



## Subject card

Subject name and code	Security technologies against corrosion, PG_00039691						
Field of study	Materials Engineering, Materials Engineering						
Date of commencement of studies	February 2024	Academic year of realisation of subject			2023/2024		
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_U01	Principles of corrosion protection of structures used in various corrosive environments			[SU2] Assessment of ability to analyse information		
	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_U04	Principles of corrosion protection of structures used in various corrosive environments			[SU3] Assessment of ability to use knowledge gained from the subject		
	K7_W05	Principles of corrosion protection of structures used in various corrosive environments			[SW1] Assessment of factual knowledge		
K7_W04	Principles of corrosion protection of structures used in various corrosive environments			[SW1] Assessment of factual knowledge			
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		
	Lecture		60.0%		50.0%		
	Laboratory		60.0%		50.0%		
Recommended reading	Basic literature		-W.v.Baeckmann, 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	Adresy na platformie eNauczanie:
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	