



DURATION  
**90 Hours**

EMBEDDED SYSTEMS & IOT

COURSE & CAREER GUIDE · 2026

# PCB Design Program

## Course Details & Career Growth Guide

From circuit design and simulation to fabrication and hardware testing — on six industry tools.

90 Training Hours

9 Modules

3 Hands-On Projects

Career Roles & Salary Ladder

Placement Support

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## Programme Highlights

### 90 Hours

90 Hours of structured, practical training

### 3 Projects

Hands-on work you can show employers

### Certified

Govt.-accredited (NSDC)  
+ IPCS

### Placement

100% placement assistance & career-readiness

# IPCS Global — Since 2008

IPCS Global began in 2008 as a specialised industrial automation training and services provider and has grown into one of India's leading technical and digital skills institutes, with 50+ branches across India and the GCC. Our Coimbatore centre in Peelamedu combines classroom teaching with hands-on labs, and every learner is coached in communication, aptitude and interview readiness alongside technical skills.

18+

YEARS

15,000+

PROFESSIONALS TRAINED

50+

BRANCHES

100%

PLACEMENT ASSISTANCE

## About the Embedded Systems & IoT Stream

Embedded systems power everything from smart devices and medical equipment to electric vehicles. Our programmes cover Embedded C, nine microcontroller families, RTOS, Embedded Linux, IoT, automotive protocols and PCB design — with 100% hands-on hardware training.



### ISO 9001:2015 Certified

Audited, consistent training quality.



### TÜV SÜD Cooperation Partner

Partner of the German testing & certification body.



### NSDC Approved Partner

Approved training partner under Skill India.



Inside the IPCS Global Coimbatore training centre.

# Why Embedded Systems & IoT, Why Now

The demand behind this programme — and the industries that hire our graduates.

- 1 Electronics is booming in India**  
Government incentives for electronics manufacturing, semiconductors and EVs are expanding embedded jobs across design centres and product companies.
- 2 Everything is becoming connected**  
Consumer devices, medical equipment, vehicles, appliances and industrial machines all run on firmware — and increasingly connect to the cloud.
- 3 EV and automotive growth**  
Electric vehicles and connected cars need engineers skilled in CAN, diagnostics, RTOS and battery management systems.

## Where You Can Work

- 1 Consumer electronics & IoT product companies**
- 2 Automotive & EV (OEMs and Tier-1 suppliers)**
- 3 Medical devices**
- 4 Industrial automation & robotics**
- 5 Semiconductor & design services**
- 6 Defence & aerospace electronics**

## Three Ways to Build Your Career

### Full-Time Job

Join a company with placement support behind you — stability and structured growth.

### Job + Freelance

Hold a job while taking side projects to build income and a broader portfolio.

### Remote & Global

Embedded skills are in demand in Germany, Japan, the US and the GCC. Many Indian engineers work on global projects from Bengaluru, Chennai, Coimbatore, Pune and Hyderabad design centres.

## SHORT COURSE

# PCB Design Program

From circuit design and simulation to fabrication and hardware testing — on six industry tools.

90 Hours

90 Hours

9 Modules

3 Projects

Classroom + hands-on lab

## Part A • Course Details

### Program Overview

Complete PCB development training: electronics basics, PCB fundamentals and manufacturing, simulation in LTspice, board design in EasyEDA, KiCad, Altium Designer, OrCAD and Proteus, and hands-on etching and assembly.

