



## Subject card

Subject name and code	Manufacturing Techniques 2, PG_00049765						
Field of study	Power Engineering, Power Engineering						
Date of commencement of studies	October 2023	Academic year of realisation of subject				2024/2025	
Education level	first-cycle studies	Subject group				Obligatory subject group in the field of study Subject group related to scientific research in the field of study	
Mode of study	Full-time studies	Mode of delivery				at the university	
Year of study	2	Language of instruction				English	
Semester of study	3	ECTS credits				3.0	
Learning profile	general academic profile	Assessment form				assessment	
Conducting unit	Department of Manufacturing and Production Engineering -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Jacek Tomków					
	Teachers	dr hab. inż. Jacek Tomków mgr inż. Karolina Chodnicka-Wszelak					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	15.0	0.0	0.0	30
	E-learning hours included: 0.0						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	Number of study hours	30		4.0		41.0	75
Subject objectives	Knowledge of plastic technology, additive processing method, electric discharge manufacturing, and others advance machining processes. Principles of manufacturing process and quality control						
Learning outcomes	Course outcome		Subject outcome			Method of verification	
	[K6_W05] has structured knowledge in the field of electrical engineering and electronics, necessary to understand the basics of operation and selection of electrical machines, electricity transmission systems and power electronic devices						
[K6_U02] is able to apply the learned mathematical methods to the analysis and design of elements, systems and energy systems							
Subject contents	LECTURE: Basic of plastic technology, additive method of manufacturing, Surface technology and inspection in 2D and 3D parameters, manufacturing systems, measurement and inspection, Production planing and control,  LABORATORY EXERCISE: Additive method in manufacturing, geometric structure of surface - roughness measurement, plastic techniques, influence of the basis on manufacturing accuracy, (EDM) electro discharge manufacturing, planing manufacture of a definite part spectrum, coordinate measurement technics						
Prerequisites and co-requisites							
Assessment methods and criteria	Subject passing criteria		Passing threshold			Percentage of the final grade	
	Final test		60.0%			60.0%	
	Reports		0.0%			40.0%	

Recommended reading	Basic literature	<ol style="list-style-type: none"> <li>1. M. P. Groover: <i>Fundamentals of modern Manufacturing</i>, JOHN WILEY&amp;SONS, INC.</li> <li>2. S. Kalpakjian, S. R. Schmid: <i>Manufacturing Engineering and Technology</i>, Pearson Prentice Hall.</li> <li>3. A. Brent Strong: <i>Plastic materials and processing</i>, Pearson Prentice Hall.2000.</li> </ol>
	Supplementary literature	<ol style="list-style-type: none"> <li>1. Myer Kutz: <i>Mechanical Engineers' handbook Manufacturing and Management</i>, John Wiley &amp; sons, INC, 2006</li> </ol>
	eResources addresses	<p>Adresy na platformie eNauczanie:</p> <p>Manufacturing Techniques 2, WL, Energy Technologies, sem. 3, zimowy, 2024/25 - Moodle ID: 41045  <a href="https://enauzanie.pg.edu.pl/moodle/course/view.php?id=41045">https://enauzanie.pg.edu.pl/moodle/course/view.php?id=41045</a></p>
Example issues/ example questions/ tasks being completed	<ol style="list-style-type: none"> <li>1. Parameters characterize the geometric structure of the surface,</li> <li>2. Measurement length and evaluation length,</li> <li>3. Characterize machining allowances,</li> <li>4. Bases in the manufacturing process,</li> <li>5. The relationship between class of the accuracy of the components and the structure of the surface</li> <li>6. What is the technological base?,</li> <li>7. Operation in the manufacturing process,</li> <li>8. Characterize the machining process,</li> <li>9. Characterize the incremental method,</li> <li>10. The method of manufacture of plastics components,</li> <li>11. Characterise EDM process.</li> </ol>	
Work placement	Not applicable	

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