



Subject card

Subject name and code	Principles of General Technology, PG_00037486						
Field of study	PODSTAWY TECHNOLOGII OGÓLNEJ						
Date of commencement of studies	October 2025		Academic year of realisation of subject		2026/2027		
Education level	first-cycle studies		Subject group		Obligatory subject group 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	Department of Chemistry and Technology of Functional Materials -> Faculty of Chemistry -> Wydział Politechniki Gdańskiej						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Anna Schmidt				
	Teachers						
Lesson types	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						
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	Knowledge of basic concepts in the field of technology. The ability to describe the process using a schematic diagram and mass balance.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	K6_U10		The student has the skills to design simple biotechnological processes. Is able to prepare schematic diagrams and material balance of the analyzed process		[SU1] Ocena realizacji zadania [SU2] Ocena umiejętności analizy informacji [SU3] Ocena umiejętności wykorzystania wiedzy uzyskanej w ramach przedmiotu [SU4] Ocena umiejętności korzystania z metod i narzędzi [SU5] Ocena umiejętności zaprezentowania wyników realizacji zadania		
	K6_W08		The student independently analyzes exemplary biotechnological processes. The student indicates possibilities of modifying existing processes. The student suggests changes enabling the transformation of individual chemical processes into biotechnological ones.		[SW1] Ocena wiedzy faktograficznej [SW2] Ocena wiedzy zawartej w prezentacji [SW3] Ocena wiedzy zawartej w opracowaniu tekstowym i projektowym		
Subject contents	Course content – lecture Principles of green engineering. Chemical technology as applied science. The genesis of a new technological process. Basic raw materials and auxiliary materials in production. Chemical concept of the method. Technological concept of the method. Unit processes. Schematic and technological scheme. Mass and heat balance of the process. Technological principles. Examples of biotechnological processes.						
Prerequisites and co-requisites	Knowledge of chemical and biotechnological equipment.						
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	test (1 hour)		60.0%		100.0%		

Recommended reading	Basic literature	1. Marek Adamczak, Włodzimierz Bednarski, Jan Fiedurek, Fundamentals of industrial biotechnology, 1st edition, Polish Scientific Publishers PWN, Warsaw 2020 2. Jerzy Piotrowski, Józef Szarawara, Theoretical foundations of chemical technology, 1st edition, Scientific and Technical Publishers, Warsaw 2010
	Supplementary literature	1. Włodzimierz Bednarski, Arnold Reys, Food Biotechnology, 2nd edition, Polish Scientific Publishers PWN, WNT, Warsaw, 2020 2. Bjorn Kristiansen, Colin Ratledge, Translator: Stanisław Bielecki, Aleksander Chmiel, Andrzej Konowicz, Fundamentals of biotechnology, 1st edition, Polish Scientific Publishers PWN, Warsaw 2013
	eResources addresses	
Example issues/ example questions/ tasks being completed	1. On the basis of the drawing showing the technological diagram of the process, a schematic diagram should be drawn. 2. Based on a verbal description of the technological process, draw a technological and schematic diagram. 3. Prepare a mass balance based on the technological description. 4. By analyzing the technological description of the process, make a judgment about compliance with the requirements of green engineering principles and technological principles.	
Practical activities within the subject	Not applicable	

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