GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

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| Subject name and code | Technology of offshore Structures, PG_00046545 | | |
| Field of study | Ocean Engineering, Ocean Engineering | | |
| Date of commencement of studies | October 2020 | Academic year of realisation of subject | 2022/2023 |
| Education level | first-cycle studies | Subject group | |
| Mode of study | Part-time studies | Mode of delivery | at the university |
| Year of study | 3 | Language of instruction | Polish |
| Semester of study | 6 | ECTS credits | 2.0 |
| Learning profile | general academic profile | Assessment form | assessment |
| Conducting unit | Department of Ship Manufacturing Technology, Quality Systems and Materials Science -> Faculty of Mechanical Engineering and Ship Technology | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | dr inż. Ryszard Pyszko | |
| | Teachers | dr inż. Ryszard Pyszko | |

**Lesson types and methods of instruction**

| Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
|---|---|---|---|---|---|---|
| Number of study hours | 20.0 | 0.0 | 0.0 | 0.0 | 0.0 | 20 |

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 | 20 | 4.0 | 26.0 | 50 |

**Subject objectives**

The aim of the course is to familiarize students with the requirements of regulations and characteristic conventions for the industry, an indication of the variety of facilities and operational requirements, materials usedand processing technologies, construction safety requirements and environmental impact

**Learning outcomes**

| Course outcome | Subject outcome | Method of verification |
|---|---|---|
| [K6_U05] can formulate a simple engineering task and its specification within the range of design, construction and operation of ocean technology objects and systems | The student is able to identify the basic problems of design, production, quality control, application of standards and provisions of the classification societies | [SU3] Assessment of ability to use knowledge gained from the subject |
| [K6_W05] has an organized knowledge on design, construction and operation of ocean technology objects and systems | The student has basic knowledge related to the typical constructions of typical ocean engineering systems | [SW1] Assessment of factual knowledge<br>[SW2] Assessment of knowledge contained in presentation |
| [K6_W06] has an organized knowledge on engineering methods and design tools allowing the conducting of projects within the construction and operation of ocean technology objects and systems | The student gets acquainted with the typical course of the construction and installation of offshore systems | [SW1] Assessment of factual knowledge |
| [K6_K03] understands 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 has knowledge related to the specificity of operating offshore installations | [SK4] Assessment of communication skills, including language correctness |

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| Subject contents | 1. Offshore facilities with a reinforced concrete structure1.1. Material characteristics2. Offshore facilities with a steel structure2.1. Solar energy installations2.2. Wind towers - division according to the axis of rotation3. Comparison of the efficiency of renewable sources 3.1. Technologies of the future 4. Material for offshore structures5. Safety of manufactured structures 5.1. ISO standards 5.2. Norse standards 5.3. PRS - Offshore Wind Farms 6. Construction technology of steel masts of wind towers 7. Manufacturers of offshore facilities |
| Prerequisites and co-requisites | Marine general knowledge of other subjects in the field of IMO conventions, rules of Classification Societies and Maritime Affairs |

**Assessment methods and criteria**

| Subject passing criteria | Passing threshold | Percentage of the final grade |
|---|---|---|
| Test | 60.0% | 100.0% |

**Recommended reading**

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| Basic literature | 1. Regulations of classification societies and ISO and Norsok standards<br><br>2. Industry magazines https://www.rivieramm.com/offshore-wind-journal ; https://www.tandfonline.com/journals/tsos20<br><br>3. Internet: Internet: https://www.oedigital.com/ ; https:// www.portalmorski.pl/offshore |
| Supplementary literature | Magazines, websites, yard and other institutional dealing with maritime Websites conventions and lows.<br><br>https://konferencja-offshore.pl/en/ ; http:// centrumoffshore.umg.edu.pl/ ; https://www.gospodarkamorska.pl/firmy-przemysl-offshore-f37 |
| eResources addresses | Adresy na platformie eNauczanie:<br>Technologia konstrukcji offshore, W, OCE, sem. 06, lato 22/23, PG_00046545, - Moodle ID: 29292<br>https://enauczanie.pg.edu.pl/moodle/course/view.php?id=29292 |

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| Example issues/ example questions/ tasks being completed | 1. Give the characteristics of steel materials for offshore structures<br><br>2. What standards are used and who formulates them in the offshore industry<br><br>3. Discuss the technologies of prefabrication of wind tower sections |
| Work placement | Not applicable |