



Subject card

Subject name and code	Failure Analysis, PG_00039090							
Field of study	Chemistry in Construction Engineering							
Date of commencement of studies	October 2021	Academic year of realisation of subject			2022/2023			
Education level	first-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	2	Language of instruction			Polish			
Semester of study	4	ECTS credits			3.0			
Learning profile	general academic profile	Assessment form			exam			
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 dr hab. inż. Michał Szociński dr inż. Łukasz Gawel						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM	
	Number of study hours	15.0	0.0	30.0	0.0	0.0	45	
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	45	5.0		25.0		75	
Subject objectives	The student properly investigates objects damaged by the corrosion processes. The student is able to prepare analysis of corrosion damage report.							
Learning outcomes	Course outcome		Subject outcome			Method of verification		
	K6_W08		The student presents typical dangers for material caused by the given environment			[SW1] Assessment of factual knowledge		
	K6_K03		The student is able to use the necessary information to identify corrosion damage and prepare a report.			[SK5] Assessment of ability to solve problems that arise in practice		
Subject contents	Analysis of corrosion damages generated by different corrosion processes (general corrosion, galvanic corrosion, pitting corrosion, crevice corrosion, intergranular corrosion, stress corrosion cracking, etc.). General description of particular corrosion processes. Review of common places of corrosion damages in industrial systems. Methods of failure analysis. Elements of prevention. Preparation of reports							
Prerequisites and co-requisites	Basic knowledge of electrochemistry							
Assessment methods and criteria	Subject passing criteria		Passing threshold			Percentage of the final grade		
	written exam		50.0%			60.0%		
	reports		100.0%			40.0%		
Recommended reading	Basic literature		Practical Engineering Failure Analysis, H.M. Tawancy, A. Ul-Hamid, N.M. Abbas, Marcel Dekker, New York 2004					
	Supplementary literature		Fundamentals of Metallic Corrosion, P.A. Schweitzer, CRC Press, New York 2006					

	eResources addresses	Adresy na platformie eNauczenie:
Example issues/ example questions/ tasks being completed	Corrosion of metal elements in industrial plants Corrosion of heat exchangers Corrosion of pipework in the ground Electrochemical corrosion in reinforced concrete structures	
Work placement	Not applicable	