Internal Combustions Engines (ICE) Training Course

20 – 24 December 2026
Dubai (UAE)



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Ref: 15296_287975 **Date:** 20 – 24 December 2026 **Location:** Dubai (UAE) **Fees:** 4900 Euro

Introduction:

This internal combustion engines ICE program provides in-depth knowledge about various internal combustion engines, such as electrical power generators, gas turbines in power plants, aircraft engines, and car engines. Participants will explore many facets, including materials, designs, and selection criteria.

The definition of internal combustion engines, fundamentals, and efficiency will be emphasized, ensuring a comprehensive understanding of how these engines operate and their purpose in today's technology-driven landscape.

This internal combustion engines ICE training course delves deep into the world of internal combustion engines, covering many topics, from the basics to the impact of internal combustion engine technologies, their efficiency, development, and significance in various applications.

This internal combustion engines ICE course is intended for individuals seeking in-depth insight and knowledge into the internal combustion engine realm. It is meticulously designed to cater to a diverse audience, including engineering professionals, researchers, and technicians.

Targeted Groups:

- Engineering directors and managers.
- Research engineers and scientists.
- Experienced technicians and drafters.
- This internal combustion engines ICE course is for those involved in vehicle design or engine application who would like to understand the internal combustion engine fundamentals underlying an engine's resulting performance.

Course Objectives:

At the end of this internal combustion engines ICE course, the participants will be able to:

- Present a historical introduction to internal combustion engines, including their development and the facts about internal combustion engine advancements over time.
- Highlight the main parts of each type of internal combustion engine and the sub-parts for each component.
- Explain how each part of the engine operates, its role in its overall function, and its interaction with preceding and succeeding parts.
- Discuss designing and manufacturing an ICE internal combustion engine, focusing on meeting objectives with high internal combustion engine efficiency.

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Targeted Competencies:

At the end of this internal combustion engines ICE training, the target competencies will:

- Understand internal combustion engine ICE principles.
- Know ICE design and components.
- Proficiency in ICE performance analysis.
- Skills in diagnosing and troubleshooting ICE issues.
- Awareness of ICE fuel systems and emissions control.
- Familiar with ICE maintenance and repair techniques.
- Competence in advanced ICE technologies and innovations.
- Insight into the environmental impact of ICEs.
- Apply thermodynamics in ICE operation.
- Proficiency in using diagnostic tools for ICE evaluation.

Course Outline:

Unit 1: The Development and Fundamentals of Internal Combustion Engines:

- Fundamental operating principles.
- Early internal combustion engine development.
- Characteristics and definition of the internal combustion engine.
- Different engines: The Wankel engine, Stratified charge engines.
- Prospects of internal combustion engines and their importance.

Unit 2: Types, Components, and Workings of Internal Combustion Engines:

- Understand thermodynamic principles relevant to ICEs.
- Dive into combustion processes and fuel varieties.
- Explore Spark ignition and Compression ignition engines.
- Induction, exhaust processes, and their role in the ICE internal combustion engine.
- Technicalities of Two-stroke engines and Turbocharging technology.

Unit 3: Applications and Performance Optimization in ICE Training:

- Introduction to Zero-dimension modeling.
- Case study: Application of modeling to a turbocharged medium-speed diesel engine.
- Mechanical design considerations and their impact on internal combustion engine efficiency.

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Unit 4: Equipment Utilized in Internal Combustion Engine Operations:

- Overview of Quasi-steady engine instrumentation.
- Ensure experimental accuracy.
- Techniques for Measurement of exhaust emissions and their impact.
- Analysis tools such as Chemiluminescence, Oxygen and air/fuel ratio analyzers.
- Examine exhaust smoke, particulates, EGR, and ER levels.

Unit 5: Monitoring the Benefits and Impact of Internal Combustion Engines:

- Assess engine size and Power-to-weight ratio.
- Applications requiring small power and Portability aspects.
- Fuel variety and cost considerations.
- Evaluate Engine emissions and their environmental impact.
- Analysis of scale power generation and associated Noise due to fuel detonation.

Unit 6: Safety, Maintenance, and Risks Associated with Internal Combustion Engines:

- Address Internal combustion pollution and compare it with Electric battery vehicle pollution.
- Prevention of Heating, Chemical burns, and fume explosions.
- Measures for handling High-pressure air and gas cylinders and proper maintenance requirements.

Conclusion:

Throughout this internal combustion engine course, participants will not only grasp the basics and the advanced concepts but also appreciate the impact, benefits, and importance of internal combustion engines in various sectors. The course is a blend of theoretical knowledge and practical skills, enabling attendees to understand the ICE training content and fully apply it professionally.