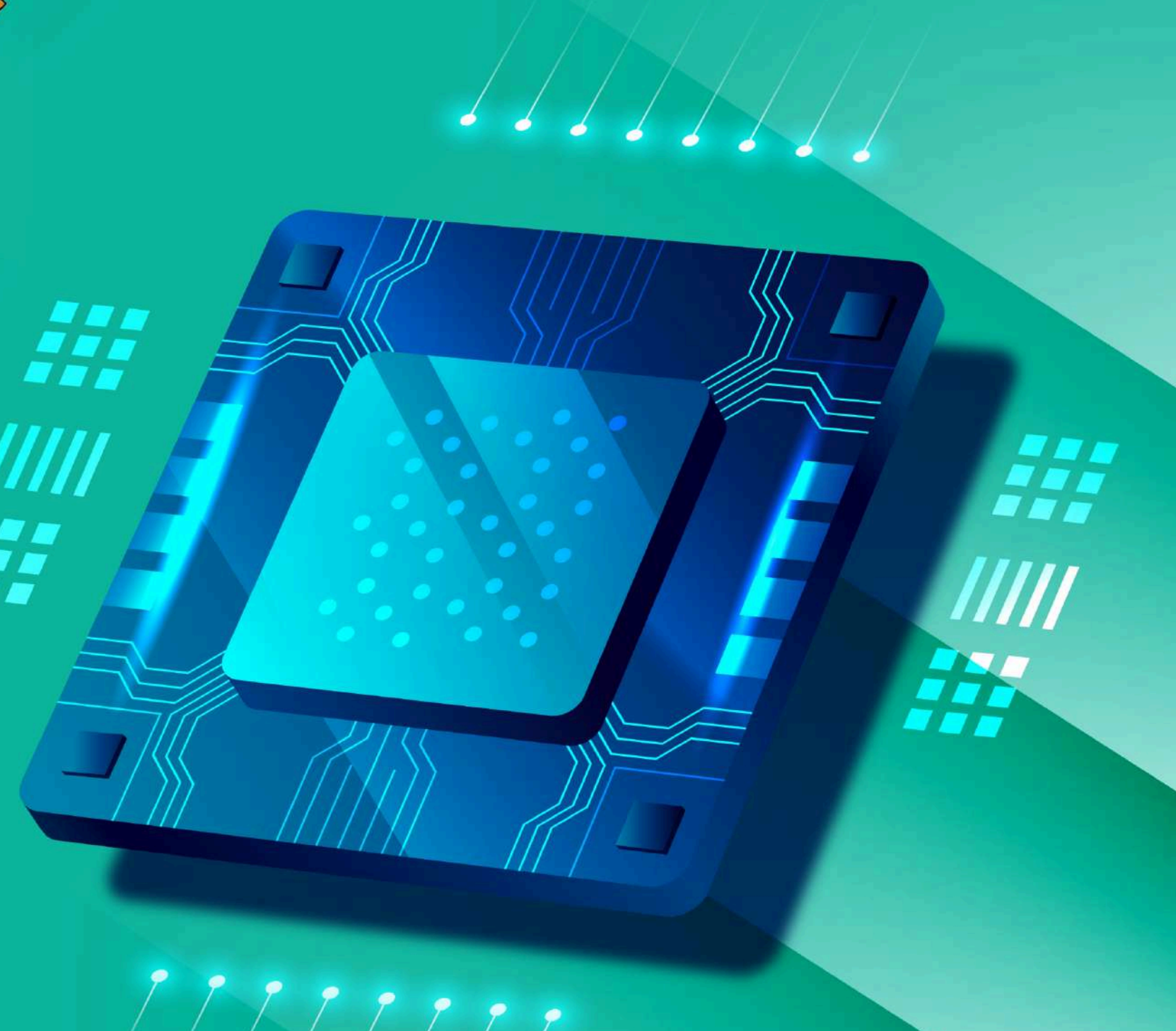
LEARN FLU
upskilling the path to your success



Empower Excel Elevate

10 Weeks Program in

EMBEDDED SYSTEMS

Integrated with Top experts from MNCs

ABOUT COMPANY

An Idea of learning and upskilling every single day for the hope of a better tomorrow.

