GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Corrosion protection technologies, PG_00060756		
Field of study	Technologie ochrony przed korozją		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2026/2027
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	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	dr hab. inż. Krzysztof Żakowski	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	30.0	0.0	30.0	0.0	0.0	60

E-learning hours included: 0.0

eNauczanie source address: https://enauczanie.pg.edu.pl/moodle/course/view.php?id=15128

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	60	5.0	35.0	100

Subject objectives

Acquiring the ability to select corrosion protection techniques depending on the operating conditions of the structure.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_U08] is able to classify and apply knowledge of the driving forces of corrosion processes in different construction materials to the design of process installations and the selection of corrosion protection methods for installations	The student is able to select a method of protecting structures against corrosion depending on the existing corrosion risks.	[SU2] Ocena umiejętności analizy informacji
[K6_W07] has knowledge of structural materials used in the chemical industry and their corrosion, corrosion monitoring and protection, and corrosion metrology	The student has knowledge of construction materials used in the chemical industry and their corrosion, monitoring and corrosion protection, as well as corrosion measurement.	[SW3] Ocena wiedzy zawartej w opracowaniu tekstowym i projektowym
[K6_U03] is able to apply knowledge of inorganic, organic, physical and analytical chemistry and identify appropriate sources of information to design and synthesize simple chemical compounds, carry out basic physicochemical and analytical measurements	The student is able to perform basic electrochemical measurements used in corrosion testing.	[SU4] Ocena umiejętności korzystania z metod i narzędzi
[K6_K01] understands the need for continuing education, and is aware of the opportunities to improve professional, personal and social competences	The student understands the need for continuous learning.	[SK5] Ocena umiejętności rozwiązywania problemów występujących w praktyce

<table>
<tr><td>Subject contents</td><td>Course content – lecture
• Coating protection: types of coatings, application methods, control methods.
• Electrochemical protection: cathodic and anodic.
• Inhibitor protection: classification of corrosion inhibitors, application.
• Selection of construction materials: overview of modern construction materials used in industrial installations.
• Corrosion monitoring.

Course content – laboratory
1. Testing of paint and varnish components.
2. Testing of paint products.
3. Testing of paint coatings and polymer linings.
4. Effectiveness of corrosion inhibitors.
5. Temporary protection measures.
6. Cathodic protection of steel.
7. Anodic protection of stainless steel.
8. Resistance of construction materials in various environments.
9. Corrosion monitoring.</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>completion of laboratory classes</td><td>100.0%</td><td>50.0%</td></tr>
<tr><td>completion of lectures</td><td>60.0%</td><td>50.0%</td></tr>
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<tr><td>Recommended reading</td><td><table>
<tr><td>Basic literature</td><td>not applicable</td></tr>
<tr><td>Supplementary literature</td><td>not applicable</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
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<tr><td>Example issues/ example questions/ tasks being completed</td><td>Coating, inhibitor, and cathodic protection. Selection of construction materials. Corrosion monitoring.</td></tr>
<tr><td>Practical activites within the subject</td><td>Not applicable</td></tr>
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