



PROGRAMMES

8

EMBEDDED SYSTEMS & IOT

COMPLETE PROGRAMME GUIDE · 2026

Embedded Systems & IoT

Course Details & Career Growth Guide

Every Embedded Systems & IoT programme at IPCS Global Coimbatore in one place — full syllabus, module-by-module topics, tools, projects, certification, job roles, salary progression and next steps.

8 Programmes

30 Days to 4 Months

Syllabus + Career Growth

Placement Support

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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 every programme in this guide — 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.

All Programmes at a Glance

8 programmes to match every background and goal. Full course details and a career guide for each follow in this document.

#	PROGRAMME	DURATION	HOURS	TYPE	BEST FOR	PAGE
01	Advanced Embedded Systems Program (CESE)	4 Months (120 Days)	360	Career programme	BE / B.Tech / Diploma in ECE, EEE, EIE, CSE	7
02	AI-Integrated Embedded Systems & IoT (CIOT)	80 Days	240	Career programme	ECE, EEE, CSE & IT students	14
03	Certified Embedded Design Professional (CEDP)	80 Days	240	Fast-track programme	ECE, EEE & EIE students and graduates	20
04	Automotive Embedded System Design Program	240+ Hours	240	Career programme	ECE, EEE, EIE & Mechatronics graduates	25
05	PCB Design Program	90 Hours	90	Short course	ECE, EEE & EIE students	31
06	Certified Embedded Professional (CEP)	30 Days	90	Short course	Students exploring embedded careers	37
07	Embedded C Programming (ECP)	30 Days	90	Short course	Engineering students	42
08	Junior Robotics Master Program	30 Days	60	School students	School students (Class 8–12)	47

Recommended Pathways

1 Advanced Embedded Systems Program (CESE) → Automotive Embedded System Design Program

2 AI-Integrated Embedded Systems & IoT (CIOT) → Advanced Embedded Systems Program (CESE)

3 Certified Embedded Design Professional (CEDP) → Advanced Embedded Systems Program (CESE)

4 Automotive Embedded System Design Program → Advanced Embedded Systems Program (CESE)

5 PCB Design Program → Advanced Embedded Systems Program (CESE)

6 Certified Embedded Professional (CEP) → Certified Embedded Design Professional (CEDP)

7 Embedded C Programming (ECP) → Certified Embedded Professional (CEP)

Advanced Embedded Systems Program (CESE)

Our most comprehensive embedded programme — eleven microcontroller families, RTOS, Python and Embedded Linux.

4 Months (120 Days)

360 Hours

15 Modules

5 Projects

Classroom + hands-on lab

Part A · Course Details

Program Overview

Certified Embedded System Engineer (CESE) is our flagship embedded programme. You master Embedded C, then work hands-on with Arduino, PIC, 8051, ARM, STM32, AVR, MSP430, RP2040 and ESP32, add Python and Raspberry Pi, and finish with FreeRTOS and Embedded Linux device drivers.

DURATION**4 Months (120 Days)****TRAINING HOURS****360 Hours****MODULES****15 Structured Modules****MODE****Classroom + hands-on lab****BATCHES****Weekday · Weekend · Fast-track****CERTIFICATION****Govt.-accredited (NSDC) + IPCS**

Who Should Join

- ✓ BE / B.Tech / Diploma in ECE, EEE, EIE, CSE
- ✓ Final-year engineering students
- ✓ Electronics hobbyists turning professional
- ✓ Engineers switching into firmware roles

Eligibility: Diploma or degree in electronics, electrical, instrumentation or computer science.

What You'll Be Able To Do

- ✓ Write clean, efficient Embedded C
- ✓ Program 9+ microcontroller families
- ✓ Interface sensors, displays, motors and protocols
- ✓ Build real-time applications with FreeRTOS
- ✓ Write basic Linux device drivers
- ✓ Design and simulate PCBs for your projects

The Full Syllabus

15 modules, 360 hours, delivered in three phases that each build on the last.

01 · FOUNDATION

Modules 1–3 · 80 Hours

Embedded C, electronics and PCB basics.

02 · MICROCONTROLLERS

Modules 4–11 · 175 Hours

Hands-on with nine controller families and all key interfaces.

03 · ADVANCED

Modules 12–15 · 105 Hours

Python, Raspberry Pi, FreeRTOS and Embedded Linux.

