



Workshop



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Robotics

Robotics is an interdisciplinary area that combines computer science and engineering. It entails the design, development, function, and application of robots. Robotics aims to create robots that can support and aid humans. Robots may be used in a variety of circumstances and for a variety of reasons, but many are now used in hazardous conditions (such as nuclear material inspection, bomb detection, and deactivation), manufacturing processes, and other situations where humans are unable to survive (e.g., in space, underwater, in high heat, and clean up and containment of hazardous materials and radiation). Students and Professionals can integrate any number of these industry-ready certified courses into your skill-set with academics you can learn new technology and upgrade your 4.0 industry carrier.

Course Advantage

- Understand the definition and significance of the Robotics.
- Opens up the gateways of innovation and creativity.
- Recognize the factors that contribute to the emergence of Robotics.
- 80% practical & 20% theory methodology.
- We focus on maximum hands-on practical learning approach.

The budding graduates from the institutions could play a key role in technological up-gradation, innovation and competitiveness of an industry. We believe that close co-operation between the two would be of major benefit to the student community to enhance their skills and knowledge.

Modules

1. Microprocessor and Microcontrollers
2. Introduction to Arduino
3. Introduction to sensors
4. Motor Control
5. Introduction to Bluetooth
6. Robotics chassis design
7. IoT with sensors
8. Wireless controlling

1. Microprocessor and Microcontrollers

Introduce students with the architecture and operation of typical microprocessors and microcontrollers. To familiarize the students with the programming and interfacing of microprocessors and microcontrollers and to provide strong foundation for designing real world applications using microprocessors and microcontrollers.

2. Introduction to Arduino.

Make the students able to write simple program in Embedded C. Transform a physical input into a digital input and analyze it. Work to complete customizable full Arduino project autonomously, from the beginning to the end. Understand the function of electronic sensors and components.

3. Introduction to sensors

A Sensor is a device used to measure sensing a change in the environment they are in. Some sensors have integrated processors to give an output in a different format. The measurement taken will be processed

and the result of the process, the output will be given. The output can then be used to cause something to change or move.

4. Motor Control

Introduces the primary theories and applications of motor control and learning. Focus on different type of motors and interfacing different types of motors with the Arduino board and show you how to connect the motor and drive it from your board. Control the direction of the spin of DC motor and motor speed control using PWM operation.

5. Introduction to Bluetooth

Bluetooth technology is a high-speed low powered wireless technology link that is designed to connect phones or other portable equipment together.

6. Robotics chassis design

Assembling of motors into the chassis and programming to control the motion of robot in different directions (forward, backward, right, left and stop) using Bluetooth control.

The course can accommodate 70 students. The students will be divided into different groups and each group will be provided with separate kits. The workshop will be conducted by one main faculty assisted by 4 members.

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