

Where Dreams

Come to

Real Life



Raspberry Pi Robotics

Discover Create Robotify!

Grades 8-12

Live 1:1 or 1:2 Online | Offline classes
Personalised curriculum | Monthly Fee structure



Welcome to Roboticschools

Program Overview



Children have an innate love for all things joyful and fun. Our mission is to unleash their full potential through a wide range of interactive and multidisciplinary programs.

At Roboticschools, we've redefined learning by making it a delightful and playful experience. We encourage children to explore their passions and uncover their hidden talents. Our curriculum takes a playful approach to cover a wide spectrum of subjects, from coding and design thinking to cutting-edge technologies like AR, VR, Robotics, IoT, and the ever-evolving domains of artificial intelligence and machine learning.

A Roboticschools student embarks on a journey of self-discovery and skill development, reaching their maximum potential through our meticulously crafted programs. These skills complement their regular school curriculum, leading to improved academic performance.

Our methodology is designed to help students grasp complex concepts in science and mathematics through coding, visualizations, and animations. We offer a unique curriculum that instills new-age skills in children, preparing them for success and the ability to tackle any challenge that comes their way. As they learn with us, their relationship with technology shifts from that of a consumer to that of a creator.

Join Roboticschools and let your child's learning journey be a joyous adventure in discovery and creativity."

About Curriculum

At Roboticschools, our curriculum is meticulously crafted to unlock the genius within your child. We offer a comprehensive technology program for kids, spanning from laying a strong foundation in coding to fostering scientific exploration, nurturing design thinking skills, and delving into the world of robotics. What sets us apart is our commitment to providing specialized expertise across various technology domains, making us the premier choice for holistic tech education.



Hands-On Learning

Creativity
and Problem-Solving



Progressive Skill Building

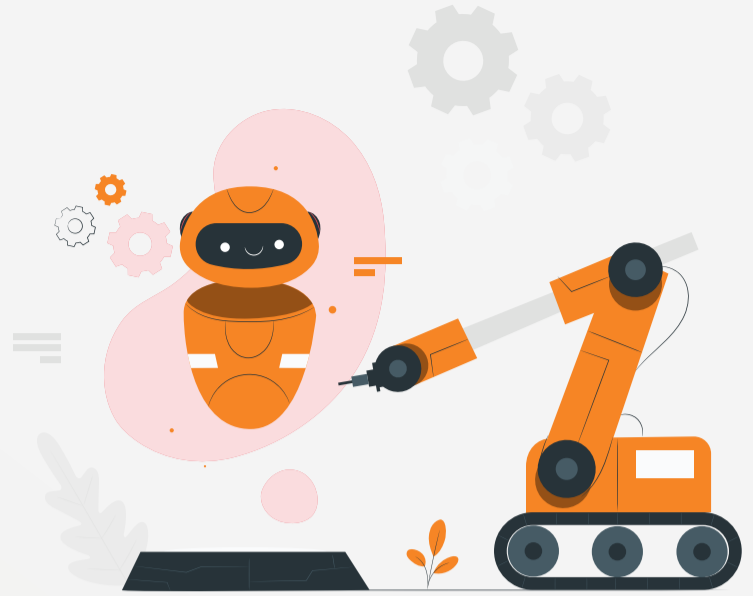
Fun engagement



Advanced technology



Raspberry Pi Robotics



- Raspberry Pi for Beginners emphasizes simple coding for easy control.
- Learn to integrate motors and sensors seamlessly into Raspberry Pi projects.
- The course provides a practical introduction, encouraging beginners to explore both hardware and software through hands-on projects.



25 Classes



25 Projects



30 Concepts



1: Intro to raspberry pi and Installing OS

Objective: Gain familiarity with Raspberry Pi and install the operating system.

Learning Outcomes: Understanding Raspberry Pi basics, OS installation proficiency, introduction to hardware components.

2: Raspberry pi linux commands

Objective: Learn essential Linux commands for Pi.

Learning Outcomes: Command-line proficiency, introduction to shell scripting.



3: LED Blink

Objective: Interface a single LED with Pi.

Learning Outcomes: GPIO pin usage, basic electronic connections, hardware programming.



