



Subject card

Subject name and code	CORROSION IN MARINE INDUSTRY, PG_00064358						
Field of study	Corrosion						
Date of commencement of studies	February 2027		Academic year of realisation of subject		2027/2028		
Education level	second-cycle studies		Subject group		Obligatory subject group in the field of study 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		2.0		
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						
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		2.0		18.0	50
Subject objectives	The aim of the subject is to familiarize students with the characteristics of degradation processes occurring in the marine environment. Information on corrosion processes taking place in seawater and atmosphere characteristic for the coastal area will be presented. The methods of corrosion protection most often implemented in the conditions of exploitation of the structure in the marine environment will also be discussed. Standards applied in the process of securing marine installations will also be presented, with particular emphasis on application technology of paint coatings.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K7_W05] recognises key developments in research, apparatus and technology in corrosion and material degradation and related fields		The student has the knowledge to select appropriate materials and techniques to protect industrial installations under defined operating conditions.		[SW1] Assessment of factual knowledge		
	[K7_U02] conducts experiments using properly selected techniques and apparatus, taking advantage of new developments in corrosion and related fields		The student is able to assess the appropriateness of the selected corrosion control technology in laboratory conditions using electrochemical and spectroscopic methods. Selects and verifies the effectiveness of corrosion protection methods for industrial installations.		[SU4] Assessment of ability to use methods and tools [SU1] Assessment of task fulfilment		
	[K7_K03] can interact and work in a group, undertaking various roles within it		The student has knowledge of both the execution and supervision of industrial construction safety systems.		[SK5] Assessment of ability to solve problems that arise in practice [SK1] Assessment of group work skills		

Subject contents	Course content – lecture Lectures: 1. Characteristics of the corrosion process in the conditions of sea and saline waters; 2. An overview of legal regulations regarding the protection of marine constructions with particular emphasis on the requirements of NORSOK M-501 and the IMO SOLAS convention; 3. Methods of protection against corrosion in marine conditions; 4. Designing of corrosion monitoring systems: 5. Discussion of selected corrosion cases in the maritime economy. Laboratory works: 1. Corrosion of metallic connections 2. The effect of oxygenation on the corrosion rate of construction materials. 3. Research on the interaction of cathodic protection and organic coatings. 4. Assessment of the suitability of galvanic anodes used in the maritime industry. 5. Corrosion of construction materials in the marine environment.		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	passing the laboratory	100.0%	50.0%
	passing the lecture	60.0%	50.0%
Recommended reading	Basic literature	available on the site e-nauczanie	
	Supplementary literature	available on the site e-nauczanie	
	eResources addresses		
Example issues/ example questions/ tasks being completed	Factors affecting corrosion in marine environment. The influence of salinity on the rate of corrosion. Anticorrosion methods for marine objects.		
Practical activities within the subject	Not applicable		

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