



Subject card

Subject name and code	Nanotechnology methods in science and technology, PG_00038594						
Field of study	Nanotechnology						
Date of commencement of studies	October 2020	Academic year of realisation of subject			2023/2024		
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	4	Language of instruction			Polish		
Semester of study	7	ECTS credits			1.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Solid State Physics -> Faculty of Applied Physics and Mathematics						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Aleksandra Mielewczyk-Gryń				
	Teachers		dr hab. inż. Aleksandra Mielewczyk-Gryń				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	0.0	0.0	0.0	15
	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	15		0.0		0.0	15
Subject objectives	The aim of a class is to present students the different applications of nanotechnology methods e.g. history or biology.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	K6_W07		Has knowledge of nanotechnology methods used in other fields of science.		[SW2] Assessment of knowledge contained in presentation [SW3] Assessment of knowledge contained in written work and projects		
	K6_W06		Has knowledge of the physical and chemical foundations of nanotechnology necessary to analyze the results of experimental measurements.		[SW1] Assessment of factual knowledge		
Subject contents	<ul style="list-style-type: none">• Calorimetry• Microscopy• Resonance methods• Spectroscopic methods• Ion scattering methods• Electrochemical methods						
Prerequisites and co-requisites							
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	Test		51.0%		50.0%		
	Essay		51.0%		50.0%		
Recommended reading	Basic literature		Experimental Methods in the Physical Sciences				

	Supplementary literature	<p>scientific papers eg:</p> <p>J Biomol Tech. 2010 Dec; 21(4): 167193.</p> <p>Hyperfine Interactions 154: 159176, 2004</p> <p>Proc Natl Acad Sci U S A. 2013 Apr 23; 110(17): 66516656</p>
	eResources addresses	<p>Adresy na platformie eNauczanie:</p> <p>Metody badawcze nanotechnologii w innych dziedzinach nauki i techniki - Moodle ID: 33125 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=33125</p>
Example issues/ example questions/ tasks being completed	<ul style="list-style-type: none"> - Proteins denaturation analysis. - Microscopy in archeology. - photoelectric effect and it's applications 	
Work placement	Not applicable	