ROBOSTEM Project

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

Lesson Plan "Application of microcontrollers in Smart Farming"

Topic: Application of microcontrollers in Smart Farming
Subject: Agricultural Technology, Sustainability, Environmental Management

Target Group:

VET students, aged between 15 - 18.

Objectives:

Obj1. To provide a basic understanding of Smart Farming and its benefits
Obj2. To explain the crucial role played by microcontrollers in Smart Farming
Obj3. To increase the environmental awareness of students
Obj4. To boost the development of STEM skills
Obj5. To improve the employability of VET students

Approach/Methodology used: This lesson focuses on teaching VET students about the application of microcontrollers in Smart Farming. The teacher will use a PowerPoint presentation to lecture on the basics of Smart Farming, showing what it is, what are its benefits and how the microcontrollers are used in smart farming applications such as irrigation systems, smart tractors, livestock position and health monitoring, etc. Next, the students are involved in a case study activity where they put into practice what they have learnt.

Means/Tools/Educational technology

- A projector or interactive whiteboard and a computer with the software needed for running the PowerPoint presentation.
- Case study template

Plan for work

Time	Activities	Methods/ means
10 min.	Use a PowerPoint presentation to introduce the basics of Smart Farming, to show what it is, what are its benefits, and the role of microcontrollers in smart farming applications.	Lecture / Projector or interactive whiteboard
20 min.	Prepare the students for the case study activity. Form teams of 3-4 students, hand them the case study template. Ask the teams to select a smart farming application and to describe how it can be implemented	Collaborative work; Case study / Case study template

	with the help of a microcontroller, using the case study template. Supervise and support the teams while they are preparing the case studies.	
15 min.	Ask the teams to either present their case study to the class or to another team.	Classroom discussion

Assessment/Feedback:

The teacher will evaluate the case studies prepared by students as well as the presentations made by them in the last part of the lesson.

Bibliography:

- https://www.st.com/en/applications/smart-farming.html