SVKM'S
NMIMS
Deemed to be UNIVERSITY

Mukesh Patel School of Technology Management and Engineering

Integrated (UG) MBA Tech (Artificial Intelligence)

- **Program Educational Objectives (PEOs)**
- **Program Outcomes (POs)**
- **Course Outcomes (COs)**

Program Educational Objectives (PEOs):

1. **Professional Skills**
2. **Career Growth**
3. **Higher Studies**

Program Outcomes (POs):

PO-1: Engineering Knowledge: Apply knowledge of mathematics, natural science, computing, engineering fundamentals and an engineering specialization as specified in WK1 to WK4 respectively to develop to the solution of complex engineering problems.

PO-2: Problem Analysis: Identify, formulate, review research literature and analyze complex engineering problems reaching substantiated conclusions with consideration for sustainable development. (WK1 to WK4)

PO-3: Design/Development of Solutions: Design creative solutions for complex engineering problems and design/develop systems/components/processes to meet identified needs with consideration for the public health and safety, whole-life cost, net zero carbon, culture, society and environment as required. (WK5)

PO-4: Conduct Investigations of Complex Problems: Conduct investigations of complex engineering problems using research-based knowledge including design of experiments, modelling, analysis & interpretation of data to provide valid conclusions. (WK8).

PO-5: Engineering Tool Usage: Create, select and apply appropriate techniques, resources and modern engineering & IT tools, including prediction and modelling recognizing their limitations to solve complex engineering problems. (WK2 and WK6)

PO-6: The Engineer and The World: Analyze and evaluate societal and environmental aspects while solving complex engineering problems for its impact on sustainability with reference to economy, health, safety, legal framework, culture and environment. (WK1, WK5, and WK7).

PO-7: Ethics: Apply ethical principles and commit to professional ethics, human values, diversity and inclusion; adhere to national & international laws. (WK9)

PO-8: Individual and Collaborative Team work: Function effectively as an individual, and as a member or leader in diverse/multi-disciplinary teams.

PO-9: Communication: Communicate effectively and inclusively within the engineering community and society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations considering cultural, language, and learning differences.

PO-10: Project Management and Finance: Apply knowledge and understanding of engineering management principles and economic decision-making and apply these to one's own work, as a member and leader in a team, and to manage projects and in multidisciplinary environments.

PO-11: Life-Long Learning: Recognize the need for, and have the preparation and ability for independent and life-long learning ii) adaptability to new and emerging technologies and iii) critical thinking in the broadest context of technological change

Courses and Course Outcomes (COs):

Probability and Random Variables

- **CO-1**: Know the concept of probability and random variables.
- **CO-2**: Solve problems involving conditional probability and moments.
- **CO-3**: Demonstrate understanding of the applications of various probability distributions, measures of central tendency to solve real life problems.
- **CO-4**: Analyse the different probability density functions and their applications.

Statistical Methods - Sem IV

- **CO-1**: Know the applications of statistics and sample the population using various sampling techniques.
- **CO-2**: Classify, tabulate, and represent data and calculate the descriptive statistics.
- **CO-3**: Explain the concepts of multivariate regression models, principal component analysis and discriminant analysis.
- **CO-4**: Analyze and implement a simple and multiple linear regression model

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.

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.

Optimization Techniques

- **CO-1**: Define suitable optimization technique for given problems.
- **CO-2**: Demonstrate use of decision making and game theory.
- **CO-3**: Solve assignment and transportation problems.
- **CO-4**: Apply concepts of linear programming and integer linear programming to solve real life problems.

English Communication

- **CO-1**: Use their knowledge of vocabulary and grammar to articulate their ideas effectively
- **CO-2**: Demonstrate effective listening and speaking skills in oral communication situations such as speeches, conversations, power-presentations, etc.
- **CO-3**: Apply different reading techniques as needed to read passages effectively

Critical Thinking

- **CO-1**: solve problems or take decisions by processing information in a clear, logical, reasoned, and reflective manner.
- **CO-2**: recognise, build, and appraise arguments
- **CO-3**: analyse contexts effectively
- **CO-4**: recognise bias and its impact on decision making

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