



*Training Course:
General Systems Engineering*

*3 - 7 August 2026
Trabzon (Turkey)*

Training Course: General Systems Engineering

Training Course code: EN236568 From: 3 - 7 August 2026 Venue: Trabzon (Turkey) - Training Course Fees: 6825 € Euro

Introduction

Systems Engineering is a multidisciplinary approach that enables organizations to design, develop, integrate, and manage complex systems throughout their entire life cycle. It ensures that technical, operational, and stakeholder requirements are effectively translated into successful engineering solutions.

This five-day course provides participants with a practical understanding of Systems Engineering principles, including systems thinking, requirements engineering, system architecture, integration, verification and validation, risk management, and life cycle management. The program combines international best practices with real-world industrial applications to enhance engineering performance and project success.

Course Objectives

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

- Understand the principles and philosophy of Systems Engineering.
- Apply Systems Thinking to complex engineering challenges.
- Understand the complete System Life Cycle.
- Develop and manage stakeholder and system requirements.
- Create functional and physical system architectures.
- Plan system integration activities.
- Conduct Verification and Validation V&V.
- Apply risk management throughout the system life cycle.
- Understand configuration and change management principles.
- Improve collaboration between multidisciplinary engineering teams.
- Apply Systems Engineering best practices to industrial and automation projects.

Target Audience

This program is designed for:

- Systems Engineers
- Project Engineers
- Automation Engineers
- Mechanical Engineers
- Electrical Engineers
- Instrumentation & Control Engineers
- Design Engineers
- Manufacturing Engineers

- Project Managers
- Technical Managers
- Engineering Supervisors
- R&D Engineers
- Technical Consultants

Course Outline

Day 1 - Fundamentals of Systems Engineering

- Introduction to Systems Engineering
- History and Evolution
- Systems Thinking Concepts
- Characteristics of Complex Systems
- Engineering Disciplines Integration
- Systems Engineering Standards
- Roles and Responsibilities of Systems Engineers
- Engineering Process Overview
- Systems Engineering Life Cycle
- Industrial Case Study

Day 2 - Requirements Engineering & System Architecture

- Stakeholder Needs Analysis
- Requirements Development
- Requirements Classification
- Requirements Documentation
- Requirements Traceability
- Functional Analysis
- Functional Decomposition
- System Architecture Development
- Physical vs Functional Architecture
- Interface Management
- Practical Workshop

Day 3 - Design, Integration & Verification

- System Design Process
- Design Trade-off Analysis
- Engineering Decision Making
- System Integration Planning
- Integration Strategies
- Verification Planning
- Validation Planning
- Verification Methods
- Validation Techniques
- Industrial Applications

Day 4 - Risk, Configuration & Project Integration

- Technical Risk Management
- Risk Identification
- Risk Assessment
- Risk Mitigation Planning
- Configuration Management
- Change Control Process
- Documentation Management
- Decision Management
- Project Integration
- Systems Engineering within Project Management

Day 5 - Systems Engineering Applications & Best Practices

- Model-Based Systems Engineering MBSE Overview
- Digital Engineering Concepts
- Reliability & Maintainability Considerations
- Safety Engineering Principles
- Quality Assurance in Systems Engineering
- Industrial Automation Applications
- Smart Manufacturing & Industry 4.0
- Systems Engineering Case Studies
- Lessons Learned
- Final Workshop and Group Exercise
- Course Review & Assessment

Registration form on the Training Course: General Systems Engineering

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