

SOLIDWORKS Design Essentials

Course Outline

 DURATION/TIME 5 Days 9:00 am - 5:00 pm	 METHODOLOGY Practical hands-on with using computers, lecturing, discussions and case studies.
 PREREQUISITES Mechanical design experience; experience with the Windows® operating system	 TARGET Application Engineer, R&D Engineer, Product Designer or Engineer, and Industrial Engineer

INTRODUCTION

SOLIDWORKS Design Essentials teaches you how to use the SOLIDWORKS Design mechanical automation software to build parametric models of parts and assemblies, and how to make drawings of those parts and assemblies.

OBJECTIVE

At the end of this program participants are expected to:

- Create parametric sketches
- Create parts and build assemblies
- Create and control different versions of your parts with configurations
- Automate design modification with equations and excel design tables
- Create drawings of your designs.

CONTACT

IME CADCAM RESOURCE CENTRE SDN BHD 200301003284 (605704-H)
formerly known as IME CADCAM TRAINING CENTRE SDN. BHD. | A Member of IME Group of Companies - Certified ISO 9001:2015 QMS

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SOLIDWORKS Design Essentials

DAY 1

Course Outline:

Lesson 1: SOLIDWORKS Design Basics and User Interface

- What is the SOLIDWORKS Design Software?
- Design Intent
- File References
- Opening Files
- The SOLIDWORKS Design User Interface
- Using the Command Manager

Lesson 2: Introduction to Sketching

- 2D Sketching
- Stages in the Process
- Saving Files
- What are We Going to Sketch?
- Sketching
- Sketch Entities
- Basic Sketching
- Rules That Govern Sketches
- Design Intent
- Sketch Relations
- Dimensions
- Extrude
- Sharing a Model
- Sketching Guidelines

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
- View Selector
- Using the Hole Wizard
- Filleting
- Editing Tools
- Detailing Basics
- Drawing Views
- Center Marks
- Dimensioning
- Changing Parameters
- Getting Started with the 3DEXPERIENCE Platform
- Share and Markup a SOLIDWORKS Design File

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DAY 1 (Cont.)

Course Outline:

Getting Started with the 3DEXPERIENCE Platform

- What is the 3DEXPERIENCE platform
- Logging In
- Navigate the 3DEXPERIENCE Platform Interface
- Getting Help
- About the Welcome App

Share and Markup a SOLIDWORKS Design File

- About Web-Based Tools
- Connect SOLIDWORKS Design to 3DEXPERIENCE
- Share A File
- Recipients Open the Model
- About 3DPlay
- Controlling Access to Shared Models
- Tips for Sharing Files

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DAY 2

Course Outline:

Lesson 4: Symmetry and Draft

- 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
- Copy and Paste Features

Store and Search Parts and Assemblies

- SOLIDWORKS Design and Web-Based Tools
- Save Parts to the Platform
- About Collaborative Spaces
- About Bookmarks
- About MySession
- Search the 3DEXPERIENCE Platform
- About the MySession Panel
- About Content Responsibilities
- Revising Parts and Assemblies
- CAD Objects on the Platform
- About the Bookmark Editor

Lesson 5: Patterning

- Why Use Patterns?
- Linear Patterns
- Circular Patterns
- Reference Geometry
- Planes
- Mirror Patterns
- Coordinate System
- Symmetric Patterns
- Up To Save Parts to the Platform
- Reference
- 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

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DAY 3

Course Outline:

Lesson 7: Shelling and Ribs

- Shelling and Ribs
- Analyzing and Adding Draft
- Other Options for Draft
- Shelling
- Ribs
- Full Round Fillets
- Thin Features
- About MySession
- Revising Parts

Lesson 8: Editing: Repairs

- Part Editing
- Editing Topics
- Sketch Issues

Lesson 9: Editing: Design Changes

- Part Editing
- Design Changes
- Information From a Model
- Rebuilding Tools
- Sketch Contours
- Creating a Design Revision
- Replace Sketch Entity

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DAY 4

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Lesson 10: Configurations

- Configurations
- Using Configurations
- Other Methods to Create Configurations
- Modeling Strategies for Configurations
- Editing Parts that Have Configuration
- Design Library

Lesson 11: Global Variables and Equations

- Using Global Variables and Equations
- Renaming Features and Dimensions
- Design Rules Using Global Variables and Equations
- Global Variables
- Equations
- Using Operators and Functions

Lesson 12: Using Drawings

- More About Making Drawings
- Removed Section
- Detail Views
- Drawing Sheets and Sheet Formats
- Model Views
- Section Views
- Annotations

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DAY 5

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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
- Mating Components
- Using Part Configurations in Assemblies
- Subassemblies
- Smart Mates
- Inserting Subassemblies
- Pack and Go

Lesson 14: Using Assemblies

- Using Assemblies
- Analyzing the Assembly
- Checking for Clearances
- Changing the Values of Dimensions
- Exploded Assemblies
- Rollback and Reorder Explode Steps
- Explode Line Sketch
- Bill of Materials
- Assembly Drawings

Test and Assessments

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