

Autodesk Navisworks

Course details



Course Description:

In this course, using hands-on exercises that demonstrate the functionality of the Autodesk Navisworks Manage features, trainees learn how to open, review, and run object-interference checks on 3D models. Students also learn how to link to task-scheduling files and create 3D construction simulations.

Using the Animator tools, trainees create interactive animations. In addition, students learn how the Presenter tools can help them to create photorealistic images and animations.

This course provides trainees with the skills and knowledge to use Navisworks effectively.

Objectives:

Upon completion of this course the delegates will understand the main features and functionality of the Navisworks:

- Getting started with Navisworks.
- Visual project model reviews.
- TimeLiner - creating construction simulations of project models to check the validity of construction schedules.
- Creating interactive animations.
- Presenter - basics and advanced features.
- Learn how to add true-to-life materials, lighting, and backgrounds to project models to create photorealistic output.
- Clash Detective How to perform clash and interference tests.

Course textbooks and other reading materials:

Web Resources:

- <https://www.autodesk.com/products/navisworks/overview>
- <http://seek.autodesk.com>
- <http://help.autodesk.com/view/NAV/2023/ENU/>

Prerequisites:

- Basic knowledge and skills about using computers
- Engineering background is recommended
- Primavera background is a must

Grading:

Attendance 40%

Assignments 60% (Workshops & Projects)

To pass the course and receive both Autodesk & CAD MASTERS certificate you should:

- Attend at least 80% of course hours
- Score more than 70% as a total score + Technical evaluation by the instructor



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Course Outline:

This course including the following:

Unit 1:

- What is BIM? How it works for Construction Industry?
- Project Delivery Systems Using BIM.
- Product Overview and file formats.
- Workspace Overview
- Opening and Appending Files in Navisworks
- Saving, Merging, and Refreshing Files

Unit 2:

- Using Navigation Tools
 - Absolute Coordinate Display
- The Navisworks Engine
 - Performance Indicators
- Selection Tree and Selecting Objects
 - View the Selection Tree
 - Setting Selection Resolution and Sorting Structures
- Hiding Objects and Overriding Materials
 - Change Object Color and Transparency
- Object Properties
 - Add a New Custom Property Tab and Property
 - Enable and Customize Smart Tags
- Measuring and Moving Objects
 - Using the Measuring Tools
 - Moving an Item

Unit 3:

- Selection and Search Sets
 - Create a Selection Set
 - Conducting a Property Object Search
- Viewpoints
 - Add and Organize Viewpoints
- Comments and Redlining
 - Adding Redline Markups and a Redline Tag
- Sectioning
 - Sectioning a Model, Section Planes & Section Box

Unit 4:

- Hyperlinks
 - Using Hyperlinks
 - View and Add Hyperlinks
- Comparing Models
 - About the Compare Tool
 - Compare Two Model Files



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Unit 5:

- TimeLiner Overview
 - Open and Run a TimeLiner Simulation
 - Run a Basic TimeLiner Simulation
- Creating Tasks
 - Creating Tasks Manually
- Import Tasks from External Project File
 - Linking to a Project File
 - Importing Tasks
- TimeLiner Simulation
 - Simulation Control Bar
 - Using Simulation
- Configuring and Defining a Simulation
 - The Configure Options
 - Customizing a Simulation
- Simulation Export
 - Exporting a TimeLiner Simulation
- Exporting a Simulation

Unit 6:

- Animator Overview
- Creating a Basic Animation
- Cameras and Camera Viewpoints
 - About Cameras and Viewpoints
 - Adding a Camera and Camera Viewpoints
- Section Plane Sets
 - About Section Plane Sets
 - Adding a Section Plane Set and Captured Sectioned Views
- Controlling Animation Scene Playback
 - Animator Playback and Adjustments
 - Adjust the Way an Animation Scene Plays

Unit 7:

- Presenter Overview
 - The Presenter Window and Tabbed Panes
 - Presenter Tabs
- Apply Materials to Model Items
 - The Materials Pane
 - Apply Materials to Model Items
- Adding Lighting Effects to a Scene
 - About Lighting Effects
 - Apply a Lighting Effect to a Model
- Adding Background Effects
 - Apply a Background Effect to a Model
- Rendering Effects
 - About Rendering
 - Select and Apply a Render Style
- Outputting Rendered Images
 - Exporting Rendered Images
- Outputting Animations (Videos)
 - About Outputting Animations
 - Exporting an Animation



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Unit 8:

- Editing and Managing Materials
 - Editing Materials
 - Rename and Manage Materials
 - To Edit and Save a Material
- Advanced Material Editing
 - Advanced Editing
 - Creating New Material
- Environment Backgrounds and Reflections
 - About Environment Backgrounds and Reflections
 - Adding an Environment Background
- RPC (Rich Photorealistic Content)
 - About RPCs
 - Add an RPC to a Model

Unit 9:

- Clash Detective Overview
 - Conducting a Simple Clash Test
- Selecting Items to Be Clashed
- Clash Test Settings
 - Selecting Geometry Types
 - Clash Testing Using the Find and Selection Set Tools
- Setting Clash Rules
- Clash Results
 - About Clash Results
 - Clash Testing, Viewing Results, and Adding Comments
- Clash Test Reporting
 - Report Contents
 - Clash Testing and Creating a Report
- Audit Checks
 - Conducting Clash Audit Checks
 - Clash Testing After Clashes are Corrected
- Create and Save Batches of Clash Tests
 - View Batches of Clash Tests
 - Export and Import Clash Tests
 - Custom Clash Tests
 - Setting up Custom Clash Tests
 - Creating a Custom Clash Test
 - Time-Based Clashing
 - Preparation
 - Conducting a Time Based Clash Test
 - Create a Time-Based Clash Report
- Switchback in Clash Detective
 - Using Switchback
 - Using Switchback in Clash Detective

Unit 10: Evaluation



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