#### DURATION

**90 Hours**

#### TRAINING HOURS

**90 Hours**

#### MODULES

**9 Structured Modules**

#### MODE

**Classroom + hands-on lab**

#### BATCHES

**Weekday • Weekend • Fast-track**

#### CERTIFICATION

**Govt.-accredited (NSDC) + IPCS**

### Who Should Join

- ✓ ECE, EEE & EIE students
- ✓ Embedded engineers
- ✓ Hardware hobbyists
- ✓ Electronics technicians

### What You'll Be Able To Do

- ✓ Design schematics and multi-layer PCBs
- ✓ Simulate circuits before building
- ✓ Generate Gerbers and BOMs for manufacture
- ✓ Etch, assemble and test a real board

**Eligibility:** Diploma or degree in electronics/electrical, or basic electronics knowledge.

## The Full Syllabus

9 modules, 90 hours.

|    |                                                 |        |
|----|-------------------------------------------------|--------|
| 01 | Basic Electronics                               | 10 Hrs |
| 02 | PCB Design Fundamentals & Manufacturing Process | 10 Hrs |
| 03 | Circuit Simulation using LTspice                | 10 Hrs |
| 04 | PCB Design using EasyEDA                        | 10 Hrs |
| 05 | PCB Design using KiCad                          | 12 Hrs |
| 06 | PCB Design using Altium Designer                | 12 Hrs |
| 07 | PCB Design using OrCAD                          | 10 Hrs |
| 08 | PCB Design & Simulation using Proteus           | 8 Hrs  |
| 09 | Hands-On PCB Etching & Assembly                 | 8 Hrs  |

Total Training Duration

**90 Hours**

## Module-by-Module Topics

|                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>MODULE 01</b></p> <p><b>Basic Electronics</b></p> <ul style="list-style-type: none"><li>• Basic electrical: voltage, current, power</li><li>• Basic electronics: R, L, C, diodes, transistors</li><li>• Digital systems: gates, flip-flops, counters</li></ul> | <p><b>MODULE 02</b></p> <p><b>PCB Design Fundamentals &amp; Manufacturing Process</b></p> <ul style="list-style-type: none"><li>• PCB layers &amp; materials</li><li>• Design rules &amp; footprints</li><li>• Fabrication &amp; assembly process</li></ul> |
| <p><b>MODULE 03</b></p> <p><b>Circuit Simulation using LTspice</b></p> <ul style="list-style-type: none"><li>• Transient &amp; AC analysis</li></ul>                                                                                                                 | <p><b>MODULE 04</b></p> <p><b>PCB Design using EasyEDA</b></p> <ul style="list-style-type: none"><li>• Online design &amp; ordering</li></ul>                                                                                                               |
| <p><b>MODULE 05</b></p> <p><b>PCB Design using KiCad</b></p> <ul style="list-style-type: none"><li>• Schematic to layout</li><li>• Gerber export</li></ul>                                                                                                           | <p><b>MODULE 06</b></p> <p><b>PCB Design using Altium Designer</b></p> <ul style="list-style-type: none"><li>• Libraries, rules &amp; routing</li><li>• Multi-layer boards</li></ul>                                                                        |

#### MODULE 07

10 Hrs

### PCB Design using OrCAD

- Capture & PCB Editor

#### MODULE 08

8 Hrs

### PCB Design & Simulation using Proteus

- Co-simulation with microcontrollers

#### MODULE 09

8 Hrs

### Hands-On PCB Etching & Assembly

- Etching, drilling & soldering
- Testing & debugging

#### PCB Design Program · Part A

## Tools, Projects & Assessment

### Tools & Technologies You'll Use

LTspice

EasyEDA

KiCad

Altium Designer

OrCAD

Proteus

Soldering station

### Projects You'll Build

1

Power supply board

2

Microcontroller development board

3

Etched & assembled PCB

### How You'll Be Assessed

1

#### Module Assessments

Practical and theory checks at the end of each module.

2

#### Project Reviews

Trainer review of your mini projects and final project.

3

#### Certification

Issued on meeting assessment and attendance criteria.

**Certification:** Government-accredited (NSDC) certificate + IPCS Global course certificate + Internship Certification.

## Where PCB Design Program Can Take You

Job roles, a realistic growth ladder with salary ranges, and the skills to keep growing.

### ■ Roles You'll Be Ready For

1

#### PCB Design Engineer

Designs schematics and board layouts.

