

# Inventor - Essentials

**Category:** Computer Aided Design (CAD), Inventor

## Part 1: Part & Assembly Design – (2 Days)

### Parametric Part Design Basics

- Guidelines for capturing design intent
- Describe the characteristics and benefits of a parametric part model
- Use sketch tools to create 2D sketch geometry
- Use geometric constraints to control sketch geometry
- Apply parametric dimensions to you sketch geometry

### Basic Shape Design

- Create features using the Extrude and Revolve tools
- Use reference and construction geometry
- Use the browser and shortcut menus to edit parametric parts
- Create, locate, and utilise work features to perform modelling tasks
- Create swept shapes by sweeping a profile along a 2D or 3D path
- Blend shapes between dissimilar profiles using the Loft tool

### Detailed Shape Design

- Create both chambers and fillets on a part
- Use the Hole and Thread tools to place hole and thread features on your part model
- Create rectangular and circular patterns and mirror existing features
- Create thin-walled parts using the Shell tool
- Strengthen your designs by using the Rib tool to create ribs and webs

### Using Project Files in Your Assembly Design

## **Designing Assemblies**

- Describe assembly modelling and the procedures you use to create an assembly model
- Describe the basic approaches to assembly modelling
- Identify the key interface elements of the assembly design environment
- State the recommended assembly design workflow

## **Placing, Creating & Constraining Components**

- Place parts in an assembly
- Accurately position assembly components and define their relationship to other components
- Save time by using industry standard components in Inventor's Content Centre
- Speed up design by duplicating components in predictable patterns
- Create new geometry and validate design intent in the context of your assembly

## **Making Complex Assemblies Simpler**

- Identify specific components in a complex assembly using location and selection tools
- Set component priority for easy selection
- Turn off visibility of all but selected components
- Streamline assembly information using browser filters
- Create section views of your assembly

## **Analysis and Motion**

- Use Inventor to understand how differences in material and analysis tolerances affect your model
- Check your assembly for interference between assembled components
- Simulate motion of components in an assembly
- Record drive constraints & save to animation file

## **Part 2: Creating Production Ready Drawings - (1 Day)**

### **Creating and Editing Drawing Sheets**

- Create drawing views and annotations to communicate design requirements for manufacturing
- Create base and projected views of your part
- Create section views for internal details

- Understanding viewing scale
- Create detail and broken views
- Move, align, and edit views to improve the quality of production-ready drawings

## **Dimensions, Annotations, Tables**

- Place dimensions both automatically and manually
- Create associative hole and thread notes
- Use hole tables for efficient annotation
- Add centrelines, centre marks, symbols and leaders
- Use revision tables, revision tags and custom tables in your drawings

## **Drawing Standards and Resources**

- Control the appearance of your drawings and define your company standards using styles
- Work with the styles and standards editor
- Create drawing sheets
- Create custom borders and title blocks Use layers to logically organise 2D drawing information

## **Part 3: Creating Assembly Drawings - (1 Day)**

### **Preparing Assemblies for Drawings**

- Configure assembly views to control the amount of information you want to display
- Visualise your assembly design in different orientations

### **Creating Assembly Drawing Views**

- Edit component and edge visibility
- Make your drawings more organised and easier to view by cutting a view window into the part or assembly
- Represent different positions of an assembly in a single view to represent the full range of motion or capabilities for an assembly
- Explain and visualise components in the assembly by creating an exploded view
- Document the assembly or disassembly process by creating animations of exploded views

### **Annotating Assembly Drawings**

- Automatically generate bill of materials from the component properties in your assembly

- Generate parts lists from bill of materials database
- Edit the parts list to meet your specifications
- Add balloons to your assembly drawing using properties specified in your parts list Automatically balloon all components contained in a view

## **Course Duration**

Duration: 4 days

## **Course Dates**

[View our full course schedule here.](#)

## **BOOKING**

To discuss course contents and booking arrangements, please call SquareOne on:

**T:** +44 (0)151 650 6907

**E:** [enquiries@squareonetraining.com](mailto:enquiries@squareonetraining.com)