



contact@cluebots.com | 9137855822 | www.cluebots.com | Panvel

Robotics Course

Module 1: Basic Electronics

- Introduction to Electronic components & how an electrical circuit works.
- Concept of electricity, voltage, current, resistor, capacitor, Inductor, conductors, insulators.
- Concept of breadboard & basic circuits
- Passive and Active Components
- LED & Buzzer project
- Capacitor charging discharging
- Series & Parallel circuit
- Basic constituents of robot
- Hands-on session of robotic motors

Projects covered under module 1:

1. Automatic LED lighting
2. LDR based night sensor
3. Street lighting system
4. Construction of Robot

Module 2: Arduino + NodeMCU

- Introduction to Robotic Motors and applications
- Introduction to Robotics programming.
- Introduction to Microprocessors and micro-controllers
- Introduction to sensors, power supply system & H-Bridge concept
- Installation of Arduino IDE
- Basic programming of Arduino & NodeMCU
- Coding led, buzzer, motors
- Construction & interfacing of robot using chassis, Micro controller, Motor driver, Arduino
- Forward & Reverse of motors.
- Bluetooth Module Configuration
- Controlling Robots using Bluetooth module

Workshops | Internships | Project Development & Guidance
Cluebots, 2nd floor, Sai Arcade, Near Lifeline Hospital, Panvel
CONTACT: 9137855822, 7498899741



contact@cluebots.com | 9137855822 | www.cluebots.com | Panvel

Projects covered under module 2:

1. White line follower
2. Obstacle avoider
3. Black line Follower
4. Object Follower
5. Light following Robot
6. Light avoiding Robot

Module 3: Raspberry Pi

- Intro to Raspberry Pi board and it's application.
- Installing OS into Pi
- Python Programming for Pi
- Interface & Program for Led, buzzer and motors with Pi
- Interfacing & programming with IR sensor, Ultrasonic sensor & Soil Moisture Sensor.
- DHT11 temperature sensor with Pi
- Controlling home appliances with Relay Module and Pi
- Introduction & applications of Internet of Things

Projects covered under module 3:

1. Automated plant watering system
2. Relay based Real life Home Automation
3. Introduction to Android app designing on MIT app Inventor
4. Basic app design for controlling robot and home appliances.
5. Controlling Robot and any home appliances (e.g. Lights, Fan, AC) using Smartphone app
6. Home Automation Chatbot