4: Traffic Lights

Objective: Build a traffic light system using LEDs.

Learning Outcomes: Sequential LED control, understanding basic traffic control systems.



5: RGB LED Colors

Objective: Understand RGB color mixing with LEDs.

Learning Outcomes: Color representation, RGB theory, practical knowledge of color blending.





6: Variables, Data types and **Conditionals**

Objective: Introduce programming concepts using Python on Raspberry Pi.

Learning Outcomes: Variables, data types, conditional statements, basic programming logic.

7: User Input control

Objective: Implement user input in Raspberry Pi projects.

Learning Outcomes: Input handling, basic interaction, user-driven program control.



8: Button controlled LED

Objective: Control an LED using a push button.

Learning Outcomes: Button interfacing, event handling, practical application of push-button control.



9: RGB Color Switcher

Objective: Develop a system to switch between RGB colors dynamically.

Learning Outcomes: Dynamic color control, user-driven changes, color manipulation.



10: Working with Multiple buttons

Objective: Extend button control to handle multiple inputs.

Learning Outcomes: Multi-button interaction, advanced user input processing.



11: Loops and functions with Electronics

Objective: Implement loops and functions for efficient code structure.

Learning Outcomes: Looping structures, modular programming, code optimization techniques.



12: Blue dot app controlled LED

Objective: Control LED using the Blue Dot app.

Learning Outcomes: App integration, wireless control, mobile app development basics.



13: App customization with python

Objective: Customize Blue Dot app functionalities.

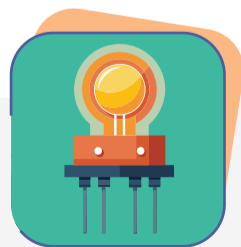
Learning Outcomes: Python app customization, user interface design principles.



14: Potentiometer Controlled LED

Objective: Use a potentiometer to control LED brightness.

Learning Outcomes: Analog sensor interfacing, Analog components programming.



15: Automatic Street Lights

Objective: Create an automatic street lights system using sensors.

Learning Outcomes: Sensor integration, automation concepts.





16: Intro to Actuators & DC Motor control

Objective: Introduce the concept of actuators and learn how to control DC motors.

Learning Outcomes: Understanding actuators, basic motor control, electronic circuit connections.

17: Robot car assembly & Movements

Objective: Assemble a robot car and implement basic movements.

Learning Outcomes: Robotics assembly, motorized movement, basic robot control.



18: Light Following Robot

Objective: Build a robot that follows light sources.

Learning Outcomes: Sensor integration, light-based navigation, practical application of robotics.



19: Mobile App controlled Robot

Objective: Control a robot using a mobile app.

Learning Outcomes: Wireless communication, app integration, remote control functionalities.



20: Interfacing Servo motor with Pi

Objective: Connect and control a servo motor with Pi.

Learning Outcomes: Servo motor control, PWM signals, hardware interfacing.



21: Controlling Position of a Servo With a Potentiometer

Objective: Use a potentiometer to control the position of a servo motor.

Learning Outcomes: Analog sensor integration, precise servo control, interactive applications.



22: User controlled Table fan

Objective: Create a table fan with user-controllable settings.

Learning Outcomes: Motorized fan assembly, user interface design, variable speed control.



23: Raspberry Pi Sunflower

Objective: Build a sunflower that turns toward a light source.

Learning Outcomes: Sun-tracking motorized movement, environmental interaction.



24: Stepper Motor Interfacing with Pi

Objective: Interface and control a stepper motor using Pi.

Learning Outcomes: Stepper motor control, precise positioning, rotational motion principles.



