



Mechanical Engineering

Advanced Engineering Principles and Practices

Course Introduction

This comprehensive course is designed for engineering and operations professionals seeking to enhance their technical knowledge across various engineering disciplines. It covers advanced concepts in mechanical, electrical, and systems engineering, with a focus on practical applications in industrial settings.

Target Audience

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Learning Objectives

By the end of this training course, participants will be able to:

- Apply advanced engineering principles to solve complex technical problems
- Identify and implement cutting-edge technologies in engineering operations
- Analyze and optimize engineering systems for improved efficiency
- Integrate various engineering disciplines in project planning and execution
- Develop strategies for continuous technical improvement in engineering operations

Course Outline

• 01 Day One

Advanced Mechanical Engineering Concepts

- Advanced material science and selection
- Thermodynamics and heat transfer in industrial applications
- Fluid dynamics and computational fluid dynamics (CFD)
- Advanced manufacturing processes and automation

• 02 Day Two

Electrical Engineering and Power Systems

- Power system analysis and stability
- Advanced control systems and instrumentation
- Electrical machines and drives
- Smart grid technologies and renewable energy integration

• 03 Day Three

Systems Engineering and Integration

- Systems thinking and complex system design
- Requirements engineering and management
- System architecture and interface management
- Model-based systems engineering (MBSE)

• 04 Day Four

Engineering Analysis and Optimization

- Finite element analysis (FEA) and its applications
- Optimization techniques in engineering design
- Reliability engineering and failure mode analysis
- Data analytics and machine learning in engineering

• 05 Day Five

Emerging Technologies and Future Trends

- Internet of Things (IoT) in engineering operations
- Additive manufacturing and 3D printing advancements

- Artificial intelligence and robotics in engineering
- Sustainable engineering practices and green technologies

Confirmed Sessions

FROM	TO	DURATION	FEES	LOCATION
April 7, 2025	April 11, 2025	5 days	4250.00 \$	UAE - Abu Dhabi
Aug. 4, 2025	Aug. 8, 2025	5 days	4250.00 \$	UAE - Dubai
Nov. 2, 2025	Nov. 6, 2025	5 days	2150.00 \$	Virtual - Online