Overview of Activities per Unit

Unit No. 3 – Additive Manufacturing and 3D printing in Industry 4.0

Act. No	Name of Activity	Knowledge	Skills	Responsibility & Autonomy	Time (h)
Subunit No. 3.1 – AM and 3D printing basic concepts					
	AM and 3D printing basic concepts	Basic concepts of AM and 3D printing in Industry 4.0	Identify the concepts of AM and 3D printing in Industry 4.0	Raise awareness amongst trainees about the potential use of AM/3D	2
Subunit No. 3.2 – AM: Processes, materials, and application areas					
	AM: processes	Fundamental knowledge of AM and 3D printing in Industry 4.0: processes, materials, and application areas	Describe the most used deposition/printing processes in AM/3D printing	Propose 3D printing to produce unique daily life objects/parts	2
	AM: materials		Recognise the main materials used in AM/3D printing considering their properties and applicability – metals, plastics, ceramics and composites, etc.		2
	AM: application areas		Recognise main application areas of AM in Industry 4.0: aerospace, automotive, healthcare, daily life objects, etc.		2
Subunit No. 3.3 – 3D software for 3D printing					
	3D software for 3D printing	Basic knowledge of AM and 3D printing in Industry 4.0: software	- Classify AM/3D printing software in categories according to tasks: modelling, slicing, etc. - Make use of Tinkercad software to design prototypes for 3D printers	Discuss the 3D design of an object/part considering the object/part application	5

Subunit No. 3.4 – Advantages and disadvantages of AM and 3D printing in Industry 4.0

	Advantages and disadvantages of AM and 3D printing in Industry 4.0	Fundamental knowledge of AM and 3D printing in Industry 4.0: benefits and limitations	Explain the benefits and limitations of AM/3D printing in the Industry 4.0 era when compared to traditional manufacturing	Use 3D printing technology when in advantage over conventional methods	2