

# Construction & Civil Engineering Fundamentals Training

Special Workshops  
Berlin (Germany)  
25 - 29 Aug 2025

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## Construction & Civil Engineering Fundamentals Training

**Ref:** 321721\_144914 **Date:** 25 - 29 Aug 2025 **Location:** Berlin (Germany) **Fees:** 4200 **Euro**

### Course Description

This comprehensive 5-day course provides a solid foundation in construction and civil engineering fundamentals. Designed for non-engineers and early career professionals, it covers key principles of materials science, structural analysis, project management, and more. Participants will gain practical knowledge and skills applicable to various construction and infrastructure projects.

### Learning Objectives

- Understand basic principles of construction and civil engineering
- Gain knowledge of key materials and their properties used in construction
- Learn fundamental concepts of structural analysis and design
- Develop skills in construction project planning and management
- Understand surveying techniques and their applications in civil engineering
- Explore sustainable construction practices and their importance

### Course Modules

#### Day 1: Introduction to Construction and Civil Engineering

- Overview of construction and civil engineering fields
- Key elements in construction and civil engineering projects
- Health, safety, and environmental considerations
- Sustainable construction practices
- Case study: Analyzing a major infrastructure project

#### Day 2: Materials Science and Properties

- Common construction materials and their properties
- Concrete technology and mix design
- Steel and other metals in construction
- Geotechnical materials and soil mechanics
- Material testing and quality control

#### Day 3: Structural Analysis and Design Basics

- Fundamentals of structural mechanics
- Load types and load paths in structures
- Basic structural elements: beams, columns, and trusses

A graphic of a chessboard with several chess pieces, including a king, queen, and pawns, arranged on the board. The text 'UK Training PARTNER' is overlaid on the image.

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- Introduction to reinforced concrete design
- Steel structure basics

#### **Day 4: Construction Project Management**

- Project lifecycle and delivery methods
- Construction planning and scheduling techniques
- Cost estimation and budgeting
- Contract administration and documentation
- Risk management in construction projects

#### **Day 5: Surveying and Civil Engineering Applications**

- Fundamentals of surveying for construction
- GPS and GIS applications in civil engineering
- Introduction to transportation engineering
- Basics of water resources and environmental engineering
- Future trends in construction and civil engineering

#### **Practical Wins for Participants**

- Ability to understand and communicate effectively with engineering teams
- Skills to contribute to basic project planning and management tasks
- Knowledge to identify potential issues in construction materials and methods
- Improved decision-making capabilities in construction and infrastructure projects

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