GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Computer Aided Design, PG_00058771
Field of study	Environmental Engineering

Date of commencement of studies	October 2022	Academic year of realisation of subject	2022/2023
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	2	ECTS credits	1.0
Learning profile	general academic profile	Assessment form	assessment

Conducting unit	Department Of Geotechnical And Hydraulic Engineering -> Faculty Of Civil And Environmental Engineering -> Wydziały Politechniki Gdańskiej

Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Witold Tisler
	Teachers	dr inż. Krzysztof Szarf
		dr inż. Witold Tisler

Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	15.0	0.0	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	5.0	8.0	28

Subject objectives	The course is designed to teach students the basics of working in AutoCAD. During the course, the most important functions of the program will be discussed, such as: drawing, modifying objects, hatching, or preparing a drawing for printing.

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K6_U07] can read architectural, construction and geodesy drawings, and can use the known computer programs to prepare a drawing part of technical documentation for the sanitary industry	The student can read a technical drawing from the construction or sanitary industry. The student can use AutoCAD to make a technical drawing.	[SU1] Assessment of task fulfilment [SU3] Assessment of ability to use knowledge gained from the subject
	[K6_U11] can use selected computer programs to support design, including CAD graphics programs	The student knows the principles of drawing up technical drawings. He knows the principles of descriptive geometry. He has the knowledge to enable correct execution of drawings in accordance with the above principles. He also has knowledge of making drawings in Autocad.	[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
	[K6_W15] knows the rules of descriptive geometry and technical drawing regarding the recording and reading of architectural drawings, construction and surveying drawings, as well as their preparation with the use of CAD	The student can prepare technical drawings using AutoCAD.	[SW3] Assessment of knowledge contained in written work and projects

Subject contents	Learn AutoCAD by Autodesk. Using the program. Drawing basic graphic elements (line, circle, polyline, polygon, rectangle). Modifying objects (copying, moving, rotating, stretching, mirroring, trimming, extending, array, fitting, scaling, offset). Precise drawing (coordinates Cartesian and polar coordinates, global and local coordinates, characteristic points. Working with layers (line types, line thicknesses). Object properties. Hatching. Dimensioning. Texts. Blocks, blocks with attributes. Regions. physical features. Preparation of a drawing for printing (printer settings, printing from the model space and from the layout area, scale, visible and invisible layers, viewports). Basics of 3D drawing. Offset. Mirror. Lengthening. Trimming. Array. Polygon. Fit. Scaling. Precision drawing. Drawing modes. characteristic points. Drawing settings. Object modifications. Hatches. fillings. Object modifications. Drawing modifications. Drawing in layers. Dimensioning. Text. Blocks. Blocks with attributes. Preparing to print. Print parameter settings. Three-dimensional modeling. Edge, plane and solid modeling.
Prerequisites and co-requisites	Mastering the material of subjects from previous semesters: descriptive geometry and technical drawing. Knowledge of the principles of technical drawing. Knowledge of the Windows environment. Knowledge of the Polish language.

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
attendance	100.0%	20.0%
Test	50.0%	80.0%

Recommended reading	Basic literature	1. AutoCAD manual.
		2. http://knowledge.autodesk.com/support/autocad/learn-explore/
		3. Andrzej Pikoń: AutoCAD. Pierwsze kroki. Helion.
		4. Andrzej Jaskólski: AutoCad. Kurs projektowania parametrycznego i nieparametrycznego w 2D i 3D. PWN.
	Supplementary literature	any AutoCAD manual or book
	eResources addresses	Adresy na platformie eNauczanie:

Example issues/ example questions/ tasks being completed	The final test consists in making two drawings, the first easier one in the middle of the semester and the second more difficult at the end of the semester. Sample pass: 1. Draw two lines 100 units long that intersect at an angle of 35 degrees2. Create a circular array centered at this point (the leader points to the point)3. Add dimensions to drawing4. Print the drawing to a .pdf file on an A4 sheet in the scale of 1:105. Copy this drawing from the paper in any way (the teacher presents a drawing with a simple object and measures time). The final grade is influenced by the presence and work in laboratory classes.
Work placement	Not applicable

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