



IRONCAD

FASTEST AND EASIEST WAY TO 3D

4 Day Training Syllabus

Day 1

Section 1 - 3D Scene

- General guide for User Interface of the 3D Scene.
- Use Catalogs to drag and drop shapes.
- Edit shapes by using Handles.
- Show content of parts in the Scene Browser.
- Use Camera tools to Orbit, Pan, and Zoom.

Section 2 - Drag and Drop Modeling Part 1

- Create parts using Drag and Drop Modeling.
- Explore General Options.
- Use SmartSnap to shape parts accurately.

Section 3 - Drag and Drop Modeling Part 2

- Explore Advanced Drag and Drop Modeling.
- Learn how to Blend (Fillet) Edges.
- Learn how to Chamfer Edges.

Section 4 - Toy Car

- Use the Shell tool to shell out parts.
- Use the TriBall to position parts.

Section 5 - TriBall Tutorial Part 1

- Use Advanced TriBall options to position parts correctly.
- Move, Rotate, Copy and Align parts using the TriBall.
- Use The TriBall to Orientate Parts.

Section 6 - TriBall Tutorial Part 2

- Explore more TriBall Orientation Options.
- Learn how to use TriBall Mouse Shortcuts, Radial Patterns, and Mirror Features.
- Learn how to create Linked Features.

Section 7 - TriBall Tutorial Part 3

- Explore Advanced TriBall Orientation Options using the Orientation Handles.
- Exercise using the TriBall to align To Point, To Center Point, Parallel to Edge, and Perpendicular to Face.

Section 8 - Wooden Table Part 1

- Exercise using Drag and Drop Modeling and the TriBall Positioning Tool.
- Save Camera Views to view parts from specific angle.
- Use SmartPaint to color parts.
- Use Assemble to assemble individual parts into Assembly Models.

Section 9 - Wooden Table Part 2

- Exercise creating TriBall Radial Patterns.
- Drop Shapes as individual parts.

Section 10 - Wooden Table Part 3

- Explore how to Name Parts.
- Exercise duplicating a Pattern Option.
- Edit SizeBoxes by using Math Functions.

Section 11 - Wooden Table Part 4

- Exercise Linear Pattern Features with Linked Copies.
- Exercise Repositioning the TriBall.
- Combine multiple parts into an Assembly.

Section 12 - Wooden Table Part 5

- Exercise dropping SmartPaint on Assemblies.
- Exercise using the TriBall to Mirror Linked Copies.
- Reorient TriBall to Global.

Section 13 - Cross-Section Sketch

- Edit Cross Sections to change Dimensions of shapes.
- View the Cross Section Display Modes.
- Use Look At Tool to look directly at surfaces.
- Edit 2D curves by dragging, or entering dimensions.
- Delete unwanted curves with Trim.
- Use the Offset command to create offset curves.

Section 14 - Sweep Wizard - Tube

- Use the Sweep Wizard to sweep a cross section along a guide curve.
- Use Polylines to quickly create curves.
- Fillet corners of sketches.
- Create 3D Curves with the 3D curve command.
- Explore how to Sweep along 3D curves.
- Troubleshoot a failed Sweep.
- Use the TriBall to create an accurate 3D Guide Curve.

Section 15 - Spin Wizard - Shaft

- Use Spin Wizard to Spin Sketches along an axis.
- Edit Cross Sections of sketches.
- Use Profile Handles to edit the spun sketch.
- Handle Edit Distance from Center Point and from Point.

Section 16 - Bend Tube

- Use Spin Wizard to create a Bend Tube.
- Use Profile Handles to edit the Dimensions of the Bend Tube.
- Use the Shell Feature to shell out the Part.

Section 17 - Loft

- Use the Loft Wizard to create lofted parts.
- Edit the Profile Locator Curve to relocate the loft.
- Edit Cross Sections of the loft sections.
- Create a Loft feature Between Shapes.
- Switch the Cross Section Directions.
- Switch between Parasolid and ACIS Modeling Kernels
- Associate loft feature with a face of another shape.