LearnFlu is nothing but an Idea.An Idea of learning and upskilling every single day for the hope of a better tomorrow. LearnFlu is also a disease, which every being alive wishes to have. A disease of learning something new and interesting for the growth they desire

- 01 REGISTRATION
- 02 LMS ACCOUNT ACTIVATION
- 03 8 WEEKS TRAINING
- 04 2 WEEKS PROJECTS
- 05 RESUME BUILDING
- 06 CARRIER GUIEDNESS PROGRAM
- 07 PLACEMENT ASSISTANCE
- 08 SUCCESS

WE OFFER

PROGRAM STRUCTURE

ELIGIBILITY
NO PRIOR EXPERIENCE REQUIRED TO CHOOSE YOUR DESIRED PROGRAM

TRAINING
- Self-Driven
- Hybird Driven
- Mentor Driven
- 40+ hrs Contents
- Life Time Access
- For LMS Portal

INDUSTRIAL PROJECT
- 8 Practical Assesments
- 1 Major Industrial Project

POST TRANING
- Course completion Certificate
- Intership Completion Certificate
- Credit Validation Report
- LOR (Letter of Recommendation)

ADD-ONS
- Jobs Assistance
- Mock Interview
- Resume Building
- Linkdeln Optimization
- Access to Our Placements Community

PROGRAM HIGHLIGHTS

WHY THIS PROGRAM IS YOUR BEST CHOICE

- 01 LIVE INTERACTIVE SESSIONS WITH INDUSTRY EXPERTS
- 02 MENTOR-DRIVEN SPRINT-BASED REAL-WORLD TEAM PROJECTS
- 03 LIVE MENTORSHIP
- 04 PERSONALISED MENTORSHIP AND CAREER GUIDANCE
- 05 CAREER ASSISTANCE
- 06 DOUBLE CERTIFICATION & CREDIT REPORT
- 07 PLACEMENT ASSISTANCE

COURSE CURRICULUM

BASIC | INTERMIDIATE | ADVANCE | PROJECTS

WEEK 1 · WEEK 2 · WEEK 3 · WEEK 4 · WEEK 5 · WEEK 6 · WEEK 7 · WEEK 8 · WEEK 9 · WEEK 10

Curriculum Summary: > Total Modules: 8 > Total Chapters: 24 > Total Hours: 36 hours

Embedded Systems Curriculum. covers foundational topics such as microcontroller architecture, peripheral interfacing, embedded C programming, real-time operating systems (RTOS), and power management. The course ends with a capstone project, giving students hands-on experience in designing and implementing an embedded system from scratch.

Module 1: Introduction to Embedded Systems

Chapter 1: Overview of Embedded Systems
- Definition and characteristics of embedded systems
- Embedded systems applications in various industries
- General architecture of embedded systems: hardware and software

Chapter 2: Microprocessors vs. Microcontrollers .
- Differences between microprocessors and microcontrollers
- Embedded system components: CPU, memory, input/output (I/O)
- Selecting microcontrollers for embedded applications

Chapter 3: Embedded System Design Process
- Design requirements and constraints
- Steps in the embedded system design process
- Importance of hardware-software co-design

Module 2: Introduction to Microcontrollers

Chapter 1: Microcontroller Architecture
- Internal structure and architecture of microcontrollers
- Core components: CPU, RAM, ROM, timers, and peripherals
- Popular microcontroller families (AVR, ARM Cortex, PIC, etc.)

Chapter 2: ATmega328 Microcontroller ..
- Overview of ATmega328 and its applications
- Pin configuration and functionality of ATmega328
- Introduction to basic programming for ATmega328

Chapter 3: ARM Cortex Microcontrollers ..
- Introduction to ARM Cortex-M series
- Features and architecture of ARM microcontrollers
- Comparison between 8-bit and 32-bit microcontrollers

Module 3: Programming Embedded Systems

Chapter 1: Embedded C Programming
- Basics of embedded C programming
- Structure of an embedded C program
- Writing programs for basic I/O operations (LED, switches)

Chapter 2: Interrupts and Timers
- Introduction to interrupts in microcontrollers
- Handling interrupts and prioritisation
- Using timers and counters for time-sensitive tasks

Chapter 3: Peripheral Programming
- Introduction to serial communication (UART, SPI, I2C)
- Interfacing external devices (sensors, displays)
- Programming peripherals: ADC, PWM, GPIO

Module 4: Real-Time Operating Systems (RTOS) .

