

15-DAY TRAINING PROGRAM

FOR ELECTRONIC DEPARTMENT STUDENTS

Duration: 3 Weeks (5 Days per Week)

Designed by: Ataturk MTAL



****Week 1: Fundamentals & Basic Circuits****



****Day 1: Introduction to Electronics & Components****

- Theory: Basics of resistors, capacitors, diodes, transistors
- Practical: Component identification + breadboard testing



****Day 2: Circuit Laws (Ohm's & Kirchhoff's Laws)****

- Theory: Circuit analysis techniques
- Practical: Simulation (Proteus/Multisim) + real-circuit verification



****Day 3: Semiconductor Basics****

- Theory: Diodes, BJTs, MOSFETs
- Practical: Testing diodes/transistors with multimeters

 ****Day 4: Digital Electronics (Logic Gates)****

- Theory: AND, OR, NOT, NAND, NOR gates
- Practical: TinkerCAD simulation + breadboard implementation

 ****Day 5: Soldering & PCB Basics****

- Theory: PCB design workflow
- Practical: Soldering practice + KiCad/Eagle demo

 ****Week 2: Embedded Systems & Microcontrollers****

 ****Day 6: Arduino/Raspberry Pi Intro****

- Practical: "Blink LED" first program

 ****Day 7: Sensor Interfacing****

- Practical: LDR, ultrasonic, IR sensor projects

 ****Day 8: Motor Control****

- Practical: DC/Servo motor control using L293D

 ****Day 9: Wireless Communication (IoT)****

- Practical: ESP8266 Wi-Fi/Bluetooth demo

 ****Day 10: Mini Project****

- Group task: Obstacle-avoidance robot / Smart home model

 ****Week 3: Advanced Topics & Industry Exposure****

 ****Day 11: Power Electronics****

- Theory + Demo: Rectifiers, SMPS circuits

 ****Day 12: IoT & Industry 4.0****

- Case study: Cloud data logging (ThingSpeak/Blynk)

 ****Day 13: PCB Fabrication & Troubleshooting****

- Lab visit (if possible) + soldering practice

 ****Day 14: Guest Lecture****

- Industry expert session on career trends

 ****Day 15: Project Presentation****

- Students showcase work + certification distribution
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 ****Tools/Software Used:****

- Arduino IDE, TinkerCAD, Proteus, KiCad, Multisim

- Hardware: Arduino Uno, Sensors, Motor Drivers

Student Responsibilities

- Keep a daily journal (learning log, what was researched, notes, and reflections).
- Complete 1 small report per week (short summary of what they've learned).
- Prepare a final mini-presentation at the end of the internship.