



Subject card

Subject name and code	INTRODUCTION TO CORROSION PROTECTION, PG_00064405						
Field of study	Chemistry						
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	5		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=1103						
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 this course is to introduce students to the various types of corrosion and to demonstrate methods for preventing them. Students will also become familiar with the general principles that should guide engineers protecting industrial structures against corrosion.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_K04] is able to identify and resolve dilemmas related to the chemical engineering profession while respecting traditions and ethical principles		is aware of the importance of his/ her activities in maintaining the integrity of the devices for which he/she will be responsible.		[SK1] Assessment of group work skills		
	[K6_U03] operates typical laboratory apparatus and carries out analyses to identify chemical compounds and materials, integrating computational methods and application software		is able to perform measurements in a corrosive system and present reliable results of their analysis.		[SU1] Assessment of task fulfilment		
	[K6_W04] identifies the conditions of chemical processes occurring in the analysed systems through the appropriate selection of methods to solve them, by taking into account the interdependence of the structure and properties of key materials in sustainable development technologies		has the knowledge and is able to apply it to minimize the impact of chemical processes occurring in industrial facilities on the integrity of equipment.		[SW1] Assessment of factual knowledge		

Subject contents	Course content – lecture Protecting steel structures with organic coatings. Environmental modification as a method of reducing corrosion. Electrochemical protection. Galvanic coatings. Course content – laboratory Structure of metals and alloys - metallography. The operation of corrosion cells. The study and application of organic coatings. The application of galvanic coatings. Surface modification - conversion coatings. Cathodic protection; Coating protection; Modification of the corrosive environment;		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Written examination of lectures	60.0%	50.0%
	Passing the entrance tests for laboratories	60.0%	50.0%
Recommended reading	Basic literature	P. A. Schweitzer, Corrosion-of-Linings-Coatings-Cathodic-and-Inhibitor-Protection-and-Corrosion-Monitoring, CRC Press, Taylor & Francis Group, Amy Forsgren, Corrosion_Control_Through_Organic_Coatings, CRC Press, Taylor & Francis Group,	
	Supplementary literature	Philip A. Schweitzer P.E.- Atmospheric Degradation and Corrosion Control-CRC Press (1999)	
	eResources addresses		
Example issues/ example questions/ tasks being completed	Cathodic protection - protection criteria; Structure design taking into account corrosion hazards - principles of material selection. Modifications of the corrosive environment - inhibitors (classification); Coating protection (paint and varnish components);		
Practical activities within the subject	Not applicable		

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