Gyanmanjari Institute of Technology (GMIT)
Mechanical Engineering Department

SDP Course Content

Name of Course : IoT and Home Automation

Course Objective:

- To understand the fundamentals of IoT (Internet of Things) and Home Automation
- To learn about various application of IoT in Automation, Safety or other day to day requirement
- To obtain certain sensor values from any distant location for various applications
- To have on hand experience with all components and programming the controllers

Syllabus

Sr.No.	Contents	Hrs.
1.	Introduction to IoT and its applications	1
2.	Arduino basics ✓ How it works? ✓ Basic Syntax and Programming ✓ Sample Programs	4
3.	Wi-Fi Module basics ✓ Introduction to ESP8266 ✓ Connection with Arduino ✓ Programming and Connection with Internet ✓ Connection of various components with Arduino and Wi-Fi module	6
4.	Programming and Demonstration ✓ Java script basics ✓ Web Page development ✓ Writing a program for home automation ✓ Demonstration of controlling various components through internet	6
5.	Sensor Value ✓ Reading the sensor value in Arduino ✓ Upload value on Internet for continuous monitoring	3
	Total Hrs.	**20**

Coordinator details and timing:

Course Duration	20 Hrs.
Course Coordinator	
Batch Size	
Course Fee	
Targeted Audiance	5th Mechanical Students interested in Robotics and Automation

Resourse requirement:

Infrastructure requiremnent	Class room with projector,
Hardware / Software	1 Laptop per Group with Arduino Software
Consumable	A Training Kit (per group)
Special Equipment	Soldering Machine, Double sided tape (Qty.-2), Charging port

Training Kit :

Sr no.	Component Name	Qty.	Price (Approx)
1	Arduino Board (ATMEGA328)	1	900/-
2	Wi-Fi Module (ESP8266)	1	300/-
3	L293D Motor Driver	1	225/-
4	9V Battery with cap	2	60/-
5	DC Motor operating on 9V	1	125/-
6	Buzzer	1	20/-
7	LED	4	20/-
8	Jumper Wires (Male-Male, Male-Female, Female-Female)	5 Each	60/-
9	Potentiometer	1	20/-
		Total	1730/-

Assessment criteria

Sr. No.	Criteria	Marks
1	Prcactical Exam – Writing and Demonstrating a Home Automation + Sensor Value Uploading Program	50
Passing criteria: More than 50% marks in all component		

Course Outcome:

- IoT is a very trending technology in last 5 years and have number of applications
- Students will understand what this technology is all about and how to use it in various applications
- Students will identify use of this technology and will be able to carry out future projects in it
- Students will also understand about Home Automation and will be able to use them on personal or professional level