

Day-1

Module1:-Introduction to Robotics & Arduino.

- Role of Robotics in Industry 4.0
- Microprocessors & Microcontrollers.
- What is Arduino & different types of Arduino Boards and Microcontrollers?

Module2:-Programming in Arduino.

- Introduction to Arduino IDE.
- Installation on mac and windows.
- Arduino IDE-Understanding the Preference panel, menu item and how to upload sketch to the Arduino.
- Revise the basics of programming syntax used in the Arduino programming.
 - Variables
 - If-Else statements
 - Loop
 - Functions

Module:-3-Interfacing of Arduino with different actuators and sensor.

- Introduction to sensor and actuators.
- Working on actuators like
 - Servo motors
 - Led
 - Buzzer
- Working on ultrasonic sensor

Mini Project:-

- Water level indicator.
- Radar.

Day-2

Module-5- Pulse width modulation(PWM).

- Introduction to pulse width modulation.
- Function of PWM in robotics.
- Application of PWM.

Module-6- Interfacing of Arduino with Dc motor.

- Introduction to dc motor.
- Difference between dc motor and servo motor.
- Programming of dc motor.

Module-7- Controlling of motors using motor driver.

- Introduction of L293d motor driver.
- Function of l293d motor driver.

Project- Build your first ROBOT(Obstacle detection robot).