



## SOLIDWORKS PCB

Prerequisites	Length	Description
Basic experience with the SolidWorks and basic background in electronic design.	3 Days	The SOLIDWORKS PCB course covers the essential tools required for developing a PCB design from logic schematics through to component placement and routing of traces on the board.

### User Interface

- SOLIDWORKS PCB environment
- Ribbon menu system
- Quick access bar
- Start page
- Interface elements

### Exercise 1-Create a Project

- Create a new project
- Installing a Library

### Theory-Schematics Explained

- Creating good schematics
- Rules of good schematics

### Exercise 2-Schematic Editor

- Symbol placement
- Schematic template
- Component placement
- Ports

### Exercise 3-Schematic Connections

- Wiring the schematic
- Busses
- Nets and net labels

### Exercise 4-Annotation

- Annotate schematics

### Exercise 5-Compiling

- Project compile and errors

### Theory-Collaboration

- SOLIDWORKS PCB/SOLIDWORKS Interaction
- Connector best practices

### Exercise 6-Create a Board Shape in SOLIDWORKS

- Create board assembly
- Create an assembly
- Create board outline
- Commit changes

### Theory-The Printed Circuit Board PCB

- The anatomy of a PCB
- The PCB manufacturing process
- Visualizing the manufacturing process
- PCB glossary of terms

### Theory-PCB Editor

- Layers
- Physical layers and the layer stack manager

### Exercise 7-Stack Configuration

### Theory-Board Shape

- Board shape commands

### Exercise 8-Adding Board Shape Cutouts

### Exercise 9-Origin and Grids

- Origin
- Grid editing
- Cartesian grid settings
- Polar grid settings

### Exercise 10-Transfer Logic Design to PCB

- ECO Generation Options
- Update PCB document from schematic editor





- Update PCB document from PCB editor

#### Exercise 11-Place Footprints

- Placing components
- Component placement in 3D
- Position remaining components

#### Exercise 12-Design Rules

- Design rule for all clearance
- Design rule for component clearance
- Design rule for routing via style
- Design rule for routing width
- Creating a new width rule
- Priority setting

#### Exercise 13-Routing

- Interactive routing commands
- High speed capabilities

#### Theory-Polygons

- Polygon overview
- Placing a polygon pour
- Defining polygon pour properties
- Net options

#### Exercise 14-Design Rule Check

#### Exercise 15-Commit from SOLIDWORKS PCB

- Place mounting holes

#### Exercise 16-Commit from SOLIDWORKS

- Update/import changes
- Modify mounting holes

#### Exercise 17-Cutout

- Create board cutout in SOLIDWORKS
- Creating a keepout from the board shape

#### Exercise 18-Global Editing

- Find similar objects
- PCB Inspector

#### Theory-Working with the PCB Panel

- Navigate using the PCB panel
- Browse mode selection list
- Browsing nets and net classes

#### Theory-Outputs

- Manufacturing outputs
- Available output types
- Assembly outputs
- Documentation outputs
- Fabrication outputs

#### Exercise 19-Export

- Export Parasolid

#### Theory-Libraries

- Integrated libraries
- Including a 3D model in a footprint

#### Exercise 20-Schematic Symbol Creation

- Create the schematic symbol for a crystal
- Using the symbol
- Revising the symbol

#### Exercise 21-PCB Footprint Creation

- 2D crystal footprint
- 3D crystal body
- Use the footprint

#### Theory-SVN Best Practices & Tools

