Online Course: Synchronous Technology for Experienced Ordered Users with Sheet Metal

Duration: 4 days – (15 Lessons)

Version: SE 2020

Course Description

This course is designed to teach synchronous modeling to existing users of Solid Edge's ordered or traditional modeling. Students will learn how to construct and edit models in the synchronous paradigm. They will also learn how to use integrated models (synchronous and ordered features together in the same part model). This course includes Synchronous Sheet Metal. If you do not require Sheet Metal, please register for the Synchronous Technology for Experienced Ordered Users course.

Prerequisites

Here are the standard pre-requisites for the training course. Potential students should have completed the following prior to the class:

- Completed the Solid Edge Fundamentals class
- Have a good understanding of ST9, ST10, or SE2019 **ordered** modeling.

Course Content

Course consists of.

- 15 Video Lectures (PowerPoint's to support the Instructor's lecture).
- 76 Instructor lead video demonstrations.
- 54 Independent practical activities to reinforce the lessons.
- Solution videos for each activity.

Course Outline

Day 1:

- **Module 1: Introduction to Synchronous Technology**
  - What is Synchronous modeling.
  - How does it differ from Ordered or traditional Solid Edge?
  - Similarities between Synchronous and Ordered modeling.
  - What are the benefits of using Synchronous Technology?
  - Getting Started

- **Module 2: Synchronous Interface Tools**

    - Synchronous Ribbon Bar
    - Select Tool
    - Steering Wheel
    - Cursors Indicators
    - Edit Definition Handles
    - 3D Dimension Value Edit
    - Dynamic Edit Controls
    - Design Intent (Live Rules)

- **Module 3: Synchronous Sketching**
    - Synchronous sketching
    - Draw directly on faces of bodies
    - Plane Locking
    - Sketch View Command
    - Sketch Elements in PathFinder
    - Sketch Regions

- **Module 4: Reference Planes, Coordinate Systems and Face Sets**
    - Reference planes in synchronous modeling
    - Synchronous coordinate systems
    - Face sets

Day 2:

- **Module 5: Synchronous Base Features**
    - Quick Shapes
        - Box
        - Sphere
        - Cylinder
    - Synchronous base features
        - Extrude
        - Revolve
        - Swept and Loft
        - Helix

- **Module 6: Dynamic Editing of Synchronous Parts**
    - Steering wheels
        - 3D steering wheel
        - 2D steering wheel
    - Move/rotate face command
    - Select Set Priority

- **Module 7: Design Intent (Live Rules)**
  - Introduction to the:
    - Design Intent Panel
    - Live rules
    - Solution Manager

- **Module 8: 3D Dimensioning and Geometric Relationships**
  - Synchronous 3D Dimensions
    - Placement
    - Locked and unlocked
    - Variable Table in Synchronous
  - Relate commands
    - Placement
    - 3D Geometric constraints (persistent)
  - Live Sectioning
    - Creating and editing
    - Revolved Feature - Auto-create Live Section

Day 3:

- **Module 9: Synchronous Features**
  - Creating and editing Synchronous features
    - Rounds and blends
    - Draft
    - Chamfers
    - Thin wall
    - Holes – 3D centric
    - Threads

- **Module 10: Re-using Synchronous Features**
  - Feature Pattern
    - Circular
    - Rectangular
    - Pattern Along Curve
  - Mirror faces
  - Feature Library
  - Cut, Copy or Ctrl+Drag, Paste
  - Face Detach and Attach

- **Module 11: Integrated Part Modeling**
  - Integrated part modeling
    - Move to Synchronous
    - PathFinder
    - Integrated Mode Patterns

    - Integrated Mode Save
    - Integrated Mode Cut, Copy & Paste
    - Integrated Mode – Coord System and Ref Plane behavior
    - Editing Integrated Mode models

- **Module 12: Assemblies with Synchronous Parts**
    - Assembly Selection
    - Assembly Handle Manipulation
    - Move Face in assembly
    - Inter-Part Copy interface enhancements
    - Persistent relationships across assemblies
    - Steering Wheel Assembly Options

Day 4:

- **Module 13: Synchronous Sheet Metal – Base and common features**
    - Synchronous features commands
        - Tab
        - Flange
        - Contour Flange
        - Close bend corners
        - Hem
        - Jog
        - Bend

- **Module 14: Synchronous Sheet Metal Features**
    - Synchronous Sheet Metal Features
        - Feature Origin
        - Feature Profiles
        - Louvers
        - Dimple and Drawn Cutout
        - Bead and Gusset Features
        - Break Corner
        - Cutout Across Bends

- **Module 15: Synchronous functions unique to Sheet Metal**
    - Synchronous Sheet Metal Manipulation
    - Flat Patterns
    - Integrated modeling

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