



Subject card

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|---|---|--|----------|-------------------------------------|--|--|-----|
| Subject name and code | Construction and exploitation of hydraulic devices, PG_00040101 | | | | | | |
| Field of study | Mechanical Engineering, Mechanical Engineering | | | | | | |
| Date of commencement of studies | October 2020 | Academic year of realisation of subject | | | | 2022/2023 | |
| Education level | first-cycle studies | Subject group | | | | Optional subject group Subject group related to scientific research in the field of study | |
| 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 | | | | 5.0 | |
| Learning profile | general academic profile | Assessment form | | | | exam | |
| Conducting unit | Department of Mechanics and Mechatronics -> Faculty of Mechanical Engineering and Ship Technology | | | | | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | | | | | | |
| | Teachers | | | | | | |
| Lesson types and methods of instruction | Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
| | Number of study hours | 22.0 | 0.0 | 15.0 | 0.0 | 0.0 | 37 |
| | 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 | 37 | | 11.0 | | 77.0 | 125 |
| Subject objectives | Learning the principles of operation and diagnosis of hydraulic systems | | | | | | |
| Learning outcomes | Course outcome | Subject outcome | | | Method of verification | | |
| | [K6_W08] possesses basic knowledge including the methodology of designing machine parts, mechanical devices, selection of construction materials, manufacturing and operation, with the lifetime cycle | | | | [SW1] Assessment of factual knowledge | | |
| | [K6_U03] is able to identify, formulate and develop the documentation of a simple design or technological task, including the description of the results of this task in Polish or in a foreign language and to present the results using computer software or other aiding tools | | | | [SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools | | |

| Subject contents | <p>1. Measurements in the laboratory of hydraulics and pneumatic systems for data collection and measurement.</p> <p>2. Wear of the machinery components and monitoring of oil.</p> <p>3. Preparation of the hydraulic system to operate.</p> <p>4. Methods for determining of pressure losses in the internal channels of pump and hydraulic and pneumatic motor.</p> <p>5. Determination of the theoretical displacement of hydraulic and pneumatic machine.</p> <p>6. Methods of testing the motor and the pump at a constant low speed. Starting torque.</p> <p>7. Methods of description of the losses in hydraulic and pneumatic motors.</p> <p>8. Methods of testing of the hydraulic and pneumatic systems components at low ambient temperatures.</p> <p>9. Methodology of the testing of the seals in the reciprocating and rotary motion.</p> <p>10. Methods of dewatering oil. Methods for determining the amount of water in oil.</p> | | | | | | | | | | | |
|--|--|--|--|--------------------------|-------------------|-------------------------------|---------|-------|-------|------------|-------|-------|
| Prerequisites and co-requisites | No requirements. | | | | | | | | | | | |
| Assessment methods and criteria | <table border="1" data-bbox="448 981 1497 1093"> <thead> <tr> <th data-bbox="448 981 794 1025">Subject passing criteria</th> <th data-bbox="794 981 1141 1025">Passing threshold</th> <th data-bbox="1141 981 1497 1025">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="448 1025 794 1059">Lecture</td> <td data-bbox="794 1025 1141 1059">56.0%</td> <td data-bbox="1141 1025 1497 1059">75.0%</td> </tr> <tr> <td data-bbox="448 1059 794 1093">Laboratory</td> <td data-bbox="794 1059 1141 1093">56.0%</td> <td data-bbox="1141 1059 1497 1093">25.0%</td> </tr> </tbody> </table> | | | Subject passing criteria | Passing threshold | Percentage of the final grade | Lecture | 56.0% | 75.0% | Laboratory | 56.0% | 25.0% |
| Subject passing criteria | Passing threshold | Percentage of the final grade | | | | | | | | | | |
| Lecture | 56.0% | 75.0% | | | | | | | | | | |
| Laboratory | 56.0% | 25.0% | | | | | | | | | | |
| Recommended reading | <p>Basic literature</p> <p>Supplementary literature</p> <p>eResources addresses</p> | <p>1. P. Śliwiński, Satelitowe maszyny waporowe. Wydawnictwo Politechniki Gdańskiej, 2016.</p> <p>2. A. Osiecki, Hydrostatyczny napęd maszyn, WNT, W-wa 1998.</p> <p>3. A. Balawender and others, Laboratorium napędów hydraulicznych. Part 1. Podstawy hydrauliki. Wyd. IMP PAN, Gdańsk 1996.</p> <p>4. S. Stryczek, Napęd hydrostatyczny, volume I i II, WNT, W-wa 1997.</p> <p>There is no requirement.</p> | | | | | | | | | | |
| Example issues/ example questions/ tasks being completed | Given during the course | | | | | | | | | | | |
| Work placement | Not applicable | | | | | | | | | | | |