

Department of Mechanical Engineering (B.Tech.)

Program Educational Objectives (PEO)

- 1.** To prepare students for successful careers in Indian and multinational industries/companies engaged in thermal systems, manufacturing processes, machine design and the related fields.
- 2.** To develop the ability among students to understand and synthesize data/information and technical concepts for application to product/system/process design.
- 3.** To prepare students to be able to work as part of teams on multidisciplinary projects involving professional ethics and codes of professional practice.
- 4.** To develop the ability among the students for taking research/teaching assignments.

Program Outcomes (PO)

- 1. Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. 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.
- 3. 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.
- 4. 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.
- 5. 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
- 6. 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.

7. 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.

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

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

10. 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.

11. 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

12. 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 (PSO)

1. Will be able to apply the acquired theoretical and practical skills to solve the industrial and research problems in the major streams such as thermal, design, manufacturing and industrial engineering.

2. Will be able to take up their career in government, public, private sector industrial/research organizations, start enterprises and pursue higher studies with high regard for social and professional ethics.

Course Outcome (CO)

<https://ptu.ac.in/wp-content/uploads/2021/12/BTech-ME-2021.pdf>