SHRI SANT GAJANAN MAHARAJ COLLEGE OF ENGINEERING, SHEGAON

DEPARTMENT OF INFORMATION TECHNOLOGY

PROGRAM: B.E. (INFORMATION TECHNOLOGY)

ACADEMIC SESSION: 2025-26

COURSE OUTCOMES (CBCS SCHEME)

CLASS: THIRD YEAR **SEMESTER: V**

Course Title: Database Management Systems **Course Code**: 5IT01

After successful completion of the course, students will be able to:

CO1: Construct ER model with notations and constraints.

CO2: Build relational algebra queries using basic, additional and extended operations.

CO3: Create SQL queries based on the relation schema and tasks.

CO4: Apply concurrency control protocols on schedules and transactions.

CO5: Create roles, grant and revoke the privileges for providing database security.

Course Title: Theory of Computations **Course Code:** 5IT02

After successful completion of the course, students will be able to:

CO1: Analyze formal languages with help of fundamental concepts and Finite Automata.

CO2: Create regular expressions and grammars which can be used to represent formal language in different forms.

CO3: Analyze the formal languages, their powers using different forms of grammars and classify them according to Chomsky hierarchy.

CO4: Design Push Down Automata for a Context Free Language along with context sensitive languages.

CO5: Design Turing machine for performing different types for computations.

CO6: Identify the decidability and un-decidability of problems in case of formal languages.

Course Title: Software Engineering **Course Code:** 5IT03

After successful completion of the course, students will be able to:

CO1: Demonstrate the Fundamental Concepts of software engineering life cycle

CO2: Elaborate the software engineering requirements specification and the SRS documents

CO3: Examine the software engineering layered technology and process framework

CO4: Illustrate the Use Case diagram, DFD, Sequence diagram, class diagram, Activity diagram and state Transition diagram.

CO5: Demonstrate the competence in communication planning, analysis, design, construction, and development of software as per requirement

CO6: Develop a basic report on software testing for effectively test, debug, and validate software

Course Title: Information Security Systems (PE-1(i)) **Course Code**: 5IT04

After successful completion of the course, students will be able to:

CO1: Apply fundamental information security concepts and the security development life cycle to secure information systems.

CO2: Apply knowledge of threats, attacks, and legal/ethical issues to determine organizational security needs

CO3: Apply legal and ethical principles to support secure and responsible information security practices

CO4: Analyze organizational risks using risk identification, assessment, and risk control strategies.

CO5: Apply security planning methods, policies, governance frameworks, and continuity strategies within an organization.

CO6: Analyze cryptographic techniques, algorithms, and secure communication protocols to evaluate their effectiveness.

Course Title: Data Science & Statistics (PE-1(ii)) **Course Code**: 5IT04

After successful completion of the course, students will be able to:

CO1: Apply Numpy and Pandas Library functions on datasets

CO2: Analyze data by performing EDA and data visualization by using plots

CO3: Create hypothesis on data and perform hypothesis testing required.

CO4: Evaluate the Performance of Linear Regression model on dataset.

CO5: Evaluate the Performance of Logistic Regression Measure Decision Tree Algorithm on datasets

Course Title: Data Structures and Algorithms (Open Elective) **Course Code**: 5IT05

After successful completion of the course, students will be able to:

CO1: Summarize the fundamental concepts of Data Structures and algorithms.

CO2; Demonstrate the implementation of arrays and linked lists in data structures.

CO3: Illustrate stack and queue operations with real-world examples.

CO4: Explain different binary tree traversal methods with examples.

CO5: Apply graph representation techniques and implement the shortest path algorithm.

CO6: Compare various sorting and searching techniques based on their efficiency.

Course Title: Computer Skill Lab III **Course Code**: 5IT09

CO1: Install and configure Angular CLI to create and run a basic Angular application.

CO2: Design, create, and navigate Angular components and analyze component lifecycle events.

CO3: Implement variables and data binding techniques to connect templates with component logic.

CO4: Apply Angular Signals to manage reactive state and improve application performance.

CO5: Use Angular directives to manipulate DOM elements dynamically.

CO6: Implement control flow statements in Angular templates for conditional rendering and iteration.