



Subject card

Subject name and code	INSPECTION OF CATHODIC PROTECTION SYSTEMS, PG_00064363						
Field of study	Corrosion						
Date of commencement of studies	February 2026		Academic year of realisation of subject		2026/2027		
Education level	second-cycle studies		Subject group		Obligatory subject group in the field of study Specialty 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	2		ECTS credits		4.0		
Learning profile	general academic profile		Assessment form		exam		
Conducting unit	Department of Corrosion and Electrochemistry -> Faculty of Chemistry -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Krzysztof Żakowski				
	Teachers		dr hab. inż. Krzysztof Żakowski				
Lesson types	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						
	eNauczanie source address: https://enauczanie.pg.edu.pl/2025/course/view.php?id=6902						
	Moodle ID: 6902 INSPEKCJA SYSTEMÓW OCHRONY KATODOWEJ https://enauczanie.pg.edu.pl/2025/course/view.php?id=6902						
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		10.0		45.0	100
Subject objectives	The aim of the course is for students to master the basic measurement methods used in the operation of cathodic protection systems for underground steel structures.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K7_K02] understands the non-technical aspects and implications of graduate activity, including the impact on the environment		understands that an engineer's actions can have a positive impact on the natural environment.		[SK5] Assessment of ability to solve problems that arise in practice		
	[K7_U07] includes ethical issues and regulations in research planning and design of products and processes		is able to make responsible decisions in their research work.		[SU2] Assessment of ability to analyse information		
	[K7_W06] integrates knowledge from different disciplines, principles of intellectual property protection and patent law, relevant for appropriate interpretation and application in scientific, sustainable economic activities		knows the technologies for implementing cathodic protection of underground and underwater structures using sacrificial anodes and impressed current.		[SW1] Assessment of factual knowledge		
	[K7_U04] predicts the properties of the materials obtained and the processes involving them, based on knowledge of corrosion and related fields		is able to evaluate the effectiveness of the cathodic protection of metal structures.		[SU3] Assessment of ability to use knowledge gained from the subject		

Subject contents	Course content – lecture		
	• Measurement of the ON and OFF-potential. • Measurement of the output parameters of the cathodic protection station. • Measurement of anode system resistance. • Measurement of current flowing through the wall of a pipeline. • Location of underground pipelines. • Location of underground pipeline insulation defects.		
	Course content – laboratory		
	• Pipeline location • Location of defects in pipeline insulation • Test cathodic polarisation of a pipeline • Assessment of the harmful effects of stray currents on a gas pipeline • Cathodic protection of a fuel station tank • Measurement of the current flowing through the pipeline wall • Testing the insulation of a gas pipeline from its casing		
Prerequisites and co-requisites	General knowledge of electrical engineering. Basic knowledge of cathodic protection.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Laboratory: completing exercises and submitting reports	100.0%	50.0%
	Lecture: written exam	60.0%	50.0%
Recommended reading	Basic literature	not applicable	
	Supplementary literature	not applicable	
	eResources addresses		
Example issues/ example questions/ tasks being completed	Measurement of the OFF-potential of underground tank. Measurement of the cathodic protection current. Measurement of anode system resistance. Location of underground gas pipeline.		
Practical activities within the subject	Not applicable		

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