

**Course Description:** Learn how to model and document civil engineering and landscape projects with Revit Infrastructure by gaining essential tools and workflows through this comprehensive training program. Explore the intricacies of designing infrastructure projects, including roads, bridges, utilities, and more, while mastering Revit's powerful features tailored for civil engineering and landscape architecture. Develop the skills necessary to create accurate models, generate detailed documentation, and collaborate efficiently with project stakeholders.

## REVIT INFRASTRUCTURE

### Module 1: Introduction to Revit for Infrastructure

- Overview of Revit and its role in infrastructure design and management
- Understanding the user interface, project navigation, and basic tools
- Setting up project templates and project units specific to infrastructure projects

### Module 2: Building Information Modeling (BIM) Fundamentals for Infrastructure

- Introduction to BIM principles and benefits in infrastructure projects
- Creating parametric 3D models with intelligent objects and components
- Managing project data, parameters, and shared parameters in Revit

### Module 3: Site Design and Terrain Modeling

- Creating accurate topographic surfaces from survey data or GIS information
- Designing site elements such as parking lots, roads, sidewalks, and landscaping
- Implementing site grading, earthwork calculations, and cut/fill analysis

### Module 4: Roadway Design

- Designing road networks, highways, and intersections using specialized tools
- Creating road profiles, cross sections, and alignments for accurate design
- Incorporating lane configurations, signage, pavement markings, and road furniture

### Module 5: Utility Design and Analysis

- Implementing utility systems such as water supply, sewerage, and stormwater
- Designing pipes, conduits, duct banks, and other utility components
- Conducting analysis and simulations for hydraulic calculations and utility management

### Module 6: Collaboration and Coordination

- Collaborating with architects, engineers, and other stakeholders in infrastructure projects
- Managing project data through shared models, worksharing, and cloud collaboration
- Coordinating interdisciplinary design changes and clash detection using Revit tools

## Module 7: Visualization and Presentation

- Applying visualization techniques for realistic renderings and walkthroughs
- Using lighting, materials, and entourage elements to enhance project visualization
- Creating interactive presentations and animations for client engagement

## Module 8: Project Documentation and Deliverables

- Generating construction documentation, annotations, and schedules
- Creating custom families and templates for consistent project documentation
- Implementing industry standards and best practices for project deliverables

## Module 9: Advanced Analysis and Performance Optimization

- Performing energy analysis and simulations for sustainable design strategies
- Analyzing daylighting, thermal performance, and energy efficiency in infrastructure projects
- Exploring optimization techniques for performance based design and cost savings

## Module 10: Revit Extensions and Add-ons for Infrastructure

- Exploring specialized tools and extensions for infrastructure design workflows
- Leveraging third-party add-ons for advanced functionalities and productivity enhancements
- Staying updated with the latest Revit extensions and plugins specific to infrastructure projects

## Module 11: Industry Standards and Regulations

- Understanding industry-specific standards, codes, and regulations for infrastructure projects
- Incorporating best practices for compliance and meeting regulatory requirements
- Case studies and examples of successful infrastructure projects and their adherence to standards