



## Academic Year 2021 - 22

**Course name: - Automation Using IOT**

**Duration: - 3<sup>rd</sup> Jan to 7<sup>th</sup> Jan 2022**

**Venue: - VIVA Institute of Technology**

**Co-ordinator: - Prof. Monali Pimpale**

**Enrolled students: - 57**

### Course Objective: -

1. This course focuses on the latest microcontrollers with application development, product design and prototyping.
2. Recognise the factors that contributed to the emergence of IoT
3. Design and program IoT devices
4. Use real IoT protocols for communication
5. Secure the elements of an IoT device

### Course Outcomes: -

After successful completion of the course, the students are able to

1. Interpret the impact and challenges posed by IoT networks leading to new architectural models.
2. Illustrate the smart objects and the technologies to connect them to network.
3. Compare different Application protocols for IoT.
4. Infer the role of Data Analytics and Security in IoT.
5. Identify sensor technologies for sensing real world entities and understand the role of IoT in various domains of Industry.

### Course Schedule: -

Session	Time	Topic
<b>Day 1: - 3<sup>rd</sup> Jan 2022</b>		
1	9.30 – 11.00	Introduction to IOT
2	11.15– 12.30	Understanding IoT fundamentals IOT Architecture and protocols
3	1.15 – 4.30	Overview of IoT components and IoT Communication Technologies Challenges in IOT
<b>Day 2: - 4<sup>th</sup> Jan 2022</b>		
1	9.30 – 11.00	Arduino Simulation Environment
2	11.15– 12.30	Arduino Uno Architecture Setup the IDE, Writing Arduino Software
3	1.15 – 4.30	Interfacing LED, push button and buzzer with Arduino Interfacing Arduino with LCD
<b>Day 3: - 5<sup>th</sup> Jan 2022</b>		
1	9.30 – 11.00	Sensor & Actuators with Arduino

2	11.15– 12.30	Overview of Sensors working Analog and Digital Sensors
3	1.15 – 4.30	Interfacing of Actuators with Arduino. Interfacing of Relay Switch and Servo Motor with Arduino
<b>Day 4 :- 6<sup>th</sup> Jan 2022</b>		
1	9.30 – 11.00	Basic Networking with ESP8266 WiFi module
2	11.15– 12.30	Basics of Wireless Networking Introduction to ESP8266 Wi-Fi Module Various Wi-Fi library
3	1.15 – 4.30	Web server- introduction, installation, configuration Posting sensor(s) data to web server
<b>Day 5 :- 7<sup>th</sup> Jan 2022</b>		
1	9.30 – 11.00	Cloud Platforms for IOT Virtualization concepts and Cloud Architecture
2	11.15– 12.30	Cloud computing, benefits Cloud services -- SaaS, PaaS, IaaS Cloud providers & offerings
3	1.15 – 4.30	Study of IOT Cloud platforms ThingSpeak API and MQTT Interfacing ESP8266 with Web services Quiz

### Report:-

Computer engg. department of VIVA Institute of Technology conducted a course on “Automation Using IOT” for Last year students. Total 57 students had been enrolled for this course.

This course was conducted by Prof. Monali Pimpale in order to provide knowledge of Automation Using IOT.

IoT is a giant, digitally connected universe of billions of physical devices around the world; “things” that collect and share data about how they’re used and the environment around them. These objects are embedded with internet connectivity, software, sensors, and other hardware that enable them to connect and exchange data with other systems and devices over the web. Students enjoyed the course and completed it successfully.

### CO-PO Mapping: -

Course Outcome	Program Outcome											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO 1	2	-	-	-	-	-	-	-	-	-	-	-
CO2	-	2	3	2	-	-	-	-	-	-	-	-
CO3	-	2	2	-	-	-	-	-	-	-	-	-
CO4	1	2	3	-	-	-	-	-	-	-	-	-
CO 5	-	-	-	3	-	-	-	-	-	-	-	-



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