GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	, PG_00065825		
Field of study	Materials Engineering		
Date of commencement of studies	October 2025	Academic year of realisation of subject	2025/2026
Education level	second-cycle studies	Subject group	Specialty 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	1	Language of instruction	Polish
Semester of study	2	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	dr hab. inż. Stefan Krakowiak	

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

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	8.0	37.0	75

Subject objectives

To provide the student with knowledge of the main technologies of corrosion protection: coating protection, cathodic protection, corrosion inhibitors, selection of construction materials.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K7_K02] Is aware of the importance of non-technical aspects and effects of engineering, including the influence on the environment and resulting responsibility for the decisions.	The student collaborates with the team to solve design problems.	[SK4] Assessment of communication skills, including language correctness [SK1] Assessment of group work skills
[K7_W04] Has enhanced knowledge of materials sciences, within the scope required for describing and understanding the correlation between the chemical composition, structure and mechanical and physical properties.	The student defines the environmental hazards of an industrial structure. The student identifies the types of corrosion occurring in a given corrosive environment.	[SW1] Assessment of factual knowledge
[K7_W05] Knows methods, techniques, tools and materials for solving complex engineering tasks relevant to materials engineering.	The student presents a project for corrosion protection of an industrial facility indicated by the instructor.	[SW1] Assessment of factual knowledge
[K7_U04] Can undertake a detailed analysis of the obtained results and develop a technical report or presentation, also in English.	The student defines the environmental hazards of an industrial structure. The student identifies the types of corrosion occurring in a given corrosive environment.	[SU3] Assessment of ability to use knowledge gained from the subject [SU1] Assessment of task fulfilment

<table>
<tr><td>Subject contents</td><td>Course content – lecture

Cathodic protection of underground structures and offshore structures, cathodic protection technologies (galvanic anodes, external power source), protection criteria, anodic alloys, methods of realizing cathodic protection in practice. Protection against stray currents.Inhibitor protection, division of corrosion inhibitors, application.Selection of construction materials, review of modern materials used in industrial installations, resistance of construction materials in various environments</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>Knowledge of the basics of corrosion.</td></tr>
<tr><td>Assessment methods and criteria</td><td>
<table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>Passing the lectures</td><td>60.0%</td><td>50.0%</td></tr>
<tr><td>Passing the laboratory</td><td>100.0%</td><td>50.0%</td></tr>
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<tr><td>Recommended reading</td><td>
<table>
<tr><td>Basic literature</td><td>on e-learning</td></tr>
<tr><td>Supplementary literature</td><td>on e-learning</td></tr>
<tr><td>eResources addresses</td><td>Basic
https://enauczanie.pg.edu.pl/moodle/course/view.php?id=1088 - It will be open in case of completion of the course
Supplementary
https://enauczanie.pg.edu.pl/moodle/course/view.php?id=1088 - It will be open in case of completion of the course</td></tr>
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<tr><td>Example issues/ example questions/ tasks being completed</td><td>Principles of paint application.Potential criteria for cathodic protection.Galvanic anodes used to protect marine structures.Principles of selection of construction materials.</td></tr>
<tr><td>Practical activites within the subject</td><td>Not applicable</td></tr>
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