NIRMA UNIVERSITY
INSTITUTE OF TECHNOLOGY
Bachelor of Technology
(A.Y 2018-19)

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Course Code	ME105
Course Title	Introduction to Mechanical Engineering

Course Learning Outcomes (CLO):

At the end of the course, students will able to-

1. relate the importance of engineering in society and industry,
2. infer the role, scope, importance and applications of mechanical engineering,
3. perceive the inter-disciplinary role and importance of mechanical engineering related to various engineering domains,
4. interpret the opportunities and upcoming areas related to mechanical engineering.

Syllabus   **Teaching hours: 15**

UNIT - I   **01 hours**

Introduction to Engineering
History of engineering, Social relevance of engineering, Role and importance of engineers in industries

UNIT - II   **05 hours**

Overview of Mechanical Engineering
Major constituents of Mechanical Engineering such as Materials, Mechanics, Design of components, Manufacturing of Products, Thermal and Energy Conversion Systems, etc.

UNIT - III   **03 hours**

Introduction to Engineering Design
Engineering Design Process, Material Selection, Productivity, Quality, Profitability, Safety, Optimization, Environmental concern, Societal needs, etc.

UNIT - IV   **05 hours**

Emerging Trends and Interdisciplinary Approach
Introduction to emerging trends and interdisciplinary approach related to Mechanical Engineering such as Manufacturing Automation, Internet of Things, Artificial Intelligence, Machine Vision and Robotics, Nanotechnology, Mechatronics, etc.

UNIT - V   **01 hours**

Career opportunities
Role and responsibilities of a Mechanical Engineer in various industries, Entrepreneurship, Start-up, etc.

Self - Study   The self-study contents will be declared at the commencement of semester. Around 10% of the questions will be asked from self-study contents.

Suggested Readings:

1. Saeed Moaveni, Engineering Fundamentals: An Introduction to Engineering , Cengage Learning
2. Jonathan Wickert, Kemper Lewis, An Introduction to Mechanical Engineering, Cengage Learning

L=Lecture T= Tutorial P=Practical, C=Credit