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: VI**

Course Title: Compiler Design   **Course Code**: 6IT01

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

CO1: Demonstrate the fundamentals of compilation for designing lexical analyzers by utilizing regular expressions, LEX, YACC, etc. for token specification and recognition.

CO2: Perform syntax analysis using top-down parsing methods such as Back-Tracking, LL(k), etc. for error detection and error recovery in predictive parsing.

CO3: Perform syntax analysis using bottom-up parsing such as Handle Pruning, Shift-Reduce, LR(k), etc. methods for error detection and error recovery in predictive parsing.

CO4: Design and implement syntax-directed translations, using synthesized and inherited attributes with syntax trees, directed acyclic graphs, and evaluate syntax-directed definitions using various methods.

CO5: Demonstrate key concepts in runtime environments, and intermediate code generation for various source language constructs.

Course Title: Design Analysis & Algorithm   **Course Code:** 6IT02

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

CO1: Analyze worst-case running times of algorithms using asymptotic analysis.

CO2: Apply the divide-and-conquer paradigm and examine when an algorithmic design situation calls for it.

CO3: Differentiate the greedy-programming paradigm and solve an algorithmic design situation calls for it.

CO4: Examine the dynamic programming approach and explain when an algorithmic design situation calls for it.

CO5: Differentiate and apply the concept of Backtracking, Polynomial Time & Non Polynomial Time Algorithms.

Course Title: Artificial Intelligence   **Course Code:** 6IT03

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

CO1: Explain concepts of Artificial Intelligence and different types of intelligent agents and their architecture.

CO2: Evaluate different uninformed search algorithms on well formulate problems along with stating valid conclusions that the evaluation supports.

CO3: Design and analyze informed search algorithms on well formulated problems.

CO4: Formulate and solve given problem using Propositional and First order logic.

CO5: Apply reasoning for non-monotonic AI problems.

CO6: Have a basic understanding of some of the more advanced topics of AI such as learning, Understanding, Natural Language Processing

Course Title: Cryptography and Network Security (PE-1(i))   **Course Code**: 6IT04

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

CO1: Apply fundamental cartographic principles to secure communication.

CO2: Implement encryption and decryption techniques ensuring confusion and diffusion.

CO3: Compare and analyze symmetric and asymmetric encryption method for data security.

CO4: Evaluate the role of network security protocols in securing data transmission.

CO5: Identify network security threats and implement countermeasures.

CO6: Identify different Web and system security solutions.

Course Title: Big Data Analytics (PE-1(ii))   **Course Code**:6IT04

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

CO1: Illustrate the concepts of big data.

CO2: Apply Hadoop goals and assumptions for choosing the proper component of the Hadoop ecosystem.

CO3: Apply the MapReduce operations based on the tasks.

CO4: Apply stream processing algorithms to data, considering issues in it.

CO5: Identify the big data mining algorithm based on the applications.

Course Title: Data Communication and Internet (Open Elective) **Course Code**:6IT05

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

CO1: Explain the fundamental concepts and principles of computer networking.

CO2: Describe the components of data communication systems and the role of various networking protocols.

CO3: Apply networking concepts to demonstrate information sharing mechanisms in computer networks.

CO4: Explain the flow of data, categories of networks, and different network topologies.

CO5: Apply knowledge of signals, transmission media, and error detection and correction techniques in data communication.

CO6: Illustrate the building blocks and functioning of a digital communication system.

Course Title: Computer Skill Lab – IV **Course Code:** 6IT09

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

CO1: Apply basic Artificial Intelligence concepts and intelligent agent models to identify problem types and working environments.

CO2: Implement and analyze AI problem-solving techniques using uninformed and informed search strategies in Python.

CO3: Develop programs that demonstrate reasoning and decision-making using knowledge representation, game-playing, and uncertainty handling techniques.

CO4: Apply natural language processing techniques to build simple AI applications using appropriate programming tools.