



Subject card

Subject name and code	DIGITAL MEASUREMENTS, PG_00064348						
Field of study	Corrosion						
Date of commencement of studies	February 2027		Academic year of realisation of subject		2026/2027		
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		blended-learning		
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 -> 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	15.0	0.0	30.0	0.0	0.0	45
	E-learning hours included: 15.0						
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	Course content – lecture						
	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	<p>Marek M Stabrowski. Miernictwo elektryczne Cyfrowa technika pomiarowa</p> <p>Józef Parchański. Miernictwo elektryczne i elektroniczne. Wydawnictwo: Wydawnictwa Szkolne i Pedagogiczne. 1996</p>
	Supplementary literature	Not required
	eResources addresses	
Example issues/ example questions/ tasks being completed	<p>Filter selection principles for digital measurements Methods of signal analysis using time-frequency methods</p> <p>Principles of correct signal sampling</p>	
Practical activities within the subject	Not applicable	

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