



Subject card

Subject name and code	Inorganic Technology, PG_00049400						
Field of study	Green Technologies						
Date of commencement of studies	October 2020	Academic year of realisation of subject			2022/2023		
Education level	first-cycle studies	Subject group			Obligatory subject group in the field of study 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	3	Language of instruction			Polish		
Semester of study	6	ECTS credits			2.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Process Engineering and Chemical Technology -> Faculty of Chemistry						
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Marek Lieder					
	Teachers	dr hab. inż. Marek Lieder					
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 Address on the e-learning platform: https://enauczanie.pg.edu.pl/moodle/course/view.php?id=10936						
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	Acquires technological knowledge of the production of inorganic compounds. Students can combine theoretical knowledge with technological applications.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K6_U04] capable of formulating and solving design tasks in the field of environmental technology to recognize their non-technical aspects, including environmental, economic and legal. Is capable of applying the principles of occupational health and safety. Is able to make initial assessment of engineering solutions and actions	Students will acquire knowledge defined by [9485] [K6_U04]			[SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject		
	[K6_W02] has a basic knowledge of chemistry including general chemistry, inorganic, organic, physical, analytical, including the knowledge necessary to describe and understand the phenomena and chemical processes occurring in the environment; measurement and the determination of the parameters of these processes.	Students will acquire knowledge defined by [9487] [K6_W02]			[SW1] Assessment of factual knowledge [SW2] Assessment of knowledge contained in presentation		

Subject contents	<ol style="list-style-type: none"> 1. Soda ash production 2. Technology of sulfuric acid production 3. Technology of phosphorous and its inorganic compounds including fertilizers 4. Technology of inorganic nitrogen compounds: nitric acid, ammonia, urea, ammonia nitrate 5. Technology of chlorine 6. Technology of fuels combustion 7. Technology of water 8 Metallurgical technologies 9. Hydrogen economy 											
Prerequisites and co-requisites												
Assessment methods and criteria	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">Subject passing criteria</th> <th style="width: 33%;">Passing threshold</th> <th style="width: 33%;">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td>examination</td> <td>60.0%</td> <td>60.0%</td> </tr> <tr> <td>test</td> <td>60.0%</td> <td>40.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade	examination	60.0%	60.0%	test	60.0%	40.0%
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examination	60.0%	60.0%										
test	60.0%	40.0%										
Recommended reading	Basic literature	<ol style="list-style-type: none"> 1. Bortel E., Koneczny H. Zarys technologii chemicznej Wydawnictwo Naukowe PWN Warszawa 1992 2. Kępiński J. Technologia chemiczna nieorganiczna Państwowe Wydawnictwo Naukowe Warszawa 1984 3. Schmidt-Szałowski K., Sentek J. Podstawy technologii chemicznej. Organizacja procesów produkcyjnych Oficyna Wydawnicza Politechniki Warszawskiej Warszawa 2001 4. Schmidt-Szałowski K., Sentek J., Raabe J., Bobryk E. Podstawy technologii chemicznej. Procesy w przemyśle nieorganicznym Oficyna Wydawnicza Politechniki Warszawskiej Warszawa 2004 5. Praca zbiorowa pod redakcją K. Schmidt-Szałowskiego Podstawy technologii chemicznej. Bilanse procesów technologicznych Oficyna Wydawnicza Politechniki Warszawskiej Warszawa 1997 6. Kowalski W., Nowe kierunki w technologii kwasu siarkowego, WNT Warszawa 1980 										
	Supplementary literature	not applicable										
	eResources addresses	Adresy na platformie eNauczenie: Technologia Nieorganiczna - Wykład - 2022/2023 - Moodle ID: 25918 https://enauczenie.pg.edu.pl/moodle/course/view.php?id=25918										
Example issues/ example questions/ tasks being completed	<ol style="list-style-type: none"> 1. Hydrogen and nitrogen are necessary for ammonia production. Where are these gases acquired? 2. Is it possible that during chlorine production by the mercury technology an electrolyte gets alkalized? 3. Compare the recirculation processes in both technologies of phosphorous production 											
Work placement	Not applicable											