01	Embedded C Programming	40 Hrs
02	Basic Electronics for Embedded Systems	20 Hrs
03	PCB Design & Circuit Simulation	20 Hrs
04	Arduino Microcontroller	20 Hrs
05	PIC Microcontroller	25 Hrs
06	8051 Microcontroller	20 Hrs
07	ARM Microcontroller	20 Hrs
08	STM32 Microcontroller	35 Hrs
09	AVR Microcontroller	15 Hrs
10	MSP430 Microcontroller	15 Hrs
11	RP2040 / ESP32 Microcontroller	25 Hrs
12	Python Programming for Embedded & IoT	25 Hrs
13	Raspberry Pi Embedded Systems	25 Hrs
14	RTOS with STM32 (FreeRTOS)	25 Hrs
15	Embedded Linux & Device Driver Development	30 Hrs

Total Training Duration

360 Hours

Module-by-Module Topics

MODULE 01**40 Hrs****Embedded C Programming**

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

MODULE 02**20 Hrs****Basic Electronics for Embedded Systems**

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

MODULE 03**20 Hrs****PCB Design & Circuit Simulation**

- Schematic capture
- PCB layout basics
- Proteus simulation

MODULE 04**20 Hrs****Arduino Microcontroller**

- Arduino architecture & IDE
- Digital/analog I/O
- Sensor projects

MODULE 05**25 Hrs****PIC Microcontroller**

- LED, switch, 7-segment (1d-8d) & keypad
- LCD, relays & motors
- ADC, timers (0/1/2), PWM & interrupts
- MPLAB X & XC8

MODULE 06**20 Hrs****8051 Microcontroller**

- 8051 architecture
- Keil programming
- Timers, serial & interrupts

MODULE 07**20 Hrs****ARM Microcontroller**

- ARM Cortex-M architecture
- Registers & peripherals
- CMSIS basics

MODULE 08**35 Hrs****STM32 Microcontroller**

- STM32CubeIDE & HAL
- GPIO, timers, ADC, PWM
- UART, SPI, I2C & DMA
- Interrupt-driven design

MODULE 09**15 Hrs****AVR Microcontroller**

- AVR architecture
- Register-level programming

MODULE 10**15 Hrs****MSP430 Microcontroller**

- Low-power design
- Peripherals & sleep modes

MODULE 11**25 Hrs****RP2040 / ESP32 Microcontroller**

- Dual-core RP2040 & PIO
- ESP32 Wi-Fi & Bluetooth
- IoT connectivity

MODULE 12**25 Hrs****Python Programming for Embedded & IoT**

- Python fundamentals
- MicroPython
- Data logging & automation

MODULE 13

25 Hrs

Raspberry Pi Embedded Systems

- Raspberry Pi OS & GPIO
- Camera & sensors
- Pi as IoT gateway

MODULE 14

25 Hrs

RTOS with STM32 (FreeRTOS)

- Tasks, scheduling & priorities
- Queues, semaphores & mutexes
- Real-time design patterns

MODULE 15

30 Hrs

Embedded Linux & Device Driver Development

- Linux boot process
- Cross-compilation
- Character device drivers
- GPIO & I2C drivers

Advanced Embedded (CESE) · Part A

Tools, Projects & Assessment

Tools & Technologies You'll Use

Embedded C / GCC

Arduino IDE

MPLAB X (PIC)

Keil µVision

STM32CubeIDE

Proteus

Oscilloscope & multimeter

Git

MSP430 LaunchPad

Raspberry Pi

ESP-IDF

FreeRTOS

Linux toolchain

Projects You'll Build

1 Smart home controller on ESP32

2 Data logger with STM32 + SD card

3 Multi-task RTOS application

4 Raspberry Pi camera/IoT gateway

5 Linux GPIO device driver

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 Advanced Embedded (CESE) 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

Embedded Software / Firmware Engineer

Writes firmware for microcontroller-based products.

2

Embedded Hardware Engineer

Designs and tests circuits and boards.

3

Embedded Test / Validation Engineer

Tests firmware and hardware against requirements.

4

IoT Developer

Builds connected devices and cloud links.

5

Device Driver / Linux Engineer

Develops drivers and board support.

6

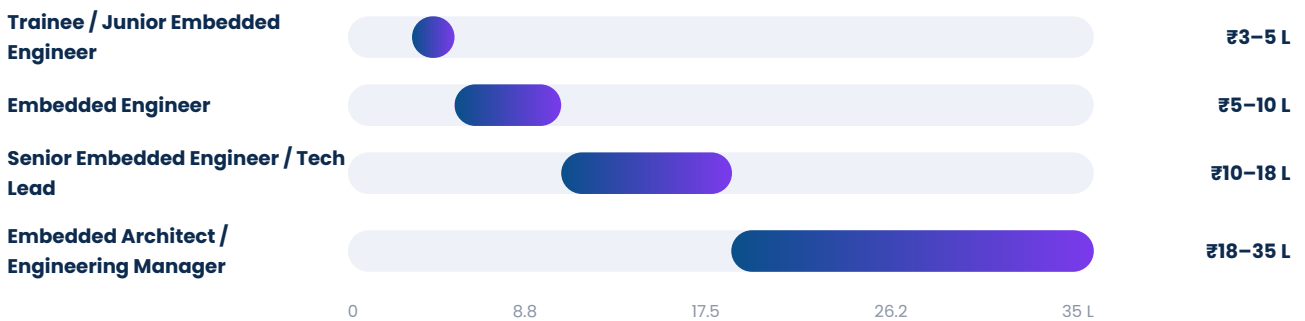
Field Application Engineer

Supports customers using electronic components.

