

SolidWorks Essentials



Length: 4 days

Prerequisites: Mechanical design experience and experience with the Windows™ operating system.

Description: SolidWorks Essentials teaches you how to use the SolidWorks mechanical design automation software to build parametric models of parts/assemblies and make drawings of those parts/assemblies.

Lesson 1: SolidWorks Basics and the User Interface

- ❖ What is the SolidWorks Software
- ❖ Design Intent
- ❖ File References
- ❖ The SolidWorks User Interface

Lesson 2: Introduction to Sketching

- ❖ 2D Sketching
- ❖ Sketch Entities
- ❖ Basic Sketching
- ❖ Rules That Govern Sketches
- ❖ Sketch Relations
- ❖ Dimensions
- ❖ Extrude

Lesson 3: Basic Part Modeling

- ❖ Terminology
- ❖ Choosing the Best Profile
- ❖ Choosing the Sketch Plane
- ❖ Boss Feature
- ❖ Sketching on a Planar Face
- ❖ Cut Feature
- ❖ Using the Hole Wizard
- ❖ View Options
- ❖ Filletting
- ❖ Detailing Basics
- ❖ Drawing Views
- ❖ Dimensioning
- ❖ Changing Parameters

Lesson 4: Modeling a Casting or Forging

- ❖ Design Intent
- ❖ Boss Feature with Draft
- ❖ Symmetry in the Sketch
- ❖ Sketching Inside the Model
- ❖ View Options
- ❖ Using Model Edges in a Sketch
- ❖ Creating Trimmed Sketch Geometry
- ❖ Using Copy and Paste
- ❖ Editing Features

Lesson 5: Patterning

- ❖ Why Use Patterns?
- ❖ Reference Geometry
- ❖ Linear Pattern
- ❖ Circular Pattern
- ❖ Mirror Pattern
- ❖ Using Pattern Seed Only
- ❖ Sketch Driven Pattern

Lesson 6: Revolved Features

- ❖ Design Intent
- ❖ Revolved Feature
- ❖ Swept Feature
- ❖ Edit Material
- ❖ Mass Properties
- ❖ File Properties
- ❖ SolidWorks SimulationXpress

Lesson 7: Shelling and Ribs

- ❖ Shelling and Ribs
- ❖ Analyzing and Adding Draft
- ❖ Other Options for Draft
- ❖ Shelling
- ❖ Ribs
- ❖ Full Round Fillets
- ❖ Thin Features

Lesson 8: Editing: Repairs

- ❖ Part Editing
- ❖ Editing Topics
- ❖ Sketch Issues
- ❖ FilletXpert
- ❖ DraftXpert

Lesson 9: Editing: Design Changes

- ❖ Design Changes
- ❖ Information From a Model
- ❖ Rebuilding Tools
- ❖ Sketch Contours
- ❖ Editing with Instant 3D

Lesson 10: Configurations of Parts

- ❖ Using Configurations
- ❖ Creating Configurations
- ❖ Editing Parts that Have Configurations
- ❖ Design Library

Lesson 11: Design Tables and Equations

- ❖ Design Tables
- ❖ Link Values
- ❖ Equations
- ❖ Design Tables
- ❖ Existing Design Tables
- ❖ Modeling Strategies for Configurations
- ❖ In the Advanced Course...

Lesson 12: Using Drawings

- ❖ More About Making Drawings
- ❖ Section View
- ❖ Model Views
- ❖ Broken View
- ❖ Detail View
- ❖ Projected View
- ❖ Annotations
- ❖ Drawing Sheets and Sheet Formats
- ❖ Define Title Block

Lesson 13: Bottom-Up Assembly Modeling

- ❖ Bottom-Up Assembly
- ❖ Creating a New Assembly
- ❖ Position of the First Component
- ❖ FeatureManager Design Tree and Symbols
- ❖ Adding Components
- ❖ Using Part Configurations in Assemblies
- ❖ Creating Copies of Instances
- ❖ Component Hiding and Transparency
- ❖ Component Properties
- ❖ Sub-assemblies
- ❖ Smart Mates
- ❖ Inserting SuB-assemblies
- ❖ Pack and Go

Lesson 14: Using Assemblies

- ❖ Using Assemblies
- ❖ Analyzing the Assembly
- ❖ Checking for Interference
- ❖ Checking for Clearances
- ❖ Changing the Values of Dimensions
- ❖ Exploded Assemblies
- ❖ Explode Line Sketch
- ❖ Bill of Materials
- ❖ Assembly Drawings

Appendix

- ❖ Options Settings
- ❖ Document Templates