GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Corrosion metallurgy, PG_00039724		
Field of study	Materials Engineering		
Date of commencement of studies	October 2023	Academic year of realisation of subject	2025/2026
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	5	ECTS credits	3.0
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	dr hab. inż. Michał Szociński	
	Teachers	dr hab. inż. Michał Szociński	

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 addresses:

Moodle ID: 20000 Metaloznawstwo korozyjne (dla Inżynierii Materiałowej) - Nowy
https://enauczanie.pg.edu.pl/moodle/course/view.php?id=20000

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	5.0	25.0	75

Subject objectives

The aim of the subject is to familiarize students with: fundamental information concerning structure of metals and alloys, their properties with a special emphasis on susceptibility to corrosion, fundamental procedures connected with preparation of metallographic specimens and their evaluation.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_U01] Can properly use selected analytical, simulation and experimental methods, as well as devices for measuring the fundamental properties of materials and technological processes.	Student can identify basic metallographic structures of metals and alloys.	[SU4] Assessment of ability to use methods and tools [SU3] Assessment of ability to use knowledge gained from the subject
[K6_W07] Has detailed knowledge of selected problems of materials science.	Student can assess the risk of particular corrosion attack and propose protection method.	[SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge
[K6_U02] Can operate typical laboratory equipment and analyze material tests	Student can prepare a metallographic specimen	[SU4] Assessment of ability to use methods and tools [SU1] Assessment of task fulfilment
[K6_K01] Understands the need to improve professional and personal competencies; is conscious of own limitations and knows when to turn to experts, properly establishes priorities helping to accomplish tasks defined by oneself or others.	Student can assess corrosion resistance of the most popular metals and alloys; knows which elements influence on this property.	[SK5] Assessment of ability to solve problems that arise in practice

<table>
<tr><td>Subject contents</td><td>Course content – lecture
Structure and properties of metals and alloys, general classification of metals and alloys, detailed structure of carbon steels, stainless steels, cast irons and non-ferrous alloys (copper and aluminum), preparation of metallographic specimens for microscopic analysis, preparation of samples for standard corrosion tests, procedure of macro- and microexamination of metallographic specimens, metallographic examination of corrosion damages of metals and alloys.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>Fundamentals of physics and physical chemistry.

Fundamentals of materials science.

Fundamentals of mechanics of materials.</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>Tests and reports from laboratory exercises</td><td>60.0%</td><td>50.0%</td></tr>
<tr><td>Test from lectures</td><td>60.0%</td><td>50.0%</td></tr>
</table>
</td></tr>
<tr><td>Recommended reading</td><td>
<table>
<tr><td>Basic literature</td><td>Dobrzański L.A. i in.: Metaloznawstwo i obróbka cieplna materiałów narzędziowych WNT. Warszawa 1990.

Przybyłowicz K.: Metaloznawstwo (wyd. VIII). WNT. Warszawa 2007.

Pr. Zb. [red. M. Głowacka]: Metaloznawstwo. Wyd. Politechniki Gdańskiej. Gdańsk 1996.

Pr. Zb. [red. J. Hucińska]: Metaloznawstwo. Materiały do ćwiczeń laboratoryjnych. Pr. Zb. [red. M. Głowacka]: Metaloznawstwo. Wyd. Politechniki Gdańskiej. Gdańsk 1996.

Pr. Zb. [red. J. Hucińska]: Metaloznawstwo. Materiały do ćwiczeń laboratoryjnych. Wyd. Politechniki Gdańskiej. Gdańsk 1995.</td></tr>
<tr><td>Supplementary literature</td><td>Pr. Zb. [red. M. Głowacka, A. Zieliński]: Podstawy materiałoznawstwa. Pr. Zb. [red. M. Głowacka]: Metaloznawstwo. Wyd. Politechniki Gdańskiej. Gdańsk 2014.

Pr. Zb. [red. J. Hucińska]: Metaloznawstwo. Materiały do ćwiczeń laboratoryjnych. Wyd. Politechniki Gdańskiej. Gdańsk 2014.</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
</table>
</td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td>Give examples of copper alloys and describe their functional properties.

Name the stages of preparation of a metallographic specimen.</td></tr>
<tr><td>Practical activites within the subject</td><td>Not applicable</td></tr>
</table>

Document generated electronically. Does not require a seal or signature.