



## **Bachelor of Instrumentation Engineering**

### **Program Outcomes (POs)**

**PO1) Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization 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 with an understanding of the limitations.

**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, and give and receive clear instructions.

**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.

### **Program Specific Outcomes (PSOs)**

**PSO1)** Apply the concepts of measurement using various sensors/transducers along with associated signal processing for controlling machines or processors using automation tools like PLC, DCS with proper planning and documentation.

**PSO2)** Apply the concept of automatic control including measurement, feedback and feedforward regulation for the operation of continuous and discrete system using mathematics as basis of modelling and design.

**PSO3)** Apply the concepts of physics, chemistry and electricity/electronics to measurement, control and communication for design and implementation of various instruments and systems utilising analog and/or digital circuits and control devices.



### **Programme Educational Objectives (PEOs)**

**PEO1)** To introduce students to various aspects of basic and applied research so as to gain proficiency in the field of design and development of Instrumentation system.

**PEO2)** To provide students in-depth knowledge of various domains of Instrumentation and control to successfully apply them to solve industrial and societal issues.

**PEO3)** To arouse intellectual curiosity among students by providing solid foundation in concepts of science and engineering for innovative solutions of real life problems.

**PEO4)** To educate students on professional issues along with qualities like leadership, ethics, planning and management to become successful entrepreneurs.