



MLC CAD Systems

SolidWorks Essentials 2010

Atlanta, GA

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Length: 4 days

Prerequisites: Mechanical design experience; 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 and assemblies, and how to make drawings of those parts and assemblies.

Lesson 1: SolidWorks Basics and the User Interface

What is the SolidWorks Software
Design Intent
File References
Opening Files
The SolidWorks User Interface

Lesson 2: Introduction to Sketching

2D Sketching
Stages in the Process
Saving Files
Sketching
Sketch Entities
Basic Sketching
Rules That Govern Sketches
Design Intent
Sketch Relations
Dimensions
Extrude

Lesson 3: Basic Part Modeling

Basic Modeling
Terminology
Choosing the Best Profile
Choosing the Sketch Plane
Details of the Part
Boss Feature
Sketching on a Planar Face
Cut Feature
Using the Hole Wizard
View Options
Filleting
Detailing Basics
Drawing Views
Center Marks
Dimensioning
Changing Parameters

Lesson 4: Modeling a Casting or Forging

Case Study: Ratchet
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 Patterns
Mirror Patterns
Using Pattern Seed Only
Sketch Driven Patterns

Lesson 6: Revolved Features

Case Study: Handwheel
Design Intent
Revolved Features
Building the Rim
Building the Spoke
Edit Material
Mass Properties
File Properties
SolidWorks SimulationXpress
Using SolidWorks SimulationXpress
The SimulationXpress Interface

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

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



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Lesson 10: Configurations of Parts

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

Lesson 11: Design Tables and Equations

Design Tables
Link Values
Equations
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 Views
Projected Views
Annotations
Drawing Sheets and Sheet Formats
Define Title Block

Lesson 13: Bottom-Up Assembly Modeling

Case Study: Universal Joint
Bottom-Up Assembly
Creating a New Assembly
Position of the First Component
FeatureManager Design Tree and Symbols
Adding Components
Using Part Configurations in Assemblies
Sub-assemblies
Smart Mates
Inserting Sub-assemblies
Pack and Go

Lesson 14: Using Assemblies

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

