Course: ST10 Advanced Assembly Course

Duration: 3 days – (**Optional 4th day** for extended features)

Version: ST10

Course Description

Students will have learned how to apply all of the relationships used to construct assembly models. They will have learned how to assemble and edit parts that already exist, and how to create new parts within an assembly; how to create exploded views, section views, simplified views, and custom views; how to manage very large assemblies; how to verify assembly integrity; how to design in the context of assemblies; and how to work with Alternate Assemblies. They will also learn advanced assembly's commands such as fastener systems, mirror assemblies, system libraries, and assembly features. Those who attend the optional 4th day will learn about adjustable parts and assemblies, virtual components, and weldments.

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, ST8, or ST10 modeling.

Students who lack any of these prerequisites should realize the impact it will have on their learning experience.

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:   Modeling Assemblies (Review of Fundamentals)**
  - The Solid Edge Assembly User Interface
  - Creating new assemblies and placing parts into assemblies
  - Using relationships to properly positions parts
  - Basic placement options and tools

- ➢ **Module 2:   Additional Relationships**
  - Insert Component command
  - Assembly command
  - Match Coordinate Systems
  - Rigid relationship
  - Cam and Path relationship
  - Range
  - Assembly Relationship Assistant
  - Assembly Relationship Manager

- ➢ **Module 3:   Gears and Motors**
  - Gear relationships
  - Motors
    - ➢ Rotational Motor
    - ➢ Linear Motor
    - ➢ Variable Table Motor
  - Simulate Motors
  - Pattern Along Curve using Chord Length
  - Skip count option
  - Assembly Suppression Variables

- ➢ **Module 4:   Synchronous relationships**
  - Synchronous inter-part relationships
  - Persistent relationships
  - Synchronous Assembly Modeling
    Boolean Commands
  - Sync Commands options with IPA
  - Synchronous moves and copies in assemblies.
  - Option to Place PMI inside Part file.

- ➢ **Module 5:   Assembly features and Editing**
  - Assembly patterning
  - Duplicate Component
  - Clone Component
  - Move Components
  - Editing Assemblies
  - Replace Part
  - Repair missing files

Day 2:

- ➢ **Module 6:   Designing in the context of an assembly**
  - Bottom Up Design vs. Top Down Design
  - Create in Place
  - Associative modeling through Inter-Part Linking
  - Assembly Restructure

- ➤ **Module 7:   Additional Assembly Design Tools**
  - Assembly based features
  - Fastener System command
  - System Libraries

- ➤ **Module 8:   Insert Assembly Copy and Mirror Assemblies**
  - Insert Assembly Copy (IAC)
  - Insert Assembly Copy - Mirror
  - Mirroring Components

- ➤ **Module 9:   Working with large assemblies – Part 1**
  - Selection Tools
  - Display Tools
  - Queries
  - Zones
  - Configurations

Day 3:

- ➤ **Module 10:   Working with large assemblies – Part 2**
  - Simplified Parts
  - Simplified Assemblies
    - Types
      - Visible faces
      - Model Command
  - Limited Update
  - Limited Save
  - Update options
  - Component Tracker

- ➤ **Module 11:   Inspecting assemblies**
  - Physical Properties
  - Drag Component
  - Motion
  - Sensors
  - Interference Checking

- ➤ **Module 12:   Explode and section views**
  - Creating exploded views
  - Creating flow lines
  - Simply Animation of exploded views
  - Creating section views

- ➢ **Module 13: Alternate assemblies**
    - • Alternate components
    - • Creating and modifying new alternate assemblies
    - • The difference between alternate assemblies and alternate positions
    - • How to work with alternate positions

Day 4: (optional)

- ➢ **Module 14: Assembly Reports**
    - • Types of Reports
    - • Creating Assembly Reports
    - • Item numbers in assemblies
    - • Occurrence Properties

- ➢ **Module 15: Adjustable parts and assemblies**
    - • Adjustable Parts
    - • Adjustable Parts in Assemblies
    - • Adjustable Assemblies

- ➢ **Module 16: Virtual components in assemblies**
    - • Virtual components
    - • Creating virtual components
    - • Using the Virtual Component Editor
    - • Publishing virtual components

- ➢ **Module 17: Weldments**
    - • Weldment Assemblies
    - • Assembly/Weldment Features
    - • Weldment commands
    - • Reports
    - • Welds in Draft
    - • Assembly Weldment Features in Part

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