



DURATION
80 Days

EMBEDDED SYSTEMS & IOT

COURSE & CAREER GUIDE · 2026

AI-Integrated **Embedded Systems & IoT** (CIOT)

Course Details & Career Growth Guide

Embedded systems combined with IoT, Python, cloud connectivity and smart automation.

240 Training Hours

7 Modules

4 Hands-On Projects

Career Roles & Salary Ladder

Placement Support

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Programme Highlights

240 Hours

80 Days of structured,
practical training

4 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.

CAREER PROGRAMME

AI-Integrated Embedded Systems & IoT (CIOT)

Embedded systems combined with IoT, Python, cloud connectivity and smart automation.

80 Days

240 Hours

7 Modules

4 Projects

Classroom + hands-on lab

Part A • Course Details

Program Overview

Also offered as Certified IoT Professional (CIOT). You learn C and Python, build Wi-Fi devices on NodeMCU (ESP8266) and ESP32 with FreeRTOS, connect them to cloud platforms and mobile apps, and use Raspberry Pi for edge computing and basic on-device AI.

DURATION

80 Days

TRAINING HOURS

240 Hours

MODULES

7 Structured Modules

MODE

Classroom + hands-on lab

BATCHES

Weekday • Weekend • Fast-track

CERTIFICATION

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

Who Should Join

- ✓ ECE, EEE, CSE & IT students
- ✓ IoT & maker enthusiasts
- ✓ Engineers moving into connected-device roles

Eligibility: Diploma or degree in an engineering or computer science discipline.

What You'll Be Able To Do

- ✓ Program ESP8266 and ESP32 devices
- ✓ Build multitasking firmware with FreeRTOS
- ✓ Send sensor data to cloud dashboards
- ✓ Build mobile apps to control devices
- ✓ Use Python and Raspberry Pi for IoT and basic AI

The Full Syllabus

7 modules, 240 hours.

01	C Programming for Embedded Systems	40 Hrs
02	Basic Electronics for IoT Systems	20 Hrs
03	NodeMCU (ESP8266) – Wi-Fi IoT Development	40 Hrs
04	ESP32 with RTOS (FreeRTOS)	45 Hrs
05	Python Programming for IoT, Automation & AI	45 Hrs
06	Raspberry Pi Embedded Systems	35 Hrs
07	IoT Cloud Platforms & Apps	15 Hrs

Total Training Duration

240 Hours

Module-by-Module Topics

MODULE 01

40 Hrs

C Programming for Embedded Systems

- Data types, operators & control flow
- Arrays (1D/2D), strings & functions
- Pointers, structures & unions
- Memory concepts & bit manipulation

MODULE 02

20 Hrs

Basic Electronics for IoT Systems

- Basic electrical: voltage, current, power
- Basic electronics: R, L, C, diodes, transistors
- Digital systems: gates, flip-flops, counters
- Sensors & actuators

MODULE 03

40 Hrs

NodeMCU (ESP8266) – Wi-Fi IoT Development

- ESP8266 architecture
- Wi-Fi & HTTP/MQTT
- Web server on device
- Sensor-to-cloud projects

MODULE 04

45 Hrs

ESP32 with RTOS (FreeRTOS)

- ESP32 peripherals
- Wi-Fi & BLE
- FreeRTOS tasks & queues
- Low-power design

MODULE 05

45 Hrs

Python Programming for IoT, Automation & AI

- Python fundamentals
- APIs & data handling
- Intro to ML & edge AI concepts
- AI-assisted coding workflows

MODULE 06

35 Hrs

Raspberry Pi Embedded Systems

- GPIO & sensor interfacing
- Camera & image processing basics
- Pi as IoT gateway

MODULE 07

15 Hrs

IoT Cloud Platforms & Apps

- HTML basics for IoT dashboards
- Firebase & ThingSpeak
- Arduino Cloud & Blynk
- MIT App Inventor mobile apps

AI-Integrated Embedded & IoT (CIOT) · Part A

Tools, Projects & Assessment

Tools & Technologies You'll Use

Arduino IDE

ESP-IDF

FreeRTOS

Python

Raspberry Pi

Firebase

ThingSpeak

Arduino Cloud

Blynk

MIT App Inventor

Projects You'll Build

1 Wi-Fi weather station with cloud dashboard

2 Smart home control app (Blynk / MIT App Inventor)

3 ESP32 multi-sensor RTOS node

4 Raspberry Pi smart camera

■ 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.

PART B • CAREER GROWTH

Where AI-Integrated Embedded & IoT (CIOT) 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

IoT Developer

Builds connected devices end-to-end.

2

Embedded Firmware Engineer

Writes firmware on ESP32 and similar MCUs.

3

IoT Solutions Engineer

Designs device-to-cloud systems for clients.

4

Edge AI / Raspberry Pi Developer

Runs analytics and AI at the edge.