■ Your Growth Ladder

STAGE 01 0–2 YRS	Trainee / Junior Embedded Engineer Write and test firmware modules.	₹3 – 5 LPA
STAGE 02 2–5 YRS	Embedded Engineer Own firmware for products and features.	₹5 – 10 LPA
STAGE 03 5–8 YRS	Senior Embedded Engineer / Tech Lead Architect firmware and lead teams.	₹10 – 18 LPA
STAGE 04 8+ YRS	Embedded Architect / Engineering Manager Own platforms and product engineering.	₹18 – 35 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

- ✓ Embedded Linux & Yocto
- ✓ RTOS internals
- ✓ ARM Cortex-M in depth
- ✓ Debugging with JTAG & logic analysers
- ✓ C++ for embedded

■ Certifications to Target

- ✓ NSDC-aligned embedded certification
- ✓ ARM accredited engineer (later career)
- ✓ Embedded Linux training
- ✓ MISRA C awareness

■ Upgrade Path at IPCS Global

1 Automotive Embedded System Design Program

2 PCB Design Program

■ 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 Trainee / Junior Embedded Engineer.

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.

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

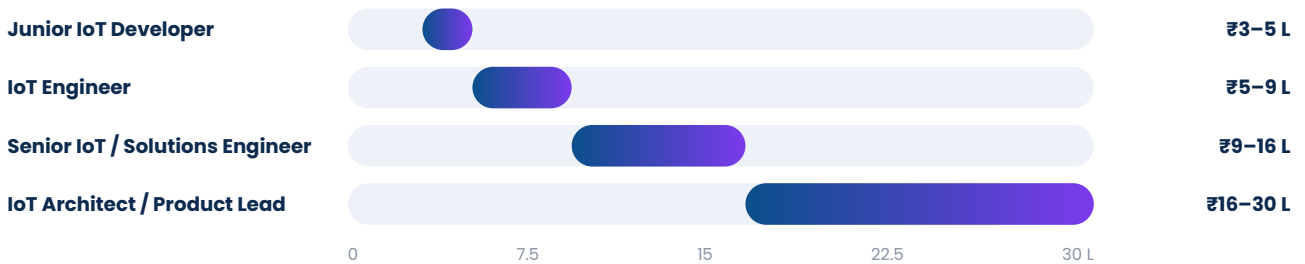
Smart Automation Developer

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.

Certified Embedded Design Professional (CEDP)

Solid embedded foundations on PIC, Arduino and STM32 with every core interface and protocol.

80 Days

240 Hours

6 Modules

3 Projects

Classroom + hands-on lab

Part A · Course Details

Program Overview

A strong mid-length programme: electronics basics, thorough C programming, then hands-on work on PIC, Arduino and STM32 covering displays, keypads, motors, ADC, timers, UART/SPI/I2C, EEPROM, interrupts and PWM.

DURATION

80 Days

TRAINING HOURS

240 Hours

MODULES

6 Structured Modules

MODE

Classroom + hands-on lab

BATCHES

Weekday · Weekend · Fast-track

CERTIFICATION

Govt.-accredited (NSDC) + IPCS

Who Should Join

- ✓ ECE, EEE & EIE students and graduates
- ✓ Diploma holders
- ✓ Freshers preparing for embedded interviews

Eligibility: Diploma or degree in electronics, electrical or instrumentation.

What You'll Be Able To Do

- ✓ Write Embedded C with pointers and structures
- ✓ Program PIC, Arduino and STM32
- ✓ Interface common peripherals
- ✓ Implement UART, SPI and I2C communication

The Full Syllabus

6 modules, 240 hours.

01	Basics – Electrical, Electronics & Digital Systems	30 Hrs
02	C Programming	60 Hrs
03	PIC Microcontroller	45 Hrs
04	Arduino	35 Hrs
05	STM32 Microcontroller	50 Hrs
06	Interfacing Project	20 Hrs

Total Training Duration

240 Hours

Module-by-Module Topics

MODULE 01

30 Hrs

Basics – Electrical, Electronics & Digital Systems

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

MODULE 02

60 Hrs

C Programming

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

MODULE 03

45 Hrs

PIC Microcontroller

- LED, switch, 7-segment (1d–8d) & keypad
- LCD, relays & motors
- ADC, timers (0/1/2), PWM & interrupts
- UART, SPI & I2C protocols
- EEPROM, digital & analog interfaces

MODULE 04

35 Hrs

Arduino

- Arduino architecture
- I/O, sensors & displays
- Serial & I2C devices

MODULE 05

50 Hrs

STM32 Microcontroller

- STM32CubeIDE & HAL
- GPIO, timers, ADC, PWM
- UART, SPI, I2C
- Interrupts

MODULE 06

20 Hrs

Interfacing Project

- Mini-project design
- Build, test & document

Embedded Design (CEDP) · Part A

Tools, Projects & Assessment

Tools & Technologies You'll Use

Embedded C / GCC

Arduino IDE

MPLAB X (PIC)

Keil µVision

STM32CubeIDE

Proteus

Oscilloscope & multimeter

Projects You'll Build

1 Digital clock with 7-segment & RTC

2 Keypad-based password lock

3 STM32 sensor data logger

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 Embedded Design (CEDP) 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

Embedded Software / Firmware Engineer

Writes firmware for microcontroller-based products.

