



Subject card

Subject name and code	ANALYSIS OF CORROSION DAMAGE, PG_00064350						
Field of study	Corrosion						
Date of commencement of studies	February 2027		Academic year of realisation of subject		2026/2027		
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	1		ECTS credits		4.0		
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. Paweł Ślepski				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	30.0	30.0	0.0	60
	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	60		8.0		32.0	100
Subject objectives	The aim of the course is to familiarize students with the procedures used in the analysis of component/object damage, to carry out damage tests (corrosion tests, chemical analyses, mechanical tests, microscopic examinations, etc.) and to analyze the results.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K7_W02] has the knowledge of materials necessary to describe and understand the relationship between chemical composition and physical properties		The student can explain the changes in the physical properties of an object undergoing corrosion.		[SW1] Assessment of factual knowledge		
	[K7_U09] prepares documentation of experiments using professional terminology		The student is able to conduct a research experiment and document the results.		[SU1] Assessment of task fulfilment		
	[K7_U04] predicts the properties of the materials obtained and the processes involving them, based on knowledge of corrosion and related fields		Can select construction materials suitable for a given corrosive environment		[SU3] Assessment of ability to use knowledge gained from the subject		
	[K7_K01] critically evaluates the content of scientific and practical problems		Students works in team, adopting various roles		[SK1] Assessment of group work skills		
Subject contents	Course content – laboratory						
	Analysis of corrosion failure caused by various corrosion processes (general, galvanic, concentration, pitting, fracture, intergranular corrosion, corrosion cracking, etc.). General characteristics of particular corrosion phenomena. Overview of the most common locations of corrosion failure in industrial installations. Failure analysis methods. Forms of corrosion prevention. Familiarization with corrosive damage databases. Building analyse report.						
Prerequisites and co-requisites	Knowledge of various corrosion processes and mechanisms, knowledge of electrochemical techniques						
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	Failure analysis raport		100.0%		100.0%		

Recommended reading	Basic literature	1. Practical Engineering Failure Analysis, H.M. Tawancy, A. UIHamid, N.M. Abbas, Marcel Dekker, New York 2004 2. Fundamentals of Metallic Corrosion, P.A. Schweitzer, CRC Press, New York 2006
	Supplementary literature	Engineering Failure Analysis - ISI journal
	eResources addresses	
Example issues/ example questions/ tasks being completed	Effect of corrosive environment Analysis of material composition Operating conditions Damage analysis	
Practical activities within the subject	Not applicable	

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