



Subject card

Subject name and code	Nanotechnology and human environment, PG_00055428						
Field of study	Nanotechnology, Nanotechnology (joint Master's double-degree program)						
Date of commencement of studies	October 2023	Academic year of realisation of subject			2024/2025		
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			English		
Semester of study	4	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	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 a general presentation of the ethical issues in the field of scientific research, in addition, during the course, allowing students to express their opinions on the ethical and humanistic subjects. Presented are current and analyzed existing codes in the area in the various fields of research especially in nanotechnology research.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	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 be able to enforce ethical standards in the research work.			[SW1] Assessment of factual knowledge		
	K7_W03	The student will know a variety of research techniques used in the field of measurement of the structure, the chemical composition, the atomic structure, student learns and classifies physical phenomena used the technic of measurement of the properties of the materials.			[SW1] Assessment of factual knowledge		
	K7_K09	Students will analyze the impact of the development of technology and new scientific content on the environment, they will be able to determine the scope of safe use of advanced technical solutions. He or she can assess the importance of maintaining balance in the field of technological progress.			[SK5] Assessment of ability to solve problems that arise in practice		
Subject contents	The content of the course is the presentation of the issues contained in the ethical codes applicable to science, the issues of human impact on the environment will be discussed. Issues of dangers in the human environment resulting from the use of nanotechnology will be presented, opportunities to avoid them will be discussed.						
Prerequisites and co-requisites	not required						

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
		preparation of the panel discussion	100.0%
Recommended reading	Basic literature	Kodeks Etyki Pracownika Naukowego PAN	
		Internet sources	
	Supplementary literature	not required	
	eResources addresses	Adresy na platformie eNauczanie: Nanotechnology and human environment - Moodle ID: 44896 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=44896	
Example issues/ example questions/ tasks being completed	The human impact on the environment.		
	Technology in the hands of man		
Work placement	Not applicable		

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