GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

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|---|---|---|---|---|---|---|---|
| Subject name and code | , PG_00056107 | | | | | | |
| Field of study | Mechatronics | | | | | | |
| Date of commencement of studies | October 2023 | | Academic year of realisation of subject | 2025/2026 | | | |
| Education level | first-cycle studies | | Subject group | | | | |
| Mode of study | Full-time studies | | Mode of delivery | at the university | | | |
| Year of study | 3 | | Language of instruction | Polish | | | |
| Semester of study | 5 | | ECTS credits | 2.0 | | | |
| Learning profile | general academic profile | | Assessment form | assessment | | | |
| Conducting unit | Institute Of Energy -> Faculty Of Mechanical Engineering And Ship Technology -> Wydziały Politechniki Gdańskiej | | | | | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | prof. dr hab. inż. Krzysztof Kosowski | | | | | |
| | Teachers | | | | | | |

| Lesson types and methods of instruction | Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
|---|---|---|---|---|---|---|---|
| | Number of study hours | 30.0 | 0.0 | 0.0 | 0.0 | 0.0 | 30 |
| | 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 | 30 | 0.0 | 0.0 | 30 |

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| Subject objectives | To give fundamentals of turbomachinery (steam and gas turbines, compressors). |

| Learning outcomes | Course outcome | Subject outcome | Method of verification |
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| Subject contents | Thermodynamic cycles of steam turbines, thermodynamic cycles of gas turbines, combined turbine cycles, elements of steam and gas turbine plants, axial turbine stage theory, stage losses and stage efficiency characteristics, multi-stage turbines, principles of radial and axial compressors, characteristics of compressors. Water turbines, principle of operation, the main characteristics. Air turbines, theory and design. Pumps, principle of operation, types and the main parameters. |
| Prerequisites and co-requisites | fundamental knowledge of thermodynamics and fluid flow dynamics |

| Assessment methods and criteria | Subject passing criteria | Passing threshold | Percentage of the final grade |
|---|---|---|---|
| | exam | 60.0% | 100.0% |

| Recommended reading | | |
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| | Basic literature | 1. Perycz S., Turbiny parowe i gazowe, IMP- Ossolineum.<br>2. Kosowski K. et al, Steam and Gas Turbines, Alstom<br>3. Troskolański A. T., Pompy wirowe, WNT |
| | Supplementary literature | Lecture materials |
| | eResources addresses | Adresy na platformie eNauczanie: |

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| Example issues/ example questions/ tasks being completed | 1. The main parameters of steam turbine cycle<br>2. The main design parameters of gas turbine power plants<br>3. Turbine stages - principle of operation<br>4. The main design parameters of turbine stages<br>5. Flows in nozzles<br>6. Multistage tubines |

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| Work placement | Not applicable |

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