2

#### Hardware Design Engineer

Designs complete electronic hardware.

3

#### Layout Engineer

Routes multi-layer and high-speed boards.

4

#### Hardware Test Engineer

Tests and debugs assembled boards.

5

#### CAD / Library Engineer

Builds component libraries and footprints.

6

#### Freelance PCB Designer

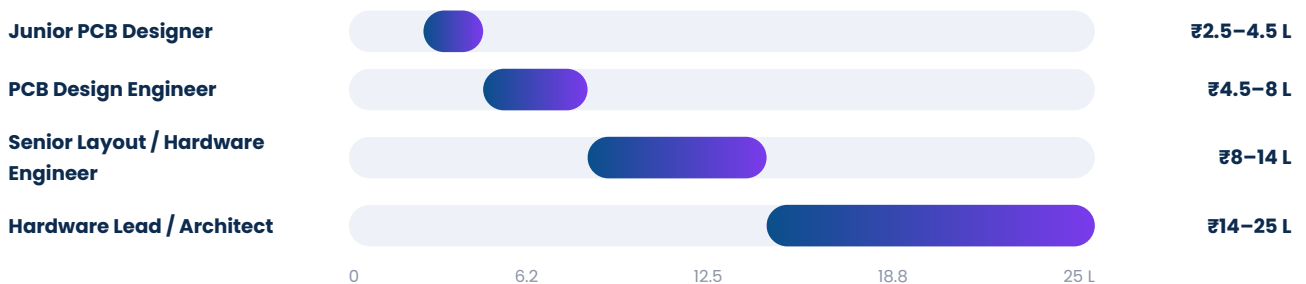
Designs boards for startups and makers.

**Good to know:** PCB Design Program is a focused short course and a strong starting point for these roles; most learners reach them fastest by continuing with **Advanced Embedded Systems Program (CESE)**.

## ■ Your Growth Ladder

|                               |                                                                                  |                |
|-------------------------------|----------------------------------------------------------------------------------|----------------|
| STAGE<br><b>01</b><br>0–2 YRS | <b>Junior PCB Designer</b><br>Create schematics and simple layouts.              | ₹2.5 – 4.5 LPA |
| STAGE<br><b>02</b><br>2–5 YRS | <b>PCB Design Engineer</b><br>Own multi-layer board designs.                     | ₹4.5 – 8 LPA   |
| STAGE<br><b>03</b><br>5–8 YRS | <b>Senior Layout / Hardware Engineer</b><br>Lead high-speed and complex designs. | ₹8 – 14 LPA    |
| STAGE<br><b>04</b><br>8+ YRS  | <b>Hardware Lead / Architect</b><br>Own hardware platforms.                      | ₹14 – 25 LPA   |

## ■ Annual Salary Range (CTC) — ₹ Lakh per annum



Indicative ranges for India in 2026. Lower end: Tier-2 cities such as Coimbatore and smaller firms; upper end: metros and larger companies; GCC and overseas packages are typically higher. Guidance only, not a salary guarantee.

## ■ Skills to Add Next

- ✓ High-speed design & signal integrity
- ✓ DFM / DFA practices
- ✓ EMI / EMC basics
- ✓ Altium in depth
- ✓ Power electronics design

## ■ Certifications to Target

- ✓ Altium Designer certification
- ✓ IPC CID (Certified Interconnect Designer)
- ✓ IPC-A-610 awareness
- ✓ KiCad advanced courses

## ■ Upgrade Path at IPCS Global

1 **Advanced Embedded Systems Program (CESE)**

2 **Automotive Embedded System Design**

## ■ Your First 12 Months After the Course

1

### **Month 0–1 · Get Visible**

Polish your resume and portfolio; apply through the IPCS placement cell's drives.

2

### **Month 1–3 · First Role**

Join as a Junior PCB Designer.

3

### **Month 3–6 · Get Certified**

Earn one certification from the list above.

