

# SYLLABUS

## 1. Basic Robotics

- Robot and Robotics - Introduction
- Branches of Robotics
- Types of Robots
- Recent achievements in Robotics
- Applications

## 2. Basic Electronics

- Introduction to Basic electronic components
- Voltage and current concepts
- Resistors
  - R-2R digital to analog converter
- Capacitors
  - Aluminum Foil capacitor based led fader
- Inductors
  - Making inductors with copper wires
- Uses of resistor, capacitor and inductor in circuits

## 3. Basic C programming

- Introduction to Programming
- Fundamental concepts of Programming
- Programming in Robotics
- Complete C Language
- Practical approach on Programming

## 4. Embedded programming with C

- Introduction to embedded systems
- Embedded Programming with C
- Bitwise operation on microcontrollers
- Input / Output

## 5. 3D Printing

- Rapid Prototyping: Introduction
- General techniques
- 3D modelling and printing
- 3D printer working mechanism
- Applications

## 6. Competition

Competition based on the provided training will be held between teams and the winner of the competition will be rewarded.

**NOTE: Kits required for the training and competition shall be provided by the club.**