GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Electrochemical power sources, PG_00058348		
Field of study	Hydrogen Technologies and Electromobility		
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 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	5.0
Learning profile	general academic profile	Assessment form	exam
Conducting unit	Department of Corrosion and Electrochemistry -> Faculty of Chemistry -> Wydziały Politechniki Gdańskiej		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Artur Zieliński	
	Teachers		

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	0.0	30.0	0.0	0.0	45

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	45	8.0	72.0	125

Subject objectives

Familiarization with the principles of operation and practical implementation of various electrochemical energy sources.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_U02] can work individually and in a team, can communicate using various techniques in a professional environment, as well as document and analyze the results of their work, can estimate the time needed to perform the entrusted task	The student is able to translate theoretical knowledge about the thermodynamics and kinetics of electrode processes into understanding the operation of various energy sources.	[SU4] Assessment of ability to use methods and tools

Subject contents

Physicochemistry of electrode processes. Batteries. Supercapacitors. Fuel cells. Photovoltaic cells.

Prerequisites and co-requisites

Electrochemistry, physical chemistry

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
lab	60.0%	50.0%
exam	60.0%	50.0%

Recommended reading

Basic literature	Electrochemical Power Sources: Batteries, Fuel Cells, and Supercapacitors By Vladimir S. Bagotsky, Alexander M. Skundin and Yury M. Volfkovich (A.N. Frumkin Institute of Physical Chemistry and Electrochemistry of the Russian Academy of Science, Russia), John Wiley & Sons Inc, New Jersey, USA, 2015, 372 pages, ISBN: 978-1-118-46023-6
Supplementary literature	Publications from the JCR list
eResources addresses	

Example issues/ example questions/ tasks being completed	Principles of operation of fuel cells Corrosion cells
Work placement	Not applicable

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