4

### **Month 6–12 · Specialise**

Pick a specialisation and own a project, system or channel.

# How We Train & Certify

Technical skill gets you noticed — presentation, confidence and communication get you hired. Career-readiness runs alongside the syllabus, not after it.

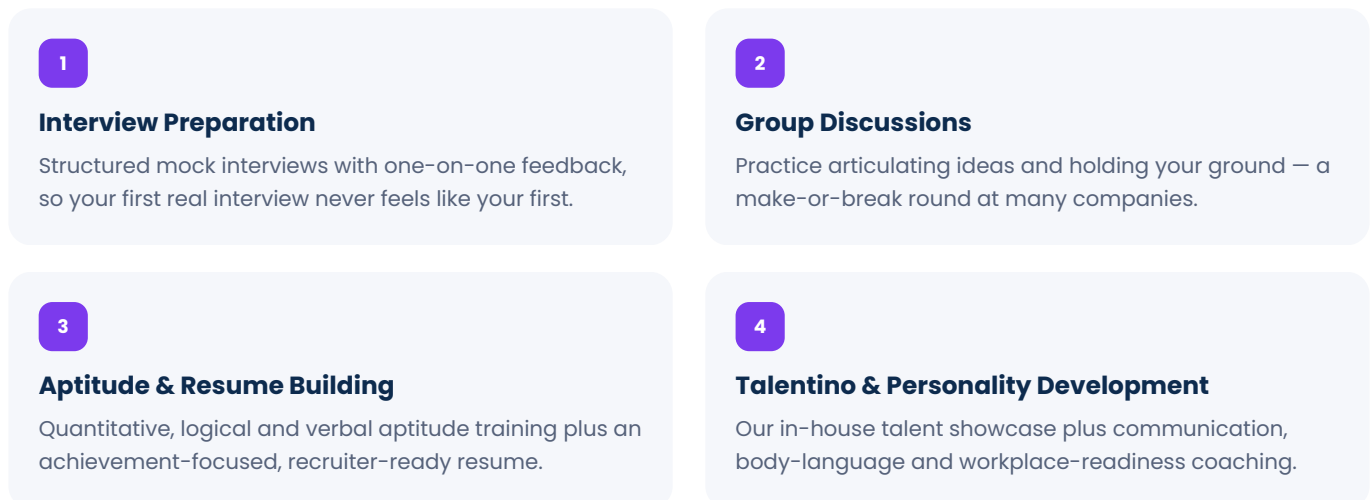
## Our Learning Method



## Your Certifications

- Government-Accredited Certification**  
 IPCS Global is an NSDC approved training partner. On successful completion you receive a government-accredited certificate that validates your technical and practical skills.
- IPCS Global Course Certificate**  
 Issued by an ISO 9001:2015 certified institute on successful completion of assessments and projects.
- Internship Certification**  
 Documents your hardware projects and lab work — verifiable experience for your resume.

## Career-Readiness Track



# How IPCS Global Gets You Hired

Every learner goes through a structured career-readiness track alongside the course, supported by our dedicated placement cell.

1

## Dedicated Placement Cell

Interview drives, industry referrals and follow-up until you are placed – not just until the course ends.

2

## Resume & Portfolio

One-on-one sessions to build a recruiter-ready resume and a project portfolio that proves your skills.

3

## Aptitude & GD Training

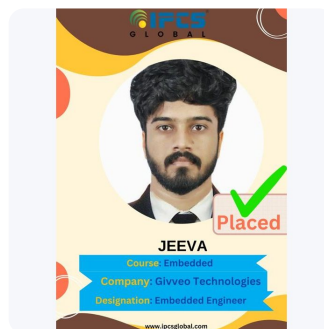
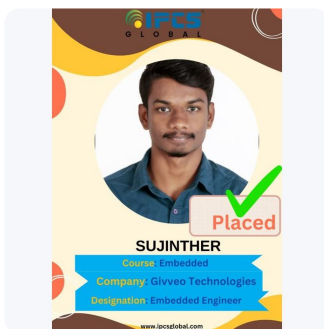
Quantitative, logical and verbal aptitude plus group discussion practice.

