**Welcome to IITS Training Factory**

At **IITS**, we are your one-stop destination for cutting-edge training in the most in-demand technologies. Our comprehensive programs in **Embedded Systems, IoT, AI, Data Science, Java, Selenium, PLC, HMI, SCADA, Control Panel, DCS, EV Vehicles, BMS, and MATLAB** are designed to equip you with the skills needed to excel in today's competitive tech and industrial automation landscape. Whether you're a student, a working professional, or a tech enthusiast, our hands-on training and industry-aligned curriculum will help you achieve your career goals.

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**Why Choose IITS?**

- **Industry-Expert Trainers**: Learn from professionals with real-world experience.
- **Hands-On Learning**: Practical sessions with live projects and case studies.
- **State-of-the-Art Labs**: Access to advanced tools and technologies.
- **Placement Assistance**: Connect with top companies for career opportunities.
- **Certification**: Get certified and boost your resume.

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**Our Training Programs**

1. **Embedded Systems**
    - Embedded C, Microcontrollers (ARM, AVR, PIC)
    - RTOS, PCB Design, and Hardware Development
2. **Internet of Things (IoT)**
    - IoT architecture, protocols, and cloud integration
    - Sensor networks and data analytics
3. **Artificial Intelligence (AI)**
    - Machine Learning, Deep Learning, and Neural Networks
    - AI applications in real-world scenarios
4. **Data Science**
    - Python, R, Data Visualization, and Statistical Analysis
    - Big Data, Machine Learning, and Predictive Modeling
5. **Java & Selenium**
    - Core Java, Advanced Java, and Selenium Automation Testing
    - Real-time projects and tools
6. **Industrial Automation**

- PLC Programming (Siemens, Allen Bradley)
- HMI, SCADA, Control Panel Design, and DCS

7. **Electric Vehicles (EV) & Battery Management Systems (BMS)**
    - EV architecture, charging systems, and BMS design
    - Hands-on training with EV components
8. **MATLAB**
    - Simulation, modeling, and data analysis
    - Applications in engineering and research

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**Key Features of Our Training**

✅ **Project-Based Learning**: Work on live projects to gain practical experience.
✅ **Flexible Batches**: Weekday and weekend batches available.
✅ **Career Guidance**: Personalized mentorship and career counseling.
✅ **Certification**: Industry-recognized certification upon completion.

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**Who Can Join?**

- Students (Engineering, Diploma, BCA, MCA, etc.)
- Working professionals looking to upskill
- Tech enthusiasts passionate about emerging technologies

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**Success Stories**

Our alumni are working with top companies like **Visteon, HCL, Wipro, pricol ,Capgemini, Tech Mahindra**,**Intel, TCS, Infosys, Bosch, Siemens, and ZF more**. Join us to be part of this success journey!

| S.No. | Course Details | Duration |
|---|---|---|
| 1. | Embedded C Course Duration | 2 to 3 Months |
| 2. | Advanced Embedded C with IOT | 5 to 6 Months |
| 3. | Data Science with AI | 2 to 3 Months |
| 4, | Java & Selenium | 2 Months |
| 5. | Diploma in Industrial Automation | 6 Months |
| 6. | Electrical Vehicle & Power Electronics and Drives : | 3 Months |

**Advanced Overview of Hardware & Electronics Devices**

- Basic Semiconductor Devices and Circuits – PN Junction, BJT and MOSFET, IGBT
- Resistor, Capacitance, Inductance, Diodes
- Practical Hans on Bread Board connections and
- PCB Board Design & Soldering practice

**Advanced Overview of Electronics Devices**

- Number Systems
- Combinational Network Design
- Interpreting the datasheet of a Logic Gate
- Designing with Mux, De mux, Decoders, Encoders,Flip Flops
- Design of Sequential Systems – Registers and Counters
- Converters -Analog to Digital (A/D), Digital to Analog (D/A)

**C Programming**

- Why C Programming in Embedded
- Structure of a C program
- The C compilation process
- Types and Operators
- Precedence & Associativity
- Arithmetic operation
- Typecasting
- Control Flow
- Logical expressions
- Decision Making
- Loops
- Definitions and Declarations
- Header files
- Scope and lifetime
- Storage Classes
- Introduction to Pointers
- Using pointers to access single dim arrays
- Bit Manipulation
- Functions – The Function as a logical program unit

- Parameter passing by copy and reference

**Advanced C Programming**

- Embedded C debugging
- Cross complier
- Arrays as circular buffers
- Relationship between pointers & arrays
- Pointer arithmetic
- C string handling
- Advanced Data types
- Structures
- Unions and Enums –Structures
- Big & Little Endian representations
- Bit-field structures
- The C Pre-Processor – Macros
- Conditional Compilation C Compilation process
- pre-processor, compiler, assembler, linker stages
- # pragma directive
- Library reference
- Memory models

**Software Development Life Cycle (SDLC):**

- Waterfall Model
- V-Model
- Spiral Model
- Agile
- Aspice for Automative domain

**Working Tools**

- KEIL
- STM32cube programmer IDE
- AVR Studio
- Arduino IDE
- Proteus 8

- Tinkercad
- Matlab
- Labview
- Jira
- Github
- IBM Doors
- PTC Integrity


**ARM Processor**

- Introduction to Embedded Systems and ARM Processor
- ARM related Companies and its opportunities
- ARM processor family
- Application of ARM Processor
- Compiler
- Emulation and Debugging
- Difference between RISC & CISC

**On Chip Peripherals, Ports: input/Output**

- Timer & Counters
- Interrupts (Internal/External)
- ADC Features
- RTC
- DAC Interfacing
- Watchdog Timer

- PWM

**Communication Protocols**

- UART/USART
- I2C
- SPI
- CAN
- LIN
- Bluetooth
- WIFI
- RFID, NFC
- IR
- GPRS, GPS
- USB

**Interfacing Devices**

- LEDs, LCD, Switches
- Seven Segment Display
- LED, LCD Display
- Keypad Matrix
- Servo Motor
- Buzzer

**Sensors:**

- Temperature & Humidity Sensor
- PIR Motion Sensor
- Gesture Sensor
- Ultrasonic Sensor
- Infrared Reflective Sensor
- 6-Axis Accelerometer & Gyroscope
- Gas Sensor

**Controllers & Development Board**

- ESP 8266 Node ECU
- ESP32
- STM32 Development Board with Flash Linker Tool
- Arduino Board
- Raspberry Pi 3,4,5

## Data Science with AI Course Details:

- Python advanced level
- ELK stack
- Grafana
- Power BI
- Zabbix

## Software Testing:

- Python Scripting
- Java Scripting Advanced Level
- Selenium

### Automotive Testing:

- vTEst Studio
- CANoe, CAN Analyzer
- Creating CAN DBC
- CAPL & Python Scripting
- Software Testing lifecycle
- CAN communication protocol

## Diploma in Industrial Automation:

- PLC Programming
- Basic of Electrical & Electronics
- Timers & Counters
- Control panel wiring
- HMI
- SCADA, DCS
- IOT

## Electrical Vehicle & Power Electronics and Drives:

- Introduction to Electric Vehicle
- Fundamental of Drives Modelling & Simulation
- DC Machine Drives and Control of EV Using DC Machine
- Basics of Power Electronics Devices
- Modelling of Power Converters
- Modelling of Power Inverters
- Simulation using MATLAB
- Speed control of Motor
- Battery Management Systems
- Real time interface and control with EV vehicle

## Live Project Training:

- For College & School Project
- Internship
- Workshop