



BITS Pilani
K K Birla Goa Campus



Accelerobotix Workshop

Accelerobotix is a new approach to the Human Machine Interface. It is a mixture of arduino hardware and software with acceleration sensor. It is based on the implementation of acceleration sensor on robotics, graphics and embedded application development. It is a workshop for people interested in robotics with lot of new things to learn and loads of fun, which teaches you right from the basics. This workshop would teach you the applications through human interface working in the field of robotics, with gestures to control the functioning of bots.

Duration: 2 Days

Cost: 6000/- Per Team of Maximum 5 Members

Team/Individual : Team of Maximum 5 Members

Registration Link : <https://thunder6.typeform.com/to/JnHgwI>

Structure and Course:

Introduction to Robotics & Embedded Systems

- Introduction to robotics.
- Introduction to embedded systems.
- Introduction to Human Interface Device (HID).

Introduction to Arduino

- Introduction to Arduino Hardware Interface.
- Programming with Arduino Software.
- Concept of using open-source hardware and software platform.

- Communication of micro controller and computer.

Programming And Basic Interfacing

- Basic I/O operations.
- Interfacing LED's and Switches.
- Interfacing Motors.
- UART Communication.
- I2C Communication.
- PWM generation and Controlling DC motor.
- Interfacing Analog sensors.

Introduction to Accelerometer

- What is accelerometer?
- Types of accelerometer.
- Basic working principle of accelerometer

Interfacing Accelerometer with Arduino.

- Register configuration of an acceleration sensor.
- Reading x, y, z and tilt parameters.
- Configuring Accelerometer for:
 - Gesture detection.
 - Tap detection.
 - Orientation detection
 - Shake detection

Kit content

- AVR circuit board.
- Accelerometer breakout board.
- Robot Chassis.
- Wheels.
- Motors.
- Castor Wheel.
- Battery (9v)
- USB Cable for Programming.
- Screws
- Screw Driver.
- Battery snaps.
- CD containing Course Material (Codes, Softwares, videos etc.)