BOOST
THE LEADING TRAINING PROVIDER

Civil Engineering

Infrastructure Asset Management

Course Introduction

Infrastructure Asset Management

Infrastructure Asset Management (IAM) is a critical discipline in civil engineering that ensures the effective operation, maintenance, and sustainability of infrastructure assets over their lifecycle. As infrastructure systems age and funding constraints grow, civil engineers must adopt systematic approaches to manage assets such as roads, bridges, water systems, and buildings.

This course introduces participants to the principles and practices of IAM, focusing on planning, decision-making, and optimization for long-term asset performance. Through theoretical insights, case studies, and practical applications, participants will learn to manage infrastructure assets to achieve economic, social, and environmental goals effectively.

Target Audience

- Project Managers in the Construction Industry
- civil engineers.

Learning Objectives

- Understand the principles and importance of infrastructure asset management.
- Develop strategies for asset lifecycle management, including planning, operation, and maintenance.
- Analyze asset performance and implement effective decision-making processes.
- Utilize modern tools and technologies for asset data collection and analysis.
- Address challenges such as funding constraints, risk management, and sustainability.
- Apply IAM practices to real-world civil engineering projects.

Course Outline

- **DAY 01**

Foundations of Infrastructure Asset Management

Introduction to infrastructure asset management:

- Definition and scope
- Importance in civil engineering and urban development

Asset types and their characteristics:

- Transportation (roads, bridges)
- Water and wastewater systems

Buildings and facilities

- Principles of asset lifecycle management
- Global standards and frameworks for IAM (e.g., ISO 55000)
- **Case studies:** Successful IAM implementations

- **Day 02**

Asset Data Collection and Analysis

Methods for asset inventory and condition assessment:

- Field inspections
- Remote sensing and GIS applications
- Sensor-based monitoring
- Key performance indicators (KPIs) for infrastructure assets

Data management systems:

- Asset Management Information Systems (AMIS)
- Integration of GIS and IoT for data analysis
- **Practical session:** Developing an asset inventory using GIS tools

- **Day 03**

Decision-Making and Risk Management

- Asset valuation and prioritization techniques

Risk assessment and management in IAM:

- Identifying potential risks (structural, operational, environmental)
- Risk mitigation strategies

Decision-making models for asset management:

- Cost-benefit analysis
- Multi-criteria decision analysis (MCDA)
- Optimization techniques for resource allocation
- **Practical session:** Risk analysis and decision-making for asset maintenance

• **Day 04**

Maintenance, Rehabilitation, and Sustainability

- Preventive vs reactive maintenance strategies
- Planning rehabilitation and renewal activities
- Lifecycle cost analysis (LCCA) for infrastructure assets

Incorporating sustainability into IAM:

- Environmental impacts
- Social considerations
- Sustainable materials and practices
- **Practical session:** Developing a maintenance plan for a transportation network

• **Day 05**

Emerging Technologies and Applications in IAM

Role of advanced technologies in IAM:

- Artificial intelligence and machine learning
- Digital twins for infrastructure systems

Drones and remote monitoring

- Future trends in infrastructure asset management
- **Case studies:** Innovative IAM projects around the world
- **Final project:** Developing an IAM strategy for a real-world infrastructure system
- Course review, participant feedback, and closing remarks

Confirmed Sessions

FROM	TO	DURATION	FEES	LOCATION
June 1, 2025	June 5, 2025	5 days	4250.00 $	KSA - Al Khobar
Sept. 15, 2025	Sept. 19, 2025	5 days	5950.00 $	switzerland - Geneva
Dec. 1, 2025	Dec. 5, 2025	5 days	4250.00 $	UAE - Dubai