

Session	Topic	Key Concepts
1	Introduction to Robotics	Overview of Robotics, Electronics, Applications
2	Breadboard Basics	How to Use Breadboards, Connecting Circuits
3	Ohm's Law & Resistors	Voltage, Current, Resistance, Resistor Color Coding
4	Project 1: LED Blinker	Combining Breadboard & Resistor Concepts
5	Transistors Basics	Switching, Amplifying, and Using Transistors
6	Sensors Introduction	Basics of Sensors, Analog vs. Digital Signals
7	Project 2: Light Sensor	Using LDR Sensor to Detect Light Levels
8	Introduction to MIT App	App Design Basics and Features
9	Buttons and Text-to-Speech	Coding Buttons, Text-to-Speech Features
10	Project 3: Text-Orator App	Build an App to Convert Text to Speech
11	Bluetooth Communication	Interfacing Bluetooth with App
12	Project 4: Bluetooth LED	Controlling LEDs with Bluetooth App
13	Introduction to Arduino	Arduino IDE, Board Overview
14	Digital Outputs	Controlling LEDs and Buzzers
15	Project 5: Traffic Light	Using LEDs and Timers
16	Digital Inputs	Using Push Buttons
17	Project 6: Button LED	Controlling LED with a Push Button
18	LCD Basics	Connecting LCD to Arduino, Displaying Text
19	Servo Motor Basics	Pulse Width Modulation, Controlling Servo Angles
20	Project 7: Wiper Mechanism	Use Servo Motor for a Simulated Wiper Mechanism
21	DHT11 Temperature Sensor	Measuring Temperature and Humidity
22	Project 8: Weather Station	Build a System to Display Temperature & Humidity
23	RFID Technology Basics	RFID Tag Reading and Applications
24	Project 9: RFID Gate	RFID-Based Access Control
25	Keypad Interfacing Basics	Using Keypads for Input
26	Project 10: Digital Locker	Build a Keypad-Based Locker System
27	Joystick Interfacing	Controlling Motors with Joystick
28	Project 11: Robot Control	Build a Joystick-Controlled Robot
29	Final Project Ideation	Combining Components, Plan Project
30	Final Project Showcase	Presenting the Completed Project