

OpenCities Map Advanced – Enterprise GIS Data Management and Spatial Analysis

Target Audience

This course is designed for GIS analysts, GIS administrators, geospatial engineers, mapping specialists, utility network managers, municipal GIS professionals, infrastructure asset managers, CAD technicians, database administrators, and geospatial consultants. It is also suitable for professionals responsible for enterprise GIS implementation, spatial database management, digital mapping, and infrastructure asset information systems.

Course Objectives

This course aims to provide participants with the knowledge and practical skills required to manage enterprise GIS environments using OpenCities Map Advanced. Participants will learn to create feature-based GIS data models, manage geospatial schemas, integrate spatial databases, perform advanced GIS analysis, develop intelligent maps, and publish professional geospatial deliverables. The training also focuses on interoperability, data governance, spatial data quality, and enterprise GIS best practices for infrastructure and asset management projects.

Course Outcomes

Upon successful completion of this course, participants will be able to:

- Configure and manage OpenCities Map Advanced environments for enterprise GIS workflows.
- Create and maintain feature-based GIS data models using the XFM framework.
- Develop and manage GIS schemas, features, attributes, and business rules.
- Connect to and manage enterprise spatial databases including Oracle, SQL Server, PostGIS, and ArcGIS.
- Perform GIS data capture, maintenance, and quality assurance workflows.
- Create thematic maps, dynamic labels, and advanced cartographic visualizations.
- Conduct spatial analysis, buffer studies, solar analysis, and reality mesh integration workflows.
- Exchange and publish geospatial information using industry-standard formats and services.
- Generate professional GIS maps, reports, and intelligent PDF deliverables.
- Implement enterprise GIS solutions and support digital infrastructure and asset management initiatives.

Course Outline

The course comprises **48 hours of theory and hands-on laboratory sessions** and is divided into **10 comprehensive modules**. Each module is followed by practical exercises and real-world site

development workflows designed to reinforce learning and evaluate the participant's understanding of the concepts covered.

Table of Contents

Module 1: Introduction to OpenCities Map Advanced and Enterprise GIS

- Overview of OpenCities Map Advanced
- GIS Concepts and Enterprise Mapping Workflows
- User Interface and Workspace Configuration
- GIS Data Models and Architecture
- Project Setup and Standards

Module 2: Feature-Based GIS Modeling and XFM Framework

- Introduction to XML Feature Modeling (XFM)
- Feature-Based Data Modeling
- Feature Properties and Business Rules
- Symbology and Annotation Configuration
- Feature Behaviors and Relationships
- Intelligent GIS Object Creation

Module 3: Geospatial Administrator and Schema Management

- Geospatial Administrator Fundamentals
- XFM Project Creation
- Feature Definition and Configuration
- Property and Attribute Management
- Placement Methods Configuration
- Schema Management Best Practices

Module 4: GIS Data Capture and Maintenance

- GIS Feature Creation and Editing
- CAD-to-GIS Workflows
- Dynamic Domain Lists
- Digital Terrain Model Support
- Data Validation and Maintenance

Module 5: Spatial Databases and Enterprise Data Management

- Oracle Spatial Integration
- SQL Server Integration
- PostgreSQL (PostGIS) Integration
- ArcGIS Server and ArcGIS Online Connectivity
- Multi-User Editing Workflows
- Database Locking and Version Management

Module 6: Map Manager and Advanced Visualization

- Map Manager Fundamentals
- Layer Organization and Management
- Thematic Mapping
- Dynamic Labeling Techniques
- Property-Based Symbolology
- Advanced Cartographic Presentation

Module 7: Spatial Analysis and Reality Modeling

- Spatial Analysis Workflows
- Buffer Creation and Proximity Analysis
- Solar and Shadow Analysis
- Direct Database Access (DDA)
- Reality Mesh Integration
- ContextCapture Reality Models

Module 8: Interoperability and Data Exchange

- Import and Export Workflows
- Geospatial Data Formats
- Web Feature Services (WFS)
- Spatial Data Streaming
- DGN2DB Workflows

Module 9: Map Production, Publishing and Reporting

- Map Generation Techniques
- Intelligent PDF Publishing
- PostScript Output
- Dynamic Feature Scoring
- Legacy Data Migration
- Professional GIS Deliverables

Module 10: GIS Application Development

- OpenCities Map Development Platform
- GIS APIs and Customization
- Open API Workflows
- GIS Automation Concepts