



DURATION
240+ Hours

EMBEDDED SYSTEMS & IOT

COURSE & CAREER GUIDE · 2026

Automotive Embedded System Design Program

Course Details & Career Growth Guide

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

240 Training Hours

10 Modules

4 Hands-On Projects

Career Roles & Salary Ladder

Placement Support

CONTENTS

What's Inside

INTRODUCTION

About IPCS Global & the Embedded Systems & IoT Stream	3
Industry Outlook & Where You Can Work	4

PART A – COURSE DETAILS

Program Overview, Key Facts & Eligibility	5
The Full Syllabus	6
Module-by-Module Topics	6
Tools, Projects & Assessment	7

PART B – CAREER GROWTH

Job Roles You'll Be Ready For	8
Growth Ladder & Salary Progression	9
Skills, Certifications & Upgrade Path	9

TRAINING, CERTIFICATION & PLACEMENT

How We Train, Certification & Career-Readiness	11
How IPCS Global Gets You Hired	12
Why IPCS Global & Meet Our Team	13
Frequently Asked Questions	14
Contact & How to Enrol	15

Programme Highlights

240 Hours

240+ Hours 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

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

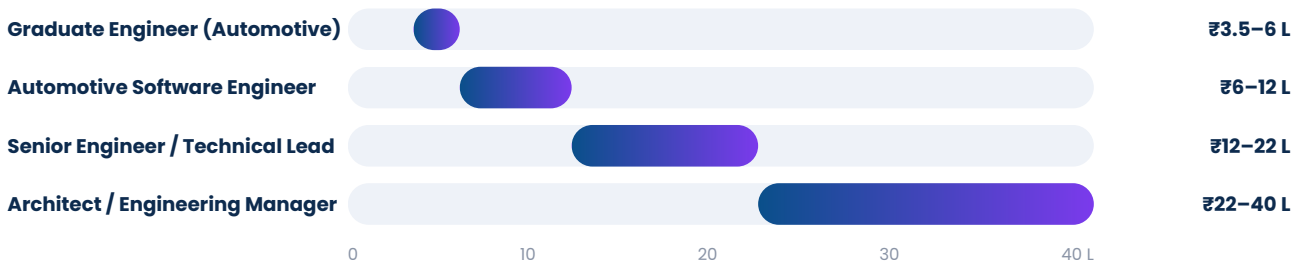
Functional Safety Engineer (junior)

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.

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.

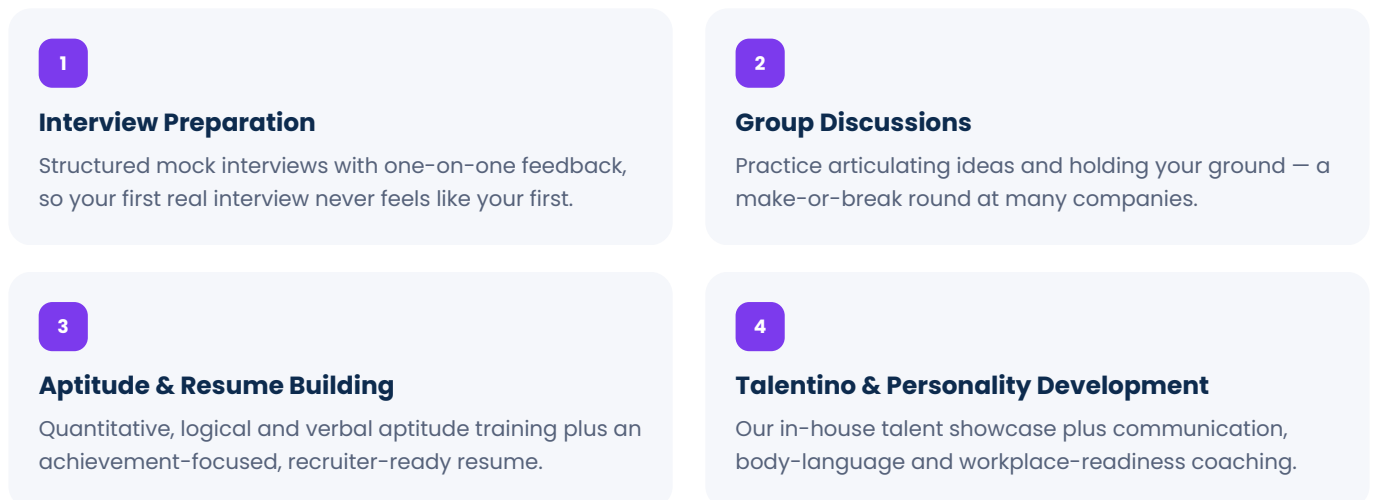
Our Learning Method



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

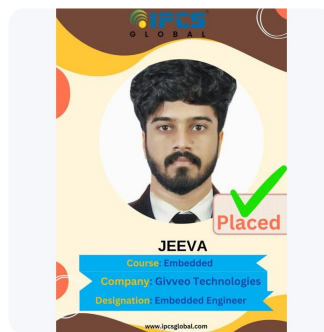
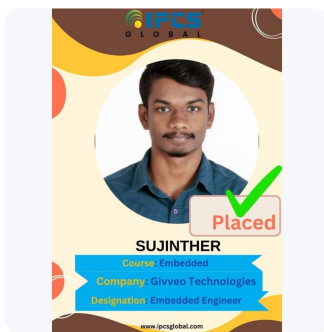
Quantitative, logical and verbal aptitude plus group discussion practice.

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 –
641004

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.