



Autodesk InfraWorks: Fundamentals

Course Length: 3 Days

The Autodesk InfraWorks Fundamentals training course is designed for people using either of the following software packages:

- Autodesk® InfraWorks®
- Autodesk® Architecture, Engineering and Construction Collection

The course provides you with a fundamental knowledge of the accelerated design process that uses data-rich 3D models with high-end visualizations. This enables you to create, evaluate, and better communicate 3D site plan proposals for faster approvals.

Topics Covered:

- Roadway Design:
 - Create property boundaries for parcels, easements, and right of ways
 - Create and modify design roads with precise parameters
 - Add components and decorations to roads
 - Adjust roadside grading
 - Apply and review superelevations in component roads
 - Modify how design roads intersect using a standard intersection or roundabout
 - Optimize the vertical design of a roadway
 - Create gradient maps based on selected feature sets to identify areas with low impact for site or corridor optimization
 - Find an optimal horizontal design of the roadway which yields a cost-effective and environmentally friendly solution
 - Run traffic simulations to analyze and animate design traffic

Course description shown for Autodesk InfraWorks 2021. Topics, curriculum, and/or prerequisites may change depending on software version.

- Bridge Design:
 - Add bridges to a design roadway
 - Work with bridge deck and girder cross sections
 - Perform analysis and design checks on all the pre-stressed girders of your bridge
- Drainage Design:
 - Run a watershed analysis
 - Create or modify culverts
 - Create a pavement drainage network
 - Analyze the pavement drainage network
- Point Cloud Modeling:
 - Preparing the point cloud
 - Create a terrain from a point cloud
 - Create features from a point cloud

Prerequisites:

A fundamental understanding and knowledge of civil engineering terminology.

Learning Guide Contents

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Chapter 1: Navigating the User Interface

- 1.1 Building Information Modeling
- 1.2 Overview of the Interface
- 1.3 Navigating the Model
- 1.4 Basic Commands
- 1.5 Working with Proposals

Chapter 2: Connecting to Data Sources

- 2.1 Geographic Information Systems Overview
- 2.2 Connect to Data Sources
- 2.3 Configure and Display Data Sources

Chapter 3: Stylize Data Sources

- 3.1 Using Multiple Styles to Display Features
- 3.2 Overriding Style Rules
- 3.3 Create and Share Styles

Chapter 4: Roadways

- 4.1 Create Planning Roads in a Model
- 4.2 Parcels, Right of Ways, and Easements
- 4.3 Creating Component Roads
- 4.4 Add Detail to Component Roads
- 4.5 Modifying Horizontal Layouts
- 4.6 Modifying Vertical Layouts
- 4.7 Component Road Superelevation
- 4.8 Working with Intersections
- 4.9 Roundabouts

Chapter 5: Waterways and Drainage

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- 5.1 Watershed Analysis
- 5.2 Create and Modify Culverts
- 5.3 Create Water Features in a Model
- 5.4 Create Pipe Networks in a Model
- 5.5 Pavement Drainage

Chapter 6: Bridges, Railways, and Tunnels

- 6.1 Bridge Components
- 6.2 Modify Bridges
- 6.3 Bridge Line Girder Analysis
- 6.4 Detail Design for Bridges
- 6.5 Create Railways in a Model
- 6.6 Create Tunnels in a Model

Chapter 7: Add Model Details

- 7.1 Create Coverages in a Model
- 7.2 Grading Areas
- 7.3 Create Buildings in a Model
- 7.4 Create City Furniture in a Model
- 7.5 Add Vegetation to a Model
- 7.6 Add Miscellaneous Details to a Model
- 7.7 Working with Autodesk Revit Models

Chapter 8: Analyzing the Model

- 8.1 Theme a Data Source
- 8.2 Suitability Maps
- 8.3 Line of Sight Analysis
- 8.4 Measure the Model
- 8.5 Analyze Shadows

Chapter 9: Communicating the Design to Stakeholders

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- 9.1 Creating Images
- 9.2 Shared Views
- 9.3 Working with Storyboards

Appendix A: Analyzing Component Roads

- A.1 Traffic Simulation
- A.2 Calculating Quantities
- A.3 Corridor Optimization
- A.4 Balance Cut and Fill Along the Roadway
- A.5 Sight Distance Analysis

Appendix B: Point Cloud Modeling

- B.1 Point Cloud Preparation
- B.2 Extract a Point Cloud Terrain
- B.3 Extract Point Cloud Features

Appendix C: Example of a GIS Data Source

Cancellation Policy

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The following cancellation policy shall apply to all training engagements, LIVE Online, Consulting Services and Dedicated/Custom Training:

- Company reserves the right to reschedule or cancel the date, time and location of its class at any time. In the event that a Training Class is cancelled by Company, Customer is entitled to a full refund. Company shall not be responsible for any other loss incurred by Customer as a result of a cancellation or reschedule.
- For Customer cancellations when written notice is received (i) at least ten (10) business days in advance of the class, the Customer is entitled to a full refund of its payment or reschedule enrollment, (ii) less than ten (10) business days, Customer shall not be entitled to a refund, but shall receive a class credit to be used within three (3) months of the date of the original class.
- Student substitutions are acceptable with at least two (2) days prior notice to the class, provided substitution meets course prerequisites and is approved by Company's Training Coordinator (trainingcoordinator@rand.com)
- For all Training orders, cancellation notices must be submitted to trainingcoordinator@rand.com. Company is not responsible for any error in the delivery of the email notice. In the event of any reschedule of Consulting Services and/or Dedicated/Custom Training by Customer, Company will invoice Customer for all non-cancellable travel expenses.

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