



## Subject card

Subject name and code	Computer Aided Design (CAD), PG_00059028						
Field of study	Environmental Engineering						
Date of commencement of studies	October 2022	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	Part-time studies	Mode of delivery			at the university		
Year of study	2	Language of instruction			Polish		
Semester of study	3	ECTS credits			4.0		
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. Krzysztof Szarf					
	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	10.0	0.0	20.0	0.0	0.0	30
	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	30	6.0		66.0		102
Subject objectives	To learn skills required to draft technical drawings using CAD software (AutoCAD by Autodesk)						
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		Student can read a civil engineering or a sanitary engineering technical drawing Student is able to use AutoCAD software to create a technical drawing		[SU4] Assessment of ability to use methods and tools [SU1] Assessment of task fulfilment		
	[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		Knows the rules of drafting technical drawings Knows the rules of descriptive geometry Has the knowledge to draft technical drawings according to the aforementioned rules Knows how to draw in 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		Can prepare technical drawings using AutoCAD		[SU1] Assessment of task fulfilment [SU4] Assessment of ability to use methods and tools		

Subject contents	<p>Learning how to use a current version of Autodesk AutoCAD  Drawing of basic elements (line, circle, polyline, polygon, rectangle, arch)  Modification of the elements already drawn (commands such as copy, move, rotate, stretch, mirror copy, cut, extend, array, scale, offset)  Precise drafting (using Cartesian and polar coordinates, using global and local coordinates, using object snap points)  Layer usage (line type, line thickness)  Properties of various objects in AutoCAD. Hatching. Adding dimensions to the drawing, including annotative dimensions. Adding texts to the drawing, including annotative texts. Drawing blocks and blocks with attributes. Regions. Mass properties.  Printing (setting up a new plotter, plotting using the model space and the layout space. Setting a proper print scale. Using invisible layers. Using viewports)  Introduction to 3D drawing</p>		
Prerequisites and co-requisites	<p>Classes taught in the previous semesters: descriptive geometry, technical drawing  Knowledge of technical drawing rules  How to use Windows OS  Polish proficiency</p>		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Udział w zajęciach	100.0%	20.0%
	test	30.0%	80.0%
Recommended reading	Basic literature	<p>1. AutoCAD help files  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.</p>	
	Supplementary literature	any AutoCAD manual	
	eResources addresses	<p>Podstawowe  <a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=33258">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=33258</a> - eNauczanie course (in Polish. Winter semester 2023/2024)  Adresy na platformie eNauczanie:</p>	
Example issues/ example questions/ tasks being completed	<p>Final test consists of redrawing a given figure and performing a number of specific tasks such as adding dimensions or printing the figure</p>		
Work placement	Not applicable		