

6-Month Basic Robotics Course

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Month 1: Introduction to Robotics

- ◆ Week 1: What is Robotics? History & Real-Life Applications
- ◆ Week 2: Types of Robots (Industrial, Mobile, Humanoid)
- ◆ Week 3: Understanding Motors, Sensors & Microcontrollers
- ◆ Week 4: Introduction to Arduino (Basics & Setup)

Month 2: Basic Electronics & Circuits

- ◆ Week 5: Understanding Basic Electronics (Ohm's Law, Voltage, Current)
- ◆ Week 6: Working with Simple Sensors (IR, Ultrasonic)
- ◆ Week 7: Introduction to Power Systems (Batteries, Motors, Servos)
- ◆ Week 8: Hands-on: Building a Simple LED & Sensor Circuit

Month 3: Robotics Programming (Arduino Focus)

- ◆ Week 9: Basics of Arduino Programming (C/C++)
- ◆ Week 10: Controlling Motors & Sensors with Arduino Code
- ◆ Week 11: Hands-on: Writing Code for Motor Control
- ◆ Week 12: Project: Making a Simple Light-Following Robot

Month 4: Mechanical Design & Assembly

- ◆ Week 13: Basics of Robot Structure & Frame Design
- ◆ Week 14: Assembling Robot Parts (Chassis, Motors, Wheels)
- ◆ Week 15: Connecting Electronics to the Robot
- ◆ Week 16: Hands-on: Assembling a Basic Moving Robot

Month 5: Wireless & Remote Control

- ◆ Week 17: Introduction to Wireless Communication (Bluetooth, RF)

- ◆ Week 18: Using Remote Controls for Robots
- ◆ Week 19: Hands-on: Building a Bluetooth-Controlled Car
- ◆ Week 20: Testing & Debugging Robot Movements

Month 6: Final Project & Career Basics

- ◆ Week 21: Planning & Designing a Final Project
- ◆ Week 22: Assembling & Coding the Final Project
- ◆ Week 23: Career Paths in Robotics & Resume Building
- ◆ Week 24: Project Presentation & Certification

Final Project & Certification

- ◆ Students will complete a basic robotics project, such as:
 - A Simple Line-Following Robot
 - A Remote-Controlled Car
- ◆ Certification of Completion for students who finish the course!