

## **B.E. Mechanical Engineering**

### **Program Educational Objectives**

1. Prepare the graduates with a solid foundation in Engineering, Science and Technology for a successful career in Mechanical Engineering.
2. Train the students to solve problems in Mechanical Engineering and related areas by engineering analysis, computation and experimentation, including understanding basic mathematical and scientific principles.
3. Inculcate students with professional and ethical attitude, effective communication skills, team work skills and multidisciplinary approach
4. Provide opportunity to the students to expand their horizon beyond mechanical engineering
5. Develop the students to adapt to the rapidly changing environment in the areas of mechanical engineering and scale new heights in their profession through lifelong learning.

### **Programme Outcomes**

PO1: Engineering Knowledge: Graduates will be able to apply knowledge of mathematics, science and engineering for the solution of mechanical engineering problems.

PO2: Problem analysis: Graduates will be able to formulate and analyze complex mechanical engineering problems.

PO3: Design/development of solutions. Graduates will be able to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, and public health.

PO4: Conduct investigations of complex problems: Graduates will be able to design and conduct experiments, and to analyze and interpret data.

PO5: Modern tool usage: Graduates will be able to use the techniques, skills, and modern engineering tools necessary for mechanical engineering practice.

PO6: The engineer and society: Graduates will be able to include social, cultural, ethical issues with engineering solutions.

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: Graduates will be able to function effectively on multidisciplinary teams.

PO10: Communication: Graduates will be able to communicate effectively.

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: Graduates will be able to adopt technological changes and promote lifelong learning.

## **M.E. Thermal Engineering**

### **Programme Educational Objectives (PEO)**

1. To equip the students with necessary foundation for effectively analyzing and solving the problems associated in thermal engineering field.
2. To deliver comprehensive education in Thermal Engineering to ensure that the students have core competency to be successful in industry/ research laboratory and motivate them to pursue higher studies and research in interrelated areas.
3. To encourage the students to take up real life and/or research related problems and to create innovative solutions of these problems through comprehensive analysis and designing.
4. Graduates will have inculcated the ability to maintain high professionalism and ethical standards, effective technical presentation and writing skill and to work as a part of team on research projects.

### **Program Outcomes (PO)**

PO 1: An ability to acquire, apply and share in-depth knowledge in the area of thermal engineering.

PO 2: An ability to conduct independent research and generate new knowledge for the benefit of mankind.

PO 3: Graduates will demonstrate an ability to identify, formulate and solve thermal engineering problems.

PO 4: Graduates will demonstrate research skills to critically analyze complex thermal engineering problems for synthesizing new and existing information for their solutions.

PO 5: An ability to maintain a high level of professional and intellectual integrity, ethics of research and scholarly standards.

PO 6: Graduates will demonstrate skills to use modern engineering tools, software and equipment to analyze and solve complex engineering problems.

PO7: Graduates will demonstrate and ability to work on laboratory and multidisciplinary tasks.

PO 8: Students will be able to convey thoughts effectively on the basis of acquired soft skills and self confidence with peers, subordinates and higher authority for the consistent and effective knowledge sharing process.

PO 9: Graduates will be able to understand the need for, and an ability to engage in life-long learning and continual updating of professional skills.

## **M.E. Energy Engineering and Management**

**Programme Educational Objectives (PEO)** This program imbibes excellent technical capabilities in the area of energy engineering and allied systems, effective communication skill in students, ensuring successful career and continuing their professional advancement through life-long learning. The programme educational objectives of Master in Energy Engineering and Management are

1. Have high level of technical competency combined with research and problem solving ability to generate innovative solutions in energy engineering or related areas using the acquired analytical, computational and experimental skills.

2. Graduates will have inculcated the ability to maintain high professionalism and ethical standards, effective technical presentation and writing skill and to work as a part of team on research projects.

3. To prepare the students to exhibit a high level of professionalism, integrity, environmental and social responsibility, and life-long independent learning ability.

**Programme Outcomes (PO)**

PO1: An ability to acquire, apply and share in-depth knowledge in the area of Energy Engineering and Management

PO2: An ability to analyze real life problems in the field of Energy Engineering and arrive at sustainable solutions

PO3: An ability to conduct independent research and generate knowledge for the benefit of mankind.

PO4: An ability to effectively communicate through technical reports, presentations and scientific publications in general and, use the modern computer/ software tools to model and analyze energy engineering problems in particular.

PO5: An ability to work effectively in interdisciplinary teams to develop energy efficient systems for the society

PO6: An ability to apply engineering and scientific principles for effective management of energy systems

PO7: Graduates will demonstrate an ability to visualize and work on laboratory and multidisciplinary tasks.

PO8: An ability to engage in life-long independent learning with high level of enthusiasm and commitment

PO9: An ability to examine critically the outcomes of one's actions and make corrective measures subsequently