BOOST
THE LEADING TRAINING PROVIDER

Civil Engineering

Application of GIS in Construction Management

Course Introduction

Construction projects involve complex plans; environmental permits; and critical data that details layout, specifications, and other key design information. For a project to be successful, several aspects must be analyzed and considered including environmental impact, scheduling conflicts, takeoffs, budgeting, site safety, and logistics. GIS technology improves the mechanics and management for building new infrastructure by integrating design and site data, interfacing with machine control, and providing the framework for as-built data collection. All those involved in a project, such as engineers, owners, contractors, and the public, rely on the technology to open communication.

Target Audience

- Chief Engineer
- Civil Engineer
- Commissioning Engineer
- Construction Engineer

Learning Objectives

- Mapping and analyzing CAD data using ArcGIS tools
- GIS Based 4D model for planning
- Creating basic and advanced spatial analysis
- Configuring web apps to planning outcomes
- Creating 3D city presentation
- Advanced label managing
- Accessibility analysis to citizens or customers
- Creating hot spots and temporal patterns
- Creating suitability analysis

Course Outline

- **DAY 01**

  What is location?

  - What is GIS?
  - Getting to know the ArcGIS platform
  - Organize GIS Data
  - Data conversion
  - Conversion CAD-GIS data
  - Explore, import, summarize, calculation with tabular data
  - Import GPS and Geo-tagged data
  - Join and Spatial Join
  - Raster conversion and Mosaic dataset
  - Data extraction and clipping
- **Day 02**

  Editing GIS Data

  - What types of data can you edit?
  - Create & Delete point, line, polygon data
  - Advanced editing with vector data

- Raster data creation from vector data
- Designing a GIS Database and Queries
- Creating feature dataset, feature class
- Creating relationship class
- Creating subtype and domain
- Creating and managing topology dataset
- Creating Query with GIS data

• **Day 03**

Cartography and Thematic Mapping

- What is cartography and cartographic methods?
- Why symbolize your data? • Basics of symbology
- Vector data visualization • Raster data visualization
- What is labeling? • Labeling options in ArcGIS
- Basic and advanced labeling
- Create a Static Map: Layout Design
- Import CAD Data, 3D and 4D Modeling

• **Day 04**

Getting Started with Spatial Analysis

- Overlay Analysis
- Introducing overlay
- How overlay works
- Impact analysis and physical planning with GIS
- Choosing the appropriate tool
- Suitability analysis for new city/facility/investment area with model builder
- Automating of Routine Works and Presentation
- Automating of CAD conversion with Model Builder in ArcGIS Pro
- Import 3D objects from another formats
- 3D city presentation with utility networks in ArcGIS Pro

• **Day 05**

Collect and Monitoring Field Works and Constructions

- Rule based modeling with CityEngine
- BIM-GIS Integration and Indoor Navigation
- Demo of Advanced Samples for Construction Management
- Brainstorming with participants

Confirmed Sessions

FROM	TO	DURATION	FEES	LOCATION
May 5, 2025	May 9, 2025	5 days	4250.00 $	UAE - Dubai
July 28, 2025	Aug. 1, 2025	5 days	2150.00 $	Virtual - Online
Dec. 29, 2025	Jan. 2, 2026	5 days	4950.00 $	Malaysia - kuala lumpur
Nov. 23, 2025	Nov. 27, 2025	5 days	4250.00 $	oman - salalah