



AUTODESK PLANT DESIGN ESSENTIAL TRAINING

Description:

Learn how to use the AutoCAD® P&ID, AutoCAD® Plant 3D and Autodesk® Navisworks® software to complete a plant design project. This comprehensive training includes all common workflows for plant design plus a focus on project setup and administration

Duration:

5 Days

Prerequisites:

- 1) A working knowledge of the AutoCAD® software and the Microsoft® Windows® operating system.

Objectives:

- To be proficient in using AutoCAD Plant 3D
- To be proficient in using AutoCAD P&ID
- Apply Navisworks in for plant coordination
- Setting up and administering a Plant project



TRAINING PROGRAMME DAY 1

Chapter 1: Introduction to AutoCAD P&ID and

Plant 3D

Lesson 1: Working in a Project

- About Projects
- Data Organization
- About the Project Manager
- About the Data Manager
- Work in a Project

Lesson 2: Opening a Drawing

- Opening Drawings
- Renaming Drawings
- Open a Drawing in AutoCAD Plant 3D

Lesson 3: Exploring the User Interface

- Task Specific Workspaces
- Task Specific Ribbons
- About Tool Palettes
- About the Properties Palette
- On-Screen Tools
- Explore the User Interface

Lesson 4: Managing Layers and Colors

- About Layers
- Manage Layers and Colors

Chapter 2: AutoCAD P&ID

Lesson 1: Creating a New Drawing

- Creating Project Folders and Sub-Folders
- Creating a Drawing
- Adding Existing Drawings to the Project
- Access Drawing Properties
- Create a New P&ID Drawing

Lesson 2: Equipment and Nozzles

- Adding Equipment
- Modify an Existing P&ID Symbol
- Adding Nozzles
- Adding Tag Information
- Equipment and Nozzles

Lesson 3: Piping

- Creating Lines
- Attaching Lines to a Component
- Annotating Lines
- Inserting Valves
- Grouping Lines
- Place Lines and Inline Components

Lesson 4: Instruments and Instrument Lines

- Adding General Instruments
- Adding Inline Instruments
- Using Instrumentation Lines
- Instruments and Instrument Lines

Lesson 5: Tagging Concepts

- View Existing Tag Numbers
- Linking Symbols to Multiple Drawings
- Add a Tag and Link Multiple Symbols to a Tag

Lesson 6: Annotation Concepts

- About Tag Data
- Annotating a Symbol
- Tag Styles
- Annotate Your P&ID



TRAINING PROGRAMME DAY 2

Lesson 7: Editing Techniques

- Applying Corners to Lines
- Linking Lines
- Creating Gaps in Pipe Lines
- Basic Line Editing
- Substitute Symbols
- Flow Arrow
- Modify the Layout of your P&ID

Lesson 8: Data Manager and Reports

- About the Data Manager
- Using the Data Manager
- Drawing, Project, and Report Data
- Exporting Project Data
- Importing Project Data
- Filtering Data in the Data Manager
- Use Data Manager to Review, Export, and Import Data

Lesson 9: Custom One-off Symbols

- Create a Custom P&ID Symbol
- Customize One-off Symbols

Lesson 10: Off Page Connections

- About Off-page Connectors
- Adding Off-Page Connectors
- Connecting Off-Page Connectors
- Delete an Off Page Connector
- Data Manager Edits and Off-page Connectors
- Add and Leverage Off Page Connectors

Lesson 11: Advanced Topics and Troubleshooting

- Creating New Class Definitions
- Creating New Component Symbols
- Adding Attachment Points to Symbols
- Creating Equipment Annotation Styles
- Validating Project and Drawings
- Convert and Create Symbols / Solve Validation Issues

Lesson 12: P&ID Admin for Users

- Locating Drawings
- Adding Project Categories
- Adding Properties to Categories
- Adding Drawing Properties
- Inserting Property Data
- Manage a P&ID Project

Lesson 13: Generating Reports

- About Project Reports
- Generating Reports Using Report Creator
- Generate Reports



TRAINING PROGRAMME DAY 3

Chapter 3: AutoCAD Plant 3D

Lesson 1: Creating Project Folders and Drawings

- Project Manager
- Creating Folders
- Create Project Folders and Drawings

Lesson 2: Steel Modeling and Editing

- Adding Structural Parts
- Configure the Settings
- Part Modification
- Build a Steel Structure

Lesson 3: Equipment Modeling and Editing

- Creating Equipment
- About Nozzles
- Equipment Templates
- Create Equipment

Lesson 4: Piping Basics

- Routing Pipe
- Modifying Pipe
- Valves and Fittings
- About Pipe Support
- Route Pipe and Add Fittings, Branch Connections, and Pipe Supports

