Arduino Controller Essentials: Introduction to Programming and Embedded Systems Training

COURSE CONTENT

About Multisoft

Train yourself with the best and develop valuable in-demand skills with Multisoft Systems. A leading certification training provider, Multisoft collaborates with top technologies to bring world-class one-on-one and certification trainings. With the goal to empower professionals and business across the globe, we offer more than 1500 training courses, which are delivered by Multisoft's global subject matter experts. We offer tailored corporate training; project Based Training, comprehensive learning solution with lifetime e-learning access, after training support and globally recognized training certificates.

About Course

The Arduino Controller Essentials: Introduction to Programming and Embedded Systems training offered by Multisoft Systems is an expertly designed course that equips learners with the foundational knowledge and practical skills necessary to master Arduino technology.

Module 1: Introduction to Arduino

- ✓ Overview of Arduino boards and their features
- ✓ Arduino Software (IDE) installation and setup
- ✓ Introduction to the Arduino programming language

Module 2: Arduino Programming Fundamentals

- ✓ Syntax, data types, and variables in Arduino programming
- ✓ Control structures (conditionals and loops)
- ✓ Functions and libraries in Arduino programming

Module 3: Input and Output (I/O) with Arduino

- ✓ Digital input and output (LEDs, buttons, switches)
- ✓ Analog input and output (potentiometers, sensors, actuators)
- ✓ Pulse Width Modulation (PWM) for analog control

Module 4: Sensor Interfacing

- ✓ Interfacing various sensors (temperature, humidity, light, etc.) with Arduino
- ✓ Reading and processing sensor data
- ✓ Sensor calibration and filtering techniques

Module 5: Actuator Interfacing

- ✓ Controlling motors (DC motors, servo motors, stepper motors)
- ✓ Working with relays, solenoids, and other actuators
- ✓ Implementing motor control algorithms

Module 6: Communication and Networking

- ✓ Serial communication between Arduino and a computer
- ✓ Wireless communication with Bluetooth, Wi-Fi, or RF modules

✓ IoT concepts and interfacing Arduino with online platforms

Module 7: Advanced Topics and Projects

✓ Advanced Arduino libraries and techniques
✓ Integrating displays (LCD, OLED) and input devices (keypads, touchscreens)
✓ Project-based learning with Arduino (e.g., home automation, robot control, data logging)