GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

| | | | |
|---|---|---|---|
| Subject name and code | Fuels, Oil and Greases, PG_00056068 | | |
| Field of study | Power Engineering, Power Engineering | | |
| Date of commencement of studies | October 2022 | Academic year of realisation of subject | 2023/2024 |
| Education level | first-cycle studies | Subject group | Obligatory subject group in the field of study<br>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 | 2 | Language of instruction | English |
| Semester of study | 3 | ECTS credits | 1.0 |
| Learning profile | general academic profile | Assessment form | assessment |
| Conducting unit | Zakład Siłowni Okrętowych -> Institute of Ocean Engineering and Ship Technology -> Faculty of Mechanical Engineering and Ship Technology | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | dr inż. Patrycja Puzdrowska | |
| | Teachers | dr inż. Patrycja Puzdrowska | |

**Lesson types and methods of instruction**

| Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
|---|---|---|---|---|---|---|
| Number of study hours | 15.0 | 0.0 | 0.0 | 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 | 3.0 | 7.0 | 25 |

**Subject objectives**

Gaining knowledge about fuels, oils and greases by the student

**Learning outcomes**

| Course outcome | Subject outcome | Method of verification |
|---|---|---|
| [K6_K03] is able to react in emergency situations, threats to health and life when using energy devices, is aware of the impact of engineering activities on the environment | The student is aware of the impact of engineering activities on the environment | [SK5] Assessment of ability to solve problems that arise in practice |
| [K6_W06] knows classic and developmental energy technologies, rules for the selection and operation of heat and energy devices and installations, basic principles of energy systems operation, basic issues regarding the reliability of energy devices and diagnostics, environmental effects of energy technologies used, methods of using renewable energy sources | The student is able to explain the origin, describe the properties and characterizing indices, classify and present the operational issues of fuels, oils and greases | [SW2] Assessment of knowledge contained in presentation |

**Subject contents**

Division and origin of fuels. Resources of fossil energy resources in Poland and in the world. Production and structure of fuel consumption. Main directions of crude oil processing. Classification and physical properties of gaseous and liquid fuels - natural gas, gasoline, kerosene, diesel oil, heating oil. Classification and characteristic indicators of solid fuels - hard coal, lignite, peat. Fuel contaminants and methods of their removal. Classification, characteristics and properties of lubricating oils and greases. Guidelines for the selection of lubricants.

**Prerequisites and co-requisites**

**Assessment methods and criteria**

| Subject passing criteria | Passing threshold | Percentage of the final grade |
|---|---|---|
| Test | 50.0% | 100.0% |

| | | |
|---|---|---|
| Recommended reading | Basic literature | 1. A.,K.,Raja, Amit P. Srivastava, Manish Dwivedi: Power Plant Engineering<br><br>2. JAMES G. SPEIGHT: Handbook of Petroleum. Product Analysis<br><br>3. Baczewski K., Kałdoński T.: Paliwa do silników o zapłonie samoczynnym. WKŁ, W-wa 2008<br><br>4. Baczewski K., Kałdoński T.: Paliwa do silników o zapłonie iskrowym. WKŁ, W-wa 2008<br><br>5. Podniało A.: Paliwa, oleje i smary w ekologicznej eksploatacji. Poradnik. WNT, W-wa, 2002. |
| | Supplementary literature | Catalogs and brochures of producers of fuels, lubricating oils and technical devices |
| | eResources addresses | Adresy na platformie eNauczanie:<br>Fuels, Oil and Greases, W, ET, sem.3, zima 23/24 (PG_00056068) - Moodle ID: 32395<br>https://enauczanie.pg.edu.pl/moodle/course/view.php?id=32395 |
| Example issues/ example questions/ tasks being completed | Determine the octane number | |
| Work placement | Not applicable | |