GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Corrosion protection of industrial installations and Risk Based Inspection(RBI), PG_00066045		
Field of study	Engineering and Technologies of Energy Carriers		
Date of commencement of studies	February 2025	Academic year of realisation of subject	2025/2026
Education level	second-cycle studies	Subject group	Obligatory subject group in the field of study Subject group related to practical vocational preparation
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	3.0
Learning profile	practical profile	Assessment form	assessment
Conducting unit	Department of Corrosion and Electrochemistry -> Faculty of Chemistry -> Wydziały Politechniki Gdańskiej		
Name and surname of lecturer (lecturers)	Subject supervisor	prof. dr hab. inż. Juliusz Orlikowski	
	Teachers	prof. dr hab. inż. Juliusz Orlikowski	

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	10.0	0.0	30.0	15.0	0.0	55

E-learning hours included: 0.0

eNauczanie source addresses:

Moodle ID: 1138 Ochrona Przeciwkorozyjna Instalacji Przemysłowych i Risk Based Inspection (RBI)
https://enauczanie.pg.edu.pl/moodle/course/view.php?id=1138

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	55	5.0	15.0	75

Subject objectives

Theory of corrosion in the refinery. Knowledge of the API 571 and 581 Standards and correct identyfication of corrosion mechanism in the materials degradation cards.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K7_K04] is aware of the responsibility for decisions made, observing and developing the principles of professional ethics and working to ensure compliance with these principles	Determining the effects of corrosion hazards on refinery installations	[SK2] Assessment of progress of work
[K7_K02] is able to cooperate and work in a group, taking on different roles	Implementation of a group risk analysis project	[SK2] Assessment of progress of work
[K7_U04] prepares a critical analysis of existing technical solutions and is able to propose their improvements (improvements).	Identifying critical corrosion hazards and their impact on process safety	[SU1] Assessment of task fulfilment
[K7_W06] defines the techniques of designing technological processes; describes the methods of selecting the right technological process; the resistance of materials to degradation, degradation mechanisms and methods of improving corrosion resistance	Ability to determine the corrosion mechanism due to technological conditions	[SW1] Assessment of factual knowledge

<table>
<tr><td>Subject contents</td><td>Theoretical knowledge of crude oil refination technology, corrosion processes and construction materials.

Practical skills of various corrosion mechanisms identyfication 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.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>Chemistry and chemical engineering</td></tr>
<tr><td>Assessment methods and criteria</td><td>
<table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>project</td><td>70.0%</td><td>30.0%</td></tr>
<tr><td>exam</td><td>60.0%</td><td>70.0%</td></tr>
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<tr><td>Recommended reading</td><td>
<table>
<tr><td>Basic literature</td><td>API 571

API 581</td></tr>
<tr><td>Supplementary literature</td><td>none</td></tr>
<tr><td>eResources addresses</td><td>Basic
https://enauczanie.pg.edu.pl/moodle/course/view.php?id=1138 - Access to the digital version of the course</td></tr>
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<tr><td>Example issues/ example questions/ tasks being completed</td><td>1. List the corrosion mechanisms of corrosion - high temperature
2. List the corrosion mechanisms causing structural degradation
3. In which refinery units there is a metal dusting mechanism</td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
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