Chapter 1: Introduction to RTOS
- What is a Real-Time Operating System (RTOS)?
- Types of RTOS: Hard, soft, and firm real-time systems
- RTOS vs bare-metal programming

Chapter 2: RTOS Concepts: Tasks, Scheduling, and Multithreading
- Basic concepts of tasks, threads, and processes in RTOS
- Scheduling algorithms: Round-robin, pre-emptive, priority-based scheduling
- Context switching and multitasking

Chapter 3: Task Synchronisation and Communication
- Task synchronization techniques: Semaphores, mutexes, and message queues
- Inter-task communication methods
- Implementing RTOS in embedded applications (using FreeRTOS)

Module 5: Interfacing Sensors and Actuators

Chapter 1: Introduction to Sensors and Actuators
- Types of sensors: analog and digital sensors
- Understanding actuators: motors, relays, servos
- Interfacing sensors and actuators with microcontrollers

Chapter 2: Interfacing Digital and Analog Sensors
- Interfacing temperature, humidity, and pressure sensors
- Using ADC for reading analog sensors
- Calibrating and processing sensor data in microcontrollers

Chapter 3: Actuators and Control Systems
- Controlling DC motors and servos using PWM
- Designing control systems using microcontrollers
- Real-world applications of sensors and actuators (robotics, automation)

Module 6: Communication Protocols and Networking

Chapter 1: Serial Communication
- Introduction to UART, I2C, and SPI communication protocols
- Configuring and using serial communication in microcontrollers
- Sending and receiving data between microcontrollers and peripherals

Chapter 2: Wireless Communication
- Overview of wireless communication protocols: Bluetooth, Wi-Fi, Zigbee
- Interfacing microcontrollers with wireless modules
- Implementing wireless communication in embedded applications

Chapter 3: Networking in Embedded Systems
- Basics of networking for embedded devices
- Introduction to IoT protocols: MQTT, HTTP, CoAP
- Connecting embedded systems to the cloud

Module 7: Power Management and Optimization

Chapter 1: Power Consumption in Embedded Systems
- Overview of power consumption in embedded devices
- Factors affecting power usage: clock speed, voltage, etc.
- Power profiles of different microcontroller families

Chapter 2: Power Optimization Techniques
- Low-power modes: sleep, idle, and standby modes
- Optimising code and hardware for power efficiency
- Design considerations for battery-powered embedded devices

Chapter 3: Energy Harvesting and Battery Management
- Basics of energy harvesting techniques
- Battery management systems (BMS) in embedded systems
- Practical techniques for designing low-power embedded systems

Module 8: Embedded System Design and Final Project

Chapter 1: Embedded System Design Considerations
- Key design considerations: cost, performance, and scalability
- Trade-offs in selecting microcontrollers and peripherals
- Embedded system development life cycle: from concept to product

Chapter 2: Testing and Debugging Embedded Systems
- Methods for testing embedded systems (hardware and software)
- Debugging tools: JTAG, in-circuit emulators, and logic analyzers
- Writing and running test cases for embedded applications

Chapter 3: Capstone Project: Designing an Embedded System
- Capstone project: building a fully functional embedded system
- Designing hardware and software components
- Demonstrating and presenting the final project

2 Weeks Major Projects

Jobs You Can Apply

- Embedded Systems Engineer, ₹5–12 LPA
- Firmware Developer,₹6–14 LPA
- Embedded Linux Developer , ₹6–15 LPA
- IoT Developer ,₹5–10 LPA
- Hardware Design Engineer ,₹5–12 LPA
- Control Systems Engineer , ₹6–14 LPA.

Projects

- Lightweight Wearable Fall Detection System for the Elderly
- Real-Time Fault Detection in Photovoltaic Modules
- Digital Twin Technology for Smart Building Energy Management

TOOL BOX

Visual Studio

MATLAB

LabVIEW

MEET YOUR MENTOR

Vamsi
Company : Google
Experience : 5+ years

Vamsi is a seasoned mentor with an impressive 5+ years of experience in Google and a notable presence in more than 2 multinational corporations. Specializing in the field of cloud computing, Vamsi has contributed his expertise to the successful completion of 20+ projects, with a remarkable individual accomplishment of leading over 2 projects. Beyond technical excellence, he is recognized for his strong leadership qualities. Vamsi commitment to knowledge transfer is evident through his role in training employees across different companies, further solidifying his reputation as a mentor who not only delivers outstanding results but also nurtures and develops talent within the data engineering domain.

PLACEMENT SERVICES

REACH YOUR DREAM JOB :
AT LEARNFLU, WE ARE DEEPLY COMMITTED TO YOUR LEARNING JOURNEY AND DEDICATED TO YOUR CAREER SUCCESS. OUR COMPRE- HENSIVE PLACEMENT SERVICES ARE TAILORED TO EQUIP YOU WITH THE SKILLS, CONFIDENCE, AND CONNECTIONS NECESSARY TO SECURE YOUR DREAM TECH JOB

RESUME PREPARATION :
CRAFT A STANDOUT RESUME WITH EXPERT GUIDANCE TO EFFECTIVELY HIGHLIGHT YOUR SKILLS AND EXPERIENCE, ENSURING YOU CATCH THE ATTENTION OF RECRUITERS.

