GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

| | | | |
|---|---|---|---|
| Subject name and code | Research laboratory, PG_00064839 | | |
| Field of study | Mechanical Engineering | | |
| Date of commencement of studies | February 2027 | Academic year of realisation of subject | 2027/2028 |
| Education level | second-cycle studies | Subject group | Specialty subject group<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 | 1 | Language of instruction | Polish |
| Semester of study | 2 | ECTS credits | 1.0 |
| Learning profile | general academic profile | Assessment form | assessment |
| Conducting unit | Division of Fluid-Flow Machinery -> Institute of Energy -> Faculty of Mechanical Engineering and Ship Technology -> Faculties of Gdańsk University of Technology | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | prof. dr hab. inż. Krzysztof Kosowski | |
| | Teachers | | |

**Lesson types**

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

The main aim is to prepare students to research work (theoretical, design and experimental investigations), to give them basic principles of experimental design (planning), research methods and analysis of results, formulating conclusions and presentation of results

**Learning outcomes**

| Course outcome | Subject outcome | Method of verification |
|---|---|---|
| [K7_W01] explains and describes, on the basis of general knowledge of the scientific disciplines forming the theoretical basis of Mechanics and Mechanical Engineering, the structure and principles of operation of mechanical systems and processes | Student can explain the theoretical fundamentals of his example of a technical solution and experimental tests. | [SW2] Assessment of knowledge contained in presentation |
| [K7_U03] plans and carries out experimental investigations to determine the parameters of devices, processes or systems in the field of Mechanical Engineering and Mechanical Engineering, appropriately selects methods, techniques and tools, interprets results and estimates measurement errors | Student can propose a simple technical solution (mechanical engineering type), design it, plan an experiment and perform tests. | [SU1] Assessment of task fulfilment |
| [K7_U14] integrates information obtained from literature and other properly selected sources, including those in a foreign language, creatively interpreting and critically evaluating them, and drawing conclusions | Student can discuss technical solutions (theoretical and used in practice), compare them to other examples, notice advantages and disadvantages. | [SU2] Assessment of ability to analyse information |

**Subject contents**

Course content – project

Problems of experimental investigations (theoretical, design and experimental investigations), to give them basic principles of experimental design (planning), research methods and analysis of results, formulating conclusions and presentation of results

**Prerequisites and co-requisites**

<table>
<tr><td>Assessment methods and criteria</td><td colspan="2"><table><tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr><tr><td>report</td><td>60.0%</td><td>100.0%</td></tr></table></td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td>M. Korzyński, Metodyka eksperymentu, PWN WNT, wyd.2 , 2021 (in Polish)<br><br>Literature will be suggested by lecturer according to the particular tasks</td></tr>
<tr><td>Supplementary literature</td><td>Literature will be suggested by lecturer according to the particular tasks</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="2">1. Propose an experimental model of steam marine propulsion system.<br><br>2. Propose an experimental model of steam turbine.<br><br>3. Propose a method for rigid rotor balancing.</td></tr>
<tr><td>Practical activites within the subject</td><td colspan="2">Not applicable</td></tr>
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