

Automotive Embedded System

Duration - 4 Days / 32 Hours

Program Description

- ❖ This program offers an in-depth overview of automotive embedded systems, focusing on the integration of hardware and software to ensure reliable, real-time performance in vehicles. Participants will explore microcontrollers, real-time operating systems (RTOS), memory management, sensors, actuators, communication protocols, power management, and system security. The program includes case studies of real-world automotive system development, emphasizing practical application and innovation in automotive technology.

Learning Goals

- ❖ Develop an understanding of the fundamentals of automotive embedded systems and their importance in modern vehicles.
- ❖ Understand the role of microcontrollers and microprocessors in automotive applications.
- ❖ Learn the principles and applications of Real-Time Operating Systems (RTOS) in automotive environments.
- ❖ Master memory management techniques in embedded systems for efficient performance.
- ❖ Analyze the functionality of automotive sensors and actuators in vehicle control systems.
- ❖ Understand key automotive communication protocols such as CAN, LIN, and FlexRay.
- ❖ Explore power management strategies in automotive electronics to optimize energy efficiency.
- ❖ Gain knowledge in hardware-software co-design specific to automotive systems.

Course Topics

- ❖ Introduction to Automotive Embedded Systems
- ❖ Basics of Microcontrollers and Microprocessors
- ❖ Real-time Operating Systems (RTOS) for Automotive
- ❖ Memory Management in Embedded Systems
- ❖ Automotive Sensors and Actuators
- ❖ Communication Protocols in Automotive Systems (CAN, LIN, FlexRay)
- ❖ Power Management in Automotive Electronics
- ❖ Automotive Hardware-Software Co-design
- ❖ Automotive Embedded Systems Security
- ❖ Case Studies: Automotive System Development

Back

Modules can be customized to suit client's specific needs and duration accordingly