GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Elements of engineering graphics and CAD, PG_00062722		
Field of study	Technologies for Industry 5.0		
Date of commencement of studies	October 2025	Academic year of realisation of subject	2025/2026
Education level	first-cycle studies	Subject group	Obligatory subject group 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	1	ECTS credits	4.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Division Of Electrochemistry And Surface Physical Chemistry -> Institute Of Nanotechnology And Materials Engineering -> Faculty Of Applied Physics And Mathematics -> Wydziały Politechniki Gdańskiej		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Mateusz Cieślik	
	Teachers	dr inż. Mateusz Cieślik	

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	0.0	30.0	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	5.0	50.0	100

Subject objectives

The objective of the course is to introduce students to Engineering Graphics and computer-aided design (CAD). The development of the student's spatial imagination will be achieved through familiarization with the principles of projection, defining drawings according to applicable standards, and the ability to create technical working and assembly drawings.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_W01] demonstrates knowledge and understanding of mathematics, physics, chemistry and IT tools at the level necessary to formulate and solve typical engineering and technological problems	The student is able to read, create, and understand technical drawings of spatial structures and machine components.	[SW1] Assessment of factual knowledge
[K6_U01] applies knowledge of mathematics, physics, chemistry, IT tools and other engineering disciplines to solve theoretical, engineering and technological problems	The student is able to use the acquired knowledge of the principles and standards of technical drawing, both manual and computer-aided, in the preparation of technical documentation.	[SU3] Assessment of ability to use knowledge gained from the subject [SU2] Assessment of ability to analyse information [SU1] Assessment of task fulfilment

Subject contents

Main content of the lecture part:

the role of engineering graphics, basics of standardization, basic elements and principles of recording constructions in axonometric and orthographic projections, point, line, plane, sections, views, general and detailed dimensioning principles, tolerances of dimensions, shapes, and positions.

Main content of the laboratory part:

familiarization with CAD software, basic commands and operations needed to create 2D working and assembly drawings, prototyping and constructing 3D models, creating electronic technical documentation from provided axonometric views, utilizing 3D design in 3D printing technology.

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Prerequisites and co-requisites

Knowledge of Euclidean geometry theorems at the level required for the high school graduation exam, and the ability to operate a PC.

<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></td><td>60.0%</td><td>60.0%</td></tr>
<tr><td></td><td>60.0%</td><td>40.0%</td></tr>
</table></td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td>Dobrzański T.: Rysunek Techniczny Maszynowy. PWN, Warszaw, 201

Burcan J.: Podstawy Rysunku Technicznego, PWN, 2016, 9.</td></tr>
<tr><td>Supplementary literature</td><td>Jaskuslki A.: Autodesk Inventor, Podstawy metodyki projektowania, PWN, Warszawa, 2019</td></tr>
<tr><td>eResources addresses</td><td>Adresy na platformie eNauczanie:</td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="2">1. Creating axonometric projections of a solid,

2. Creating an assembly drawing of a mechanism,

3. Creating drawing documentation using computer software.</td></tr>
<tr><td>Work placement</td><td colspan="2">Not applicable</td></tr>
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