ROBOSTEM Project

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

Erasmus+

Developping programming skills using the Arduino platform.

Topic/Subject: Arduino programming

Target Group: Highschool students with a basic programming experience

Objectives:

Obj1. Students will work in teams on a given project.
Obj2. Students will understand the basic programming principles of Arduino and implement them in a project.
Obj3. Students will use critical thinking and problem solving skills.

Approach/Methodology used: Students will be required to finish a project in its entirety during this lesson. The teacher will first show the students an introduction to the Arduino using the accompanying video. The students' curiosity will be increased by the film. A brief introduction to the Arduino will be provided after the movie. After the lesson, each team will receive the project.
In order to teach the class, the students in this project will go through each stage of the project life cycle. In this session, the teams will cooperate, problem-solve, and work as a team while learning fundamental programming abilities.

Means/Tools/Educational technology

Google Drive Accounts; Computers; Arduino Starter Kit.

Plan for work

Time 80’	**Activities**	**Methods/ means**
	1. Use the movie to draw the class's attention as you introduce the Arduino. 2. Review with the class while bringing out the Arduino and other parts. Show the Arduino to them and describe what each port does. Identify any queries the pupils may have. 3. State the project's scope in this paragraph (attached). Make careful to thoroughly describe the project while introducing it and respond to any queries the audience may have. Each deliverable should be understood by the students. The project's primary goal	- Introduction to Arduino video from Make - https://www.youtube.com/watch?v=CqrQmQqpHXc&ab_channel=Make%3A - Arduino Blink Lesson - https://www.youtube.com/watch?v=dnPPoetX0uw&ab_channel=techteachervideo

	is to use the project life cycle to design, carry out, monitor, and conclude a project. They ought to observe each step in action. 4. After all queries have been addressed, distribute the Arduinos (4 individuals per Arduino) and let the students become acquainted with the system. Finish a 20-minute class demonstration of the blinking light. 5. Students start the project's planning phase. To plan the project, the students will finish a work breakdown structure. The project's goal is to educate the class while learning the fundamentals of the Arduino.	Introduction to Arduino comic: https://blog.adafruit.com/2011/09/05/introduction-to-arduino%C2%A0comic/ - Work Breakdown Structure for Dummies https://www.dummies.com/article/business-careers-money/business/project-management/how-to-create-a-work-breakdown-structure-189258/ - Arduino Parts https://docs.arduino.cc/tutorials/uno-rev3/intro-to-board

Assessment/Feedback:

Students will create an oral presentation about the basics of the Arduino, and their specific Arduino project using any presentation software (PowerPoint, Prezi, PowToons, Infographics, etc.).
Students will answer a minimum 5 question formal assessment for the class.

Bibliography:

https://www.youtube.com/watch?v=CqrQmQqpHXc&ab_channel=Make%3A
https://www.youtube.com/watch?v=dnPPoetX0uw&ab_channel=techteachervideo
https://blog.adafruit.com/2011/09/05/introduction-to-arduino%C2%A0comic/
https://www.dummies.com/article/business-careers-money/business/project-management/how-to-create-a-work-breakdown-structure-189258/
https://docs.arduino.cc/tutorials/uno-rev3/intro-to-board