SVKM'S
NMIMS
Deemed to be UNIVERSITY

Mukesh Patel School of Technology Management and Engineering

Integrated(UG) MBA Tech (Computer Engineering)

- **Program Outcomes (POs)**
- **Course Outcomes (COs)**

Program Outcomes (POs):

PO-1: Apply the knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems

PO-2: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences.

PO-3: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for public health and safety, and cultural, societal and environmental considerations

PO-4: Use research-based knowledge and research-methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions

PO-5: Create, select, and apply appropriate techniques, resources and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO-6: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice.

PO-7: Understand the impact of the professional engineering solutions in societal and environmental contexts, demonstrate the knowledge of, and need for sustainable development.

PO-8: Apply ethical principles and commit to professional ethics, responsibilities, and norms of engineering practice.

PO-9: Function effectively as an individual , and as member or leader in diverse teams , and in multidisciplinary settings

PO-10: Communicate effectively on complex engineering activities with the engineering community and with the society at large such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO-11: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments

PO-12: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Courses and Course Outcomes (COs):

Probability and Statistics

- **CO-1:** Solve problems involving random variables, probability distributions and testing of hypothesis, correlation and regression.
- **CO-2:** Identify suitable probability distribution and testing techniques to solve problems.
- **CO-3:** Apply knowledge of random variables, probability distributions, measures of central tendency, correlation and regression to solve real life problems
- **CO-4:** Analyse data samples using statistical methods.

Computer Networks

- **CO-1:** Explain the concepts of computer networks, topologies and data communication
- **CO-2:** Analyze the various error detection and correction and medium access techniques
- **CO-3:** Apply network layer addressing and routing techniques to different network topologies.
- **CO-4:** Analyze the different protocols of the layered architecture of computer networks

Data Structures and Algorithms

- **CO-1:** Understand the concept of data structures and computational complexity
- **CO-2:** Identify and implement appropriate linear data structure for the given problem.
- **CO-3:** Identify and implement appropriate non-linear data structure for the given problem.
- **CO-4:** Differentiate various searching and sorting algorithms.

Constitution of India

- **CO-1:** Recall the historical evolution of India's democratic values, emphasizing the foundational principles of justice, equality, and liberty as enshrined in the Preamble of the Constitution.
- **CO-2:** Understand the fundamental rights enshrined in the Constitution, their permissible restrictions, and how these rights are balanced with duties, to grasp their application within societal and professional frameworks.
- **CO-3:** Apply the knowledge of the structure of India's polity and the role of the Judiciary in maintaining the basic structure of the Constitution in real-world professional contexts

Workshop

- **CO-1:** Identify correct testing instruments and tools for various tasks.
- **CO-2:** Build PCB circuits using through hole and SMD components for small applications.
- **CO-3:** Make use of required electrical components for building domestic wiring circuits.
- **CO-4:** Assemble PC hardware and configure network topology.

Computer Organization and Architecture

- **CO-1:** Discuss the functional blocks of computers and the interconnections
- **CO-2:** Evaluate the memory system
- **CO-3:** Explain the components of the Central Processing Unit
- **CO-4:** Describe Input Output and Parallel Organization

Elements of Biology

- **CO-1:** Identify the principles of biomimicry and explain their applications in engineering and sustainable design, demonstrating an understanding of biologically inspired solutions.

- **CO-2:** Classify the fundamental building blocks of life (carbohydrates, proteins, lipids, and nucleic acids) and describe their structural and functional roles in cellular processes and metabolism.
- **CO-3:** Explain the molecular basis of genetic information transfer, including DNA replication, transcription, and translation, and interpret Mendel's laws and their significance in genetics.
- **CO-4:** Describe the mechanisms of enzyme action, enzyme-substrate interactions, and enzyme inhibition, and discuss their industrial and biological applications.
- **CO-5:** Explain the principles of metabolism and energy transactions, and categorize microorganisms based on their characteristics, growth kinetics, and applications in biotechnology and drug discovery.

Operating Systems

- **CO-1:** Describe fundamental concepts of Operating system
- **CO-2:** Apply process management strategies
- **CO-3:** Apply memory, I/O and file management strategies
- **CO-4:** Relate the basic concepts for an advanced operating system

Object oriented programming through Java

- **CO-1:** Understand java programming fundamentals
- **CO-2:** Write program using object-oriented programming concepts
- **CO-3:** Use exception handling and collection framework in Java
- **CO-4:** Design graphical user interface

Interpersonal Skills

- **CO-1:** Demonstrate awareness of business networks and communicate appropriately in various contexts
- **CO-2:** Illustrate the knowledge of team dynamics to work productively in teams and participate effectively in contexts such as group discussions
- **CO-3:** Apply persuasive communication strategies to articulate themselves in situations such as personal interviews

- **CO-4:** Create social media plans and employment related documents to showcase their personal brand