2

Embedded Hardware Engineer

Designs and tests circuits and boards.

3

Embedded Test / Validation Engineer

Tests firmware and hardware against requirements.

4

IoT Developer

Builds connected devices and cloud links.

5

Device Driver / Linux Engineer

Develops drivers and board support.

6

Field Application Engineer

Supports customers using electronic components.

Your Growth Ladder

STAGE

01

0-2 YRS

Trainee / Junior Embedded Engineer

Write and test firmware modules.

₹3 – 5 LPA

STAGE

02

2-5 YRS

Embedded Engineer

Own firmware for products and features.

₹5 – 10 LPA

STAGE

03

5-8 YRS

Senior Embedded Engineer / Tech Lead

Architect firmware and lead teams.

₹10 – 18 LPA

STAGE

04

8+ YRS

Embedded Architect / Engineering Manager

Own platforms and product engineering.

₹18 – 35 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

- ✓ Embedded Linux & Yocto
- ✓ RTOS internals
- ✓ ARM Cortex-M in depth
- ✓ Debugging with JTAG & logic analysers
- ✓ C++ for embedded

■ Certifications to Target

- ✓ NSDC-aligned embedded certification
- ✓ ARM accredited engineer (later career)
- ✓ Embedded Linux training
- ✓ MISRA C awareness

■ Upgrade Path at IPCS Global

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

2 **Automotive Embedded System Design Program**

■ 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 Trainee / Junior Embedded Engineer.

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.

Automotive Embedded System Design Program

Automotive protocols, diagnostics, RTOS, CANoe tools and EV battery systems.

240+ Hours

240 Hours

10 Modules

4 Projects

Classroom + hands-on lab

Part A · Course Details

Program Overview

An industry-focused programme for the automotive and EV electronics sector. After Embedded C, electronics and STM32 with FreeRTOS, you learn CAN, LIN and FlexRay, UDS diagnostics, Vector CANoe and CAPL scripting, EV and Battery Management Systems, and an overview of ISO 26262 functional safety.

DURATION

240+ Hours

TRAINING HOURS

240 Hours

MODULES

10 Structured Modules

MODE

Classroom + hands-on lab

BATCHES

Weekday · Weekend · Fast-track

CERTIFICATION

Govt.-accredited (NSDC) + IPCS

Who Should Join

- ✓ ECE, EEE, EIE & Mechatronics graduates
- ✓ Embedded engineers moving into automotive
- ✓ EV enthusiasts
- ✓ Final-year engineering students

Eligibility: Degree or diploma in electronics, electrical, instrumentation or mechatronics. C basics helpful.

What You'll Be Able To Do

- ✓ Develop firmware on STM32 with FreeRTOS
- ✓ Implement and analyse CAN and LIN networks
- ✓ Understand UDS diagnostic services
- ✓ Write CAPL scripts in CANoe
- ✓ Explain EV powertrain and BMS architecture
- ✓ Apply ISO 26262 concepts

The Full Syllabus

10 modules, 240 hours.

01	Embedded C Programming for Embedded Systems	30 Hrs
02	Electronics & Digital Systems for Embedded Applications	20 Hrs
03	STM32 Microcontroller Development	35 Hrs
04	RTOS with STM32 (FreeRTOS)	25 Hrs
05	Automotive Communication Protocols (CAN, LIN, FlexRay)	35 Hrs
06	Automotive Diagnostics (UDS)	25 Hrs
07	CANoe Tool & CAPL Programming	30 Hrs
08	EV & Battery Management Systems (BMS)	20 Hrs
09	Functional Safety Overview (ISO 26262)	10 Hrs
10	Automotive Embedded Projects & Case Studies	10 Hrs

Total Training Duration

240 Hours

Module-by-Module Topics

MODULE 01

30 Hrs

Embedded 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

Electronics & Digital Systems for Embedded Applications

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

MODULE 03

35 Hrs

STM32 Microcontroller Development

- STM32CubeIDE & HAL
- Timers, ADC, PWM
- CAN peripheral

MODULE 04

25 Hrs

RTOS with STM32 (FreeRTOS)

- Tasks & scheduling
- Queues & semaphores
- Timing analysis

MODULE 05

35 Hrs

Automotive Communication Protocols (CAN, LIN, FlexRay)

- CAN frames, arbitration & errors
- CAN FD
- LIN master/slave
- FlexRay overview

MODULE 06

25 Hrs

Automotive Diagnostics (UDS)

- UDS services & sessions
- DTCs & fault memory
- ISO-TP

MODULE 07

30 Hrs

CANoe Tool & CAPL Programming

- CANoe configuration
- DBC files & simulation
- CAPL scripting & test automation

MODULE 08

20 Hrs

EV & Battery Management Systems (BMS)

- EV architecture
- Cell monitoring & balancing
- SoC/SoH estimation

MODULE 09

10 Hrs

Functional Safety Overview (ISO 26262)

- ASIL levels
- Safety lifecycle

MODULE 10

10 Hrs

Automotive Embedded Projects & Case Studies

- ECU project
- Industry case studies

Automotive Embedded System Design Program · Part A**Tools, Projects & Assessment****Tools & Technologies You'll Use**

STM32CubeIDE

FreeRTOS

Vector CANoe / CANalyzer

CAPL

CAN / LIN analysers

DBC editor

Projects You'll Build**1** CAN-based multi-node ECU network**2** UDS diagnostic request/response**3** CAPL test automation script**4** BMS cell-monitoring prototype

■ 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 Automotive Embedded System 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

Automotive Embedded Software Engineer

Develops ECU firmware.

