



Subject card

Subject name and code	, PG_00064499						
Field of study	Materials Engineering, Materials Engineering						
Date of commencement of studies	February 2024	Academic year of realisation of subject			2024/2025		
Education level	second-cycle studies	Subject group			Optional subject group 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	1	Language of instruction			Polish		
Semester of study	2	ECTS credits			5.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Division of Magnetic Properties of Materials -> Institute of Nanotechnology and Materials Engineering -> Faculty of Applied Physics and Mathematics						
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Marek Chmielewski					
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	30.0	30.0	0.0	60
	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	60		0.0		0.0	60
Subject objectives	The aim of the course is to familiarize the student with the possibilities of technical 3D prototyping from the level of using commercial and non-commercial software to create 3D models to the process of direct printing using 3D devices such as FDM/FFF and SLA.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	K7_W07	The student learns about the possibilities of the various techniques used in the field of 3D prototyping, independently discovers and indicates the possibilities of their effective application in various fields of technology and in everyday life. He/she is able to effectively select the properties of materials which can meet design conditions.	[SW1] Assessment of factual knowledge
	K7_U01	The student learns the importance of correctness in formulating the language of science, is able to communicate correctly, is able to objectively convey information on the content learned in the literature. He or she is able to effectively review content available in literature databases, and is able to put this information, edited in Polish and English, into practice.	[SU1] Assessment of task fulfilment
	K7_K01	In carrying out tasks related to the topics of laboratory student will know the correct methods of carrying out the experiment, will be able to realize and understand the need for multi-track analysis of the results. Properly provide calibration procedures, and effectively uses these results to determine the unknown parameters of the measured elements	[SK2] Assessment of progress of work
Subject contents	The content of the course is to comprehensively familiarise students with prototyping techniques based on 3D printing technologies. Within the scope of the subject, programmes for the rapid creation of simple and advanced 3D models will be presented. Work with commercial as well as free software is foreseen. The next task will be to familiarise students with 3D printing techniques, especially in terms of practical applications. The final stage of the course will be the realisation of a selected 3D project, from the level of the computer model to the final product.		
Prerequisites and co-requisites	not required		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	project	50.0%	100.0%
Recommended reading	Basic literature	web resources https://3d.edu.pl/3-obowiazkowe-ksiazki-o-druku-3d/	
	Supplementary literature	not require	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed	Printing by technik FPD/FFF Filamnets PLA,ABS,PET Ekstruder, hot endy, etc		
Work placement	Not applicable		

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