GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	DIGITAL MEASUREMENTS, PG_00064348		
Field of study	Corrosion		
Date of commencement of studies	February 2025	Academic year of realisation of subject	2024/2025
Education level	second-cycle studies	Subject group	Obligatory subject group in the field of study Specialty subject group
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	4.0
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	prof. dr hab. inż. Juliusz Orlikowski	
	Teachers	prof. dr hab. inż. Juliusz Orlikowski	

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	47.0	100

Subject objectives

Presentation of the principles of measuring electrochemical quantities using digital methods

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K7_U02] conducts experiments using properly selected techniques and apparatus, taking advantage of new developments in corrosion and related fields	Ability to select filters during signal recording	[SU1] Assessment of task fulfilment
[K7_W05] recognises key developments in research, apparatus and technology in corrosion and material degradation and related fields	Ability to detect measurement errors	[SW3] Assessment of knowledge contained in written work and projects
[K7_K01] critically evaluates the content of scientific and practical problems	Ability to perform digital measurements	[SK2] Assessment of progress of work
[K7_U06] applies computer, statistical and specialised database methods to solve scientific and technological problems in corrosion and related fields	Ability to program digital signal generation and recording systems	[SU1] Assessment of task fulfilment

Subject contents

Presentation of the principles of generating and recording digital signals. The concept of the Nyquist frequency. Construction of measurement systems. Programming digital systems. Performing digital electrochemical measurements.

Prerequisites and co-requisites

Basics of electrochemistry and physics at the engineering level

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Exam	60.0%	50.0%
Passing laboratory classes	60.0%	50.0%

Recommended reading	Basic literature	Marek M Stabrowski. Miernictwo elektryczne Cyfrowa technika pomiarowa Józef Parchański. Miernictwo elektryczne i elektroniczne. Wydawnictwo: Wydawnictwa Szkolne i Pedagogiczne. 1996
	Supplementary literature	Not required
	eResources addresses	
Example issues/ example questions/ tasks being completed	Filter selection principles for digital measurements Methods of signal analysis using time-frequency methods Principles of correct signal sampling	
Work placement	Not applicable	

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