



Subject card

Subject name and code	, PG_00055426						
Field of study	Nanotechnology						
Date of commencement of studies	February 2023	Academic year of realisation of subject			2023/2024		
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	2	Language of instruction			Polish		
Semester of study	3	ECTS credits			3.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Zakład fizyki nanomateriałów -> Instytut Nanotechnologii i Inżynierii Materiałowej -> Faculty of Applied Physics and Mathematics						
Name and surname of lecturer (lecturers)	Subject supervisor	prof. dr hab. inż. Wojciech Sadowski					
	Teachers	prof. dr hab. inż. Wojciech Sadowski dr inż. Tadeusz Miruszewski dr inż. Sebastian Wachowski dr hab. inż. Aleksandra Mielewczyk-Gryń dr hab. inż. Beata Bochentyn dr hab. inż. Jacek Ryl prof. dr hab. inż. Maria Gazda dr inż. Michał Winiarski prof. dr hab. inż. Tomasz Klimczuk prof. dr hab. inż. Barbara Kościelna dr inż. Marcin Łapiński dr inż. Kamil Kolincio dr hab. inż. Leszek Piotrowski dr hab. Maciej Bobrowski dr inż. Szymon Winczewski dr hab. inż. Natalia Wójcik					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	0.0	0.0	0.0	30
	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	30		5.0		40.0	75
Subject objectives	The aim of the course is to familiarize students with the latest trends in materials science, research directions and achievements based on literature and conference reports.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	K7_K09	He can analyze various aspects of nanotechnology applications.	[SK5] Assessment of ability to solve problems that arise in practice
	K7_W02	Can critically analyze detailed knowledge in the field of a selected field of nanotechnology and, to the extent adequate to the needs, in related fields of science or technology.	[SW1] Assessment of factual knowledge
	K7_U07	The ability to apply the acquired knowledge to the application of new materials.	[SU2] Assessment of ability to analyse information
Subject contents	<p>Properties of nanosystems.</p> <p>Aspects of designing and modeling of nanomaterials.</p> <p>Methods of synthesis in nanotechnology.</p> <p>Research methods of properties of nanomaterials.</p> <p>Examples of nanomaterials and nanostructures.</p>		
Prerequisites and co-requisites	Knowledge in the field of physicochemistry of materials.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Written test on the content of the lecture.	50.0%	100.0%
Recommended reading	Basic literature	<p>NanotechnologyBased Additive Manufacturing: Product Design, Properties and Applications</p> <p>Editor(s): Kalim Deshmukh, S.K. Khadheer Pasha, Kishor Kumar Sadasivuni First published: 23 December 2022</p> <p>Nanotechnology in Electronics: Materials, Properties, Devices. Visakh P. M. (Editor), Artem Semkin (Editor), Raneesh Balakrishnan (Editor), Sasa Lazovic (Editor) ISBN: 978-3-527-34673-8 October 2022</p> <p>Artificially Intelligent Nanomaterials for Environmental Engineering. Peng Wang, Jian Chang, Lianbin Zhang</p> <p>ISBN: 978-3-527-34494-9 February 2020</p>	
	Supplementary literature	CNA Library Resources.	
	eResources addresses	<p>Adresy na platformie eNauczanie:</p> <p>Nowe trendy w nauce o materiałach i nanotechnologii - Moodle ID: 36252</p> <p>https://enauzanie.pg.edu.pl/moodle/course/view.php?id=36252</p>	
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		