



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		2022/2023		
Education level	first-cycle studies		Subject group				
Mode of study	Full-time studies		Mode of delivery		at the university		
Year of study	3		Language of instruction		Polish		
Semester of study	5		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						
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	Understanding the essence of electrochemical processes. Thermodynamic conditions. Kinetic conditions						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	K6_K03		The student is able to perform basic works related to the protection of building materials against corrosion and independently makes decisions about the choice of the protection method.		[SK3] Assessment of ability to organize work [SK5] Assessment of ability to solve problems that arise in practice [SK2] Assessment of progress of work		
	K6_W05		The student is able to use the acquired knowledge to select appropriate building materials.		[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects		
	K6_U09		The student knows the methods of environmental corrosivity assessment. Is able to apply appropriate building materials or an appropriate corrosion protection method to the existing corrosion hazards.		[SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject [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 occurring 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	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	1-Types of corrosion? 2- Structure of construction materials? 3-Characteristics of corrosive environments?	
Work placement	Not applicable	