



Subject card

Subject name and code	, PG_00052319						
Field of study	Chemical Technology						
Date of commencement of studies	October 2022		Academic year of realisation of subject		2023/2024		
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	2		Language of instruction		Polish		
Semester of study	4		ECTS credits		3.0		
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. Jacek Gębicki				
	Teachers		dr hab. inż. Jacek Gębicki dr hab. inż. Justyna Łuczak dr inż. Robert Aranowski				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	45.0	0.0	0.0	0.0	15.0	60
	E-learning hours included: 0.0						
	Address on the e-learning platform: https://enauczanie.pg.edu.pl/moodle/my/						
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	60		5.0		10.0	75
Subject objectives	The aim of the course is to introduce students to the basic principles of organization and conduct of technological processes in the chemical industry and related, involving the chemical processing of raw materials into products. Chemical technology is one of the areas of knowledge about production processes in which products with a specific chemical composition are produced from appropriately selected raw materials with appropriate efficiency.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	K6_W05		The student can choose the synthesis from raw materials to the product of basic chemical compounds in industry. Can critically evaluate the analyzed process		[SW2] Assessment of knowledge contained in presentation		
	K6_U05		The student has acquired basic knowledge in the field of chemical technology and unit processes and operations. In addition, he knows the principles of green engineering and chemistry		[SU3] Assessment of ability to use knowledge gained from the subject [SU2] Assessment of ability to analyse information [SU1] Assessment of task fulfilment		
Subject contents	1. Basics of chemical processes, equilibrium constant, reaction rate, 2. Mathematical theory of planning experiments, optimization 3. Elements of process design. Unit operations. Schematic and technological diagram 4. Material and heat balance 5. Technological principles 6. Basic unit operations 7. Issues of the kinetics of the technological process 8. Basics of reactor theory 9. Increasing the scale of the technological process 10. Technological methods of environmental protection (air, water)						

Prerequisites and co-requisites	The student has a basic knowledge of: 1. Chemical apparatus 2. Thermodynamics and chemical kinetics 3. Basics of environmental protection		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	lecture	60.0%	70.0%
	seminar	60.0%	30.0%
Recommended reading	Basic literature	1. S. Bretsznajder i in., Podstawy Ogólne Technologii Chemicznej, WNT, Warszawa, 1973 2. J. Molenda, Technologia Chemiczna, WSiP, Warszawa, 1997 3. K. Schmidt-Szałowski i in., Technologia Chemiczna, PWN, Warszawa, 2013	
	Supplementary literature	Scientific publications and trade journals, e.g. Chemical Industry	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed	1. Describe the dependence of the equilibrium degree of transformation on temperature 2. Describe the dependence of the reaction rate on the degree of conversion 3. Show the model of a plug-flow tubular reactor using a diagram 4. List the types of absorbers 5. Describe what is the mass exchange process in the co-current and countercurrent systems		
Work placement	Not applicable		