



Subject card

Subject name and code	Computer Aided Design, PG_00058771						
Field of study	Environmental 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		
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						
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Witold Tisler					
	Teachers	dr inż. Witold Tisler dr inż. Krzysztof Szarf					
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_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		
	[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.			[SU4] Assessment of ability to use methods and tools [SU3] Assessment of ability to use knowledge gained from the subject [SU1] Assessment of task fulfilment		
	[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.			[SU3] Assessment of ability to use knowledge gained from the subject [SU1] Assessment of task fulfilment		

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
	Test	50.0%	80.0%
	attendance	100.0%	20.0%
Recommended reading	Basic literature	1. AutoCAD manual.  2. <a href="http://knowledge.autodesk.com/support/autocad/learn-explore/">http://knowledge.autodesk.com/support/autocad/learn-explore/</a>  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		