



Subject card

Subject name and code	DESING OF RENEWABLE ENERGY INSTALATIONS, PG_00064329						
Field of study	PROJEKTOWANIE INSTALACJI ENERGII ODNAWIALNEJ						
Date of commencement of studies	February 2026		Academic year of realisation of subject		2025/2026		
Education level	second-cycle studies		Subject group		Optional 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	1		Language of instruction		Polish		
Semester of study	1		ECTS credits		2.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Department of Corrosion and Electrochemistry -> Faculty of Chemistry -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		prof. dr hab. inż. Juliusz Orlikowski				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	0.0	30.0	0.0	30
	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	30		2.0		18.0	50
Subject objectives	The aim of the course is to obtain knowledge regarding the use of software for planning technological processes, CO2 emissions, primarily in the context of processes related to obtaining renewable energy: green hydrogen production, gas-water conversion reactors.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K7_K01] critically evaluates the content of cognitive and practical problems		The student is able to properly determine priorities for implementing specific tasks		[SK5] Ocena umiejętności rozwiązywania problemów występujących w praktyce		
	[K7_W02] selects appropriate apparatus and materials for the manufacture and processing of consumer goods		The student knows the methods of making a model of a technological installation		[SW1] Ocena wiedzy faktograficznej		
	[K7_U03] designs innovative technological solutions for obtaining useful goods based on the state of the knowledge in accordance with the latest scientific literature		The student is able to use the software to calculate the required raw materials and energy expenditure for production (in a simulated process)		[SU4] Ocena umiejętności korzystania z metod i narzędzi		
Subject contents	Course content – project The basic principles of programming in the AspenTech package will be presented in the context of developing the operation of the installation. The scope of knowledge includes the basic definition of technological streams, models of physicochemical processes and types of chemical reactions. In the process scope, the subject content includes defining chemical equipment (heat exchangers, pumps, compressors, separators, reactors). The principles of calculating CO2 emissions will be presented comprehensively.						
Prerequisites and co-requisites	Basic knowledge of chemical engineering and chemical equipment						
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	Passing design classes		60.0%		100.0%		
Recommended reading	Basic literature		Aspentech University knowledge base based on a license agreement for the Faculty of Chemistry of GUT (https://esupport.aspentech.com/apex/t_homepage)				
	Supplementary literature		is not needed				

	eResources addresses	
Example issues/ example questions/ tasks being completed	Preparation of a renewable energy technology project in the form of a P&D diagram	
Practical activities within the subject	Not applicable	

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