



Subject card

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|---|--|--|----------|-------------------------------------|--|------------|-----|
| Subject name and code | Geometry and Technical Drawing, PG_00041993 | | | | | | |
| Field of study | Power Engineering, Power Engineering | | | | | | |
| Date of commencement of studies | October 2023 | Academic year of realisation of subject | | | 2023/2024 | | |
| Education level | first-cycle studies | Subject group | | | Obligatory subject group in the field of study 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 | | | English | | |
| Semester of study | 1 | ECTS credits | | | 3.0 | | |
| Learning profile | general academic profile | Assessment form | | | assessment | | |
| Conducting unit | Department of Machine Design and Vehicles -> Faculty of Mechanical Engineering and Ship Technology | | | | | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | dr hab. inż. Jacek Łubiński | | | | | |
| | Teachers | mgr inż. Bartosz Bastian dr hab. inż. Jacek Łubiński | | | | | |
| Lesson types and methods of instruction | Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
| | Number of study hours | 15.0 | 30.0 | 0.0 | 0.0 | 0.0 | 45 |
| | 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 | 45 | | 7.0 | | 23.0 | 75 |
| Subject objectives | Ability of sketching assembly drawings and drawings of details | | | | | | |

| Learning outcomes | Course outcome | Subject outcome | Method of verification |
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| | [K6_K01] is aware of the need for training and self-improvement in the profession of energy and the possibility of further education; can think and act in a creative and entrepreneurial manner; can define priorities for the implementation of an individual or group task | Conscious recognition of the role of the energy sector to technology and economy. Understanding of the necessity in engineering to read the technical documentation expressed in the form of technical drawings and possessing the skills sufficient for the creation of simple technical drawings, as required in day-to-day maintenance of energy production/conversion systems. | [SK4] Assessment of communication skills, including language correctness [SK5] Assessment of ability to solve problems that arise in practice [SK2] Assessment of progress of work |
| | [K6_U04] is able to design a simple device structure and prepare the accompanying technical documentation, conduct a basic technical and economic analysis of energy systems, including technologies using renewable and pro-ecological energy sources as well as conventional and nuclear energy, design energy installations for them and their basic elements (including electric lighting)); select, operate and control the most commonly used electrical devices and drive systems. | Skills in engineering graphics as required to use in machine design tasks. | [SU1] Assessment of task fulfilment [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 [SU5] Assessment of ability to present the results of task |
| | [K6_K01] is aware of the need for training and self-improvement in the profession of energy and the possibility of further education; can think and act in a creative and entrepreneurial manner; can define priorities for the implementation of an individual or group task | Conscious recognition of the role of the energy sector to technology and economy. Understanding of the necessity in engineering to read the technical documentation expressed in the form of technical drawings and possessing the skills sufficient for the creation of simple technical drawings, as required in day-to-day maintenance of energy production/conversion systems. | [SK4] Assessment of communication skills, including language correctness [SK5] Assessment of ability to solve problems that arise in practice [SK2] Assessment of progress of work |
| | [K6_K01] is aware of the need for training and self-improvement in the profession of energy and the possibility of further education; can think and act in a creative and entrepreneurial manner; can define priorities for the implementation of an individual or group task | Conscious recognition of the role of the energy sector to technology and economy. Understanding of the necessity in engineering to read the technical documentation expressed in the form of technical drawings and possessing the skills sufficient for the creation of simple technical drawings, as required in day-to-day maintenance of energy production/conversion systems. | [SK4] Assessment of communication skills, including language correctness [SK5] Assessment of ability to solve problems that arise in practice [SK2] Assessment of progress of work |
| | [K6_U04] is able to design a simple device structure and prepare the accompanying technical documentation, conduct a basic technical and economic analysis of energy systems, including technologies using renewable and pro-ecological energy sources as well as conventional and nuclear energy, design energy installations for them and their basic elements (including electric lighting)); select, operate and control the most commonly used electrical devices and drive systems. | Competency in engineering graphics, as required to design machines. | [SU1] Assessment of task fulfilment [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 |
| | [K6_U04] is able to design a simple device structure and prepare the accompanying technical documentation, conduct a basic technical and economic analysis of energy systems, including technologies using renewable and pro-ecological energy sources as well as conventional and nuclear energy, design energy installations for them and their basic elements (including electric lighting)); select, operate and control the most commonly used electrical devices and drive systems. | Competency in engineering graphics, as required to design machines. | [SU1] Assessment of task fulfilment [SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools [SU5] Assessment of ability to present the results of task |

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| Subject contents | Basic geometry elements and relationship. Axonometric and orthographic projection. Point & line in space. Solids cross sections. Principles of dimensioning. Surface finish, tolerances and fits. Presenting of welded, screwed, keys elements, rolling bearing, gears in engineering drawing. Assembly drawing and working drawing of element of machinery | | |
| Prerequisites and co-requisites | command of the English language, minimum level B2 | | |
| Assessment methods and criteria | Subject passing criteria | Passing threshold | Percentage of the final grade |
| | final test | 65.0% | 50.0% |
| | projects sheets | 65.0% | 50.0% |
| Recommended reading | Basic literature | Zapis konstrukcji, część I, Geometria Wykreślna, A. Rigall, J. Sadaj, Rysunek Techniczny Maszynowy, T. Dobrzański, Engineering Graphics handbook (preferably an European release) | |
| | Supplementary literature | Zbiór zadań z rysunku technicznego maszynowego, Z. Lewandowski The Fabric of Reality, David Deutsch A Brief History of Time, Stephen Hawking The Axemaker's Gift, James Burke, Robert Ornstein Catch 22, Joseph Heller The Trial, Franz Kafka Animal Farm, George Orwell | |
| | eResources addresses | Adresy na platformie eNauczanie: Geometry and Technical Drawing, PG_00041993 2023/24 - Moodle ID: 34341 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=34341 | |
| Example issues/ example questions/ tasks being completed | Sketch the assembly drawing of an energetic device based on detail drawings. | | |
| Work placement | Not applicable | | |

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