5

IoT Test Engineer

Validates device, app and cloud behaviour.

6

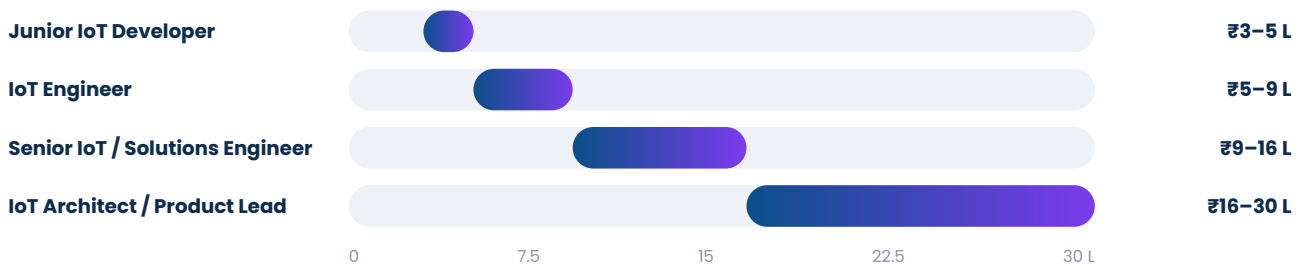
Smart Automation Developer

Builds home and building automation products.

■ Your Growth Ladder

STAGE 01 0–2 YRS	Junior IoT Developer Build device features and dashboards.	₹3 – 5 LPA
STAGE 02 2–5 YRS	IoT Engineer Own devices and cloud integrations.	₹5 – 9 LPA
STAGE 03 5–8 YRS	Senior IoT / Solutions Engineer Architect IoT products.	₹9 – 16 LPA
STAGE 04 8+ YRS	IoT Architect / Product Lead Lead IoT platforms and teams.	₹16 – 30 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

- ✓ AWS IoT / Azure IoT
- ✓ MQTT & protocols
- ✓ TinyML & edge AI
- ✓ Mobile app development
- ✓ Device security

■ Certifications to Target

- ✓ NSDC-aligned IoT certification
- ✓ AWS Certified Cloud Practitioner
- ✓ Azure IoT Developer (AZ-220 successor paths)
- ✓ Edge AI / TinyML courses

■ Upgrade Path at IPCS Global

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

2 **Certified Industrial IoT Professional**

■ 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 IoT Developer.

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.

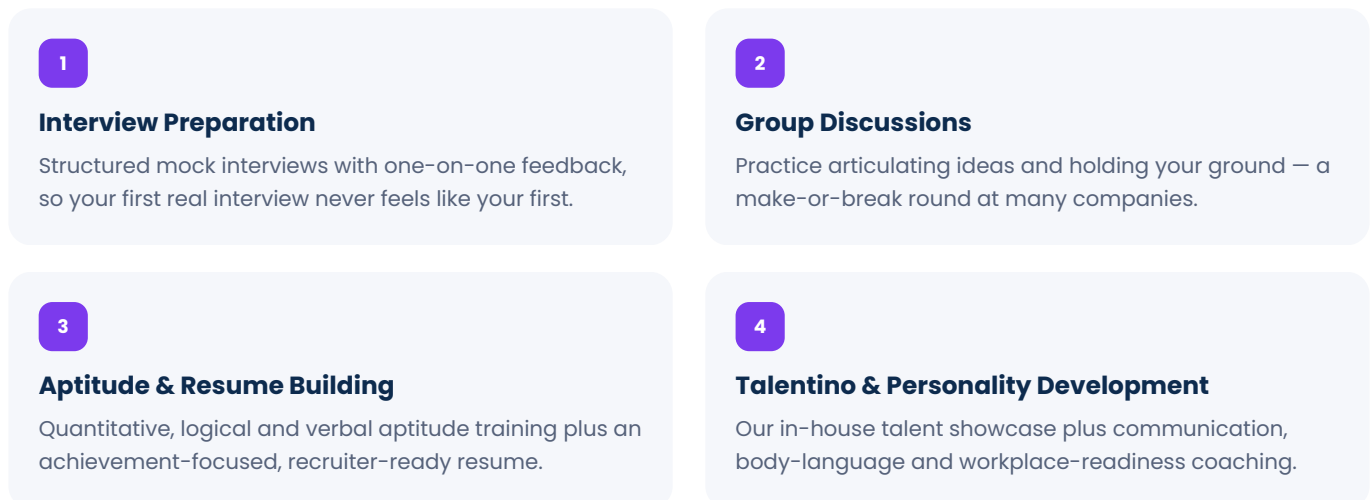
Our Learning Method



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.

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.

Q. Are classes held online or in the classroom?

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

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.

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.

Q. What certificate will I receive?

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

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.

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.

Q. Can working professionals join?

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

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 –
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Get In Touch

Phone +91 80860 96664
Email bmcbe@ipcsglobal.com
Web 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.