

## B Tech Instrumentation and Control

### Program Education Objectives (PEOs):

**PEO1: Core Competency:** Graduate will solve real world problems appropriate to the field of Instrumentation & Control Engineering using foundation of mathematics and science.

**PEO2: Breadth:** Graduate will apply current industry accepted practices, new and emerging technologies to analyze, design, implement, and maintain the state-of-art solutions.

**PEO3: Learning Environment:** Exhibit self- learning capabilities to assimilate and practice emerging theories and technologies.

**PEO4: Professionalism:** Inculcate professional and ethical attitude and ability to relate automation issues to society at large as well as exhibit teamwork and effective communication skills.

**PEO5: Preparation:** Be successfully employed or accepted into a graduate program / higher studies, and demonstrate a pursuit of lifelong learning.

### Program Specific Outcomes (PSOs)

**PSO1.** Design and deploy Instrumentation systems to enhance the performance of the industrial and real life applications.

**PSO2.** Devise innovative systems and control methodologies to cater the needs of the core industrial problems.

**PSO3.** Create knowledge base for ease in implementing advanced techniques for seamless integration of the technology for the real life applications.

### Program Outcomes (POs):

On successful completion of the Program, engineering graduates will able to:

**PO1: Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, to Instrumentation and Control discipline to the solution of complex engineering problems.

**PO2: Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO3: Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

**PO4: Conduct investigations of complex problems:** 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.

**PO5: Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities.

**PO6: The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

**PO7: Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

**PO8: Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO9: Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10: Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations.

**PO11: Project management and finance:** 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.

**PO12: Life-long learning:** 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.