



Subject card

Subject name and code	Metal corrosion, PG_00060748						
Field of study	Chemical Technology						
Date of commencement of studies	October 2026		Academic year of realisation of subject		2028/2029		
Education level	first-cycle studies		Subject group		Optional subject group 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	3		Language of instruction		Polish		
Semester of study	6		ECTS credits		2.0		
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		dr hab. inż. Stefan Krakowiak				
	Teachers						
Lesson types	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						
	eNauczanie source address: https://enauczanie.pg.edu.pl/2025/course/view.php?id=5087						
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	The aim of the course is to introduce students to the basics of corrosion processes and to familiarize them with the types of corrosion that constitute the greatest problem in the economy.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_K01] Is aware of the social role of a technical university graduate and understands the need to provide information about technical achievements and engineering activities to society, including through the media.		understands the need to communicate with society in order to raise its technical awareness.		[SK2] Assessment of progress of work		
	[K6_W02] Possesses the chemical knowledge necessary to synthesize, analyze and evaluate the properties of compounds and processes used in chemical technology.		has the knowledge necessary to independently implement simple measures used to prevent corrosion and to perform an assessment of their quality.		[SW1] Assessment of factual knowledge		
	[K6_U08] Is able to select elements of automatic control systems for simple technological processes and use computer programs to control and optimize chemical processes.		is able to identify factors influencing the development of corrosion and knows methods for automatically measuring process parameters responsible for corrosion.		[SU3] Assessment of ability to use knowledge gained from the subject		
	[K6_W07] Has knowledge of raw materials and technologies in the chemicaland polymer industries, also covering issues of corrosion and material protection.		understands the potential applications of chemical industry raw materials and corrosion protection technologies for industrial structures. They are knowledgeable about the advantages and limitations of these materials.		[SW1] Assessment of factual knowledge		

Subject contents	Course content – lecture Metals and alloys iron/carbon diagram; Pourbaix diagrams; Corrosion diagrams; Galvanic corrosion; General corrosion; Local corrosion; Corrosion cracking, fatigue corrosion; Corrosion erosion, cavitation;		
	Course content – laboratory 1. Electrochemical potential and corrosion potential; 2. Galvanic cells; 3. Concentration and temperature cells; 4. Passivity of metals and alloys; 5. Localized corrosion - pitting and crevice; 6. Intergranular corrosion; 7. Selective corrosion. 8. Cavitation 9. Assessment of corrosion damage.		
Prerequisites and co-requisites	Basics of electrochemistry and physical chemistry.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Written examination of lectures	60.0%	50.0%
	Laboratory: Weighted Average of Entry Tests	60.0%	50.0%
Recommended reading	Basic literature	R. Juchniewicz, Anti-Corrosion Technology, Parts 1 and 2 G. Wranglen Basics of Corrosion and Metal Protection. WNT, Warsaw 1975 H.H. Uhlig Corrosion Protection, WNT, Warsaw 1976	
	Supplementary literature	K. Żakowski, K. Darowicki - Cathodic Protection, PG Publishing House A. Miszczyk, M. Szociński, K. Darowicki, Paint Coatings in Anticorrosion Protection. Principles of Application and Quality Control, PG Publishing House	
	eResources addresses		
Example issues/ example questions/ tasks being completed	Evans Chart for Cathodic Control Corrosion Reactions Polarization Galvanic Cells Corrosion Cells		
Practical activities within the subject	Not applicable		

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