



Subject card

Subject name and code	Experimental Nanotechnology , PG_00057511						
Field of study	Nanotechnology						
Date of commencement of studies	February 2025	Academic year of realisation of subject			2024/2025		
Education level	second-cycle studies	Subject group					
Mode of study	Full-time studies	Mode of delivery			at the university		
Year of study	1	Language of instruction			Polish		
Semester of study	1	ECTS credits			3.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Division of Nanomaterials Physics -> Institute of Nanotechnology and Materials Engineering -> Faculty of Applied Physics and Mathematics						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Marcin Łapiński				
	Teachers		dr hab. inż. Marcin Łapiński				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	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 in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	Number of study hours	45		2.0		28.0	75
Subject objectives	Overview of selected experimental methods used in nanotechnology in the field of synthesis and research properties .						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
Subject contents	<p>The properties of nanomaterials and structure sizes.</p> <p>Methods of preparation :</p> <ul style="list-style-type: none">- Methods of bottom-up , top-down,- Methods of preparation of 0D, 1D, 2D, 3D structures , <p>Methods of study:</p> <ul style="list-style-type: none">- Microscopic methods ,- Methods of structure studies,- Spectroscopic methods, especially luminescence measurements.						

Prerequisites and co-requisites	The physical basis of nanotechnology - NAN1B007 Physical chemistry of surfaces - NAN1B016		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Examination of the lecture	60.0%	60.0%
	laboratory assessment	80.0%	40.0%
Recommended reading	Basic literature	Nanostructures and Nanomaterials. Synthesis, Properties and Applications. Imperial College Press. Guozhong Gao. 2004. Introduction to Nanotechnology. Ch. P. Poole Jr., F. J. Owens. Wiley. 2003. Nanoelectronics and Information Technology. Adv. Electronic Materials and Novel Devices. Reiner Waser (Ed.) Wiley-VCH. 2003.	
	Supplementary literature	Introduction to Nanotechnology. Ch. P. Poole Jr., F. J. Owens. Wiley. 2003. Nanoelectronics and Information Technology. Adv. Electronic Materials and Novel Devices. Reiner Waser (Ed.) Wiley-VCH. 2003.	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed	Methods of synthesis of luminescence thin films. Methods of test properties of glasses and oxide thin films.		
Work placement	Not applicable		

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