

Certificate Course in Embedded System using Arduino

Objective of the Course:

This short term course focuses on students having knowledge of Basic Electronics and willing to develop career in field of Embedded System

Learning Outcome:

The student will able to know the programming in open source embedded development board-Arduino and industrial applications of these modern microcontrollers.

Duration of the Course: 6 weeks (60Hrs.)

Course Fee : 3000/- + GST (18%)

Minimum Eligibility Criteria: Pursuing/Passed BE/B.Tech/BCA/BSc (Electronics)

COURSE OUTLINE

Sr. No.	Modules to be Covered
1	Basic Concepts of Embedded System
2	Learning Arduino Platform
3	Sensor & Actuators with Arduino
4	Arduino - Wireless Communication
5	Project

Detailed Course Syllabus:

1. Basic Concepts of Embedded System

- Introduction to Embedded System
- Main Components of Embedded Systems
- Concepts of Microprocessor and Microcontroller

2. Learning Arduino Platform

- Arduino Uno Architecture
- Setup the IDE, Writing Arduino Software
- Arduino Libraries
- Arrays, Function, String
- Random Numbers
- Pulse Width Modulation
- Trigonometric Functions
- Basics of Embedded C programming for Arduino
- Interfacing LED, push button and buzzer with Arduino
- Interfacing Arduino with LCD and seven segment

3. Sensor & Actuators with Arduino

- Overview of Sensors working
- Analog and Digital Sensors
- Interfacing of Temperature, Humidity, Motion, Light and Gas Sensor with Arduino
- Interfacing of Actuators with Arduino.
- Interfacing of Relay Switch and different types of Motors with Arduino

4. Arduino - Wireless Communication

- Basics of Wireless Communication
- Various WiFi library
- Web server- introduction, installation, configuration
Posting sensor(s) data to web server

5. Project