



## Subject card

Subject name and code	Materials Science and Corrosion, PG_00068887						
Field of study	Chemical Technology						
Date of commencement of studies	October 2026	Academic year of realisation of subject				2028/2029	
Education level	first-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	3	Language of instruction				Polish	
Semester of study	6	ECTS credits				1.0	
Learning profile	general academic profile	Assessment form				assessment	
Conducting unit	Department of Corrosion and Electrochemistry -> Faculty of Chemistry -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor	prof. dr hab. inż. Juliusz Orlikowski					
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	10.0	0.0	5.0	0.0	0.0	15
	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	15		2.0		8.0	25
Subject objectives	Theory of corrosion in the refinery. Knowledge of the API 571 and 581 Standards and correct identification of corrosion mechanism in the materials degradation cards.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K6_W07] Has knowledge of raw materials and technologies in the chemical and polymer industries, also covering issues of corrosion and material protection.	Knowledge of corrosion mechanisms in the refining industry			[SW1] Assessment of factual knowledge		
	[K6_K01] Is aware of the social role of a technical university graduate and understands the need to provide information about technical achievements and engineering activities to society, including through the media.	The importance of risk analysis in society			[SK2] Assessment of progress of work		
	[K6_U02] Performs design calculations of technological processes, selects industrial equipment, operates laboratory equipment and conducts material analyses	Ability to use software to model corrosive components in process streams			[SU1] Assessment of task fulfilment [SU3] Assessment of ability to use knowledge gained from the subject		
Subject contents	Course content – lecture Theoretical knowledge of crude oil refination technology, corrosion processes and construction materials.						
	Practical skills of various corrosion mechanisms identification and basic techniques of corrosion monitoring applied in refinery.						
	Project based on creation of degradation cards for the atmospheric distillation unit based on chemistry of the stream, working temperatures, construction materials etc.						
	Course content – laboratory Aspen Hysys software support and analysis of corrosion examples based on coupon corrosimetry						

Prerequisites and co-requisites	Chemistry and chemical engineering		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	lecture	60.0%	70.0%
	lab	60.0%	30.0%
Recommended reading	Basic literature	Standards:  API 571  API 581	
	Supplementary literature	none	
	eResources addresses		
Example issues/ example questions/ tasks being completed	none		
Practical activities within the subject	Not applicable		

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