

## New Program Outcomes

**PO1: Engineering Knowledge** - Apply the knowledge of mathematics, natural science, computing, and engineering fundamentals and an engineering specialization to the solution of complex engineering problems.

**PO2: Problem Analysis** - Identify, formulate, and analyze complex engineering problems, reaching substantiated conclusions with consideration for the holistic nature of the problem.

**PO3: Design/Development of Solutions** - Design creative solutions for complex engineering problems and design systems, components, or processes to meet identified needs — with consideration for public health and safety, and cultural, societal, and environmental factors. Sustainability is now intrinsic to design.

**PO4: Conduct Investigations of Complex Problems** - Conduct investigations of complex engineering problems using research-based knowledge and research methods, including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions.

**PO5: Engineering Tool Usage** - Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling — recognizing their limitations — to solve complex engineering problems. (Previously titled "Modern Tool Usage.")

**PO6: The Engineer and the World** - Analyze and evaluate societal and environmental aspects while solving complex engineering problems, considering their impact on sustainability with reference to economy, health, safety, legal frameworks, culture, and the environment. This PO merges the old PO6 (Society) and old PO7 (Environment and Sustainability) into one.

**PO7: Ethics** - Apply ethical principles and commit to professional ethics, human values, diversity, and inclusion; and adhere to relevant national and international laws. (Diversity and inclusion are now explicit additions.)

**PO8: Individual and Collaborative Team Work** - Function effectively as an individual, and as a member or leader in diverse and multi-disciplinary teams.

**PO9: Communication** - Communicate effectively and inclusively within the engineering community and with society at large — comprehending and writing effective reports and design documentation, and making effective presentations — considering cultural, language, and learning differences

**PO10: 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, to manage projects in multi-disciplinary environments.

**PO11: Life-Long Learning** - Recognize the need for, and have the preparation and ability for, independent and life-long learning, adaptability to new and emerging technologies, and critical thinking in the broadest context of technological change.