

Training on Robotics and Industrial Automation

Training on LINE FOLLOWER ROBOT and BT CONTROLLED ROBOT, using Arduino under CoE in Robotics and Industrial Automation

The Department of Electronics and Communication Engineering organized a **Training on Robotics and Industrial Automation using Arduino, where students trained in Basics of Robotics, Line follower and Bluetooth Controlled robot.** This training was conducted by **Mr. Bhanuteja G (AP/ECE)**, and 35 students from 1st and 2nd year participated in this training. The Robot industry is fast reaching its pinnacle, and there is a rapidly multiplying opportunity in construction, industrial, military and office robots. The journey of Robotics-learning starts with basic design and control.

The training started with an explanation about what a robot is, how a human is better than a robot, the parameters to be considered for designing any robot and the difference between microcontrollers and development board.



Training on Robotics and Automation, organized by Robolab on 20.09.19 and 21.09.19
Mr. Bhanuteja G (AP,ECE) explaining to students about different types of USB cables available for Serial Communication.

The training that was conducted on **20th and 21st September 2019**, was divided into three sessions. In the first session, the Trainer explained about the basics of Robotics, how to choose the components for different robots, and explained about the ARDUINO board and the components required for a basic robot. At the end of the session, the students understood the architecture of the Arduino Uno board and how to interface electronic components with the board.



Training on Robotics and Automation, organized by Robolab on 20.09.19 and 21.09.19
1st year students working on connection between motor driver and Arduino board

The second session of the training was on designing the simplest Autonomous robot, i.e. Line follower. The students were taught about IR sensors; how infrared radiations are used to detect the change in colours. Students interfaced IR sensor with Arduino, and displayed its status on LED. Later, Mr. Bhanuteja taught students how to solder the wire connections to motors, and how to code for the Line follower.



Training on Robotics and Automation, organized by Robolab on 20.09.19 and 21.09.19
Neshma, Keerthana, Priya and Kavya from 2nd year ECE, controlling their designed robot using bluetooth.

On Day 2, the students learnt about how to select different motors based on the application. Mr. Venu Prasad (7th Semester, ECE) explained about the HC-05 Bluetooth module, and how to communicate with android platform from Arduino using serial communications. By the end of the session, students were able to prepare a Bluetooth controlled robot.



**Training on Robotics and Automation, organized by Robolab on 20.09.19 and 21.09.19
Students working on the bluetooth controlled robots designed during training.**

Outcomes

- The students learnt the basics of Robotics, and how to choose microcontroller and motors for different robotic applications.
- They understood how a human is better than a robot.
- They got an insight into the parameters to be considered for different applications.
- learnt about difference between Mechatronics system and a Robot.
- They learnt about different sensors and the use of motor driver.
- They got hands on experience in soldering.
- They learnt to build Line follower and Bluetooth controlled robot.



**Training on Robotics and Automation, organized by Robolab on 20.09.19 and 21.09.19
Mr. Bhanuteja G (AP, ECE) along with the students who attended the Training**