MECHANICAL ENGINEERING

Vision:

To become an Internationally Acclaimed Department of Higher Learning, Research, Innovation, and Incubation in Mechanical Engineering by 2035.

Mission:

1. To provide quality education to the students in order to make them globally competitive Mechanical Engineers.
2. To enhance the skills of students using modern engineering tools and experimental techniques to solve real life mechanical engineering problems.
3. To make them work in groups with high level of societal, environmental, and professional ethics with the self-learning attitude.
4. To establish linkages with the Industries, R&D organizations, and educational institutions in India and abroad for excellence in teaching, research, and innovation.

B. Tech. in Mechanical Engineering

Programme Educational Objectives (PEO)

1. To prepare students in the area of mechanical engineering for successful careers in industries, academia and research organizations through state-of-the-art education
2. To provide students with a sound foundation in science and engineering fundamentals necessary to formulate, analyze and solve mechanical engineering problems and to prepare them for research activities.
3. To develop ability in the field of machine design, thermal engineering, manufacturing, and industrial engineering so as to design and create novel products, processes and solutions for the real-life problems
4. To inculcate in students professional and ethical attitude, effective communication & teamwork skills, and ability to apply multidisciplinary knowledge to relate mechanical engineering problems to broader environmental and social context.
5. To engage students in professional development through the self-learning and keep abreast with the state-of-the-art technology needed for a successful professional career.

Program Outcomes (POs) and Program Specific Outcomes (PSOs)

1. Apply knowledge of mathematics, science, and mechanical engineering fundamentals to solve real life problems.
2. Identify, formulate, apply engineering knowledge, and conduct research to solve real life mechanical engineering problems.
3. Ability to design a system, component, or process by applying the knowledge of Machine Design, Thermal Engineering, Manufacturing to meet desired needs within realistic constraints such as economic, environment, cultural, societal, health and safety and sustainability.

4. Ability to design and conduct experiments, as well as to analyze and interpret data and synthesis of information to reach out to solutions.
5. Select, create and apply modern engineering and IT tools, including CAD, CAM to solve complex engineering problems.
6. Apply reasoning to assess the impact of engineering solutions and practices in a global, societal, health, safety, legal and cultural context.
7. Understand the impact of engineering solutions in societal and environmental contexts and demonstrate knowledge of and need for sustainable development.
8. Apply ethical principle, inculcate moral values and commit to professional ethics, responsibility and norms of engineering practice.
9. Function effectively as member or leader in diverse teams and in multi-disciplinary settings.
10. Communicate effectively on complex engineering activities with engineering fraternity and society at large such as being able to understand and write effective reports, documents, presentations and give and take instructions clearly.
11. Apply knowledge and understanding of industrial engineering and management principles and function in multidisciplinary teams as a member or leader to manage projects.
12. Recognition of the need for and an ability to engage in life-long self-learning in state of the art technology.

PSO-1 Graduate will be able to identify, analyze and solve engineering problems relating to mechanical systems together with allied engineering streams.

PSO-2 Graduates will learn managerial skills and interdisciplinary technologies to work effectively in a team and in a society by following ethical and environmental practices.

Mechanical Engineering Department

Madan Mohan Malaviya University of Technology

Gorakhpur-273010

Course: M.TECH. in Energy Technology & Management

Program Specific Outcome (PSO)

Ability to develop complex problem solving skills, conduct experiments, model & simulate real life situations through advance computational techniques and compete global employment opportunities in the field of Energy Technology & Management.

Program Education Objectives (PEOs)

PEO-1: To educate students with expertise in carrying out analysis and research in the field of Energy Technology & Management.

PEO-2: To encourage the students towards advance efficient energy conversion technologies and alternate energy resources for sustainable developments.

PEO-3: To capable the students as entrepreneur in generating employment and employable in different research organizations with advance technical skills.

PEO-4: To emphasisethe students for professional and managerial skills as per current scenarioto meet the requirement globally and motivate for higher research.

Program Outcomes (POs)

1. Student will acquire sound domain knowledge of advanced mathematics, energy science & engineering fundamentals and apply to the solution of complex problems.
2. Student will be able to identify, formulate and analyse current challenging problems through simulation and experimental approach.
3. Student will be able to conceptualize different thermal systems to evaluate the optimal feasible solution with appropriate considerations of realistic constraints.
4. Student will be able to use research-based knowledge from literatures, technical tools for analysis to provide valid solutions.
5. Student will be able to use modern tools, techniquesand resources to predict & model real-life engineering problems.
6. Student will be able to exhibit the contextual knowledge of professional ethics & responsibilities to implement the research outcome for development of society.
7. Student will be able to upgrade skills of managerial ethics as an individual, as a member or as a leader in multidisciplinary teams towards achieving their goals.
8. Student will be able to demonstrate & communicate effectively with scientific community.
9. Student will be able to write effective technical reports and documentations.

MECHANICAL ENGINEERING DEPARTMENT
MADAN MOHAN MALAVIYA UNIVERSITY OF TECHNOLOGY
GORAKHPUR-273010

Course: M.TECH. in Computer Integrated Manufacturing

PROGRAM EDUCATIONAL OBJECTIVES (PEO):

PEO1: Design and development of computer integrated manufacturing systems by using the knowledge of advanced mathematics, basic concepts of sciences, fundamentals of engineering and advance manufacturing tools.

PEO2: Apply advanced computational, analytical, simulation tools and techniques to face the challenges in manufacturing and its integration in real world.

PEO3: Working independently as well as collaboratively, while presenting the professional and ethical responsibilities of the engineering profession.

PEO4: Engage in life-long learning to adapt the changing requires for professional and career advancement.

PROGRAM OUTCOMES (POs):

PO1: Develop an ability to carry out research and investigation work to solve practical problems related to computer integrated manufacturing.

PO2: Develop an ability to write and present a substantial technical report / document and research paper.

PO3: Develop an ability to demonstrate a degree of mastery over the areas of computer integrated manufacturing at level higher than the bachelor's program in mechanical engineering and allied programs.

PO4: Develop an ability to use latest technology for the design and analysis of CNC based manufacturing and automation systems.

PO5: Develop an ability to apply engineering knowledge, techniques and modern tools to design, simulate and analyse CAD and CAM systems.

PO6: Develop an ability to adapt technical, human safety, ethical behaviour and environmental affecting factors in the design of computer integrated systems.

PO7: Develop an ability to perform in interdisciplinary teams with social and management skills with a commitment to lifelong learning.

Program Specific Outcomes (PSO):

PSO1: Design subsystems of computer integrated manufacturing system by integrating automation in manufacturing, assembly and testing to develop advanced tools for evaluating performance of automated systems with respect to materials, machines and other resources.