SOFT SKILL PREPARATION :
ELEVATE YOUR COMMUNICATION, TEAMWORK, AND LEADERSHIP ABILITIES WITH ENGAGING LIVE SESSIONS AND CUSTOMIZED FEEDBACK, DESIGNED TO HELP YOU EXCEL IN ANY PROFESSIONAL SETTING.

HIRING PARTNERS & CAREER PORTAL :
GAIN ACCESS TO LEADING TECH COMPANIES THROUGH OUR EXTENSIVE NETWORK OF HIRING PARTNERS AND OUR EXCLUSIVE CAREER PORTAL, DESIGNED TO CONNECT YOU WITH YOUR IDEAL JOB OPPORTUNITIES..

MENTORSHIP
GAIN HANDS-ON EXPERIENCE THROUGH INTERNSHIPS ANDMENTORED PROJECTS, EARNING AN INDUSTRY CERTIFICATE

ADDITIONAL SERVICES

Linkedin optimization
Optimizing your LinkedIn profile can greatly enhance your professional online presence and increase your

Career Guidance
Career guidance plays a vital role in helping individuals navigate the complex and often challenging world of work.

Career Opportunities
Career opportunities are essential as they provide pathways for personal and professional growth, financial stability, and the fulfillment of individual potential and aspirations.

Hands-on experience
The importance of hands-on experience, especially in the context of professional development and education, is very substantial to land your first Job.

Personality Development
Personality development is crucial as it enhances overall personal growth, fosters confidence, and improves interpersonal skills, leading to success in both personal and professional life.

CREDIT VALIDATION REPORT

CERTIFICATE
OF APPRECIATION
PROUDLY PRESENTED TO
Name Surname
This is to certify that [Student's Name] has successfully completed [Program Name] from dd/mm/yy till dd/mm/yy, having earned a total of [xyz] credits.

THEORY / SESSION	: XX / 60
TUTORIALS	: XX / 30
LABORATORY / PRACTICAL	: XX / 60
TOTAL CREDITS	: XX / 60

Total Credits Obtained : 140
Grades Obtained : x

SIGNATURE

COURSE COMPLETION CERTIFICATE

CERTIFICATE
OF APPRECIATION
PROUDLY PRESENTED TO
Name Surname
This is to certify that [Student's Name] has successfully completed[Program Name] from dd/mm/yy till dd/mm/yy.
During this course, the student has found to be keen & enthusiastic Candidate
DATE SIGNATURE
अखिल भारतीय तकनीकी शिक्षा परिषद्
All India Council for Technical Education

INTERNSHIP COMPLETION CERTIFICATE

CERTIFICATE
OF APPRECIATION
PROUDLY PRESENTED TO
Name Surname
This is to certify that [Student's Name] has successfully completed[Program Name] from dd/mm/yy till dd/mm/yy.
During this course, the student has found to be keen & enthusiastic Candidate
DATE SIGNATURE
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अखिल भारतीय तकनीकी शिक्षा परिषद्
All India Council for Technical Education

STUDENTS REVIEWS

Sravan ★★★★★
Very good internship program. My mentors are teaching me more technical stuff. I also recommend my friends to do this internship.

Vasavi ★★★★
This is the best internship provider with major projects with best experienced mentors.

Sarvani ★★★★★
This is the best internship and training provider company with 100% job assistance

Raghu Roy ★★★★
This is the best internship provider with major projects with best experienced mentors.

Aradhana ★★★★★
"Learnflu seamlessly merges education and technology, offering a dynamic platform for immersive learning experiences. With innovative tools and engaging content,Learnflu elevates the educational landscape."

Kashish Yadav ★★★★★
Very good internship program. My mentors are teaching me more technical stuff. I also recommend my friends to do this internship.

Dinakaran ★★★★
Thank you so much learnflu for giving this wonderful opportunity and developed my knowledge.

Aju Koshan ★★★★★
I enrolled for web Data Analysis Program for April batch and yesterday was my induction session and Session was so good and the mentor Syed Aleem have given very insightful Information about this internship and Training Programme and I am very much excited regarding the program

Priya ★★★★
This is a very good learning platform which offers students training and internship program

OUR ALUMNI WORKS AT

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