SHRI SANT GAJANAN MAHARAJ COLLEGE OF ENGINEERING, SHEGAON

DEPARTMENT OF INFORMATION TECHNOLOGY

PROGRAM: B.E. (INFORMATION TECHNOLOGY)

ACADEMIC SESSION: 2025-26

COURSE OUTCOMES (NEP SCHEME)

CLASS: SECOND YEAR **SEMESTER: IV**

Course Title: Data Structures **Course Code:** 4IT209PC

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

CO1: Explain fundamental concepts of data structures and pattern matching algorithms.

CO2: Use linear and multidimensional arrays for problem-solving.

CO3: Construct and manipulate various types of linked lists.

CO4: Apply stack and queue operations in practical problems.

CO5: Use binary trees, BSTs, and heaps to solve problems.

CO6: Design and implement graph traversals and sorting techniques.

Course Title: Data Communication & Networking **Course Code:** 4IT210PC

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

CO1: Describe the fundamental concepts of data communication, including components, types of data flow, and communication systems

CO2: Compare the OSI and TCP/IP models by analyzing the functionalities and protocols at each layer.

CO3: Apply knowledge of signal conversion methods and apply error detection and correction techniques to ensure reliable communication.

CO4: Analyze IPv4/IPv6 protocols, and packet delivery processes.

CO5: Compare and contrast TCP and UDP features, use cases, and transport layer mechanisms.

CO6: Assess application layer services like DNS and HTTP and troubleshoot networking issues using protocols and addressing schemes.

Course Title: Computer Organization & Architecture **Course Code**: 4IT211PC

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

CO1: Apply the basic knowledge of computers to demonstrate the working of the computer system.

CO2: Analyze the execution of a complete instruction within the processing unit.

CO3: Discover the approaches computers follow to handle input/output operations.

CO4: Choose memory at each level in the computer based on its functionalities.

CO5: Interpret the arithmetic operations done by the computer.

Course Title: Introduction to Operating Systems **Course Code:** 4IT214MD

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

CO1: Explain and apply process scheduling algorithms

CO2: Apply synchronization and deadlock-related issues

CO3: Investigate memory management techniques

Course Title: Computer Skills – I C**ourse Code**: 4IT215VS

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

CO1: Apply the knowledge of Internet, web protocols, servers and web design principles to develop effective websites.

CO2: Apply the concepts and structure of HTML to create basic web pages.

CO3: Apply HTML elements knowledge to design web pages by working with text, lists, tables, frames, hyperlinks, images, multimedia etc.

CO4: Analyze and implement CSS techniques to create visually appealing and responsive web pages.

CO5: Apply JavaScript concepts to develop interactive and user-friendly web pages.

CO6: Apply your knowledge to build dynamic web applications using PHP by integrating PHP with HTML.

Course Title: Artificial Intelligence **Course Code:** 4IT216OE2

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

CO1: Explain the Artificial Intelligence concepts. History, types, intelligent agents, and applications of AI

CO2: Apply problem-solving techniques using uninformed and informed search strategies to solve AI-related problems.

CO3: Analyze knowledge representation methods basic machine learning approaches to design simple AI/ML solutions

Course Title: IT Ethics and Management **Course Code:** 4IT217EM

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

CO1: Apply Engineering and professional ethics, morals, and laws in day to day life

CO2: Analyze engineering ethical dilemmas using moral reasoning and professional codes of ethics.

CO3: Analyze computing ethics issues and apply IEEE Codes to privacy, intellectual property, and cyber crimes

Course Title: Universal Human Values and Ethics **Course Code:** 4SH219VE

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

CO1: Understand the concept of self, differentiate physical and mental needs, and apply human values for personal well-being and ethical awareness in engineering.

CO2: Understand and apply trust, empathy, conflict resolution, and ethical principles in relationships, family, and society.

CO3: Apply professional ethics, promote sustainability in engineering practices, and understand corporate and global ethical responsibilities including CSR.