

ELECTRICAL TRAINING

2025 - 2026

General training timeline

Sessions:

1	Arduino + Basic Electronics	ONLINE	Wednesday	6/8/2025
2	Workshop + Transistor Fundamentals	On-ground	Friday	8/8/2025
3	Python + Raspberry Pi (Online)	ONLINE	Tuesday	12/8/2025
4	Git + Version Control + Components Packages	ONLINE	Saturday	16/8/2025
5	Communication Protocols + DFM, DFA	ONLINE	Monday	18/8/2025
6	Workshop: Sensor Interfacing + Testing	On-ground	Saturday	23/8/2025
Interviews			24/8/2025	

Session Contents

1.Arduino + Basic Electronics (Online)

Topics:

- Introduction to Arduino and its ecosystem.
- Building simple circuits using breadboards.
- Understanding basic components.

2.Workshop + Transistor Fundamentals (On-ground)

Topics:

- Basic idea of operation.
- Transistor types.
- Different transistor configurations.
- Switching problems (floating, switching time, etc.).
- Pull-up & pull-down concepts.
- Gate drivers – need and types.

2. Python + Raspberry Pi (Online) Topics:

- Python basics for hardware interfacing.
- Using Raspberry Pi for sensor communication.
- Difference between microcontroller (Arduino) and microprocessor (RPi).
- Applications: motor driver, serial communication.

3. Git + Version Control + Components Packages (Online)

Topics:

- Introduction to Git, GitHub, and collaborative workflows.
- Creating and pushing repositories.
- Introduction to various types of component packages.

4. Communication Protocols + DFM, DFA (Online)

Topics:

- Overview of UART, I2C, and SPI.
- Applications in sensor and module communication.
- Basics of Design for Manufacturing (DFM) and Design for Assembly (DFA).

5. Workshop: Sensor Interfacing + Testing (On-ground)

Topics:

- Reading and understanding sensor datasheets.
- Determining communication interfaces.
- Building and testing interfacing scripts.