Day 2

Section 1 - Stirling Engine 1

- Create a Conceptual Layout of a Stirling engine.
- Use Drag and Drop Modeling to create the basic parts of the engine.
- Exercise using SizeBox Handle SmartSnap.

Section 2 - Stirling Engine 2

- Use SmartSnap to snap to features of other parts.
- Change Snap Increments when using the handles.
- Exercise using the TriBall Copy/Link snap

Section 3 - Stirling Engine 3

- Use Suppress to suppress parts or shapes from being generated.
- Use the Hide Selected tool to hide selected parts.
- Edit the Part User Name, Part Number and Description

Section 4 - Stirling Engine 4

- Use Forward and Backward End Conditions to Extend shapes to features of shapes.
- Exercise using advanced options to orient the TriBall to position shapes.

Section 5 - Stirling Engine 5

- Reverse the extrude direction using the Flip Extrude Direction tool.
- Hide Unselected parts to only view selected parts.
- Use the Show All command to view all parts.

Section 6 - Stirling Engine 6

- Shift-snap parts to center upon drag and drop.
- Use Edit Feature Options to edit existing part features.
- Exercise using the TriBall to position shapes.

Section 7 - Stirling Engine 7

- Edit Cross Section Camera Look At Options.
- Edit Cross Section Display Modes.
- Position the TriBall by 2D Plane Handle.
- Toggle the Perspective Camera option.

Section 8 - Stirling Engine 8

- Edit Surface Smoothness and its Default Setting.
- Use Section Part/Assembly to view sections of a part/assembly.
- Use Precise Mode on the Section to toggle between Precise and Graphics.

Section 9 - Stirling Engine 9

- Exercise editing cross sections and moving curves.
- Explore Command Browser Tips.
- Explore Cursor "Entity Feedback" options.

Section 10 - Stirling Engine 10

- Use the IronPRO XT and other Add-ins from the Catalog Browser, or the Common Tab.
- Use the Tools Catalog to access a variety of useful tools.
- Create IronPRO XT Threaded holes.

Section 11 - Stirling Engine 11

- Exercise dragging and dropping parts as shapes.
- Exercise resizing shapes symmetrically.

Section 12 - Stirling Engine 12

- Exercise using the Shell Feature, Editing Individual Face Thickness.
- Focus on Selected Parts by using the Hide Unselected option.
- Exercise creating Threaded holes using the IronPRO XT tools.

Section 13 - Stirling Engine 13

- Exercise Projecting 3D Edges.
- Use S-Key "Floaty" menus to quickly access common tools.
- Exercise using Two Tangent and One Point Circle tool to create circles.

Section 14 - Stirling Engine 14

- Use the Draft Faces tool to draft faces of a part.
- Use Feature Reordering to reorder the features of a part.
- Shift-drag TriBall center handle to find a holes center point.

Section 15 - Stirling Engine 15

- Exercise using the Spin Wizard along selected surfaces.
- Exercise offsetting and shelling parts
- Use SmartPaint Transparency to see through parts.

Section 16 - Stirling Engine 16

- Create L3 Circles Loft Shape by dragging and dropping from the catalog.
- Practice Individual Blend Radii edits by editing the blend feature.
- Use the Eyedropper to copy colors on parts and apply it to other parts.

Section 17 - Stirling Engine 17

- Exercise repositioning the TriBall.
- Exercise using the TriBall to reposition parts.
- Use Alt-Left Click to select a Feature/Shape.

Section 18 - Stirling Engine 18

- Use the TriBall to create right-click linked copies.
- Use the IronPRO XT Fasteners Assembly from the Catalog to create Fasteners.
- Explore the difference between BOM Expand vs. Treat as Part.

