Course: SE 2019 Synchronous Course

Duration: 3 days – (optional 4th day for Sheet Metal)

Version: SE 2019

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).

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 ST8, ST9, or ST10 **ordered** modeling.

Course Content

Course consists of;

- PowerPoint's to support the Instructor's lecture.
- Instructor lead demonstrations.
- Independent practical activities to reinforce the lessons.
- Student and Activity manuals and support documents.

Course Outline

Day 1:

- ➤ **Module 1:   Synchronous vs. Ordered**
  - What is Synchronous modeling
  - When to use synchronous
  - Unique synchronous interface tools

- ➤ **Module 2:   Synchronous Sketching**
  - Synchronous sketching
  - Draw directly on faces of bodies
  - Plane Locking
  - Sketch View Command
  - Sketch Elements in PathFinder
  - Sketch Regions

- ➢ **Module 3:   Reference Planes, Coordinate Systems and Face Sets**
  - Reference planes in synchronous modeling
  - Synchronous coordinate systems
  - Face sets

- ➢ **Module 4:   Synchronous Base Features**
  - Synchronous base features
    - o Extrude
    - o Revolve
    - o Swept and Loft
    - o Helix

- ➢ **Module 5:   Dynamic Editing of Synchronous Parts**
  - Steering wheels
    - o 3D steering wheel
    - o 2D steering wheel
  - Move/rotate face command
  - Select Set Priority

Day 2:

- ➢ **Module 6:   Design Intent (Live Rules)**
  - Introduction to the:
    - o Design Intent Panel
    - o Live rules
    - o Solution Manager

- ➢ **Module 7:   3D Dimensioning and Geometric Relationships**
  - Synchronous 3D Dimensions
    - o Placement
    - o Locked and unlocked
    - o Variable Table in Synchronous
  - Relate commands
    - o Placement
    - o 3D Geometric constraints (persistent)

- ➢ **Module 8:   Synchronous Features**
  - Creating and editing Synchronous features
    - o Rounds and blends
    - o Draft
    - o Chamfers
    - o Thin wall
    - o Holes – 3D centric
    - o Threads

- ➢ **Module 9:   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

Day 3:

- ➢ **Module 10: Advanced Editing Tools**
  - • Live Sectioning
    - ○ Creating and editing
    - ○ Revolved Feature - Auto-create Live Section
    - ○ Integrated Mode Live Sections
  - • Editing Synchronous Rounds
    - ○ Reorder Blends
    - ○ Sync Cylinder vs. Round Editing

- ➢ **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: (optional)

> **Module 1:   Synchronous Sheet Metal – Base and common features**
>   - Synchronous features commands
>   - Tab
>   - Flange
>   - Contour Flange
>   - Close bend corners
>   - Hem
>   - Jog
>   - Bend

> **Module 2:   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 3:   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 class.