

# PRINTED CIRCUIT BOARD (PCB) MANUFACTURING

*eLearning courses designed to increase productivity and profits*



## Learning Made Simple, Visual, and Interactive

The THORS *Printed Circuit Board (PCB) Manufacturing* course introduces the learner to the PCB manufacturing processes, starting from laminate manufacturing and PCB designing. The course covers common manufacturing processes, such as the patterning process, multilayer PCB manufacturing processes, solder mask application, silkscreen application, and surface finish, followed in the industry. Presented in THORS' highly visual and interactive learning format, this course will equip learners to broaden their knowledge of PCB manufacturing and its related technologies.

Credit Hours **2**

## Learning Objectives

- Identify the various processes involved in laminate manufacturing.
- Understand the importance of creating and printing a PCB design.
- Recognize the processes involved in patterning and their procedures.
- Explain the processes required to manufacture a multilayer PCB.
- Define the process of solder mask application, silkscreen application, and surface finish.

## Table of Contents

### I. Pre-Manufacturing Processes

- Raw Material Selection
- Laminate Manufacturing Process
  - Impregnation
  - Layout
  - Pressing
  - Breakdown
  - Finishing
- PCB Designing
  - Creating Gerber Files
  - Printing PCB Designs

### II. PCB Fabrication

- Primary Processes
  - Patterning
    - Resist Coating
    - Exposing
    - Etching
    - Resist Stripping
  - Optical Punch
  - Drilling
    - Process
    - Post-Drilling
  - Plating

### II. PCB Fabrication (continued)

- Additional Processes for Multilayer PCBs
  - Inner Layer Patterning
  - Layer Alignment
  - Lamination
  - Outer Layer Patterning
- Surface Processing
  - Solder Mask Application
  - Silkscreen Application
  - Surface Finish

