

EMBEDDED SYSTEMS AND IOT

About Us

Adacode Solutions excels in innovative software solutions, specializing in IoT, Robotics, Cloud, Data Science, and more. Trust us as your partner for cutting-edge solutions, shaping the future of technology.

We Provide

- ✓ **Scholarship for Students**
- ✓ **Education Loan**
- ✓ **Life time Placement Support**
- ✓ **Online and Offline Classes**
- ✓ **Life time Access to course Materials**

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more info



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Industrial Experts

Developing and executing strategies that stimulate business expansion.



100% Genuine Placements

In-depth market analysis and competitive intelligence.



Interview Assistance

Talent management, leadership development, and HR strategy.



Collage Project Assistance

Optimizing financial performance, budgeting, and forecasting.



Aptitude Practice Sessions

Streamlining processes and improving operational effectiveness.



English Training

Leveraging technology for efficiency and competitive advantage.



Soft Skill Sessions

Leveraging technology for efficiency and competitive advantage.



EMBEDDED SYSTEMS AND IOT

Who Should Join This Course

- ➡ Engineers who are looking for their 1st Job
- ➡ Professionals who are working on Embedded/IoT Projects
- ➡ Anyone who is interested in becoming Embedded & IoT Developer

Course Details

Duration: 6-8 Months

12 Modules

Unlimited Lab Access

Final Project

Project Certificates

Course Certificates

English Training Sessions

Monthly Mock Interview Sessions

IEEE Certified Projects

Course Content

- Introduction to Embedded Systems
- Basics of Embedded Systems
- Embedded C Programming
- Real-time Operating Systems (RTOS)
- Embedded System Design & Development
- Embedded System Interfacing
- IoT Protocols and Communication
- IoT Development Platforms
- IoT Security and Privacy
- Advanced Topics and Project Work
- Final Project
- Emergin Trends in Embedded Systems and IoT



EMBEDDED SYSTEMS AND IOT

Syllabus

Module 1: Basics of Embedded Systems

- Introduction to embedded systems
- Embedded system components and architecture
- Microcontrollers vs. microprocessors

Module 2: Embedded C Programming

- C programming for embedded systems
- Memory management in embedded systems
- Input/Output programming for microcontrollers

Module 3: Real-time Operating Systems (RTOS)

- Introduction to RTOS
- RTOS concepts and features
- Hands-on experience with a simple RTOS

Module 4: Embedded System Design and Development

- System design methodologies
- Hardware-software co-design
- Case studies on embedded system development

Module 5: Embedded System Interfacing

- Interfacing with sensors and actuators
- Communication protocols (SPI, I2C, UART)
- Practical exercises with interfacing projects

Module 6: IoT Protocols and Communication

- MQTT, CoAP, and other IoT protocols
- Wireless communication (Wi-Fi, Bluetooth, Zigbee)
- IoT middleware platforms

Module 7: Introduction to IoT

- Overview of the Internet of Things
- IoT architecture and components
- Edge computing in IoT

Module 8: IoT Development Platforms

- Platforms like Arduino, Raspberry Pi, and others
- IoT development using popular platforms
- Integration with cloud services

Module 9: IoT Security and Privacy

- Security challenges in IoT
- Cryptography and secure communication
- Best practices for IoT security

Module 10: Embedded Systems in Automotive and Aerospace

- Automotive embedded systems
- Avionics and aerospace embedded systems
- Safety and reliability in critical systems

Module 11: Industrial IoT (IIoT)

- IIoT concepts and applications
- Industrial communication protocols (Modbus, PROFIBUS)
- IIoT security and standards

Module 12: Final Project

- Design and implement an IoT-based embedded system
- Real-world application development
- Project presentation and documentation