



## Unit 1: Advanced manufacturing – companies’ mindset and current trends

### Subunit 1.1: Basics

#### Activity 1.1.3: The opportunities of Industry 4.0

##### Learning Outcomes

(paste the appropriate LOs from the LOs Matrix)

	Knowledge	Skills	Responsibility and Autonomy
	<ul style="list-style-type: none"> <li>fundamental knowledge of advanced manufacturing:                             <ul style="list-style-type: none"> <li>key characteristics of 1st, 2nd, 3rd and 4th industrial revolution</li> <li>principles of industry 4.0</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Identify and illustrate the 4 development stages of industrial revolution</li> <li>compare key characteristics of 3rd and 4th industrial revolutions in order to recognise the benefits of the 4th industrial revolution in comparison with the 3rd one</li> <li>identify key principles of industry 4.0</li> <li>explain how to apply key characteristics of industry 4.0 to examples from its respective VET field/ industry sector</li> <li>provide examples of the use of advanced manufacturing in different sectors</li> <li>show benefits of implementing advanced manufacturing for the improvement of</li> </ul>	<ul style="list-style-type: none"> <li>demonstrate knowledge and skills obtained for development of cooperation between VET and business sector</li> </ul>



		<p>product quality, cost reduction, flexibility to adapt to changes in the market and reduction of time to get new products to market</p> <ul style="list-style-type: none"> <li>• distinguish between terms and concepts of digitization, digitalization and digital transformation</li> <li>• differentiate between digitalization and Industry 4.0 in order to recognise the evolution</li> <li>• demonstrate knowledge and skills obtained for development of cooperation between VET and business sector of the industrial production paradigm</li> <li>• list 9 main technologies that are transforming</li> <li>• industrial production</li> </ul>	
<p>Type of activity</p>	<input checked="" type="checkbox"/> PDF <input type="checkbox"/> PPT <input type="checkbox"/> Image/Infographic <input type="checkbox"/> Video	<input checked="" type="checkbox"/> Test/Quiz <input type="checkbox"/> Game <input type="checkbox"/> Other (specify)	<hr/>
<p>Duration</p>	<p>60 minutes</p>		
<p>Activity (to be inserted into Moodle and</p>	<p>Industry 4.0 helps manufacturers with current challenges by making them becoming more flexible and reacting to changes in the market more easily. It can increase the speed of innovation and is very consumer-centred, leading</p>		



seen by learners)	<p>to faster design processes. The aim of this activity is to get insight into the benefits and opportunities arising from the Industry 4.0.</p> <p>To complete this lesson:</p> <ol style="list-style-type: none"> <li>1. Read the following article (15 minutes): „Industrial Revolution 4.0 – Advantages, Challenges and the Future“ <a href="https://techtzpah.com/industrial-revolution-4-0-advantages-challenges-and-the-future/">https://techtzpah.com/industrial-revolution-4-0-advantages-challenges-and-the-future/</a></li> <li>2. Read the following article (10 minutes): „How can Industry 4.0 benefit my business?“</li> <li>3. <a href="https://www.bdc.ca/en/articles-tools/technology/invest-technology/pages/how-can-industry-benefit-my-business.aspx">https://www.bdc.ca/en/articles-tools/technology/invest-technology/pages/how-can-industry-benefit-my-business.aspx</a></li> <li>4. Read the following chapter, p. 53-63, (30 minutes): <a href="http://www.smeart.eu/en/results/handbook-smear/SMeART_Handbook_2019_web_EN.pdf">http://www.smeart.eu/en/results/handbook-smear/SMeART_Handbook_2019_web_EN.pdf</a></li> <li>5. Complete the short quiz (5 minutes).</li> <li>6.</li> </ol>
Assessment	Learner will answer short quiz on the topic.
Resources	PC, laptop, tablet, smartphone, Internet connection
Further reading	<a href="https://www.bdc.ca/EN/Documents/analysis_research/bdc-etude-manufacturing-en.pdf?utm_campaign=manufacturing-2017--Studies--EN&amp;utm_medium=email&amp;utm_source=Eloqua">https://www.bdc.ca/EN/Documents/analysis_research/bdc-etude-manufacturing-en.pdf?utm_campaign=manufacturing-2017--Studies--EN&amp;utm_medium=email&amp;utm_source=Eloqua</a>

