NextCircuit LABS

www.nextcircuitlabs.com

PCB Design & Manufacturing

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Professional PCB Design & Manufacturing

Master the Art of Electronics from Software to Hardware

Objective

The electronics and manufacturing industry is experiencing rapid growth, increasing the demand for specific technical skill sets. This course is designed to train students in the complete lifecycle of Printed Circuit Board (PCB) design, drafting, and fabrication, taking your ideas from software to something real and working.

Why PCB Design & Manufacturing?

- PCBs are the foundation of all electronic devices—from laptops and smartphones to DIY projects with microcontrollers.
- Core Component: PCBs are essential in almost all electronic gadgets used for domestic or industrial purposes.
- Error Reduction: An effective PCB design helps in reducing the possibilities of errors and the chances of short circuits.
- High Demand: With the increase in gadget demand, the number of PCB services and job opportunities is on the rise.
- Creative Fulfillment: It is incredibly satisfying to build a working circuit board with your own hands.

Eligibility

This program is open to candidates with the following backgrounds:

- Diploma / B.Tech / BE / ITI / B.Sc.
- Specializations: Electronics, Telecommunication, Instrumentation, or Electrical.

Career Prospects & Job Roles

Join a field that pays handsomely, with starting salaries for freshers ranging from 3.4 Lac/Year to 5.3 Lac/Year.

- Job Roles: PCB Design Engineer, OrCAD/KiCad Layout Engineer, Embedded Hardware Developer, PCB Tester, or R&D Engineer.
- Placement: We provide 100% placement assistance and dedicated support to help you secure a role.

Career Prospects & Job Roles

- Global Certification: Standardized, nationally acceptable training outcomes.
- 3-I Method: Individual Focus, Innovative & Interactive learning.
- Expert Mentorship: Learn from industry experts with years of experience and lifetime access to session recordings.
- Project-Based Approach: We emphasize latest industrial trends through hands-on projects.

Comprehensive Course Curriculum (KiCad & PCB Standards)

Learn to go from a blank canvas to a fully working PCB through the design of a Clap-Activated LED Circuit.

Module 1: PCB & Soldering Basics

- What is a PCB, materials used, and common industry definitions.
- Soldering tools, techniques, and pro troubleshooting tips.

Module 2: Understanding Schematics

- Identifying electronic symbols and reading circuit diagrams.
- Understanding designators (like R1, C2) and what they tell you.

Module 3: Mastery of CAD Software (KiCad / Eagle)

- Installation, workspace setup, and navigating built-in libraries.
- Creating new projects and managing component databases.

Module 4: Designing Your PCB

- Creating schematic diagrams and wiring components.
- Generating the Netlist (the circuit's blueprint) and checking for design errors.

Module 5: Advanced Layout & Routing

- Turning schematics into physical board layouts and understanding layers.
- Manual and auto-routing your board for signal integrity.
- Preparing Gerber files for professional manufacturing.

Module 6: Library & Footprint Management

- Creating custom footprints and symbols for components.
- Building complete parts for use in your professional designs.

Module 7: SMD (Surface-Mount Device) Design

- Understanding SMD components and creating SMD-based layouts.
- Adding vias, labels, and finalizing the silkscreen layer.

Module 8: Real-World Manufacturing & Testing

- Creating a Bill of Materials (BOM) and ordering components.
- The full manufacturing workflow: from design to final board testing.

Course Details

- Duration: 1-Month Industrial Internship (Online Live) or 6-Month Certified Internship.

Contact & Enrollment

- Website: **www.nextcircuitlabs.com**
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- Email: **office@nextcircuitlabs.com**
- Availability: Please contact between 9:00 AM – 5:30 PM on weekdays.