2

CAN / Vehicle Network Engineer

Designs and tests in-vehicle networks.

3

Diagnostics (UDS) Engineer

Implements and tests diagnostic services.

4

Validation & Test Engineer (CANoe/CAPL)

Automates ECU testing.

5

BMS / EV Firmware Engineer

Develops battery management software.

6

Functional Safety Engineer (junior)

Supports ISO 26262 activities.

■ Your Growth Ladder

STAGE 01 0-2 YRS	Graduate Engineer (Automotive) Test and develop ECU software modules.	₹3.5 – 6 LPA
STAGE 02 2-5 YRS	Automotive Software Engineer Own ECU features and diagnostics.	₹6 – 12 LPA
STAGE 03 5-8 YRS	Senior Engineer / Technical Lead Lead ECU programmes.	₹12 – 22 LPA
STAGE 04 8+ YRS	Architect / Engineering Manager Own vehicle software architecture.	₹22 – 40 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

- ✓ AUTOSAR Classic
- ✓ MATLAB / Simulink & model-based design
- ✓ Automotive Ethernet & SOME/IP
- ✓ ISO 26262 in depth
- ✓ Hardware-in-the-loop (HIL) testing

■ Certifications to Target

- ✓ Vector CANoe training
- ✓ AUTOSAR courses
- ✓ ISO 26262 functional safety certification
- ✓ ASPICE awareness

■ Upgrade Path at IPCS Global

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

2 **Functional safety & AUTOSAR certifications**

■ 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 Graduate Engineer (Automotive).

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.

PROGRAMME 05 OF 08 · 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

MODULE 01

10 Hrs

Basic Electronics

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

MODULE 02

10 Hrs

PCB Design Fundamentals & Manufacturing Process

- PCB layers & materials
- Design rules & footprints
- Fabrication & assembly process

MODULE 03

10 Hrs

Circuit Simulation using LTspice

- Transient & AC analysis

MODULE 04

10 Hrs

PCB Design using EasyEDA

- Online design & ordering

MODULE 05

12 Hrs

PCB Design using KiCad

- Schematic to layout
- Gerber export

MODULE 06

12 Hrs

PCB Design using Altium Designer

- Libraries, rules & routing
- Multi-layer boards

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

PROGRAMME 06 OF 08 · SHORT COURSE

Certified Embedded Professional (CEP)

C programming plus one microcontroller of your choice — a fast start in embedded.

30 Days

90 Hours

2 Modules

1 Projects

Classroom + hands-on lab

Part A · Course Details

Program Overview

A 30-day course that combines C programming with hands-on work on one microcontroller platform, giving you a practical entry into embedded systems.

DURATION

30 Days

TRAINING HOURS

90 Hours

MODULES

2 Structured Modules

MODE

Classroom + hands-on lab

BATCHES

Weekday · Weekend · Fast-track

CERTIFICATION

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

Who Should Join

- ✓ Students exploring embedded careers
- ✓ Freshers preparing for interviews
- ✓ Hobbyists

What You'll Be Able To Do

- ✓ Write C programs confidently
- ✓ Program one microcontroller end-to-end
- ✓ Interface basic peripherals

Eligibility: Diploma or degree student in electronics, electrical or computer science.

The Full Syllabus

2 modules, 90 hours.

01

C Programming

50 Hrs

02

Microcontroller (any one: PIC / Arduino / STM32 / ESP32)

40 Hrs

Total Training Duration

90 Hours

Module-by-Module Topics

MODULE 01

50 Hrs

C Programming

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

MODULE 02

40 Hrs

Microcontroller (any one: PIC / Arduino / STM32 / ESP32)

- LED, switch, 7-segment (1d-8d) & keypad
- LCD, relays & motors
- ADC, timers (0/1/2), PWM & interrupts
- UART, SPI & I2C protocols

Tools, Projects & Assessment

Tools & Technologies You'll Use

GCC

Arduino IDE / MPLAB / STM32CubeIDE

Proteus

Projects You'll Build

1

Peripheral interfacing mini-project

■ 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 Embedded Professional (CEP) 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

Embedded Software / Firmware Engineer

Writes firmware for microcontroller-based products.

2

Embedded Hardware Engineer

Designs and tests circuits and boards.

3

Embedded Test / Validation Engineer

Tests firmware and hardware against requirements.

4

IoT Developer

Builds connected devices and cloud links.

5

Device Driver / Linux Engineer

Develops drivers and board support.

