

Duration	Learning phase	Learning content (What should the apprentice learn?)	Learning activities (Apprentice actions to meet the objectives?)	Teacher/trainer activities (What is the role of the teacher/trainer and what is he/she going to do?)	Communication and collaboration forms	Resources, tools and media (Which tools or media are used and how are they used?)
10 min.	Introduction and Orientation	Learn to: How to create and assemble Air quality monitoring system	<ul style="list-style-type: none"> • Prepare 3d object • Prepare 3 printer • Prepare raspberry pi and sensor 	<ul style="list-style-type: none"> • Mentoring 	<ul style="list-style-type: none"> • Verbal and guided • Visual 	<ul style="list-style-type: none"> • Manuals • Web • Teams
30 min.	Execution of the task	How to measure air quality (different parameters) and collect data How to draw, slice and print box for RPi and sensor	<ul style="list-style-type: none"> • Connecting IoT sensor with RPi • Collecting data in a database • Modeling box with Fusion 360 • Slicing and printing box with 3D printer • Assembling all parts together 	<ul style="list-style-type: none"> • Mentoring 	<ul style="list-style-type: none"> • Visual • Written • Verbal • Video 	<ul style="list-style-type: none"> • 3d printer • Raspberry pi • Air Quality sensor
30 min.	Assessment /Check	How to check quality of connected sensors, data receiving and end product assembling	<ul style="list-style-type: none"> • Check connection of Rpi and sensor • Check receiving of data and saving into database • Check 3d printing quality • Check assembling of all parts 	<ul style="list-style-type: none"> • Validation of students checks v • Provide feedback to students 	<ul style="list-style-type: none"> • Verbal Evaluation • Written Evaluation 	<ul style="list-style-type: none"> • Teams forms • Quality assembling form

IoT – measuring air quality

30 min.	End of the lesson	<ul style="list-style-type: none"> Evaluating finished activities and the tasks Talking about ways of improvement the process of building AQ monitor 	<ul style="list-style-type: none"> Prepare the documentation of the project Discuss the whole process Identify and discuss new ideas 	<ul style="list-style-type: none"> Guide on the documentation best practices Version history of the documentation document 	<ul style="list-style-type: none"> Written 	Shared document
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