

## Program Schedule

**Day/Slot**      **05:30 pm – 07:00 pm (Tentative)**

- Day 1              • Course Introduction

### **Python**

- Day 2              • Introduction  
• Why Python Programming?  
• Data Type and Operators

- Day 3              • Data Structures  
• Control Flow

- Day 4              • Function  
• Scripting

- Day 5              • Practical 1  
• Practical 2

### **Raspberry Pi**

- Day 6              • Introduction  
• Why Raspberry Pi?  
• Introduction  
• How to Start?  
• Raspberry Pi Vs Arduino

- Day 7              • Operating System  
• Raspberry Pi setup  
• Raspberry Pi Configuration  
• Navigating the File system  
• Text Editors

- Day 8              • Permissions  
• Accessing File  
• Python in Raspberry Pi  
• GPIOs  
• Protocol Pins  
• PWM  
• Tkinter Library

- Day 9              • Communication  
• Practical 1

- Practical 2

## **Arduino**

- Day 10
  - Introduction
  - Arduino board
  - Sketches
  - Arduino IDE
- Day 11
  - Arduino Libraries
  - C programming Basics for Arduino
- Day 12
  - GPIOs
  - Communication
- Day 13
  - Practical 1
  - Practical 2

## **Sensors and Actuators**

- Day 14
  - Sensors Introduction
  - Actuators Introduction
  - Basic Setup
  - Sensor Selection
  - Actuator Selection
- Day 15
  - Programming for Every Sensor and Actuators
  - Making of Small Devices
- Day 16
  - Use of Various Sensors
  - Use of Various Actuators
- Day 17
  - Practical 1
  - Practical 2

## **Internet of Things (IoT)**

- Day 18
  - Introduction,
  - IoT Devices and Computers
  - Case Study
- Day 19
  - Adoption towards IoT
  - Benefits, Risk, Privacy and Security
  - Embedded System
  - Networking and Wan
- Day 20
  - Internet structure
  - Protocols

- TCP/ IP Application Layers
- Day 21
- Practical 1
  - Practical 2

### **Webots**

- Day 22
- Introduction
- Day 23
- User interface
  - Virtual Simulations of a Wheeled Robot
- Day 24
- Virtual Simulations of Humanoid Robot
- Day 25
- Practical 1
  - Practical 2

### **Robot Design with NX**

- Day 26
- Introduction about NX
- Day 27
- User interface
  - Modeling
  - Assembly
- Day 28
- Drafting
  - Practical 1
  - Practical 2
- Day 29
- Projects Explanation and Discussion
- Day 30
- Case Study