

# Course Outline

## PREREQUISITES:

Mechanical design experience and experience with the Windows operating system. This course is intended for users who are new to 3D design.

## DESCRIPTION:

The goal of this course is to teach you how to utilise the assembly modelling capabilities of SolidWorks. It focuses on the skills, tools, and concepts central to successfully working with assemblies.

Upon completion of this training course, you will be able to confidently create SolidWorks assemblies.

### Lesson 1: Top-Down Assembly Modelling

- Top-down assembly modelling
- Stages in the process
- Building virtual parts
- Building parts in an assembly
- In-context features
- Propagating changes
- Saving virtual parts as external
- External references
- Breaking external references
- Removing external references

### Lesson 2: Assembly Features and Smart Fasteners

- Stages in the process
- Assembly features
- Smart fasteners

### Lesson 3: Advanced Mate Techniques

- Adding mate references

- Design library parts
- Capture mate references
- Smart components
- Summary: inserting and mating components
- Multiple mate mode
- Using copy with mates
- Mate options

### Lesson 4: Using Configurations with Assemblies

- Using configurations with assemblies
- Stages in the process
- Component patterns
- Configuration properties
- Using configure component
- Creating configurations manually
- Configuration publisher

### Lesson 5: Display States and Appearances

- Display states

- Bulk selection tools
- Advanced select
- Envelopes
- Appearances, materials and scenes

## *Lesson 6: Assembly Editing*

- Assembly editing
- Editing activities
- Replacing and modifying components
- Troubleshooting an assembly
- Replacing components using save as
- Mirroring components
- Hole alignment
- Controlling dimensions in an assembly
- Sensors

## *Lesson 7: Layout-based Assembly Design*

- Layout-based assembly design
- Key topics

- Blocks
- Inserting blocks
- Creating a part from a block

## *Lesson 8: Large Assemblies*

- Large assemblies
- Lightweight components
- Large assembly mode
- Selective open with hide
- Using SpeedPak
- Defeature
- Using configurations with large assemblies
- Modifying the structure of an assembly
- Assembly visualisation
- Tips for faster assemblies
- Drawing considerations

