MERCURY

Mechanical Engineering for Non-Mechanical Engineers Course

4 – 8 April 2027
Dubai (UAE)



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Mechanical Engineering for Non-Mechanical Engineers Course

Ref: 9243_302348 **Date:** 4 – 8 April 2027 **Location:** Dubai (UAE) **Fees:** 4900 Euro

Introduction:

This mechanical engineering for non-mechanical engineers course provides non-mechanical engineers and other professionals with an introduction to the core subject areas of mechanical engineering. Engineering is becoming increasingly multidisciplinary and combining with other professions. People can work with mechanical engineers without understanding the technical language or the critical engineering principles.

This mechanical engineering for non-mechanical engineers course focuses on the traditional subject areas of mechanical engineering. This mechanical engineering for non-engineers training covers design, statics stationary objects, dynamics things that move, fluids gases and liquids, and other general subjects. The theory covers the terminology and the fundamental laws that underpin each topic.

A better understanding of the precise use of terms can improve communication with mechanical engineers and participation in mechanical engineering projects. This mechanical engineering for non-mechanical engineers course covers a broad range of mechanical engineering subjects, incorporating mechanical engineering training to facilitate a practical understanding of mechanical engineering concepts for non-engineers.

Targeted Groups:

This mechanical engineering for non-mechanical engineers course is designed for professionals who work alongside mechanical engineers or in organizations where mechanical engineering is an integral part of their business.

The mechanical engineering for non-mechanical engineers training is also beneficial for those who wish to broaden their knowledge base and gain practical insight into the subject, aiming to achieve a certificate in mechanical engineering or a mechanical engineering certificate to validate their acquired expertise.

Course Objectives:

At the end of this mechanical engineering for non-mechanical engineers course, the participants will be able to:

- Explain the main subject areas of mechanical engineering
- Recognize the key terminology and the fundamental laws.
- Clarify communications with mechanical engineers.
- Analyze engineering problems better.
- Participate more effectively in mechanical engineering projects, leveraging mechanical engineering certification as a stepping stone for career advancement or interdisciplinary collaboration.

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Targeted Competencies:

- Technical expertise.
- Analytical thinking.
- Problem-solving.
- Communication skills.
- Collaborative working.

Course Content:

Unit 1: Design:

- Mechanical Engineering Design and its Implications in the Engineering Certificate Realm.
- Standards relevant to mechanical engineering certification.
- Technical drawing essentials for non-engineers.
- Orthographic projections and their interpretation.
- Tolerance.
- Fit.
- Mechanical components are relevant to manufacturing.
- Introduction to Computer-Aided Design CAD in the context of mechanical engineering for non-mechanical engineers.

Unit 2: Statics:

- Properties of engineering materials for those seeking mechanical engineering certification.
- Solid Mechanics foundations for non-specialists.
- Forces.
- Newton's Laws of Motion in Mechanical Engineering.
- Equilibrium concepts and their application in mechanical design.
- Stress.
- Strength.
- Strain.

Unit 3: Dynamics:

- Types of motion encountered in mechanical systems.
- Energy conservation and work principles for mechanical engineering applications.
- Friction.
- Lubrication.
- Bearings and their importance in mechanical engineering.
- Shafts design and analysis for reliability.
- Fatigue.
- Vibration analysis for mechanical engineering longevity.

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Unit 4: Fluids:

- An introduction to fluid mechanics.
- Focusing on both gasses and liquids.
- Perfect gas law and its application in mechanical engineering
- Liquid properties.
- Focus on buoyancy.
- Viscosity.
- Basic principles of aerodynamics for non-specialists.
- Thermodynamics and its role in mechanical engineering for non-engineers.

Unit 5: General Subjects:

- Mathematical approach to mechanical engineering problems.
- Units and measurements standardization in mechanical engineering.
- Computer tools that assist in mechanical engineering for non-engineers.
- Problem-solving methodologies tailored for mechanical engineering challenges.
- Documentation practices for mechanical engineering projects.
- Ethics in Mechanical Engineering Practice.
- A brief history of mechanical engineering, providing context for the profession.
- Professional engineering registration for those pursuing a mechanical engineering course.

Conclusion:

This mechanical engineering for non-mechanical engineers course aims to be an exhaustive learning journey for non-mechanical professionals seeking comprehensive mechanical engineering training.