25: Display Names on LCD

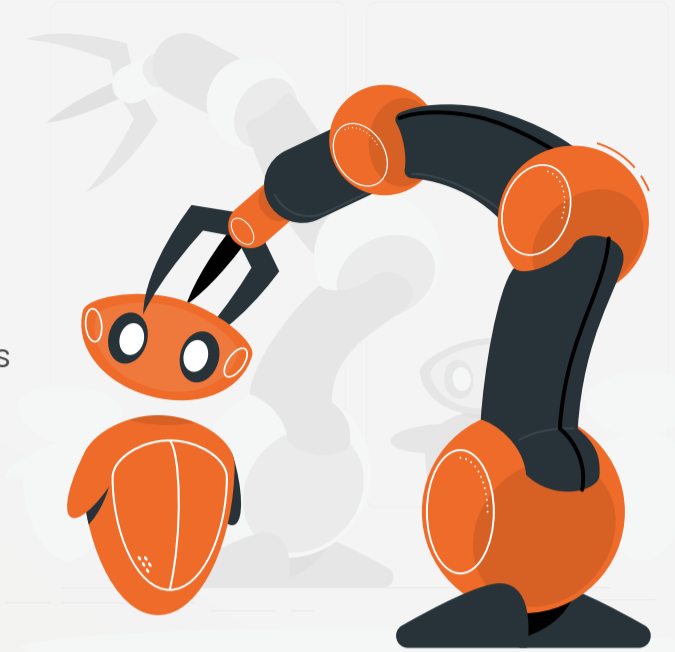
Objective: Interface an LCD display and show names or messages.

Learning Outcomes: LCD display integration, text rendering, basic graphical user interface.



Pi Robotics Tinkerer

- Explore magic buttons and secret messages to make Raspberry Pi do amazing things!
- Predicting the weather like a tech wizard! kids will learn how to talk to computer.
- Raspberry Pi helps kids to solve real-world puzzles and make awesome stuff together!



32 Classes



25 Projects



33 Concepts



1: App Controlled LCD Display

Objective: Control and display information on an LCD using a mobile app.

Learning Outcomes: Mobile app integration, wireless communication, dynamic data display.

2: Measuring Distance with Ultrasonic Sensor

Objective: Use an ultrasonic sensor to measure and display distance.

Learning Outcomes: Ultrasonic sensor integration, distance measurement



3: Smart Dustbin

Objective: Develop a dustbin that opens automatically upon approach.

Learning Outcomes: Proximity sensor usage, smart bin design, automation concepts.



4: Smart Doorbell System

Objective: Create a doorbell system with smart features.

Learning Outcomes: Doorbell circuitry, camera integration, notification systems.



5: Obstacle Avoidance Pi Robot

Objective: Build a robot that can navigate and avoid obstacles.

Learning Outcomes: Obstacle detection, robot navigation, algorithmic control.





6: Line Following Pi Robot

Objective: Construct a robot that follows a predefined path.

Learning Outcomes: Line following algorithms, sensor-based navigation.

7: Joystick Controls

Objective: Interface a joystick with Raspberry Pi.



Learning Outcomes: Joystick integration, analog input processing.



8: Joystick Controlled Robot

Objective: Control the movement of a robot using a joystick.

Learning Outcomes: Joystick-based robot control, real-time interaction.

9: App controlled Watering Plants

Objective: Develop a system for water plants to control using an app.



Learning Outcomes: IoT plant watering, app-controlled actuators.



10: Automatic Plant Watering System

Objective: Create a self-watering system for plants.

Learning Outcomes: Sensor-based plant care, automated watering principles.

11: Raspberry Pi Security System

Objective: Build a security system using Raspberry Pi.

Learning Outcomes: Camera integration, security algorithm implementation.



12: Motion sensor Light

Objective: Construct a light that activates based on motion detection.



Learning Outcomes: Motion sensor integration, automated lighting.



13: App Controlled IOT Study Lamp

Objective: Control a study lamp remotely using a mobile app.

Learning Outcomes: IoT lamp control, user-friendly app design.

14: Fire detection alarm system

Objective: Create a system that detects fire and triggers an alarm.



Learning Outcomes: Fire sensor integration, alarm systems.



15: Measure Temperature with DHT-11 Sensor

Objective: Interface a DHT-11 sensor to measure temperature and humidity.

Learning Outcomes: Sensor calibration, environmental monitoring.



16: Weather monitoring app

Objective: Build an app that displays real-time weather information.

Learning Outcomes: API integration, dynamic data display, app development.

17: Interfacing

IR Remote with Pi

Objective: Interface and control devices using an IR remote.

Learning Outcomes: IR communication, remote-controlled systems.



18: IR Remote Controlled Robot

Objective: Control the movement of a robot using an IR remote.

