



Subject card

Subject name and code	Safety in Nanotechnology, PG_00037200						
Field of study	Nanotechnology						
Date of commencement of studies	October 2022		Academic year of realisation of subject		2025/2026		
Education level	first-cycle studies		Subject group		Humanistic-social subject group		
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	Division of Ceramics -> Institute of Nanotechnology and Materials Engineering -> Faculty of Applied Physics and Mathematics -> Wydziały Politechniki Gdańskiej						
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						
	eNauczanie source addresses: Moodle ID: 972 Bezpieczeństwo w Nanotechnologii https://enauczanie.pg.edu.pl/2025/course/view.php?id=972						
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		1.0		9.0	25
Subject objectives	The aim of the course is to familiarize students with the hazards arising from the production and application of nanomaterials, as well as the health and environmental risks associated with working in environments where nanostructures are present. Students will learn methods of risk assessment, strategies for hazard mitigation, and technical and organizational solutions applied in practice. In addition, legal regulations concerning the safety and use of nanomaterials in Poland and at the international level will be discussed.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_W71] has general knowledge in humanistic, social, economic or legal sciences		Student can understand and present the positive and negative attitudes towards nanotechnology.		[SW1] Assessment of factual knowledge		
	[K6_K71] is conscious of the need to apply knowledge from humanistic, social, economic or legal sciences in order to function in a social environment		Student understands a necessity to implement a law. He/she can characterize the law regulations towards import, manufacturing and sale of products containing nanomaterials.		[SK5] Assessment of ability to solve problems that arise in practice [SK4] Assessment of communication skills, including language correctness [SK2] Assessment of progress of work		
	K6_U10		The student can correctly identify biological and ecological effects and hazards in the context of research on nanomaterials.		[SU1] Assessment of task fulfilment		
Subject contents	Social audience of nanotechnology and associated hazards. The health hazards. The law and technical mens to prevent the hazards caused by an application of nanotechnology. The law regulations of European Community in area of nanotechnology. The law regulations for chemical substances. The law regulations for cosmetic products, biocides, foods and food packages, medical and therapeutical products. The safety of employes. The environment safety: protection of water, soli and air, wastes.						
Prerequisites and co-requisites	None						
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	Written exam		50.0%		100.0%		

Recommended reading	Basic literature	<ol style="list-style-type: none"> Łopacka J. Półtorak A.: Zagrożenia związane z wykorzystaniem nanotechnologii w produkcji opakowań do żywności w świetle badań naukowych i w opinii konsumentów. Problemy Higieny i Epidemiologii 94 (2013) 172-178. Zapór L.: Bezpieczeństwo i higiena pracy a rozwój nanotechnologii. Bezpieczeństwo i Higiena Pracy, nr 2 (2012) 4-7. Nanotechnologies: a preliminary risk analysis on the basis of a workshop organized in Brussels on 12 March 2004 by the Health and Consumer Protection Directorate General of the European Commission. http://europa.eu.int/comm/health/ph_risk/events_risk_en.htm Waszkiewicz-Robak B., Świderski F.: NANOTECHNOLOGIA KORZYŚCI I ZAGROŻENIA ZDROWOTNE. Bromatologia i Chemia Toksykologiczna 16, nr 3 (2008) 202-208.
	Supplementary literature	<ol style="list-style-type: none"> Jurewicz M.: Nanotechnologia. Regulacje prawne. Legislacja Unii Europejskiej. Difin 2014. http://ec.europa.eu/polska/news/121003_nanotechnologia_pl.htm
	eResources addresses	
Example issues/ example questions/ tasks being completed	<ol style="list-style-type: none"> Health hazards in work with nanomaterials Law regulations for chemical substances Law regulations for foods and food packages 	
Work placement	Not applicable	

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