

Syllabus - Master in Robotics with MicroPython program

Day 1 - Practical Electronics ප්‍රායෝගික ඉලෙක්ට්‍රොනික උපකරණ

- Learn Electronics
- Basic Electronic Components
- Introducing the Relay Module
- DIP switches
- Solid-State switches
- Transducers
- Activities

Day 2- Network essentials ජාල කරණයේ අත්‍යාවශ්‍යංග

- Introduction to Networking
- Transmission of data over physical media
- Network Architectures
- Networking Hardware
- Network Topologies
- Types of Network
- Data Security
- Activities

Day 3 - Data Communication දත්ත සන්නිවේදනය

- What is Data Communication?
- Transmission Direction for Data Flow
- Communication Protocols
- UART Communication
- Serial Plotter
- Activities

Day 4 - Artificial Intelligence කෘත්‍රීම බුද්ධිය

- History and Evolution of Artificial Intelligence (AI)
- Artificial Intelligence (AI)
- Industrial Revolution
- Activities

Day 5 - Internet of things IoT උපාංග

- History of the Internet and its evolution
- Concept of cloud computing
- Internet of things – IoT
- IoT Communication Protocols
- Smart Technologies
- Industrial Revolution
- Activities

Day 6 - Magicblock programming මැජික්බ්ලොක් වැඩසටහන් කරණය

- What is magicbitOS?
- Main Components of the Magicblock
- What is Magicblock
- Setting up magicblocks
- Activity: display “Hello”

Day 7- Magicblock inside මැජික්බ්ලොක් ක්‍රියාකාරීත්වය

- Magicblock Nodes
- Magicblocks Wires
- Core Blocks
- Magicblocks Dashboard
- Activity - Turn on LED through internet/ Turn on motor through internet

Day 8 - Magicblock Activities (Part1) මැජික්බ්ලොක් ක්‍රියාකාරකම් (1 කොටස)

- Use of Push Buttons with Magicblocks
- Display text on a Magicbit using Magicblocks
- Use the buzzer on the Magicbit using Magicblocks
- Use a Proximity Sensor with a Magicbit using Magicblocks

Day 9 - Magicblock Activities (Part2) මැජික්බ්ලොක් ක්‍රියාකාරකම් (2 කොටස)

- Ultrasonic Sensor with your Magicbit using Magicblocks
- Use the Soil Moisture Sensor with your Magicbit using Magicblocks
- Use the potentiometer with your Magicbit using Magicblocks
- Use the temperature and humidity sensor
- Magicblocks Project1: Smart Alarm
- Magicblocks Project2: Knight Rider style LED pattern
- Magicblocks Project3: A Digital Clock on Magicbit Display
- Magicblocks Project4: Simulate Traffic Light with Magicbit
- Magicblocks Project5: Use Text-To-Speech with Magicbit

Day 10 - Magicblock mobile apps

- Make a simple weather station with Magicblocks
- Make a Smart Counter with Magicblocks
- Configure app with Magicblocks.io
- An introduction to the app and it's sensors
- Send data from sensors in your phone to be processed in Magicblocks
- How to save and open the projects

Day 11 - MicroPython programming මයික්‍රොපයිතන් වැඩසටහන් කරණය

- Installation and Configuration

Day 12 - MicroPython Activities (Part 1) මයික්‍රොපයිතන් ක්‍රියාකාරකම් (1 කොටස)

- Reading an Analog Signal
- Generating Tones
- Onboard OLED Screen

Day 13 - MicroPython Activities (Part 2) මයික්‍රොපයිතන් ක්‍රියාකාරකම් (2 කොටස)

- Use of Door Sensor
- Servo Motor

Day 14 - MicroPython Activities (Part 3) මයික්‍රොපයිතන් ක්‍රියාකාරකම් (3 කොටස)

- Reading the state of Push Button
- Working with Analog Write

Day 15 - MicroPython Activities (Part 4) මයික්‍රොපයිතන් ක්‍රියාකාරකම් (4 කොටස)

- Use of Proximity Sensor
- Tilt Sensor
- Flame Sensor

Day 16 - MicroPython Activities (Part 4) මයික්‍රොපයිතන් ක්‍රියාකාරකම් (5 කොටස)

- Use of Motion Sensor
- RGB Module
- Magnetic Sensor



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077 295 3717 | 0112 18 2996

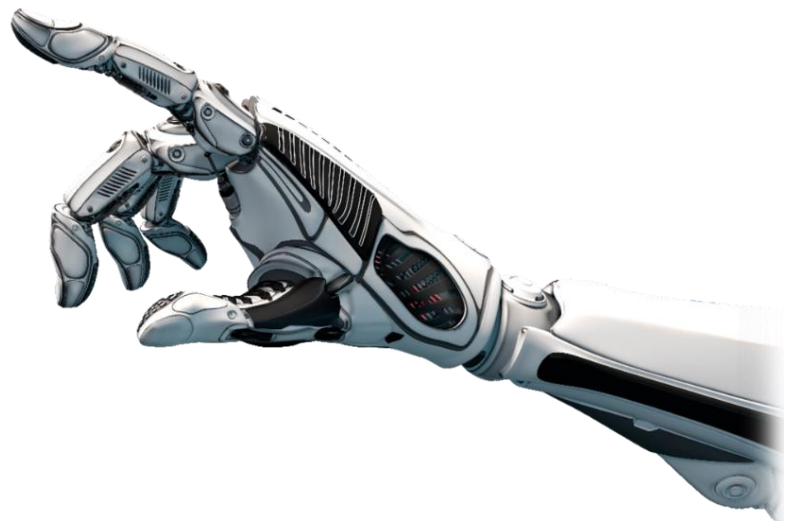
@ srilankarobotics@gmail.com

YouTube srilankarobotics

f SriLankaRobotics

Sri Lankan Robotics

srilankarobotics.lk



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ඩිසන්ට් යාපා Founder & CEO - Academy of Robotics
PgDip. Computing (Lpool, UK), NDT Electronics (UoM), MCP, MOS, ECDL (UK)



www.srilankarobotics.lk