✓ **Skills Gained:**
 - Coding Proficiency: Through hands-on practice and assignments, students develop coding proficiency in Python, enabling them to write clear, concise, and functional code.
 - Problem-Solving: They enhance their problem-solving skills by applying Python programming concepts to solve various computational problems and algorithms.
 - Debugging and Troubleshooting: Students acquire skills in debugging code and troubleshooting errors, learning how to identify and fix common programming mistakes effectively.

- ✓ **Competency Developed:**
 - Logical Thinking: Python programming exercises require logical thinking and algorithmic problem-solving skills, helping students develop a logical mindset.
 - Attention to Detail: Writing code necessitates attention to detail to ensure accuracy and functionality. Students develop this competency through debugging and code review processes.

SEMESTER – II

MAJ3

DISCRETE STRUCTURES

Course Outcomes: After the completion of the course

✓ **Knowledge acquired:**

- Basic knowledge of discrete mathematics and discrete structures,
- To develop understanding of Logic sets and functions
- Knowledge of mathematically correct terminology and notations.
- Knowledge about construction of direct and indirect proofs.

✓ **Skills gained:**

- Development of problem-solving skills necessary for understanding counting problems.
- Ability to generalize from a single instance of a problem an entire class of problems and identification of patterns of data.

✓ **Competency Developed:**

- Ability to analyze problems and solve problems.
- Ability to implement mathematical knowledge in data analysis.

MAJ4

OBJECT ORIENTED PROGRAMMING USING JAVA

Course Outcomes: After the completion of the course

✓ **Knowledge acquired:**

- Understanding of Object-Oriented Concepts: Students will acquire knowledge of fundamental Object-Oriented Programming (OOP) concepts such as classes, objects, inheritance, polymorphism, and encapsulation. They'll grasp the theoretical underpinnings of these concepts and their practical applications in software development.
- Java Syntax and Language Features: Through hands-on coding exercises and projects, students will become proficient in Java syntax, learning about data types, control flow structures, and exception handling. They'll understand how to write Java programs that follow best practices and adhere to industry standards.

✓ **Skills gained:**

- Programming Proficiency: Students will develop practical programming skills in Java, including the ability to write, compile, and execute Java programs independently. They'll gain confidence in coding by solving progressively challenging programming problems and implementing real-world applications.
- Debugging and Troubleshooting: Through debugging exercises and code reviews, students will learn how to identify and fix errors in Java code effectively. They'll develop skills in using debugging tools and techniques to diagnose and resolve software issues efficiently.

✓ ***Competency Developed:***

- Problem-Solving Skills: Students will enhance their problem-solving abilities by applying object-oriented principles to solve complex programming problems. They'll learn how to break down problems into smaller, manageable components and devise elegant solutions using OOP concepts.
- Critical Thinking and Analysis: The course will foster students' ability to critically evaluate software designs and code implementations. They'll learn to analyze trade-offs, identify design flaws, and propose alternative solutions, honing their critical thinking skills essential for software development.

SEC2 – E2

HTML PROGRAMMING

Course Outcomes: After the completion of the course

✓ ***Knowledge Acquired:***

- Understanding of web page structure.
- Notepad, browser familiarity.
- Knowledge about building web pages.

✓ ***Skills Gained:***

- Proficiency in web page development.
- Visual content insertion capability.
- Creation of forms, tables.

✓ ***Competency Developed:***

- Effective web page development competency.
- Understanding the core concepts of web development and how web pages are constructed.
- Ability to structure and organize content on a web page effectively.
- Skills in creating forms to collect and manage user input.