GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Corrosion Processes, PG_00048916		
Field of study	Chemistry in Construction Engineering		
Date of commencement of studies	October 2020	Academic year of realisation of subject	2021/2022
Education level	first-cycle studies	Subject group	Obligatory subject group in the field of study
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	2	Language of instruction	Polish
Semester of study	4	ECTS credits	3.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Electrochemistry, Corrosion and Materials Engineering -> Faculty of Chemistry		
Name and surname of lecturer (lecturers)	Subject supervisor	prof. dr hab. inż. Kazimierz Darowicki	
	Teachers	prof. dr hab. inż. Kazimierz Darowicki	

Lesson types and methods of instruction

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

Adresy na platformie eNauczanie:

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

To acquaint students with the basic corrosion processes and types of corrosion

Learning outcomes

Course outcome	Subject outcome	Method of verification
K6_K03	the student is able to solve problems related to corrosion of materials	[SK2] Assessment of progress of work
K6_W05	the student has a basic knowledge of corrosion processes	[SW1] Assessment of factual knowledge
K6_U09	the student is able to choose the type of protection for a given material	[SU4] Assessment of ability to use methods and tools

Subject contents

Lecture: -Chemical thermodynamics: corrosion cells, E/pH diagrams, thermodynamic stability of water and its solutions. -Corrosion processes kinetics: E=f(I) diagrams, corrosion processes control. -Types of corrosion: general, pitting, selective, intergranular, crevice, stress corrosion and stress corrosion cracking, corrosion-erosion, cavitation. -Corrosion occuring conditions (practical examples). -Atlas of corrosion fatigue: description and visualization of fatigues. Laboratory: 1.Introduction and safety. 2.Temperature cell. 3.Oxygen concentration cell. 4.Galvanic cell. 5.Crevice corrosion. 6.Intergranular corrosion. 7.Selective corrosion of brass. 8.Pitting corrosion of steel. 9.Water 10.Reserved.

Prerequisites and co-requisites

Chemical thermodynamics

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Written exam	60.0%	50.0%
Laboratory	60.0%	50.0%

Recommended reading

Basic literature	http://www.korozja.pl
Supplementary literature	No requirements
eResources addresses	

Example issues/ example questions/ tasks being completed

Describe the work of a corrosion cell. Characterize the types of corrosion.

Work placement

Not applicable