



Subject card

Subject name and code	Security technologies against corrosion, PG_00039691						
Field of study	Materials Engineering, Materials Engineering, Materials Engineering						
Date of commencement of studies	February 2023		Academic year of realisation of subject		2022/2023		
Education level	second-cycle studies		Subject group		Optional 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		exam		
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	30.0	0.0	30.0	0.0	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	Principles of corrosion protection of structures used in various corrosive environments						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	K7_W04	Principles of corrosion protection of structures used in various corrosive environments			[SW1] Assessment of factual knowledge		
	K7_W05	Principles of corrosion protection of structures used in various corrosive environments			[SW1] Assessment of factual knowledge		
	K7_U04	Principles of corrosion protection of structures used in various corrosive environments			[SU3] Assessment of ability to use knowledge gained from the subject		
	K7_K02	Principles of corrosion protection of structures used in various corrosive environments			[SK5] Assessment of ability to solve problems that arise in practice		
K7_U01	Principles of corrosion protection of structures used in various corrosive environments			[SU2] Assessment of ability to analyse information			
Subject contents	Lecture: -Corrosion protection of primary construction materials. -Corrosion protection of oil systems. - Corrosion protection of marine infrastructure. -Corrosion protection of underground systems. -Principles of anticorrosion design. -Increasing of construction materials corrosion resistance by chemical, mechanical and thermal treatment. Laboratory: 1.Evaluation of construction materials corrosion rates in industry environments. 2.Field measurements in cathodic protection planning. 3.Basics of paint coatings inspection - destructive tests. 4.Basics of paint coatings inspection - nondestructive tests.						
Prerequisites and co-requisites	Knowledge of basics of corrosion protection.						
Assessment methods and criteria	Subject passing criteria	Passing threshold		Percentage of the final grade			
	Laboratory	60.0%		50.0%			
	Lecture	60.0%		50.0%			
Recommended reading	Basic literature	-W.v.Baermann, W.Schwenk, W.Prinz, Handbook of cathodic corrosion protection, Elsevier Science USA, 1997. -N.Perez, Electrochemistry and corrosion science, Kluwer Academic Publishers, Boston, 2004.					
	Supplementary literature	-William D. Corbett, Using Coatings Inspections Instruments, A KTA-Tator, Ins. Publication, -Ochrona elektrochemiczna przed korozją (praca zbiorowa pod redakcją J. Ostaszewicza), WNT, W-wa, 1991					

	eResources addresses	
Example issues/ example questions/ tasks being completed	1. Methods of implementation of passivation and etching of stainless steels  2. Ways of implementing anodic protection  3. Diagram of the installation for anodic protection of the tank	
Work placement	Not applicable	