

GDAŃSK UNIVERSITY

Subject card

Subject name and code	Thin film technologies, PG_00058947							
Field of study	Nanotechnology							
Date of commencement of studies	October 2022		Academic year of realisation of subject			2024/2025		
Education level	first-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	3		Language of instruction			Polish		
Semester of study	5		ECTS credits			4.0		
Learning profile	general academic profile		Assessment form			exam		
Conducting unit	Institute of Nanotechnology and Materials Engineering -> Faculty of Applied Physics and Math				ematics			
Name and surname of lecturer (lecturers)	Subject supervisor dr hab. inż. Marcin Łapiński							
	Teachers		dr hab. inż. Marcin Łapiński					
			dr inż. Marta Prześniak-Welenc					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Projec	:t	Seminar	SUM
	Number of study hours	15.0	0.0	30.0	0.0		0.0	45
	E-learning hours included: 0.0							
Learning activity and number of study hours	Learning activity Participation ir classes includ plan		I didactic Participation in ed in study consultation hours		Self-study		SUM	
	Number of study hours	45	5.0			50.0		100
Subject objectives	The aim of the course is to give information with the techniques (both, production and analysis) used in thin- film technology.						used in thin-	
Learning outcomes	Course outcome		Subject outcome			Method of verification		
	K6_W05		The student is able to solve scientific and technological problems related to thin films			[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects		
	K6_U10		The student is able to plan and conduct an experiment, paying particular attention to energy consumption and other environmental aspects.			[SU4] Assessment of ability to use methods and tools [SU1] Assessment of task fulfilment		
	K6_W06		The student has theoretical bacground, especially including knowledge of the basics of thermodynamics, crystallography and chemistry			[SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge		
	K6_U06		The student knows the techniques of manufacturing and analyzing thin films. Has the necessary theoretical knowledge and uses professional terminology.			[SU5] Assessment of ability to present the results of task [SU3] Assessment of ability to use knowledge gained from the subject [SU2] Assessment of ability to analyse information		

Subject contents	1. Nanothermodynamics,						
	2. Manufacturing of the thin films,						
	3. Properties						
	4. Analysis of the thin films						
	5. Applications						
Prerequisites and co-requisites	Passed the exam in the listed below subjects						
	Technologie Otrzymywania Nanomateriałów						
	Fizyczne Metody Badań Materiałów						
	Termodynamika						
	Krystalografia						
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade				
	exam	51.0%	60.0%				
	lab report	51.0%	40.0%				
Recommended reading	Polis and English books and papers. Like eg.		s. Like eg.				
		Krishna Seshan, "Handbook of Thin Film Deposition"					
		Hartmut Frey, "Handbook of Thin Film Technology"					
	Supplementary literature	Technological news from journals					
	eResources addresses	Adresy na platformie eNauczanie:					
	Technologie cienkowarstwowe - Moodle ID: 41767 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=41767						
Example issues/ example questions/ tasks being completed	Opisz metodę wytwarzania ultracienkich warstw.						
	Wyjaśnij na czym polega efekt fotochromowy						
Work placement	Not applicable						

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