DATAK ENGINEERING COURSE MODULE

AUTOCAD PLANT 3D

CREATING PROJECTS AND P&IDS

- Introduction
- PROJECT MANAGER
- Creating a New Project in AutoCAD Plant 3D
- Creating a New Drawing
- Grouping Project Files
- Designing a P&ID
- Adding Equipment to a P&ID
- Adding Pipe Lines
- Assigning Tags to a line
- Adding Valves
- Adding Instruments and Instrumentation Lines
- Adding Fittings
- Adding the Off Page Connectors
- Connecting the Off Page Connectors
- Validating the Drawing
- Checking for Errors
- Editing the Drawing
- Moving an Equipment
- Moving a Valve
- Moving a Line
- Editing a Line
- Grouping Lines
- Editing a P&ID Symbol
- Substituting Components
- Converting AutoCAD Components into P&ID Symbols
- Exercise 1

CREATING STRUCTURES

- Introduction
- Creating a Grid
- Editing Grids
- Setting the Representation of the Structural Member
- Adding Members
- Creating Stairs
- Editing Stairs
- Creating Railings
- Creating Ladders
- Ladder Tab
- Cage Tab
- Creating a Plate/Grate
- Creating Footings
- Editing the Structural Members
- Changing the Length of a Member
- Restoring the Member to its Original Length
- Cutting Member at Intersections
- Creating Miter Joints
- Trimming/Extending a Member

- Exploding a Structure
- Visibility Options
- Hiding and Displaying Components
- Exchanging Data with other Applications
- Exercise 1

CREATING EQUIPMENT

- Introduction
- Creating Equipment
- Placing Equipment in the Drawing
- Adding a Vessel
- Adding a Heat Exchanger
- Adding a Pump
- Adding a Heater
- Creating a Customized Equipment
- Modifying Equipment
- Converting Solid Models into Equipment
- Converting Inventor Models into Equipment
- Attaching Objects to an Equipment
- Detaching Objects from an Equipment
- Adding Nozzles to a Customized Equipment
- Adding Nozzles to a Converted Equipment
- Modifying Nozzles
- Exercise 1

EDITING SPECIFICATIONS AND CATALOGS

- Introduction
- Getting Started with AutoCAD Plant 3D Spec Editor
- Working with Spec Files
- Creating a New Spec File from an Existing Spec
- Adding Parts to the Spec Sheet
- Editing the Parts Added to a Spec
- Setting the Part Use Priority
- Adding Notes to a Group
- Editing the Long Description Styles
- Assigning a Long Description Style to Multiple Specs
- Assigning Operators (Actuators) to Valves
- Working with the Catalog Editor
- Creating a New Catalog from an Existing Catalog
- Adding a New Part to a Catalog
- Creating a New Component using Parametric Graphics
- Creating a New Component using Block Based Graphics
- Modifying the Branch Table
- Creating Branch Table Legends
- Assigning Legends to a Branch Table
- Tutorial 1

DATAK ENGINEERING COURSE MODULE

ROUTING PIPES

- Introduction
- Selecting a Spec
- Working with the Spec Viewer
- Routing a Pipe
- Routing a Pipe with a New Line Number
- Setting the Route Line
- Routing a Pipe from a Line
- Routing a Pipe using a P&ID
- Routing a Pipe from an Equipment
- Working with the Compass
- Connecting two Open Ports of Pipes
- Changing the Pipe Size while Routing
- Changing the Orientation Plane while Routing a Pipe
- Creating a Cutback Elbow
- Creating a Roll Elbow
- Creating Bends
- Changing the Elevation while Routing a Pipe
- Routing Pipe at an Offset
- Routing a Pipe at a Slope
- Creating Branches
- Creating a Tee Branch
- Creating an O-let Branch
- Creating a Stub-In Branch
- Creating a Stub-In Branch at an Offset from the Center of the Header Pipe
- Creating a Branch from an Elbow
- Creating a Stub-In Branch at a Precise Location
- Adding a Reinforced Pad to a Stub-In Branch
- Creating a Weld Connection
- Creating Autodesk Connection Point
- Editing an Autodesk Connection Point
- Routing a Pipe from an Autodesk Connection Point
- Exercise 1

ADDING VALVES, FITTINGS, AND PIPE SUPPORTS

- Introduction
- Adding Valves and Fittings
- Adding Valves and Fittings to a Pipe using the Spec Sheet
- Adding Valves and Fittings using a P&ID
- Placing Valves and Fittings while Routing a Pipe
- Placing Custom Parts
- Mapping a P&ID Object to a Plant 3D Object
- Adding Pipe Supports
- Adding a Dummy Leg
- Adding a Hanger and Connecting it to a Structural Member

- Modifying the Pipe Supports
- Copying and Moving a Pipe Support
- Connecting Two Pipe Supports
- Converting Solids into Pipe Supports
- Attaching Objects to a Pipe Support
- Detaching Objects from a Support
- Insulating a Pipe
- Modifying the Pipe Components using Grips
- Substituting a Pipe Component
- Rotating a Pipe Component
- Flipping a Pipe Component
- Flipping a Component Inline with the Pipe
- Changing the Elevation of the Pipe
- Changing the Valve Operator
- Validating a 3D Model
- Exercise 1

CREATING ISOMETRIC DRAWINGS

- Introduction
- Isometric Drawing Types
- Creating a Quick Isometric Drawing
- Creating a Production Isometric Drawing
- Viewing Isometric Results
- Placing Iso Messages and Annotations
- Exporting a Pipe Component File
- Creating an Iso from a Pipe Component File
- Locking a Line Number
- Configuring Isometric Drawing Settings
- Configuring Iso Style Settings
- Configuring Annotation Settings
- Configuring Dimensional Settings
- Configuring Themes
- Configuring Sloped and Offset Piping Settings
- Setting the Title Block and Display Properties
- Exercise 1

CREATING ORTHOGRAPHIC DRAWINGS

- Introduction
- Creating Orthographic Drawings
- Generating the First View
- Creating the Adjacent View
- Adding Annotations to the Drawing
- Adding Dimensions to the Drawing
- Locating a Component in the 3D Model
- Editing a Drawing View
- Updating a View

- Adding Gaps to Pipes
- Generating Bill of Material
- Creating BOM Annotation
- Exercise 1

MANAGING DATA AND CREATING REPORTS

- Introduction
- DATA MANAGER
- Viewing data in the DATA MANAGER
- Modifying the Display of Data
- Displaying the Data by Object Type and Area
- Zooming to Plant Objects
- Locating an Object in the Drawing Area
- Scrolling through the Data in the DATA MANAGER
- Editing Data in the DATA MANAGER
- Placing Annotations in a P&ID using the DATA MANAGER
- Filtering the Information in the Data Table
- Viewing only the Selected Record in the Data Table
- Viewing all the records in the Data Table except the Selected One
- Viewing the Data of the Objects Selected in the Drawing Area
- Exporting Data from the DATA MANAGER
- Importing Data to the DATA MANAGER
- Accepting or Rejecting Changes in the Imported Data
- Viewing Reports in the DATA MANAGER
- Exporting the Project Reports
- Importing the Project Reports
- Working with the Report Creator
- Generating Reports using the AutoCAD Plant Report Creator
- Exercise 1