Learning Outcomes: IR remote-controlled robotics, code interpretation.

19: Keypad

controlled Light

Objective: Control the lighting system using a keypad.

Learning Outcomes: Keypad integration, code-based control.



20: Password Door Locking System

Objective: Build a door locking system with password protection.

Learning Outcomes: Keypad-based security, password verification.



21: Keypad Calculator

Objective: Create a calculator using a keypad for input.

Learning Outcomes: Keypad input processing, basic calculator logic.

22: Interfacing

RF ID with PI

Objective: Interface Pi with an RF ID module.

Learning Outcomes: RF ID integration, data communication.



23: RF ID Attendance system

Objective: Develop an attendance system using RF ID technology.

Learning Outcomes: Attendance tracking, database integration.

24: Digital clock with OLED

Objective: Build a digital clock using an OLED display.

Learning Outcomes: OLED display integration, real-time clock implementation.



25: Interfacing dot matrix with Pi

Objective: Interface a dot matrix display with Raspberry Pi.

Learning Outcomes: Dot matrix integration, message scrolling algorithms.

Pi Robotics Inventor

- Learn to develop real-world projects by interfacing with hardware sensors integration.
- Explore IoT integration with Raspberry Pi, focusing on building interconnected systems.
- Apply advanced machine learning on Raspberry Pi with Sense HAT for interactive projects.



23 Classes



15 Projects



25 Concepts



1: Home Automation Project

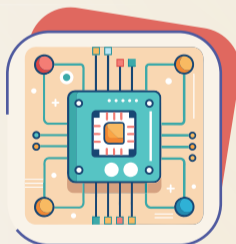
Objective: Create a home automation system for remote control of appliances.

Learning Outcomes: IoT integration, sensor control, home automation principles, mobile app integration.

2: Getting started with SenseHAT

Objective: Familiarize with SenseHAT and its functionalities.

Learning Outcomes: Basic sensor interactions, Programming on SenseHAT.



3: Countdown Timer

Objective: Build a versatile countdown timer using SenseHAT.

Learning Outcomes: Timer functionality, event-driven programming, adaptable timer design.



4: Rainbow Predictor

Objective: Develop a program predicting and displaying rainbow.

Learning Outcomes: Color representation, basic prediction algorithms, integration of external data.



5: Virtual Dice Roller

Objective: Create a dynamic virtual dice rolling app with SenseHAT.

Learning Outcomes: Advanced random number generation, dynamic dice simulation, user-configurable options.





6: SenseHAT Pong

Objective: Implement the classic Pong game using SenseHAT.

Learning Outcomes: Advanced game development, multiplayer functionality, user interface enhancements.

7: Finding North with compass sensor

Objective: Use compass sensor to determine North with accuracy.

Learning Outcomes: Compass sensor integration, navigation, precision enhancement.



8: Where's the Treasure?

Objective: Develop a treasure hunt game .

Learning Outcomes: Game design, algorithmic complexity, user engagement strategies.

9: Flappy Astronaut

Objective: Create a Flappy Bird game with an astronaut using HAT.

Learning Outcomes: Game physics, character animation, power-up implementation.



10: SenseHAT Pressure Readings graph

Objective: Display pressure readings graphically using Sense HAT.

Learning Outcomes: Graph plotting, sensor data visualization, user interface design.



11: SenseHAT Marble maze

Objective: Build an immersive marble maze game using SenseHAT.

Learning Outcomes: Advanced game physics, tilt sensor integration, dynamic maze generation.

12: SenseHAT Weather forecast

Objective: Develop a weather forecast application using SenseHAT.

Learning Outcomes: Weather data retrieval, graphical representation.



13: Capstone Project 1

Objective: Integrates multiple sensors and actuators with pi.

Learning Outcomes: IoT integration, combining various sensors and actuators.

14: Capstone Project 2

Objective: Develop system with machine learning model for automation.

Learning Outcomes: Integration of ML algorithms, advanced sensor technologies.



15: Capstone Project 3

Objective: Develop an energy-efficient smart home system using Pi.

Learning Outcomes: Integration of energy monitoring sensors, ML for predicting values.



Register Now



**ROBOTIC
SCHOOLS**

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