



## Subject card

Subject name and code	Corrosion failure analysis, PG_00048986						
Field of study	Corrosion						
Date of commencement of studies	February 2023	Academic year of realisation of subject			2022/2023		
Education level	second-cycle studies	Subject group			Obligatory subject group in the field of study 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 Electrochemistry, Corrosion and Materials Engineering -> Faculty of Chemistry						
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Paweł Ślepski					
	Teachers	dr hab. inż. Paweł Ślepski					
Lesson types and methods of instruction	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	5.0	35.0	100		
Subject objectives	The aim of this subject is to acquaint students with procedures employed in analysis of failures of components/objects, to perform failure investigations (corrosion tests, chemical analyses, mechanical tests, microscopic examinations etc.) in order to determine the cause of failure, to write a failure analysis report.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	K7_K04	Student analyzes various solutions to the problem			[SK3] Assessment of ability to organize work [SK1] Assessment of group work skills		
	K7_K02	Students works in team, adopting various roles			[SK1] Assessment of group work skills		
	K7_W04	Students carries out adequate corrosion studies and chemical analyses			[SW2] Assessment of knowledge contained in presentation		
K7_U03	Students applies adequate measurement technique for various types of degradation			[SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject			
Subject contents	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 report	100.0%			100.0%		
Recommended reading	Basic literature	1. Practical Engineering Failure Analysis, H.M. Tawancy, A. Ul-Hamid, 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 journa					
	eResources addresses						

Example issues/ example questions/ tasks being completed	The influence of corrosive environment  Material composition analysis  Operating conditions  Failure analysis
Work placement	Not applicable