Section 19 - Stirling Engine 19

- Use IronPRO XT to create Fastener Assemblies with washers and nuts.
- Use IronPRO XT to create threaded and simple holes.
- Use IronPRO XT to create countersunk holes.
- Exercise using the TriBall to align screws to holes.

Section 20 - Stirling Engine 20

- Create TriBall Radial Linked Copies.
- Snap SizeBox handles from one part to another.
- Exercise creating threaded holes and screws.

Section 21 - Stirling Engine 21

- Extract 3D Curve from edges to create parts with existing curves.
- Exercise using the Sweep Wizard to create parts from 3D and 2D curves.
- Exercise mirroring parts using the TriBall.

Day 3

Section 1 - 2D Drawing Part 1

- Assemble created parts together using the Assemble tool.
- Create Drawings of Parts and Assemblies.
- Create and customize a Bill of Materials.
- Use Item Bubbles to label parts in the drawings.

Section 2 - 2D Drawing Part 2

- Create Drawings of Individual Parts.
- Use the Center Mark command to create center marks on circles.
- Use the Centerline command to create centerlines on Parts.
- Use the Section command to create sectioned views of parts.

Section 3 - 2D Drawing Part 3

- Use Smart Dimension to Quickly create Dimensions.
- Use Align to Align Dimensions up with one another.
- Use Shift-Select to use Smart Dimension and Align.
- Explore how to use Text Format options such as Flip Inside/Outside Arrow.

Section 4 - 2D Drawing Part 4

- Create broken-out sections with the Broken-out Section command.
- Exercise changing the View Quality of the drawing.
- Use Distribute Horizontally and Distribute Vertically to Distribute items equally horizontally/vertically.
- Exercise creating Smart Dimensions and Section Views.

Section 5 - 2D Drawing Part 5

- Use Select Part/Assembly To Project tool to project certain part/assembly from a saved file.
- Exercise using Broken-out sections, Centerline and Center Marks.
- Use Move to another View command to move dimensions.

Section 6 - 2D Drawing Part 6

- Rotate drawings using the View Rotate command.
- Align Drawings using the View Alignment command.
- Exercise using the Smart Dimension and Text Formatting tools.

Section 7 - 2D Drawing Part 7

- Create rendered drawings by using the Rendered Shading command.
- Explore how to create and add parts into subassemblies.
- Explore how to Disassemble Assemblies.

Section 8 - 2D Drawing - Bill of Materials Part 1

- Explore options to change the properties for one or all bubbles.
- Explore options to edit the Bill of Materials.

Section 9 - 2D Drawing - Bill of Materials Part 2

- Explore how to edit the Layout of the Bill of Materials.
- Create and Save custom Bill of Materials.

Section 10 - Assembly Instructions Drawing Part 1

- Use Configurations to create assembly instructions.
- Explore Configurations options to help create assembly instructions

Section 11 - Assembly Instructions Drawing Part 2

- Use the Crop View command to Crop out parts of the Drawing view.
- Create more views by copying and pasting views.
- Change the configuration of each view to show the different steps in the drawings.
- Create text boxes to explain how to assemble the Sterling Engine.

Section 12 - Customize 2D Drawing Part 1

- Explore the Styles and Layers options.
- Create sketches using the Sketch commands.
- Explore how to create title and description boxes.
- Create descriptions using part properties.
- Create and save custom line types.

Section 13 - Customize 2D Drawing Part 2

- Add Styles for views and layers.
- Explore how to add a logotype to the Drawing.
- Explore how to create and save custom Templates.
- Use IronPRO XT Tools to add material to parts.

Section 14 - Exploded View Part 1

- Use Configurations to make exploded views.
- Use the TriBall to easily position parts in the exploded view.
- Exercise using the TriBall to move multiple parts.

Section 15 - Exploded View Part 2

- Create explode lines in the scene by using the 3D Curve command.
- Create explode line on the drawing by using the Sketch commands.
- Use the Split command to split lines to trim away unwanted segments from the exploded lines.
- Use the Edit Curves command to edit curves in the drawing view.

