GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Fundamentals of electrochemistry, PG_00058339		
Field of study	PODSTAWY ELEKTROCHEMII		
Date of commencement of studies	October 2025	Academic year of realisation of subject	2025/2026
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	1	Language of instruction	Polish Polish
Semester of study	1	ECTS credits	3.0
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. Kazimierz Darowicki	
	Teachers	prof. dr hab. inż. Kazimierz Darowicki dr hab. inż. Paweł Ślepski	

Lesson types

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

eNauczanie source address: https://enauczanie.pg.edu.pl/moodle/course/view.php?id=1117

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	6.0	24.0	75

Subject objectives

To familiarize students with the phenomena occurring at the electrode-electrolyte interface.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_U13] can use properly selected methods and devices enabling the measurement of basic quantities characterizing materials and technological processes	To familiarize students with the phenomena occurring at the metallic electrode-electrolyte interface.	[SU3] Ocena umiejętności wykorzystania wiedzy uzyskanej w ramach przedmiotu
[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	To familiarize students with the phenomena occurring at the metallic electrode-electrolyte interface.	[SU1] Ocena realizacji zadania

Subject contents

Course content – lecture
Safety procedures in laboratory. Termodynamical of water stability. Pourbaix diagram. Hydrogen evolution reactions on different metals. Voltammetry of reversible/irrreversible reactions. Electrochemical Impedance Spectroscopy. Faradic/non-faradic current. Electrochemical oscillations.

Prerequisites and co-requisites

Basics of thermodynamics and chemical kinetics.

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Laboratory	100.0%	100.0%

Recommended reading	Basic literature	A. Kisza, Electrochemistry part 1,2, WNT, Warsaw 2000 Z.Galus, Electroanalytical methods of determining physicochemical constants, PWN, Warsaw 1979 Z.Galus, Theoretical basis of chemical electroanalysis, PWN Warsaw 1977.
	Supplementary literature	No requirements
	eResources addresses	
Example issues/ example questions/ tasks being completed	Chemical and electrochemical processes. Determination of thermodynamic parameters. Activation and diffusion control.	
Practical activites within the subject	Not applicable	

Document generated electronically. Does not require a seal or signature.