

Embedded Systems Design & Programming

COURSE OVERVIEW

This comprehensive course provides fundamental knowledge and practical skills in designing, programming, and implementing embedded systems. It explores microcontroller architectures, real-time operating systems, and hardware-software co-design principles. The curriculum covers both theoretical foundations and hands-on development of embedded applications, focusing on resource-constrained environments and real-time performance requirements. Upon completion, participants will be equipped to design, program, and optimize embedded systems for various applications, from consumer electronics to industrial control systems.

WHO SHOULD ATTEND?

This course is ideal for electronics engineers, software developers, firmware engineers, and system architects working on embedded systems. It also suits professionals involved in IoT device development, industrial automation, robotics, and AI hardware design. Early-career engineers, technical specialists, and developers seeking hands-on skills in microcontroller programming, real-time system design, and embedded software development will also benefit.

COURSE OUTCOMES

Delegates will gain the skills and knowledge to:

- Program microcontrollers using C and assembly language.
- Design and implement real-time operating system applications.
- Interface with peripherals and external devices.
- Develop and debug embedded software using industry-standard tools.
- Optimize system performance for power and memory constraints.
- Apply hardware-software co-design principles.

KEY COURSE HIGHLIGHTS

At the end of the course, you will understand;

- Microcontroller architectures and programming models.
- Real-time operating system concepts and implementation.
- Peripheral interfacing and device driver development.
- Embedded software debugging and testing methodologies.
- Power management and optimization techniques.
- Hardware-software integration and co-design.
- Industry standards and safety-critical system design.

All our courses are dual-certificate courses. At the end of the training, the delegates will receive two certificates.

1. A GTC end-of-course certificate
2. Continuing Professional Development (CPD) Certificate of completion with earned credits awarded