6

Field Application Engineer

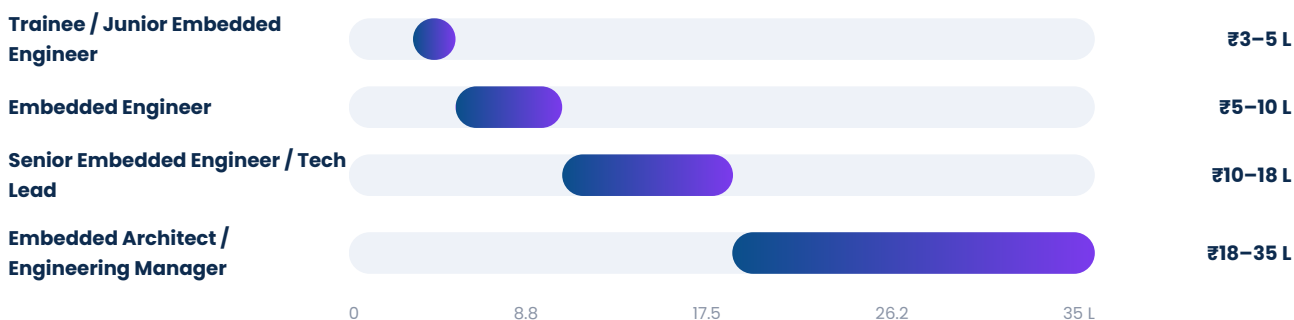
Supports customers using electronic components.

Good to know: Certified Embedded Professional (CEP) is a focused short course and a strong starting point for these roles; most learners reach them fastest by continuing with **Certified Embedded Design Professional (CEDP)**.

■ Your Growth Ladder

STAGE 01 0–2 YRS	Trainee / Junior Embedded Engineer Write and test firmware modules.	₹3 – 5 LPA
STAGE 02 2–5 YRS	Embedded Engineer Own firmware for products and features.	₹5 – 10 LPA
STAGE 03 5–8 YRS	Senior Embedded Engineer / Tech Lead Architect firmware and lead teams.	₹10 – 18 LPA
STAGE 04 8+ YRS	Embedded Architect / Engineering Manager Own platforms and product engineering.	₹18 – 35 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

- ✓ Embedded Linux & Yocto
- ✓ RTOS internals
- ✓ ARM Cortex-M in depth
- ✓ Debugging with JTAG & logic analysers
- ✓ C++ for embedded

■ Certifications to Target

- ✓ NSDC-aligned embedded certification
- ✓ ARM accredited engineer (later career)
- ✓ Embedded Linux training
- ✓ MISRA C awareness

■ Upgrade Path at IPCS Global

1 Certified Embedded Design Professional (CEDP)

2 Advanced Embedded Systems Program (CESE)

■ 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 Trainee / Junior Embedded Engineer.

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.

PROGRAMME 07 OF 08 · SHORT COURSE

Embedded C Programming (ECP)

Master C and Embedded C — the language behind every microcontroller.

30 Days

90 Hours

2 Modules

2 Projects

Classroom + hands-on lab

Part A · Course Details

Program Overview

A focused 30-day course on C programming and Embedded C: memory, pointers, bit manipulation, registers and coding practices used in firmware development.

DURATION

30 Days

TRAINING HOURS

90 Hours

MODULES

2 Structured Modules

MODE

Classroom + hands-on lab

BATCHES

Weekday · Weekend · Fast-track

CERTIFICATION

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

Who Should Join

- ✓ Engineering students
- ✓ Freshers preparing for embedded interviews
- ✓ Programmers moving to firmware

Eligibility: Any engineering or science student.

What You'll Be Able To Do

- ✓ Solve problems in C
- ✓ Use pointers, structures and memory correctly
- ✓ Write register-level Embedded C
- ✓ Crack C-based interview rounds

The Full Syllabus

2 modules, 90 hours.

01

C Programming

55 Hrs

02

Embedded C

35 Hrs

Total Training Duration

90 Hours

Module-by-Module Topics

MODULE 01

55 Hrs

C Programming

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

MODULE 02

35 Hrs

Embedded C

- Registers & memory-mapped I/O
- Bit manipulation & masks
- Volatile, const & storage classes
- Embedded coding standards (MISRA intro)

Tools, Projects & Assessment

Tools & Technologies You'll Use

GCC

VS Code

Keil / MPLAB

Proteus

Projects You'll Build

1

C problem-solving set

2

Register-level LED/timer program

■ 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 Embedded C (ECP) 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

Embedded Software / Firmware Engineer

Writes firmware for microcontroller-based products.

2

Embedded Hardware Engineer

Designs and tests circuits and boards.

3

Embedded Test / Validation Engineer

Tests firmware and hardware against requirements.

4

IoT Developer

Builds connected devices and cloud links.

5

Device Driver / Linux Engineer

Develops drivers and board support.

