

# CERTIFICATE COURSE IN IoT

## Detail Syllabus

Duration: 100 Hrs

SI No	Particulars	No. of Hours
1	<b>Introduction to IOT:</b> <ul style="list-style-type: none"><li>• Understanding IoT fundamentals</li><li>• IOT Architecture</li><li>• Various Platforms for IoT</li><li>• Real time Examples of IoT</li><li>• Overview of IoT components</li></ul>	8 Hours
2	Introduction embedded system: <ul style="list-style-type: none"><li>• Understanding Embedded System</li><li>• Microcontroller vs. Microprocessor</li><li>• Common features of Microcontroller.</li><li>• Different types of microcontrollers.</li></ul>	7 Hours
3	<b>Overview of basic electronics and digital electronics:</b> <ul style="list-style-type: none"><li>• Elementary electrical theory: current, voltage, resistance, and Ohm's Law.</li><li>• Reading a simple schematic.</li><li>• Wiring on a solder less breadboard.</li><li>• Voltage dividers: resistor/resistor, resistor/switch, resistor/photoresistor, resistor/LED.</li><li>Using a multimeter to measure voltage and resistance.</li></ul>	14 Hours
4	<b>Getting Started with Arduino:</b> <ul style="list-style-type: none"><li>• Introduction to Arduino</li><li>• Pin configuration and architecture.</li><li>• Device and platform features.</li><li>• Concept of digital and analog ports.</li></ul>	6 Hours
5	<b>Introduction to Programming Languages:</b> <ul style="list-style-type: none"><li>• Setup the IDE, Writing Arduino Software</li><li>• Understanding Embedded C programming for Arduino</li><li>• Arduino Libraries</li></ul>	15 Hours
6	<b>Introduction to Sensors, Actuators:</b> <ul style="list-style-type: none"><li>• What are Sensors and Actuators?</li><li>• Various Basic Industrial Sensors-IR- Analog Sensor</li><li>• IR Digital Sensor Application of Sensor</li></ul>	5 Hours

	How to Interface Sensor and actuator	
7	<p><b>LIVE Projects using Arduino Uno and ESP-32:</b></p> <ul style="list-style-type: none"> <li>• LED Blinking</li> <li>• Interfacing of Temperature, Humidity, Proximity, Light and Gas Sensor with Arduino</li> <li>• Interfacing Arduino with LCD or OLED module</li> <li>• ESP32 Web Server</li> <li>• Smart Home automation</li> </ul>	45 Hours
8	<p><b>Soft Skills</b></p> <ul style="list-style-type: none"> <li>• Verbal/ Non-verbal communication</li> <li>• Interview skills</li> <li>• Professional/social etiquettes</li> <li>• Professional correspondence/ English</li> </ul>	
		<b>Total : 100 Hours</b>