



Subject card

Subject name and code	Innovations in industry, PG_00069062						
Field of study	Materials Engineering						
Date of commencement of studies	October 2024		Academic year of realisation of subject		2025/2026		
Education level	second-cycle studies		Subject group		Specialty 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		1.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Institute of Nanotechnology and Materials Engineering -> Faculty of Applied Physics and Mathematics -> Wydział Politechniki Gdańskiej						
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	0.0	15.0	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		2.0		8.0	25
Subject objectives	The aim of the course is to present the possibilities of practical application of technical solutions developed in research laboratories in real industrial conditions. The presentation will be based on the analysis of actual implementations. Case study.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K7_K02] Is aware of the importance of non-technical aspects and effects of engineering, including the influence on the environment and resulting responsibility for the decisions.		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.		[SK2] Assessment of progress of work		
	[K7_U02] Can independently determine the directions of self-development and implement the self-education process it in order to raise professional competences.		Students will analyse the impact of technological development and new scientific content on the environment, and will be able to determine the extent to which advanced technical solutions can be applied safely. He/she is able to assess the importance of maintaining the balance of technological progress. He/she is able to acquire knowledge on his/ her own to the extent necessary to expand his/her competence.		[SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools		
	[K7_W07] Has knowledge of the development trends and most important new achievements of the fields of science and scientific disciplines relevant to materials engineering and related disciplines.		The student will learn various research techniques used in the field of structure research, chemical composition, atomic structure, The student will learn and classify physical phenomena used in the field of materials research.		[SW1] Assessment of factual knowledge		

Subject contents	The content of the course is to provide information on the importance of introducing innovations into technological processes in the wider industry. The subject will be presented on the basis of exemplary applications of new technologies applied in existing technological processes, including an analysis of the social and economic effects of such solutions.		
Prerequisites and co-requisites	Not required		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Settlement on the basis of a prepared report	60.0%	100.0%
Recommended reading	Basic literature	Innovations in Industry 4.0 conditions. Radosław WOLNIAK January 2023, Scientific Papers of Silesian University of Technology Organization and Management Series2023(169):725-741 The role of innovation in industrial dynamics and productivity growth: a survey of the literature, Ugur, Mehmet; Vivarelli, Marco, GLO Discussion Paper, No. 648, https://www.econstor.eu/bitstream/10419/223311/1/GLO-DP-0648.pdf	
	Supplementary literature	Not required	
	eResources addresses		
Example issues/ example questions/ tasks being completed	Economics in industry. Research directions versus industrial development. Who cares about process innovation		
Work placement	Not applicable		

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