ROBOSTEM Project

Agreement no: 2019-1-RO01-KA202-063965

Lesson Plan for Basic Electronics

Topic: Basic lesson to understand how electricity works
Subject: Electrical fundamentals

Target Group: Students aged between 15 and 18
The students should be people that are learning about sciences, particularly aimed at Engineering disciplines/Technicians, etc…

Objectives:

Obj1. To understand how electricity works
Obj2. To learn about difference between AC and DC
Obj3. To learn what passive components are
Obj4. To learn and understand ohm's law
Obj5. To learn how to use a Multimeter

Approach/Methodology used:

Presentation, Simulation, Project Based Assignment

Means/Tools/Educational technology

Projector and Teacher explaining basics of electronics. Multimeter, 5V power supply, Breadboard, Jumper wires and various resistors

Plan for work

Time	Activities	Methods/ means
5 min	Explain what electricity is and how it works	Presentation
10 min	What AC and DC is and what the difference is between them. Why we use AC in Electrical grids, and why we use DC in devices	Presentation
10 min	What passive components are (resistors, capacitors, inductors, etc…)	Presentation
20 min	Classroom example of ohms law V=IR	Simulation

Assessment/Feedback:

Students do a simple task of measuring current through a resistor and measuring voltage across a resistor. Use various resistors to understand how voltage is affected by adding resistors in series/parallel. Marks allotted to actual values read by multimeter.

Bibliography:

Bird, J., 2017. *Electrical and Electronic Principles and Technology*. Florence: Taylor and Francis.