



Subject card

Subject name and code	Nanotechnology and the human environment, PG_00055425						
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		Humanistic-social subject group		
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		2.0		
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 inż. Marek Chmielewski				
	Teachers		prof. dr hab. inż. Jarosław Rybicki dr inż. Marek Chmielewski				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	0.0	15.0	15.0	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		2.0		18.0	50
Subject objectives	The aim of the course is the answer on the question of ethics influence on the accuracy of the science investigation procedure and presentation in the public results of the research and measurement results.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	K7_K09		The student learns the issue of ethics in scientific research and is able to effectively verify their validity and can apply them in practice. Student will able to enforce ethical standards in the research work.		[SK5] Assessment of ability to solve problems that arise in practice		
	K7_W03		The student will know: the physical basis of the description of the magnetic properties with a particular emphasis on the properties of hysteresis, definitions and description of the mechanical waves propagating in solid materials,will know influence of the permanent or changed in time magnetic field on the conductive materials.		[SW1] Assessment of factual knowledge		
	K7_W07		The student learns the issue of ethics in scientific research and is able to effectively verify their validity and can apply them in practice. Student will able to enforce ethical standards in the research work.		[SW1] Assessment of factual knowledge [SW2] Assessment of knowledge contained in presentation		
Subject contents	The content of the course is the analysis and verification of existing codes of the ethics in the subjects of the research and development in science. Understanding and analyzing the ethic code in the field of nanotechnology. The analysis is also the history and evolution of content included within the applicable codex. In addition, the lecture will be analyzed as current controversial statements and publications in the field of science and especially nanotechnology.						
Prerequisites and co-requisites	not required						

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Grade	50.0%	100.0%
Recommended reading	Basic literature	The Ethics of Nanotechnology, Andrew Chen	
	Supplementary literature	not required	
	eResources addresses	Adresy na platformie eNauczanie: Nanotechnologia a środowisko człowieka - Moodle ID: 36929 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=36929	
Example issues/ example questions/ tasks being completed	Ethics in nanotechnology.		
	The impact of research on the economy.		
	The impact of research on policy.		
Work placement	Not applicable		