

Arduino IDE Course

Arduino IDE installation, board setup, sketches, libraries, serial monitor, debugging, sensors, actuators and practical IoT projects.

Course Objectives

By the end of this course, learners should be able to configure the development environment, write and troubleshoot programs, connect common hardware components, and complete a practical project.

Complete Course Modules

- 1 Introduction to Arduino and microcontroller concepts
- 2 Arduino IDE installation and interface
- 3 Boards, ports and drivers
- 4 Sketch structure: setup(), loop(), variables and data types
- 5 Digital input/output and pull-up/pull-down concepts
- 6 Analog input and PWM output
- 7 Serial Monitor and Serial Plotter
- 8 Functions, arrays, strings and basic debugging
- 9 Libraries and library management
- 10 Working with LEDs, buttons, buzzers and relays
- 11 Sensors: temperature, light, distance and motion
- 12 Displays: LCD and OLED fundamentals
- 13 Motor control and servo basics
- 14 Communication: I2C, SPI and UART
- 15 Troubleshooting common upload and runtime errors
- 16 Project: sensor-based monitoring system
- 17 Project documentation and interview/viva preparation

Practical Project

Build an end-to-end project using the tools and hardware covered in the modules. Include setup documentation, source code, testing steps, troubleshooting notes and a short demonstration.

Important

Course duration, hardware requirements, batch schedule, fees and delivery format should be confirmed with WC Skills before enrollment.