



Subject card

Subject name and code	Manufacturing techniques 2, PG_00042015						
Field of study	Power Engineering, Power Engineering, Power Engineering, Power Engineering, Power Engineering						
Date of commencement of studies	October 2020		Academic year of realisation of subject		2021/2022		
Education level	first-cycle studies		Subject group				
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. Stefan Dzionk				
	Teachers		dr hab. inż. Stefan Dzionk dr inż. Mieczysław Siemiątkowski dr inż. Piotr Sender dr inż. Sławomir Szymański				
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						
	Adresy na platformie eNauczanie: Techniki wytwarzania II, W, Energ., I-st., sem.3, zimowy 2021/22, (PG_00042015) - Moodle ID: 18594 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=18594 Techniki wytwarzania II, W, Energ., I-st., sem.3, zimowy 2021/22, (PG_00042015) - Moodle ID: 18594 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=18594						
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		3.0		42.0	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_W06		Students will learn about unconventional manufacturing technologies, their possibilities and applications. Students will be able to determine the quality requirements of manufactured parts and select appropriate processing methods.		[SW1] Assessment of factual knowledge		
	K6_U01		The student is able to select appropriate methods of quality verification of manufactured parts and interpret them using adequate technical parameters. The student is able to obtain information from literature, organize and interpret it in order to select technology for processing various materials.		[SU3] Assessment of ability to use knowledge gained from the subject		

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%	50.0%
	Reports	60.0%	50.0%
Recommended reading	Basic literature	1. M. P. Groover: <i>Fundamentals of modern Manufacturing</i> , JOHN WILEY&SONS, INC. 2. S. Kalpakjian, S. R. Schmid: <i>Manufacturing Engineering and Technology</i> , Pearson Prentice Hall. 3. A. Brent Strong: Plastic materials and processing, Pearson Prentice Hall.2000.	
	Supplementary literature	1. Myer Kutz: Mechanical Engineers handbook Manufacturing and Management, John Wiley & sons, INC, 2006	
	eResources addresses	Techniki wytwarzania II, W, Energ., I-st., sem.3, zimowy 2021/22, (PG_00042015) - Moodle ID: 18594 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=18594 Techniki wytwarzania II, W, Energ., I-st., sem.3, zimowy 2021/22, (PG_00042015) - Moodle ID: 18594 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=18594	
Example issues/ example questions/ tasks being completed	1. Parameters characterize the geometric structure of the surface, 2. Measurement length and evaluation length, 3. Characterize machining allowances, 4. Datum in the manufacturing process, 5. The relationship between class of the accuracy of the components and the structure of the surface 6. What is the technological datum?, 7. Operation in the manufacturing process, 8. Characterize the machining process, 9. Characterize the incremental method, 10. The methods of manufacture of plastics components, 11. Characterise EDM process.		
Work placement	Not applicable		