4

## Mock Interviews

Simulated technical and HR panels so the first real interview never feels like the first.

## Recent IPCS Coimbatore Placements



A selection of recent placements across IPCS Global Coimbatore programmes.

**Global opportunity:** Embedded skills are in demand in Germany, Japan, the US and the GCC. Many Indian engineers work on global projects from Bengaluru, Chennai, Coimbatore, Pune and Hyderabad design centres.

# Why IPCS Global



## 18+ Years of Training Excellence

A track record since 2008, refined across 15,000+ professionals trained.



## ISO 9001:2015 Certified

Audited, consistent training quality — every batch, every time.



## Recognised Partnerships

TÜV SÜD cooperation partner and NSDC approved training partner.



## Dedicated Placement Cell

Industry tie-ups, interview drives and follow-up until you are placed.



## Real Labs, Real Projects

Industry-grade equipment and live projects — proof of work, not just a certificate.



## 50+ Branches, One Standard

Across India and the GCC, with weekday, weekend and fast-track batches.

## Meet Our Coimbatore Team



Trainers, mentors, counsellors and placement coordinators at IPCS Global Coimbatore — working with every learner from the first class to final placement.

# Frequently Asked Questions

Quick answers to the questions learners and parents ask us most. For anything else, call or visit the Coimbatore branch.

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## **Q. Do I need prior experience to join?**

Most programmes start from the fundamentals. Each programme lists its eligibility — our counsellors will confirm the right starting point for your background.

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## **Q. Are classes held online or in the classroom?**

Classroom + hands-on lab. Talk to our counsellors about the best option for your programme.

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## **Q. What batch timings are available?**

We run weekday, weekend and fast-track batches, so students and working professionals can both find a schedule that fits.

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## **Q. Is placement guaranteed?**

We provide 100% placement assistance — resume building, aptitude and GD training, mock interviews and interview drives through our dedicated placement cell. Final selection depends on each learner's performance, attendance and interview results.

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## **Q. What certificate will I receive?**

Government-accredited (NSDC) certificate + IPCS Global course certificate + Internship Certification.

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## **Q. Can I attend a class before enrolling?**

Yes. Book a free demo session to meet the trainers, see the labs and experience a live class before you decide.

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## **Q. What are the course fees?**

Fees depend on the programme and batch type. Please contact the Coimbatore branch for the current fee structure and any available offers.

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## **Q. Can working professionals join?**

Yes. Weekend and fast-track batches are designed for people who are working or studying alongside the course.

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LET'S START THE CONVERSATION

# Your Career in **Embedded Systems & IoT** Starts Here

Book a free demo class, meet the trainers and see the labs — our counsellors will help you pick the right programme and batch.

## Visit Us

**Address** #12, 2nd Floor, Swathi Towers,  
Sowripalayam –  
Masakalipalayam Road, Opp.  
GRG Matriculation School,  
Periyar Nagar, Peelamedu,  
Coimbatore, Tamil Nadu –  
641004

## Get In Touch

**Phone** +91 80860 96664  
**Email** [bmcbe@ipcsglobal.com](mailto:bmcbe@ipcsglobal.com)  
**Web** [www.ipcsglobal.com](http://www.ipcsglobal.com)  
**Batches** Weekday · Weekend · Fast-track

## Book Your Free Demo Session Today

Walk in, call or write to us — meet the trainers, see the labs, and get counselling on the right course and batch before you enrol.

## How to Enrol

1

### Contact Us

Call, WhatsApp or walk in to our Peelamedu centre.

2

### Free Demo

Attend a live class and see the labs.

3

### Choose a Batch

Weekday, weekend or fast-track.

4

### Enrol & Start

Simple, guided enrolment.