6

Field Application Engineer

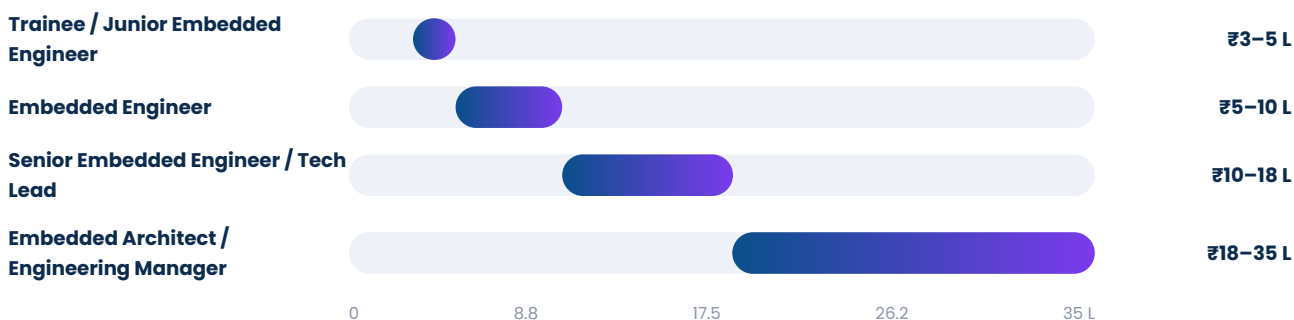
Supports customers using electronic components.

Good to know: Embedded C Programming (ECP) is a focused short course and a strong starting point for these roles; most learners reach them fastest by continuing with **Certified Embedded Professional (CEP)**.

■ Your Growth Ladder

STAGE 01 0–2 YRS	Trainee / Junior Embedded Engineer Write and test firmware modules.	₹3 – 5 LPA
STAGE 02 2–5 YRS	Embedded Engineer Own firmware for products and features.	₹5 – 10 LPA
STAGE 03 5–8 YRS	Senior Embedded Engineer / Tech Lead Architect firmware and lead teams.	₹10 – 18 LPA
STAGE 04 8+ YRS	Embedded Architect / Engineering Manager Own platforms and product engineering.	₹18 – 35 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

- ✓ Embedded Linux & Yocto
- ✓ RTOS internals
- ✓ ARM Cortex-M in depth
- ✓ Debugging with JTAG & logic analysers
- ✓ C++ for embedded

■ Certifications to Target

- ✓ NSDC-aligned embedded certification
- ✓ ARM accredited engineer (later career)
- ✓ Embedded Linux training
- ✓ MISRA C awareness

■ Upgrade Path at IPCS Global

1 **Certified Embedded Professional (CEP)**

2 **Certified Embedded Design Professional (CEDP)**

■ 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 Trainee / Junior Embedded Engineer.

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.

Junior Robotics Master Program

A beginner-friendly introduction to electronics, Arduino, sensors and robotics.

30 Days

60 Hours

5 Modules

3 Projects

Classroom + hands-on lab

Part A · Course Details

Program Overview

A fun, hands-on programme that introduces young learners to electronics, digital logic, Arduino programming, sensors and communication, using virtual labs like Proteus, Wokwi, Tinkercad and Fritzing before building real circuits.

DURATION**30 Days****TRAINING HOURS****60 Hours****MODULES****5 Structured Modules****MODE****Classroom + hands-on lab****BATCHES****Weekday · Weekend · Fast-track****CERTIFICATION****Govt.-accredited (NSDC) +
IPCS**

Who Should Join

- ✓ School students (Class 8–12)
- ✓ First-year college students
- ✓ Parents looking for a STEM programme
- ✓ Absolute beginners

What You'll Be Able To Do

- ✓ Understand basic and power electronics
- ✓ Build circuits in virtual and real labs
- ✓ Program an Arduino
- ✓ Build simple sensor-driven robots

Eligibility: No prior knowledge needed. Curiosity required!

The Full Syllabus

5 modules, 60 hours.

01	Basic Electronics & Power Electronics	12 Hrs
02	Digital Electronics Fundamentals	10 Hrs
03	Microcontroller & Arduino Programming	18 Hrs
04	Sensors, Peripherals & Communication Basics	12 Hrs
05	Circuit Simulation & Virtual Labs	8 Hrs

Total Training Duration

60 Hours

Module-by-Module Topics

MODULE 01

12 Hrs

Basic Electronics & Power Electronics

- Voltage, current & components
- Batteries & power supplies

MODULE 02

10 Hrs

Digital Electronics Fundamentals

- Logic gates
- Binary numbers

MODULE 03

18 Hrs

Microcontroller & Arduino Programming

- Arduino basics
- LEDs, buttons & motors
- Simple robot logic

MODULE 04

12 Hrs

Sensors, Peripherals & Communication Basics

- IR, ultrasonic & light sensors
- Bluetooth control

MODULE 05

8 Hrs

Circuit Simulation & Virtual Labs

- Proteus, Wokwi, Tinkercad, Fritzing

Tools, Projects & Assessment

Tools & Technologies You'll Use

Arduino UNO

Tinkercad

Wokwi

Proteus

Fritzing

Robot kit

■ Projects You'll Build

- 1 **Line-follower robot**
- 2 **Obstacle-avoiding robot**
- 3 **Bluetooth-controlled car**

■ 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 Junior Robotics Master Program Can Take You

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

■ Where This Journey Can Lead

1

Young Maker / Innovator

Builds projects for school exhibitions and competitions.

