GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

| | | | |
|---|---|---|---|
| Subject name and code | Corrosion protection of ocean engineering facilities, PG_00060400 | | |
| Field of study | Ocean Engineering | | |
| Date of commencement of studies | February 2023 | Academic year of realisation of subject | 2023/2024 |
| Education level | second-cycle studies | Subject group | |
| Mode of study | Part-time studies | Mode of delivery | at the university |
| Year of study | 2 | Language of instruction | Polish |
| Semester of study | 3 | ECTS credits | 2.0 |
| Learning profile | general academic profile | Assessment form | assessment |
| Conducting unit | Institute of Ocean Engineering and Ship Technology -> Faculty of Mechanical Engineering and Ship Technology | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | dr inż. Milena Supernak | |
| | Teachers | dr inż. Milena Supernak | |

**Lesson types and methods of instruction**

| Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
|---|---|---|---|---|---|---|
| Number of study hours | 18.0 | 0.0 | 0.0 | 0.0 | 0.0 | 18 |

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 | 18 | 0.0 | 0.0 | 18 |

**Subject objectives**

The aim of the course is to familiarize the student with the types of corrosion in the water environment and the protection techniques currently used in the industry.

**Learning outcomes**

| Course outcome | Subject outcome | Method of verification |
|---|---|---|
| [K7_K02] is aware non-technical aspects and effects of operation as an engineer, its influence on the environment and is aware of the responsibilities for the decisions taken | The student defines the division and types of corrosion depending on the working environment. The student knows the methods of corrosion protection. The student knows the impact of assessment and technical objects on environmental degradation. | [SK2] Assessment of progress of work<br>[SK1] Assessment of group work skills<br>[SK3] Assessment of ability to organize work |
| [K7_W05] has an organized, widened knowledge on design, construction and operation of ocean technology objects and systems | The student is able to analyze the type of corrosion on the basis of examples. The student understands the essence of the selection of material for the working environment and the choice of protection against degradation. | [SW3] Assessment of knowledge contained in written work and projects |
| [K7_W06] has an organized, widened knowledge on engineering methods and design tools allowing the conducting of advanced projects within the construction and operation of ocean technology objects and systems | The student is able to define the corrosion process and propose a corrosion protection method depending on the element and the working environment. | [SW3] Assessment of knowledge contained in written work and projects |

<table>
<tr><td>Subject contents</td><td>1. Introduction to the topic of Corrosion<br>2. The Cottosive destruction<br>3. Surface preparation<br>4. Protection technologies<br>5. Selection of protection.<br>6. Cathodic protection<br>7. Corrosion of welded joints<br>8. Biocorrosion</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>Knowledge of metallic engineering materials is recommended.</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>Passing the content of the lecture - form written.</td><td>60.0%</td><td>100.0%</td></tr></table></td></tr>
<tr><td>Recommended reading</td><td><table><tr><td>Basic literature</td><td>• A. Miszczyk; M. Szociński; K. Darowicki "Powłoki malarskie w ochronie przeciwkorozyjnej", WPG Gdańsk 2022<br>• M. Głowacki; J. Łabanowski; M. Landowski "Współczesne materiały inżynierskie Wybrane grupy materiałów", WPG Gdańsk 2022<br>• A. Warszawki; S. Koter " Elektrochemia" Wybrane zagadnienia. Podręcznik do ćwiczeń rachunkowych; WUMK, Toruń 2005<br>• H. Bala "Korozja materiałów-teoria i praktyka" WIPMiFS, Częstochowa 2002</td></tr><tr><td>Supplementary literature</td><td>• Głowacka M., Zieliński A.: Podstawy Materiałoznawstwa. WPG, Gdańsk 2011<br>• Dobrzański L.A.: Podstawy nauki o materiałach i metaloznawstwo.. WNT, Warszawa, 2002</td></tr><tr><td>eResources addresses</td><td>Adresy na platformie eNauczanie:<br>Ochrona antykorozyjna obiektów oceanotechnicznych - Moodle ID: 38516<br>https://enauczanie.pg.edu.pl/moodle/course/view.php?id=38516</td></tr></table></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td>1. What is corrosion?<br>2. List the types of corrosion.<br>3. What are the methods of fighting corrosion?<br>4. What is biocorrosion and how to protect against it?<br>5. What is coating protection?<br>6. What is cathodic protection?</td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
</table>