GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Corrosion protection technologies, PG_00060323		
Field of study	Materials Engineering		
Date of commencement of studies	October 2023	Academic year of realisation of subject	2025/2026
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	7.0
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	dr hab. inż. Krzysztof Żakowski dr hab. inż. Stefan Krakowiak dr hab. inż. Andrzej Miszczyk	

Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	45.0	0.0	30.0	0.0	0.0	75
	E-learning hours included: 0.0						
	eNauczanie source address: https://enauczanie.pg.edu.pl/moodle/course/view.php?id=1088						

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	75	5.0	95.0	175

Subject objectives	Students will gain knowledge of the main corrosion protection technologies: coating protection, cathodic protection, corrosion inhibitors, selection of construction materials.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_U03] Can critically analyze and evaluate the functioning – particularly in the context of materials engineering –existing technical solutions, particularly equipment, objects, systems, processes.	the student understands the impact of corrosion on the environmen	[SU2] Assessment of ability to analyse information
[K6_K01] Understands the need to improve professional and personal competencies; is conscious of own limitations and knows when to turn to experts, properly establishes priorities helping to accomplish tasks defined by oneself or others.	the student understands the need to improve professional competences	[SK3] Assessment of ability to organize work
[K6_W04] Knows selected aspects of construction and operation of scientific equipment in materials engineering.	the student knows the basic research techniques in protection against corrosion	[SW1] Assessment of factual knowledge
[K6_U01] Can properly use selected analytical, simulation and experimental methods, as well as devices for measuring the fundamental properties of materials and technological processes.	the student is able to work in a team	[SU1] Assessment of task fulfilment
[K6_W06] Knows selected methods, techniques, tools and materials used in solving simple engineering problems within the scope of materials engineering.	the student has basic knowledge of corrosion protection	[SW3] Assessment of knowledge contained in written work and projects

Subject contents

Course content – lecture
Lecture: -Coating protection: coatings types, application methods, control methods. -Cathodic and anodic protection. -Inhibitor protection: types and application of corrosion inhibitors. -Construction materials choice: modern industry construction materials review. -Corrosion monitoring.

Course content – laboratory
Laboratory: 1.Examination of paints and lacquers components. 2.Examination of paint products. 3.Examination of paint coatings and polymer linings. 4.Corrosion inhibitors efficiency. 5.Temporary protectives. 6.Cathodic protection of steel. 7.Anodic protection of stainless steels. 8.Corrosion resistance of construction materials in variuos environments. 9.Corrosion monitoring.

Prerequisites and co-requisites

Knowledge of corrosion basics.

Assessment methods and criteria

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

Recommended reading

Basic literature	not applicable
Supplementary literature	not applicable
eResources addresses	

Example issues/ example questions/ tasks being completed

Principles of paint application.
Potential criteria for cathodic protection.
Galvanic anodes used to protect marine structures.
Principles of construction material selection.

Practical activites within the subject

Not applicable

Document generated electronically. Does not require a seal or signature.