2

Robotics Competition Participant

Competes in robotics and STEM contests.

3

Future Embedded Engineer

Designs smart electronic products.

4

Future Robotics Engineer

Builds robots and automation systems.

5

Future IoT Developer

Creates connected smart devices.

6

Future Tech Entrepreneur

Turns ideas into products.

For parents & students: this programme builds curiosity and a strong foundation early. Salary figures apply only once a learner completes higher studies and begins a professional career.

■ Pathway From Young Learner to Engineer

STAGE 01 SCHOOL	Young Maker Build Arduino projects and join STEM competitions.	
STAGE 02 COLLEGE	Engineering / Diploma student Choose ECE, EEE, Mechatronics or CSE and keep building.	
STAGE 03 FINAL YEAR	Embedded / Robotics Intern Gain internship and project experience.	
STAGE 04 CAREER START	Embedded / Robotics Engineer Start a professional career in electronics.	₹3 – 5 LPA

■ Skills to Add Next

- ✓ Python basics
- ✓ 3D design & printing
- ✓ Advanced Arduino & ESP32
- ✓ Basic C programming
- ✓ Problem-solving & teamwork

■ Certifications to Target

- ✓ IPCS Junior Robotics certificate
- ✓ Robotics olympiads & competitions
- ✓ School science exhibitions
- ✓ Next: Embedded C Programming (ECP)

■ Upgrade Path at IPCS Global

1	Embedded C Programming (ECP)
2	Certified Embedded Professional (CEP)



■ Tips for Parents & Students

- ✓ Keep building small projects at home — consistency matters more than complexity.
- ✓ Take part in school science fairs and robotics competitions.
- ✓ Learn basic C and Python alongside school studies.
- ✓ Choose ECE, EEE, Mechatronics or CSE in higher studies to turn the hobby into a career.

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.

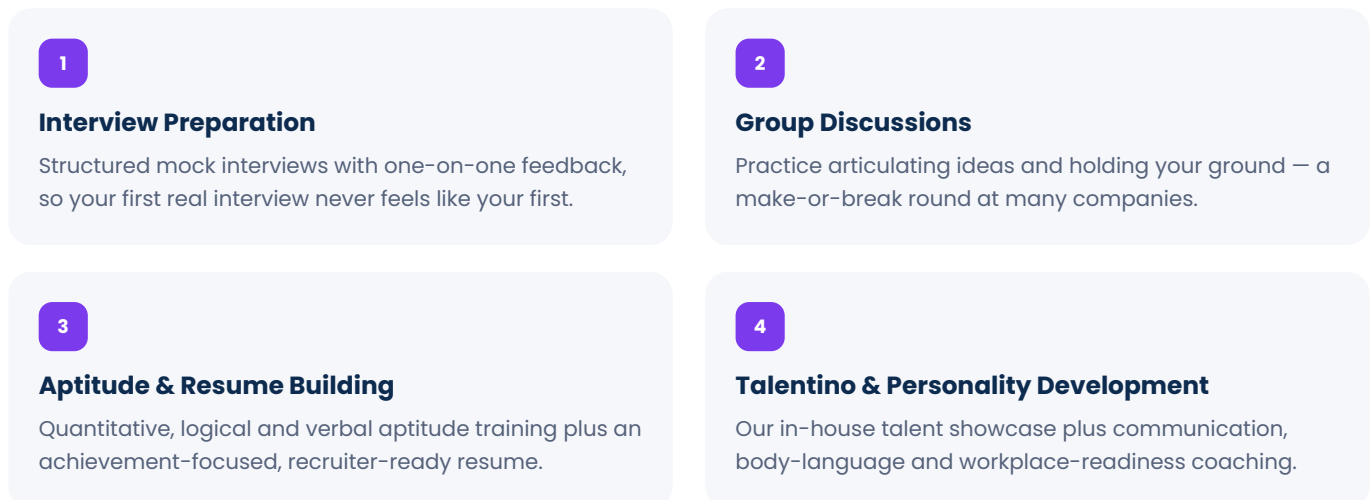
Our Learning Method



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

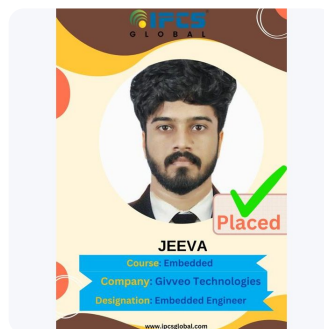
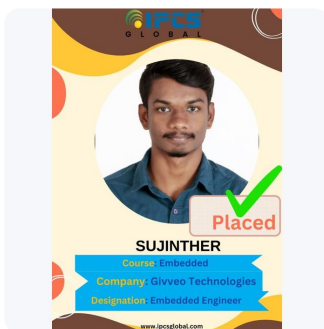
Quantitative, logical and verbal aptitude plus group discussion practice.

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?

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2

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3

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