GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Introduction to Corrosion Protection, PG_00060887		
Field of study	Wprowadzenie do zabezpieczeń przeciwkorozyjnych		
Date of commencement of studies	October 2025	Academic year of realisation of subject	2027/2028
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	3.0
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/moodle/course/view.php?id=46562

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	5.0	40.0	75

Subject objectives

The aim of this course is to introduce students to various types of corrosion and to identify methods for preventing them. Students will also become familiar with the general principles that should guide engineers involved in protecting steel structures against corrosion.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_W07] Has knowledge of raw materials and technologies in the chemicaland polymer industries, also covering issues of corrosion and material protection.	The student is able to diagnose corrosion of construction materials and is able to propose a method of protecting them against corrosion.	[SW1] Ocena wiedzy faktograficznej
[K6_K03] Understands the need for continuous learning and knows the opportunities to improve professional, personal and social competences, and is able to think and act in an entrepreneurial manner.	The student understands the need for continuous improvement of professional skills	[SK5] Ocena umiejętności rozwiązywania problemów występujących w praktyce

Subject contents

Course content – lecture
A practical introduction to corrosion processes.
Protection of 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 action of corrosion cells.
The study and application of organic coatings.
The application of electroplated coatings.
Surface modification - conversion coatings.

Prerequisites and co-requisites

Knowledge of the basics of electrochemistry and physical chemistry.

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Passing the lecture	60.0%	50.0%
Passing the laboratory	100.0%	50.0%

Recommended reading	Basic literature	R. Juchniewicz, Anti-corrosion technology parts I and II; 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	K. Żakowski, K. Darowicki - Cathodic Protection, Wydawnictwo PG A. Miszczyk, M.Szociński, K. Darowicki, Paint coatings for anticorrosion protection. Application guidelines and quality control., Wydawnictwo PG
	eResources addresses	
Example issues/ example questions/ tasks being completed	1. cathodic protection; 2. coating protection; 3. corrosive environment modifications; 4. structure design with corrosion hazards in mind.	
Practical activites within the subject	Not applicable	

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