Lesson 5: Piping Editing and Advanced Topics

- Copying Parts and Pipeline Sections
- Managing Changes in Xref files
- Placeholder and Custom Parts
- Selecting an Entire Pipe Run
- Isolate, Hide, and Lock Pipe Runs
- Modify and Reuse Data

Lesson 6: Working with P&ID Data in Plant 3D

- About Working with P&ID Data in Plant 3D
- Using the P&ID Line List to Place Lines and Inline Equipment
- Validating the P&ID and Plant 3D Designs
- Add and Validate Pipelines Using the P&ID Line List

Lesson 7: Creating and Annotating Orthographic Views

- About Orthographic Drawings
- Creating and Editing Orthographic Views
- Annotations and Dimensions
- Updating Orthographic Drawings
- Create and Annotate Orthographic Views

Lesson 8: Creating Isometric Drawings

- About Creating Isometric Drawings
- Creating, and Adding Data to Isometric Drawings
- Specification Sheets and Files
- Process to Create Isometric Drawings
- Create Isometric Drawings



TRAINING PROGRAMME DAY 4

Chapter 4: Navisworks

Lesson 1: File Handling

- File Types
- Setting File Units
- Sharing
- Troubleshooting
- Work with Navisworks Files

Lesson 2: Basic Navigation and Walkthrough

- Viewing a Model
- Selecting Objects in a Model
- Viewing Object Properties
- Navigate Your Way through a Design

Lesson 3: Clash Detection

- Conducting a Clash Test
- Clash Detective
- Conduct Clash Tests

Lesson 4: Highlights of Scheduling, Animation, and Rendering

- Timeliner
- Animations
- Presenter
- Work within the Fourth Dimension

Chapter 5: Setting up and Administering a Plant Project

Lesson 1: Overview of Project Setup

- Opening an Existing Project
- Creating a New Project
- Default Drawing Templates
- Project Folders
- Set Up and Structure Your Project

Lesson 2: Overview of Project Structure and Files

- About the Data and Files in a Project
- New Drawing Creation Locations
- Managing Files and Folders in Moved or Copied Projects
- Working with Plant 3D and P&ID Drawings in AutoCAD
- Manage Your Project

Lesson 3: Setting Up Larger Projects

- Setting Up a Project for Multiple User Access
- Configuring the File Name Format
- Locking the Project Properties
- XREF Demand Load
- Set Up a Project for Multiple Users

Lesson 4: Defining New Objects and Properties

- Creating Symbols and Setting Color and Layer
- Add Properties as Selection List and Acquire Functions
- Setting a Tag Format
- Creating a Custom Annotation Style
- Create Symbols and Set Up the Tagging Scheme



TRAINING PROGRAMME DAY 5

Lesson 5: Customizing Data Manager

- Default Reports and Views in the Data Manager
- Modifying Existing Reports
- Setting up Data Manager Views Used in the Project
- Configuring a Custom Report
- Setting up Export and Import Settings
- Create Views and Manage Reports

Lesson 6: Creating and Editing Drawing Templates and Data Attributes

- About Property Fields
- Custom Properties
- Process of Moving AutoCAD Templates to Plant 3D Templates
- Create a Template for AutoCAD Plant 3D

Lesson 7: Specs and Catalogs

- Spec Editor
- Process: Editing Parts
- Catalogs
- Configure Specs and Catalogs

Lesson 8: Isometric Setup

- About Iso Styles
- Iso Style Customization
- Setting Up the Bill of Materials (BOM)
- Creating and Configuring a New Iso Style
- Setting up a Custom Title Block for Iso Drawings
- Exercise: Create a Custom Isometric Drawing Set Up

Lesson 9: Troubleshooting

- Validating Drawings
- Auditing Drawings
- Quick ISO
- ISO Congestion
- Exercise: Troubleshooting

Lesson 10: Setting Up SQL Express for AutoCAD Plant 3D

- About Plant 3D Databases
- Setting Up to Use a Server Database
- Installing SQL Server Express
- Introduction to Setting Up SQL Server to Allow Connections
- SQL Server Express Configuration and Management
- Creating a New Plant 3D Project that Uses SQL Server Express
- Converting a Project to SQL Server
- Install SQL Express and Set Up Plant 3D Projects to Use SQL Express

Lesson 11: Creating and Managing Report Configurations

- About Report Configuration Files
- Location of Report Configuration Files
- Creating and Editing Report Configurations
- Configuring Report Queries
- Customizing the Report Layout
- Fields, Calculated Fields, and Expressions
- Styles for Reports and Cells
- Create and Manage Report Configuration Files