Workshop: Solid Edge – Modeling Electronic Enclosures

Duration: 2 days

Version: 2021

At Workshop Completion

Students will have learned how to use basic synchronous modeling features needed to create electronic enclosures. This will provide a good overview of synchronous modeling in Solid Edge but should not be used as a synchronous training course. Novice users should use this as a test case scenario to bench mark the enclosure creation capabilities in Solid Edge. Experienced users can use this workshop to enhance their skills in the creation of enclosures, and as an introduction to 3D Printing tools in Solid Edge.

Prerequisites

Here are the standard pre-requisites for this workshop. Potential students should have or completed the following prior to the class:

- Mechanical Design Experience
- Windows Experience
- Previous 3D CAD experience is an asset but not mandatory.

Workshop Content

Course consists of.

- 8 Video Lectures (PowerPoint's to support the Instructor’s lecture).
- 59 Instructor lead video demonstrations.
- 25 practical activities to reinforce the lessons.
- Solution videos for each activity.

Course Outline

Day 1:

- **Lesson 1: Synchronous Sketching Basics**
  - Interface Basics
  - Draw directly on faces of bodies
  - Plane Locking
  - Sketch View Command
  - Sketch Elements in PathFinder
  - Basic drawing commands
  - Constraining the sketch

- **Lesson 2: Base Feature Modeling**
  - Base features
  - Reference planes in synchronous modeling
  - Synchronous coordinate systems
  - Sketch Regions
  - Quick Shapes
  - Synchronous base features
    - Extrude
    - Revolve
  - Dimension Migration from Sketch to Model

- **Lesson 3: Adding and manipulating features for enclosures**
  - Swept and Loft features
  - Holes
  - Steering wheel
  - Move/rotate face command
  - Design Intent Panel
  - Live rules
  - Solution Manager
  - 3D Dimensions
  - Relate commands

- **Lesson 4: Treatment and Plastic features for enclosures**
  - Rounds
  - Draft
  - Chamfers
  - Thin wall
  - Thicken
  - Ribs
  - Web networks
  - Lips
  - Super Features
    - Slots
    - Vent
    - Mounting Bosses (Ordered only)

Day 2:

- **Lesson 5: Re-using features on enclosure models**
  - Feature Pattern
    - Circular
    - Rectangular
    - Pattern Along Curve
    - Fill Pattern
  - Mirror faces
  - Cut, Copy or Ctrl+Drag, Paste
  - Face Detach and Attach

- **Lesson 6: Assembling the enclosure components**
  - Constructing an assembly document by placing parts into an assembly.
  - How to define relationships between these parts.

- **Lesson 7: Modifying and editing enclosure models**
  - Assembly PathFinder
  - Editing assemblies
  - Designing within an assembly
  - Live Sectioning
  - Reorder Blends
  - Part Colors

- **Lesson 8: Enclosure manufacturing using 3D printing**
  - 3D Print Tab
  - Physical Threads
  - 3D Print Validation
  - Reorient (on Printer Bed)
  - Design Tips for Reducing Cost Per Part

Note: The number of lessons covered on any given day could vary due to the progress of the student.