GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	, PG_00059118						
Field of study	Environmental Engineering						
Date of commencement of studies	October 2023		Academic year of realisation of subject		2026/2027		
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	4		Language of instruction		Polish		
Semester of study	7		ECTS credits		2.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Department of Mechanics of Materials and Structures -> Faculty of Civil and Environmental Engineering -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Dawid Bruski				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	10.0	0.0	0.0	5.0	0.0	15
	E-learning hours included: 0.0						
	eNauczanie source address: https://enauczanie.pg.edu.pl/2025/course/view.php?id=1415						
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		1.0	34.0	50	
Subject objectives	To provide foundational knowledge of Building Information Modeling (BIM) technology, applicable to future professional practice. To teach the basics of creating simplified BIM models of buildings. To develop skills in creating, modifying, and processing BIM model data for conducting basic analyses, generating schedules, floor plans, visualizations, and animations.						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_U06] knows and applies the basic provisions of construction law, water law and environmental law	Knows the basic legal and regulatory requirements for design documentation and understands the principles for preparing design documentation within a BIM environment.	[SU1] Assessment of task fulfilment
[K6_W08] has elementary knowledge of construction: including building materials, their strength, construction mechanics and building physics, moisture migration in buildings, heat transfer through building partitions	Knows the basic properties of building materials and their impact on a building's performance within a BIM model. Understands the role of structural elements (e.g., foundations, walls, columns, slabs, roofs) and can identify and describe them in a BIM model.	[SW1] Assessment of factual knowledge
[K6_U01] has the ability to self-education, can obtain information from literature, databases and other sources, uses information technology, Internet resources; can integrate the obtained information, make their interpretation, as well as draw conclusions and formulate and justify opinions	The student is capable of creating and modifying BIM models of objects, utilizing data from the models to generate reports, analyze them and interpret them. Can locate and integrate information resources (family libraries, standards), use scheduling and basic analysis tools, and import/export BIM model data. The student also understands the principles of interoperability between different software applications	[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

Subject contents

Course content – lecture
Wprowadzenie do programu Revit. Modelowanie domu jednorodzinnego (fundamenty, ściany, okna, drzwi, schody, stropy, dach). Zestawienia, oznaczenia i opisy, wymiarowanie oraz przygotowanie arkuszy rysunkowych. Modelowanie otoczenia, zestawienia materiałów i kosztorysowanie, wizualizacje projektu.

Course content – project
Introduction to Autodesk Revit. Modeling a single-family house (foundations, walls, windows, doors, stairs, slabs, roof). Schedules, tags and notes, dimensioning, and sheet setup. Site/terrain modeling; material takeoffs and cost estimation; suspended ceilings and reflected plans; project visualizations.

Prerequisites and co-requisites

Knowledge of Computer Aided Design (CAD)

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Project	60.0%	100.0%

Recommended reading

Basic literature

1. Bednarczyk i inni, BIM Standard PL, Warszawa 2020 (dostępny w sieci Internet)
2. Kasznia D., Magiera J., Wierzowiecki P., BIM w praktyce, standardy, wdrożenia, case study, Wydawnictwo Naukowe PWN, Warszawa, 2017.
3. Anger A., Łaguna P., Zamara B., BIM dla managerów, Wydawnictwo Naukowe PWN, Warszawa, 2021.
4. Tomana A., Bim Innowacyjna Technologia w Budownictwie. Podstawy, standardy, narzędzia, Kraków 2015.
5. Autodesk - Revit, dokumentacja on-line,
6. 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: -

eResources addresses:

Example issues/ example questions/ tasks being completed

Design of a small facility - BIM model, schedules, analyses, visualizations, and animations.

Practical activites within the subject

Not applicable

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