



Lesson Plan “Application of microcontrollers in Manufacturing Automation”

Topic: Application of microcontrollers in Manufacturing Automation

Subject: Industrial Automation

Target Group:

VET students, aged between 15 - 18.

Objectives:

Obj1. To provide a basic understanding of manufacturing automation and its benefits

Obj2. To explain the crucial role played by microcontrollers in manufacturing automation

Obj3. To prepare students for Industry 4.0 revolution

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 Manufacturing Automation. The teacher will use a PowerPoint presentation to lecture on the basics of manufacturing automation, showing what manufacturing automation is, what are the applications, benefits and how the microcontrollers are used to automate various manufacturing processes. 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 manufacturing automation, to show what manufacturing automation is, what are its applications, benefits, and the role of microcontrollers.	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 manufacturing	Collaborative work; Case



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	process and to describe how it can be automated with the help of a microcontroller, using the case study template. Supervise and support the teams while they are preparing the case studies.	study / Case study template
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:

- Basic Elements of an Automated System, https://www.brainkart.com/article/Basic-Elements-of-an-Automated-System_6383
- Automation, <https://kids.britannica.com/students/article/automation/273027>
- 12 Examples of Automation in Real Life, <https://studiousguy.com/automation-examples/>
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