GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	, PG_00052343					
Field of study	Chemical Technology					
Date of commencement of studies	October 2021	Academic year of realisation of subject		2024/2025		
Education level	first-cycle studies	Subject group		Optional subject group		
Mode of study	Full-time studies	Mode of delivery		at the university		
Year of study	4	Language of instruction		Polish		
Semester of study	7	ECTS credits		2.0		
Learning profile	general academic profile	Assessment form		assessment		
Conducting unit	Department of Electrochemistry, Corrosion and Materials Engineering -> Faculty of Chemistry					
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Artur Zieliński				
	Teachers	dr hab. inż. Artur Zieliński				

Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	15.0	0.0	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	Getting to know the theoretical foundations of measurements in digital technology. Acquiring the ability to carry out this type of measurements in practice, especially in relation to corrosion tests. Mastering the necessary basics of work in the selected programming environment in order to start and control the measurement system.

Learning outcomes	Course outcome	Subject outcome	Method of verification
	K6_W07	The student is able to choose the type of experiment and configure the measuring equipment depending on the type of the studied phenomenon (general, pitting, crevice corrosion), etc.	[SW1] Assessment of factual knowledge
	K6_U08	The student is able to recognize the type of corrosion attack depending on the material used, the environment and the possibility of synergy of degradation phenomena.	[SU2] Assessment of ability to analyse information

Subject contents	Definition of a digital signal. Sampling of analog signals. Spectral analysis. Discrete Fourier Transform. Construction of a digital measuring stand. The most important components and parameters of a digital measurement system. Basics of graphic programming in the LabVIEW environment.

Prerequisites and co-requisites	Mathematics: complex numbers, trigonometric and exponential functions.Physical chemistry: cells, corrosion.

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Laboratory	60.0%	50.0%
	Lecture	60.0%	50.0%

Recommended reading	Basic literature	Richard G. Lyons, "Understanding Digital Signal Processing", Prentice Hall/PTR, 2004.
	Supplementary literature	J. Essick, "Hands-On Introduction to LabVIEW for Scientists and Engineers", ISBN-10 : 0190853069

	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	Program for recording the potential of a corrosive electrode.Program for inducing and monitoring the phenomenon of pitting corrosion.Program for measuring the Tafel curve.	
Work placement	Not applicable	