

Diploma in Embedded Systems

Offline
Online

4 Months

Gain Real Project Experience & Placement

Modules

Programming in c

- Learn C Programming from Scratch
- Hands-on Coding with Real Examples
- Build Strong Foundation for Embedded Systems

Data Structures & Algorithms

- Arrays
- Linked Lists
- Stacks
- Queues
- Trees
- Searching & Sorting Algorithms

Basic Electronics

- Digital
- Analog
- Communication

Embedded - C With ARM Cortex - M3

- Embedded C
- ARM Cortex-M3

Unix / Linux Shell Programming

- Basic Shell Commands & File Management
- Shell Scripting & Automation
- Process and System Management in Linux

Networking

- Linux Kernel Architecture Basics
- Device Driver & Kernel Module Concepts
- Linux Networking & Socket Programming



100% Placement Assistance

Placement Assistance

- Resume Building & Profile Preparation
- Mock Interviews & Technical Interview Training
- Job Referrals with Embedded Companies
- Dedicated Placement **till 1 Year**



Program Takeaway

Program Takeaway

- Strong Foundation in Embedded Systems & Programming
- Hands-on Experience with Real-Time Projects
- Industry-Ready Skills with Placement Assistance



Project Based Training

Project Based Training

- Work on Real-Time Embedded Projects
- Hands-on Hardware & Programming Practice
- Practical Industry-Oriented Learning



Hiring Domains

Hiring Domains

- Aerospace & Automotive
- IOT & Defence
- Semiconductor & EV Vehicles
- Wireless
- IT Services

~~₹ 45,000~~

₹ 29,000

1 C Programming

✓ prerequisite

- Basic knowledge of Computer Fundamental.

☰ module outline

- | | | | |
|---------------------|-------------------|------------------|----------------------|
| • Environment Setup | • Decision Making | • Unions | • Error Handling |
| • Program Structure | • Loops | • Bit Fields | • Recursion |
| • Basic Syntax | • Functions | • Typedef | • Variable Arguments |
| • Data Types | • Scope Rules | • Input & Output | • Memory Management |
| • Variables | • Arrays | • File I/O | • Command Line |
| • Constants | • Pointers | • Preprocessors | • Arguments |
| • Storage Classes | • Strings | • Header Files | |
| • Operators | • Structures | • Type Casting | |

☐ projects

- Mini project

2 Data Structures & Algorithms

✓ prerequisite

- basic understanding of C programming language, text editor, and execution of programs

☰ module outline

- | | | | |
|--------------------------|-----------------------------|---------------------------|----------------------------|
| Overview | Stack & Queue | Sorting Techniques | Tree Data Structure |
| Environment Setup | • Stack | • Sorting Algorithms | • Tree Data Structure |
| Algorithm | • Expression Parsing | • Bubble Sort | • Tree Traversal |
| • Algorithms Basics | • Queue | • Insertion Sort | • Binary Search Tree |
| • Asymptotic Analysis | Searching Techniques | • Selection Sort | • AVL Tree |
| • Greedy Algorithms | • Linear Search | • Merge Sort | • Spanning Tree |
| • Divide and Conquer | • Binary Search | • Shell Sort | • Heap |
| • Dynamic Programming | • Interpolation Search | • Quick Sort | Recursion |
| Data Structures | • Hash Table | • Graph Data Structure | • Recursion Basics |
| • Data Structure Basics | Linked Lists | • Depth First Traversal | • Tower of Hanoi |
| • Array Data Structure | • Linked List Basics | • Breadth First Traversal | • Fibonacci Series |
| | • Doubly Linked List | | |
| | • Circular Linked List | | |

3 Basic Electronics

✓ prerequisite

- Basic knowledge of Electronics fundamental.

☰ module outline

Digital

- Number conversion Addition and subtraction Logic gates
- Combinational design Encoder Decoder Multiplexer De multiplexer
- Sequential design Flip-flops Shift register Counters

Analog

- Semi-conductors
- Diodes
- Transistors and subtraction
- Logic gates
- BJT Basic theorems { kvl, kcl, thevenin and Norton's theorem}
- Op-amp
- ADC,DAC

Communication

- Amplitude modulation Frequency modulation
- Phase modulation
- ASK and FSK modulators
- GPS
- Bluetooth ZIG-BEE
- WIFI

4 Embedded C with ARM - 7

✓ prerequisite

- C programming and Embedded C

☰ module outline

- ARM evaluation system
- Interfacing ADC and DAC
- Interfacing LED and PWM
- Interfacing real time clock & serial port

- Interfacing keyboard and LCD
- Interfacing EPROM and interrupt
- Mailbox
- Interrupt performance characteristics of ARM and FPGA.

- Flashing of LEDs.
- Interfacing stepper motor and temperature sensor.
- Implementing zigbee protocol with ARM.

