GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

| | | | |
|---|---|---|---|
| Subject name and code | Computer aided design (CAD), PG_00055891 | | |
| Field of study | Power Engineering | | |
| Date of commencement of studies | October 2026 | Academic year of realisation of subject | 2027/2028 |
| 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 | Polish |
| Semester of study | 4 | ECTS credits | 3.0 |
| Learning profile | general academic profile | Assessment form | assessment |
| Conducting unit | Institute of Mechanics and Machine Design -> Faculty of Mechanical Engineering and Ship Technology -> Faculties of Gdańsk University of Technology | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | dr hab. inż. Michał Wodtke | |
| | Teachers | | |

**Lesson types**

| Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
|---|---|---|---|---|---|---|
| Number of study hours | 15.0 | 0.0 | 0.0 | 30.0 | 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 | 3.0 | 27.0 | 75 |

**Subject objectives**

Aquisition of knowledge and design skills with the use of CAD (Computer-Aided Design) systems.

**Learning outcomes**

| Course outcome | Subject outcome | Method of verification |
|---|---|---|
| [K6_K02] is able to work in a group taking different roles in it, can think and act in an entrepreneurial way, is aware of responsibility for their own work and responsibility for teamwork | Student plans and solves steps of an assigned task, taking into account cooperation in a project group, he/she is able to cooperate with other members of the group while solving the given problem. | [SK3] Assessment of ability to organize work<br>[SK1] Assessment of group work skills |
| [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. | Student uses CAD tools that enable 3D design, creating 3D dosumentation, creating assembly and manufacturing 2D drawings. | [SU1] Assessment of task fulfilment<br>[SU3] Assessment of ability to use knowledge gained from the subject |
| [K6_U08] can design the basic parameters of the selected technology related to energy conversion and select auxiliary devices and evaluate the project in terms of technical and economic | Student uses CAD tools that use engineering algorithms of various advancement levels. Student uses program libraries and external databases. | [SU4] Assessment of ability to use methods and tools<br>[SU5] Assessment of ability to present the results of task |

**Subject contents**

Course content – lecture
Familiarization with CAD 3D software (Inventor or Solidworks or others) in the field of creating 2D and 3D technical documentation, dimensional analysis, familiarization with available databases of machine elements (both from the program library and from external sources, e.g. database of suppliers of machine components).

<table>
<tr><td>Prerequisites and co-requisites</td><td colspan="2">Engineering graphics, Strength of Materials, basic of using CAD systems</td></tr>
<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>Task III</td><td>60.0%</td><td>60.0%</td></tr>
<tr><td>Task I</td><td>60.0%</td><td>20.0%</td></tr>
<tr><td>Task II</td><td>60.0%</td><td>20.0%</td></tr>
</table></td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td>Tutorials (help systems) for 3D CAD software<br><br>Dobrzański T.: Rysunek Techniczny Maszynowy, WNT Warszawa 2005</td></tr>
<tr><td>Supplementary literature</td><td>Any literature for CAD software, e.g. . Jaksulski A. :Autodesk Inventor 2020 wyd. Helion.</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="2">Design a system that converts rotary motion to reciprocating motion for specific assumptions using the CADprogram. Perform a kinematic simulation of the proposed solution.<br><br>Design, using the CAD program, the schematic functional layout by selecting elements from the program library and external databases.</td></tr>
<tr><td>Practical activites within the subject</td><td colspan="2">Not applicable</td></tr>
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