

SDAŃSK UNIVERSITY 的 OF TECHNOLOGY

Subject card

Subject name and code	, PG_00048766								
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			English			
Semester of study	5		ECTS credits			6.0			
Learning profile	general academic profile		Assessment form			exam			
Conducting unit	Department of Process Engineering and Chemical Technology -> Faculty of Chemistry								
Name and surname	Subject supervisor		dr hab. inż. Marek Lieder						
of lecturer (lecturers)	Teachers		dr hab. inż. Justyna Łuczak						
			dr hab. inż. Marek Lieder						
Lesson types and methods	Lesson type	Lecture	Tutorial	Laboratory	Projec	t	Seminar	SUM	
of instruction	Number of study hours	15.0	0.0	30.0	15.0		0.0	60	
	E-learning hours included: 0.0								
	Address on the e-learning platform: https://enauczanie.pg.edu.pl/moodle/course/view.php?id=6136								
Learning activity and number of study hours	Learning activity Participation in classes includion		n didactic Participation in ed in study consultation hours		Self-study SU		SUM		
	Number of study hours	60		10.0		80.0		150	
Subject objectives	Learning of theoretical and practical aspects of the green chemical technologies. Acquiring the ability to combine theoretical knowledge with technological expectations.								
Learning outcomes	Course outcome		Subject outcome		Method of verification				
	[K6_W03] has a basic knowledge of soil, air and water pollutants, design and supervision of environmentally friendly technologies and technologies which do not produce waste, knows technology of cleaning and neutralization of industrial waste and wastewater management, has a basic understanding of the theoretical basis of methods and types of apparatus used in chemical analysis of environmental pollutants[K6_U02] is able to operate		Students will acquire knowledge in accordance with [9488] [K6_W03] Students will acquire knowledge in			[SW1] Assessment of factual knowledge [SU1] Assessment of task			
	equipment and perform typical analyzes of studies of environmental pollution, is able to carry out an analysis of typical environmental pollution and simple devices according to specification		accordance with [9411] [K6_U02]			fulfilment [SU4] Assessment of ability to use methods and tools [SU5] Assessment of ability to present the results of task			

Subject contents	1. Physico-chemical principles of technological processes						
	2. Chemical and technological conception of a method						
	3. The best use of raw materials						
	4. Principle of the best use of energy						
	5. Elements of electrochemical technology						
	6. Energy management in industry. Combustion						
	7. Simulations of chemical processes						
	8. Energy and mass balance						
Prerequisites and co-requisites	Student has basic knowledge of general, inorganic, organic and physical chemistry.						
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade				
	Lab repors	0.0%	40.0%				
	Exam	60.0%	60.0%				
Recommended reading	Basic literature	1. Jess, A., Wasserscheid, P., Chen Textbook, Wiley, 2013	nical Technology: An Integral				
		2. Kirk, R.E., Encyclopedia of Chemical Technology, Wiley & Sons Inc., 2007					
		3. Moulijn, J.A., Makkee, M., Diepen, A.E., Chemical Process Technology, 2014					
		4. Koyikkal, S., Chemical Process Technology and Simulation, PHI learning, 2013					
		5. H. L. White: Introduction to Industrial Chemistry, Wiley, 1987					
	Supplementary literature	not applicable					
	eResources addresses	Adresy na platformie eNauczanie:					
Example issues/ example questions/ tasks being completed	 Define the following terms: unit operations, and unit processes. Support definition with technological examples. What does it mean to 'freeze' a chemical system? Describe parallel heat exchange. Describe the Sabatier's rule (energy profiles are necessary). 						
Work placement	o. Describe the shift conversion.						
work placement	Inot applicable						