GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	, PG_00062071		
Field of study	Civil Engineering		
Date of commencement of studies	October 2023	Academic year of realisation of subject	2024/2025
Education level	first-cycle studies	Subject group	
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	2	Language of instruction	Polish
Semester of study	3	ECTS credits	1.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Engineering Structures -> Faculty of Civil and Environmental Engineering		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Arkadiusz Sitarski	
	Teachers		

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	0.0	0.0	0.0	0.0	0.0	0

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	0	0.0	0.0	0

Subject objectives

Preparing students to produce technical drawings in the subject of General Construction

Learning the basics of Building Information Modeling (BIM) technology which will be useful for students in the future design and implementation practice.
Learning the basics of developing a simplified BIM model of building (architecture and construction)
Learning to create, modify, and process BIM model data to carry out basic analyses and create schedules, floor plans, visualizations, and animations.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_W04] Knows the rules of descriptive geometry and technical drawing for preparing and reading architectural, construction and geodetic drawings; also with the use of CAD	Creating construction technical drawings in accordance with the guidelines and standards for construction drawings.	[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects
[K6_U04] Reads and prepares construction documentation (including drawings, graphic documentation in the CAD environment), efficiently uses maps as well as architectural, construction and geodetic drawings.	Ability to create advanced technical drawings Ability to create simple BIM models	[SU4] Assessment of ability to use methods and tools [SU2] Assessment of ability to analyse information

Subject contents	Preparation of selected drawings for the subject General Construction.- composition of drawing elements.- preparing drawings for printing for the adopted scaleSelected advanced elements of the AutoCad program - advanced commands Introduction to BIM, basic BIM terminology, BIM software overview, interoperability of software, BIM standards. Architectural and structural modeling in BIM software (for instance, foundations, walls, columns, slabs). Modeling of families, parameterization of families, use of families in the project. Modeling of the terrain and surroundings of the building. Creating schedules, cost calculations. Graphics display options, creating visualizations and animations, rendering. Creating drawing sheets, arrangement of views and schedules on the drawing sheet.
Prerequisites and co-requisites	Knowledge of Geometry and principles of technical drawing. Knowledge of the basics of operating systems. Basic knowledge of AutoCad

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Design drawings	60.0%	50.0%
Drawing exercises	80.0%	50.0%

Recommended reading

Basic literature	1. KŁOSOWSKI P.: *Ćwiczenia w kreśleniu rysunków w systemie AutoCAD 2010PL, AutoCAD 2011PL*, Wydawnictwo Politechniki Gdańskiej, Gdańsk 2011. 2. PIKOŃ A.: *AutoCAD 2014PL. Pierwsze kroki,* Helion, 2014. 3. JASKULSKI A.: *AutoCAD 2014/LT2014/360(WS+), Kurs projektowania parametrycznego i nieparametrycznego 2D i 3D.* PWN, 2014. 4. Bednarczyk i inni, *BIM Standard PL*, Warszawa 2020 (dostępny w sieci Internet) 5. Kasznia D., Magiera J., Wierzowiecki P., *BIM w praktyce, standardy, wdrożenia, case study*, Wydawnictwo Naukowe PWN, Warszawa, 2017. 6. Anger A., Łaguna P., Zamara B., *BIM dla managerów*, Wydawnictwo Naukowe PWN, Warszawa, 2021. 7. Tomana A., *Bim Innowacyjna Technologia w Budownictwie. Podstawy, standardy, narzędzia*, Kraków 2015. 8. Autodesk - Revit, dokumentacja on-line, 9. Eastman, C., Teicholz, P., Sacks, R., & Liston, K. 2011. *BIM handbook: A guide to building information modeling for owners, managers, designers, engineers and contractors.* Indianapolis, IN: Wiley
Supplementary literature	1. PN-EN ISO 13567-1:2002 *Dokumentacja techniczna wyrobu. Organizacja i nadawanie nazw warstwom w systemie CAD*. Część 1: Zasady ogólne. 2. PN-EN ISO 128-21: *Rysunek techniczny. Zasady ogólne przedstawiania*. Część 21: Linie w systemie CAD.
eResources addresses	Adresy na platformie eNauczanie:

Example issues/ example questions/ tasks being completed	Preparation of a floor plan of the building and details of the building - AutoCad Design of a small facility (e.g. single-family house). BIM model of the facility, schedules, analyses, visualizations and animations.
Work placement	Not applicable