

School of Engineering
Department of Mechanical Engineering
(M. Tech-Automation and Robotics)

Department Vision:

To be a globally recognized center of excellence in Mechanical Engineering through academic excellence, research, innovation, international collaborations, and community engagement, nurturing competent, ethical, and socially responsible engineers for sustainable technological advancement and the holistic development of society and the nation.

Department Mission:

Mission 1: To provide inclusive, value-based, and outcome-driven education that fosters intellectual curiosity, critical thinking, ethical leadership, and lifelong learning, enabling at least 90% of graduates to achieve academic excellence, professional competence, and successful career progression in Mechanical Engineering.

Mission 2: To promote research, innovation, entrepreneurship, startup incubation, and technology commercialization through strong collaborations with industry and academia, integrating Industry 4.0, Industry 5.0, Artificial Intelligence, Digital Manufacturing, IoT, and Smart Manufacturing into teaching, research, and professional practice.

Mission 3: To cultivate socially responsible engineers by promoting community outreach, extension activities, rural technology initiatives, SDG-based projects, environmental sustainability, and ethical professional practices that contribute to the holistic development of society and the nation.

Program Educational Objectives (PEOs):

PEO1: Graduates will develop expertise in automation, robotics, control systems, machine vision, and intelligent technologies, enabling them to design, analyze, and innovate advanced engineering systems through rigorous research and technical proficiency.

PEO2: Graduates will excel as skilled professionals and leaders in industry, academia, and research organizations by demonstrating strong analytical abilities, project management skills, effective communication, and the ability to work collaboratively in multidisciplinary environments.

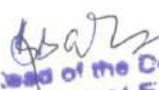
PEO3: Graduates will apply automation and robotics solutions with a commitment to ethical responsibility, safety, environmental sustainability, and societal well-being, contributing positively to industrial progress and technological development.

Program Outcomes (POs):

PO	Statement
PO1:	An ability to independently carry out research /investigation and development work to solve practical problems.
PO2:	An ability to write and present a substantial technical report/document.
PO3:	Students should be able to demonstrate a degree of mastery over the area as per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program.
PO4:	Apply advanced analytical and computational tools, techniques, and modern engineering software to model, simulate, and optimize complex engineering systems.
PO5:	Design, develop, and evaluate innovative engineering systems or solutions by integrating interdisciplinary knowledge, demonstrating creativity and a systems-level thinking approach.
PO6:	Integrate ethical reasoning and professional responsibility into engineering decision-making, demonstrating sensitivity to the societal, environmental, and legal dimensions of technological innovations.

Program Specific Outcomes (PSOs):

PSO	Statement
PSO1:	Intelligent Automation & Robotic System Design Able to design, model, and implement advanced robotic and automation systems using modern tools, AI/ML techniques, machine vision, sensors, actuators, and real-time control architectures.
PSO2:	Advanced Control, Integration & Optimization Able to develop, integrate, and optimize control strategies for autonomous systems, industrial automation platforms, and cyber-physical systems, ensuring high performance, reliability, and safety.
PSO3:	Research, Innovation & Technological Advancement Able to conduct independent and applied research in automation and robotics, innovate new solutions, and contribute to emerging areas such as Industry 4.0, smart manufacturing, digital twins, and intelligent systems.


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