

Matlabwith Robotics Course Content (45 Days)

- 1. Introduction to Basic MATLAB Concepts**
- 2. Introduction to Data Storage and Manipulation**
- 3. Arrays and Matrices**
- 4. Introduction to Mathematical Manipulations**
- 5. Image Acquisition Tool**
- 6. Image Processing Tool**
- 7. Introduction to Robotics**
- 8. Introduction to Sensors**
- 9. Introduction to Computational Devices**
- 10. How to work on Educational & Engineering Level Actuator**
- 11. Introduction to Driving System/Locomotion**
- 12. Introduction to Programming Languages**
- 13. Interfacing of Anatomy of Robot**
- 14. Introduction to USART**
- 15. Application and Demos**
- 16. Introduction to Programming Languages**
- 17. Interfacing of Anatomy of Robot**
- 18. Introduction to LCD Display**
- 19. Introduction to USART**
- 20. Application and Demos**

LIVE Projects Covered

- LED Blinking
- Running LEDs
- Sand Glass Filling of LEDs
- Decoration LEDs/ LED Patterns Etc.
- Sensor Interfacing
- DC Motor Driving
- Black Line Follower using two IR-Sensor
- White Line Follower using two IR-Sensor
- Wall follower Robot
- Edge Avoider Robot
- Intelligent Line Follower Robot
- Displaying your Name on LCD
- Scrolling Text on LCD
- Blinking Text on LCD
- Automatic Counting of Numbers using LCD
- PC to $\hat{\text{A}}\mu\text{C}$ Communication
- $\hat{\text{A}}\mu\text{C}$ to PC Communication
- PC - $\hat{\text{A}}\mu\text{C}$ Full Duplex Communication
- Computer Keyboard Controlled Robot
- 2D & 3D Graphical Representation
- Image Comparison
- Image Pairing
- Matrices Manipulation
- Filtering of Noise
- Red Object Detection
- GUI Based Calculator
- GUI Based Image Transforms
- GUI Switch Controlled Robot
- Laser Controlled Robot
- Ball Tracker Robot
- Collision Avoidance Robot

MATLAB with Robotics Training Kit Details

- 1x (ATmega8 mini V4 Development Board)
- 1x (ATmega8 with inbuilt Robosapiens Boot loader)
- 1x (USB Connector cable)
- 1x (High Quality Plastic Chassis Board)
- 1x (Screw driver)
- 1x (Ball Caster wheel)
- 2x (IR Based Digital Sensors)
- 4x (Support Studs)
- 1 Pair wheel 76mm Diameter
- 1 Pair D.C Plastic gear motors
- USB to Serial Converter.
- 4 Pin Female to Female Connecting Wire
- 3 Pin Female to Female Connecting Wire
- 16x2 LCD Display
- Matlab DVD.
- Other required Tools and accessories etc.