☐ projects

- Mini project

5 Unix / Linux Shell Programming

✓ prerequisite

- Programming in C and data Structure

☰ module outline

- For Beginners
- Home
- Getting Started
- File Management
- Directories
- File Permission
- Environment
- Basic Utilities
- Pipes & Filters
- Processes
- Communication
- The vi Editor
- Shell Programming
- Shell Scripting
- What is Shell?
- Using Variables
- Special Variables
- Using Arrays
- Basic Operators
- Decision Making
- Shell Loops
- Loop Control
- Shell Substitutions
- Quoting Mechanisms
- IO Redirections
- Shell Substitutions
- Shell Functions
- Manpage Help
- Advanced Unix / Linux
- Regular Expressions
- File System Basics
- User Administration
- System Performance
- System Logging
- Signals and Traps



6 Networking

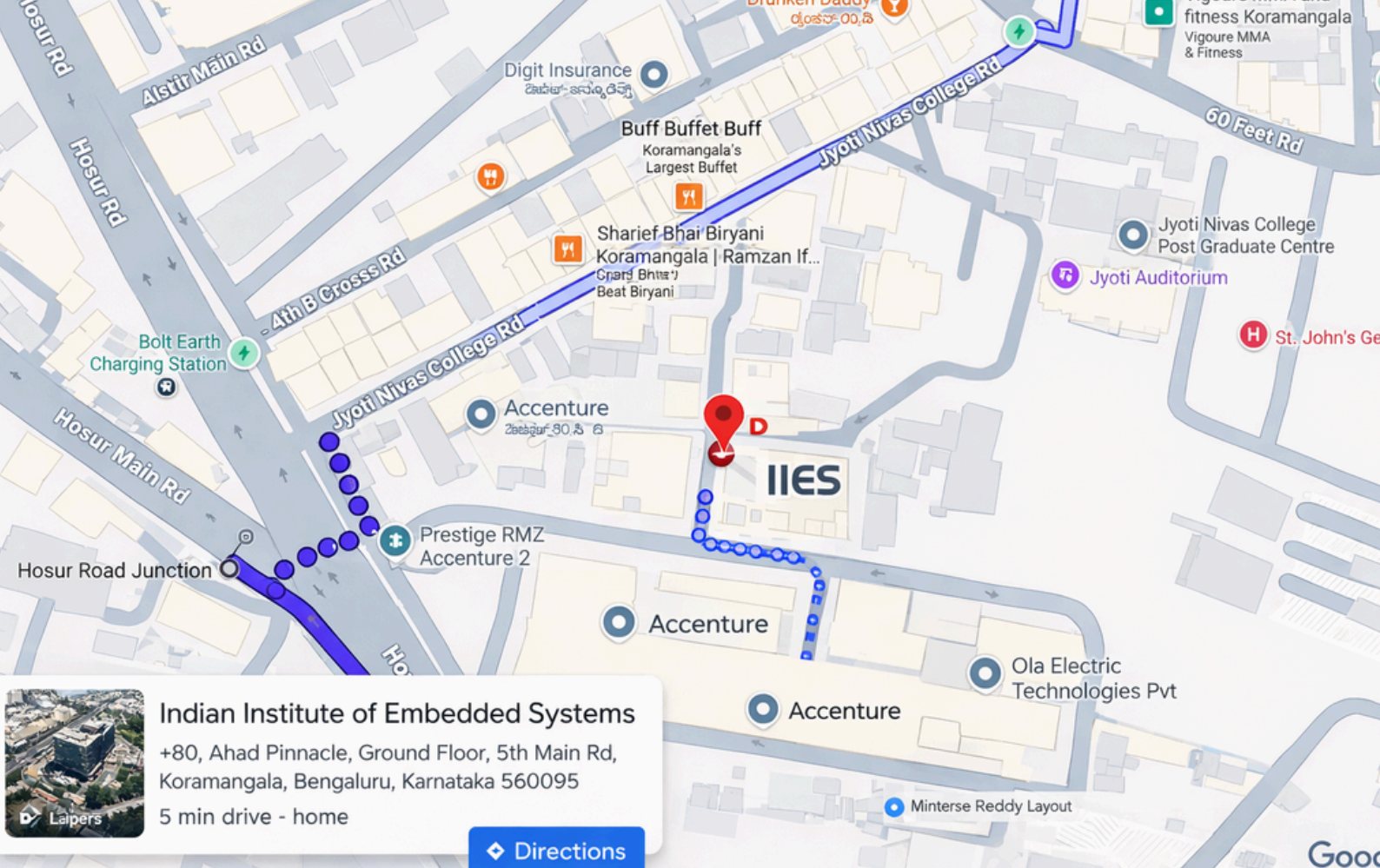
✓ prerequisite

- Knowledge of Linux

☰ module outline

- Introduction
- Features
- Architecture
- Components
- Computer Network
- Types
- Topologies
- Transmission Modes
- Models
- Models
- OSI Model
- TCP/IP Model
- Physical Layer
- Digital Transmission
- Transmission Media
- Guided Media
- Unguided Media
- Multiplexing
- Switching
- Switching Modes
- Switching Techniques
- Data Link layer
- Data Link layer
- Error Detection
- Error Correction
- Data Link Controls
- Network Layer
- Network Layer
- Network Addressing
- Routing
- Network Layer Protocols
- Routing Algorithm
- Distance Vector
- Link State Routing
- Transport Layer
- Transport Layer Protocols
- Application Layer
- Client & Server Model
- Application Protocols
- DNS
- FTP
- Telnet
- SMTP
- SNMP
- HTTP
- Network Security
- Security
- Privacy
- Digital Signature
- PGP





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Indian Institute of Embedded Systems

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