Day 4

Section 1 - Catalogs Part 1

- Create a new Catalog by using the New command under the Common ribbon.
- Snap the Catalogs to the Top, Bottom or sides by dragging and dropping the Catalog tab.
- Save custom parts and IntelliShapes into custom catalogs by dragging and dropping.
- Explore the differences between IntelliShapes and parts

Section 2 - Catalogs Part 2

- Explore the behavior of anchors and its uses.
- Explore options that change the anchors behaviour

Section 3 - Catalogs Part 3

- Explore the uses of the anchor.
- Drag and drop parts into catalog.
- Edit the anchor to manipulate part behavior.

Section 4 - Catalogs Part 4

- Replace parts in an assembly by dragging and dropping from the catalog.
- Create duplicates or parts of assemblies by dragging and dropping into the catalog.
- Add materials and colors to the catalog.

Section 5 - Catalogs Part 5

- Edit parts and IntelliShapes in the catalog.
- Use IntelliShape properties to edit the behavior of the shapes.

Section 6 - Import Part 1

- Import Parts into IronCad using the Import Part command.
- Explore using the control and alt key to edit the behavior of the parts.
- Use the Add-in Applications command to add in applications.

Section 7 - Import Part 2

- Unfold parts using the Solid/Surface Flat Pattern from Faces command.
- Use Faces to IntelliShape to create IntelliShapes from faces.
- Use Smart Dimension to measure and edit distances of features of parts.

Section 8 - Import Part 3

- Use import options to import parts as reference geometry.
- Explore the Behavior of reference geometry.

Section 9 - Animation Part 1

- Create Animations by dragging and dropping from the animation catalog.
- Edit the animation by using the SmartMotion Editor.
- Use the Visualization tab to Edit and play the Animation.

Section 10 - Animation Part 2

- Apply animation options onto linked parts.
- Explore the Behavior between the Anchor and Animation effects.

Section 11 - Animation Part 3

- Delay parts from moving by using the SmartMotion Editor.
- Exercise moving parts using the Animation Catalog.
- Use the Export Animation command to save and export the animation.

Section 12 - Render Part 1

- Mentions that there are 3 videos, but there are only 2
- Create render views by using the Render Now command.
- Edit the image size, lighting and image quality using the Advanced Rendering Properties.
- Explore the options in the Scene Properties under the Rendering Command.
- Move the Camera with the Edit Camera Command.

Section 13 - Render Part 2

- Add Material to Parts using the AdvMaterial Catalog.
- Explore how to use Shaders from the SmartPaint option.
- Create light using the Insert Light command.

Section 14 - Sheet Metal Part 1

- Create Sheet Metal by dragging and dropping from the SheetMtl Catalog.
- Change the Stock of sheet metal by using the part properties tools.
- Create Chamfers and Fillets by dragging and dropping from the catalog.
- Create Hems and Seams by dragging and dropping from the catalog onto edges.
- Create Dimples by Dragging and Dropping from the catalog.
- Drag and Drop a variety of Punch shapes, and Embosses.

Section 15 - Sheet Metal Part 2

- Explore Sheet Metal Options.
- Change the Default stock.

Section 16 - Sheet Metal Part 3

- Add Bends to sheet metal by dragging and dropping the Bend command from the catalog.
- Use Handles to change the length, width, angle and radius of the bend.
- Explore the differences between In Bend and Out Bend.
- Use Edit Bend Alignment to edit Bends.

Section 17 - Sheet Metal Part 4

- Exercise creating Bends, Editing Cross-Sections.
- Create and edit Bend Reliefs on Bends.
- Exercise using the TriBall to mirror features.

Section 18 - Sheet Metal Part 5

- Unfold and fold sheet metal by using the Unfold Command.
- Use the Export option to save a drawing to multiple file types.