



ARDUINO COURSE CONTENT:

Module 1: Introduction and Familiarization

- Course Introduction
- Hardware Overview
- Download and Install the Arduino IDE
- Arduino IDE and Sketch Overview
- Understanding Arduino Syntax

Module 2: Basics

- Understanding and Using Variables.
- Knowledge on pre defined functions.
- Blink an LED
- Challenge Discussion
- digitalWrite() and Serial Port Communication
- analogRead() and Serial Port Communications
- Reading Analog Pins and Converting the Input to a Voltage
- Fade an LED with Pulse Width Modulation using analogWrite()

Module 3: Control

- If-Else Statement, Comparison Operators and Conditions
- For Loop Iteration
- How to Use Arrays
- Switch Case Statement and Using a Keyboard for Data Collection
- While Statement



Module 4: peripheral Interfaces

- Using a switch as an input.
- A/D conversion & monitoring over serial port.
- Generating PWM of different duty cycle
- Timers & counters
- Display devices like LCD & 7-segment
- Interface with any any analog sensor
 - Gas sensor
 - Temperature sensor
 - Humidity sensor
 - Ultrasonic sensor
 - PIR sensor
 - IR sensor
 - Flex sensor

Module 5: wireless

- Concepts of Serial and Parallel communication
- Bluetooth module.
- Zigbee
- WIFI
- Connecting Digital and Analog sensors through wireless modules and displays



REAL TIME SIGNALS TECHNOLOGIES

Module 6:Advanced Sessions

- RFID.
- Gyro sensor.
- Accelerometers.
- Speed control of Servomotor.
- Speed control of DC ,stepper & Induction Motors.

Module 7: Connecting to Internet

- Internet of things (IOT)
- Connecting analog sensors to ESP8266(wifi chip)
- Plotting a real time graph on the cloud

Real Time Signals Technologies