



Autodesk Navisworks: Fundamentals

Course Length: 3 Days

The Autodesk Navisworks: Fundamentals course teaches you how to better predict project outcomes, reduce conflicts and changes, and achieve lower project risk using the Autodesk® Navisworks® Manage software in a BIM workflow.

Building Information Modeling (BIM) encompasses the entire building life cycle. BIM includes all phases of the design process, from model creation to construction and ending at operations and maintenance. Using a BIM workflow, you will learn how a design changes throughout the BIM process and how the changes affect the BIM model.

Over the course of this course, you will learn how to consolidate civil, architectural, structural, and MEP models into one BIM model. Starting with an Autodesk® Civil 3D® drawing file, you will append various Autodesk® Revit® and Autodesk® Inventor® models and check for conflicts. Next, you will use review and markup tools for communicating issues across disciplines. Finally, you will use TimeLiner, Animator, and Clash Detective to simulate construction and find constructibility issues and on-site clashes.

This course is designed for new and experienced users of the Autodesk Navisworks software in multiple disciplines.

Topics Covered:

- Understanding the purpose of Building Information Modeling (BIM) and how it is applied in the Autodesk Navisworks software.
- Consolidate Models
- Navigating the Autodesk Navisworks workspace and interface.
- Creating a composite model.
- Transforming models for proper alignment.
- Review and Analyze Models

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

- Using basic viewing tools.
- Saving and retrieving views.
- Sectioning a model.
- Investigating properties.
- Searching for items.
- Hiding and unhiding items.
- Communication
- Measuring a model.
- Adding tags and comments to model components.
- Marking up and redlining the model.
- Animate a model.
- Writing scripts for interacting with the model.
- Creating photorealistic images.
- Collaboration
- Reviewing a model for clashes.
- Consolidating redlines from other team members.
- Performing quantification calculations and material takeoffs.
- Construction
- Creating a construction timeline.
- Animating a construction timeline.

Prerequisites:

- A working knowledge of 3D design and task-scheduling software is recommended.

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Learning Guide Contents

Chapter 1: Introduction to Autodesk Navisworks

- 1.1 What Is Navisworks?
- 1.2 Overview of the Interface
- 1.3 Using Basic Viewing Tools

Chapter 2: Consolidate Trade Models

- 2.1 Consolidating the Model
- 2.2 Aligning Models

Chapter 3: Review Models

- 3.1 Saving and Retrieving Views
- 3.2 Sectioning the Model
- 3.3 Setting View Options
- 3.4 Setting Up Appearances

Chapter 4: Analyze Models

- 4.1 Selecting Items
- 4.2 Investigating Properties
- 4.3 Using the Selection Tree
- 4.4 Finding Items and Saving Search Sets
- 4.5 Hiding and Unhiding Items

Chapter 5: Communication: Review and Mark Up a Model

- 5.1 Using Measuring Tools
- 5.2 Marking Up Scenes for Review

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Chapter 6: Collaboration: Clash Detection

- 6.1 Overview of the Clash Detective
- 6.2 Setting Up Clash Tests
- 6.3 Reviewing Clash Results
- 6.4 Assigning Clash Fixes
- 6.5 Clash Grouping
- 6.6 Sharing Clash Test Results
- 6.7 Incorporating Model Updates

Chapter 7: Quantification

- 7.1 Quantification Overview
- 7.2 Setting Up a Quantification Project
- 7.3 Item and Resource Management
- 7.4 3D Model and Virtual Takeoffs
- 7.5 2D Takeoffs
- 7.6 Takeoff Data

Chapter 8: Communication: Animator

- 8.1 Creating Tours
- 8.2 Animating Objects
- 8.3 Animation and Scripts

Chapter 9: Communication: Scripter

- 9.1 Scripter
- 9.2 Creating and Managing Events
- 9.3 Creating and Configuring Actions
- 9.4 Combining TimeLiner and Animator
- 9.5 Time-Based Clashes

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Chapter 10: Construct: Project Scheduling

- 10.1 Introduction to TimeLiner
- 10.2 Manually Creating a Construction Simulation
- 10.3 Importing an External Task List
- 10.4 Combining TimeLiner and Animator
- 10.5 Time-Based Clashes

Chapter 11: Communication: Rendering

- 11.1 Autodesk Rendering Overview
- 11.2 Materials
- 11.3 Material Mapping
- 11.4 Lighting
- 11.5 Exposure Control
- 11.6 Photorealistic Rendering

Appendix A: Practices to Prepare for Animator

Appendix B: Coordination Tools

- B.1 Creating a View in Autodesk Revit
- B.2 Setting a Project Point in Autodesk Revit
- B.3 Autodesk Civil 3D Object Enabler
- B.4 Creating an .FBX File in Autodesk InfraWorks 360
- B.5 Preparing a Corridor Model for TimeLiner
- B.6 Preparing an Autodesk Revit Model for TimeLiner

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