GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	CAD. Integrated Architectural Design, PG_00055651		
Field of study	Architecture		
Date of commencement of studies	October 2023	Academic year of realisation of subject	2024/2025
Education level	first-cycle studies	Subject group	Optional subject group Subject group related to scientific research in the field of study
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	2	Language of instruction	English
Semester of study	3	ECTS credits	2.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Visual Techniques -> Faculty of Architecture		
Name and surname of lecturer (lecturers)	Subject supervisor	mgr inż. arch. Dariusz Cyparski	
	Teachers	mgr inż. arch. Dariusz Cyparski	

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	0.0	0.0	30.0	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	2.0	18.0	50

Subject objectives

Detailed understanding of optimizing the design process using parametric BIM (Building Information Modeling) in the Autodesk Revit Architecture program. Practical design exercises included familiarize students with methods of integrating parametric design and exchanging data with other CAD/BIM programs, modifying parametric objects and generating automatic 2D/3D architectural documentation.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_U03] is able to prepare a graphic, written and oral presentation of your own design concepts in the field of architecture and urban planning, meeting the requirements of a professional record appropriate for architectural and urban design	The student understands the possibilities resulting from the application of parametric design. Is able to select the appropriate computer tools to effectively perform a design tasks in the BIM environment in the context of multi-disciplinary architectural design, communicate effectively the information with other building industries;	[SU5] Assessment of ability to present the results of task [SU3] Assessment of ability to use knowledge gained from the subject [SU2] Assessment of ability to analyse information
[K6_U02] is able to design an architectural object or a simple urban complex that meets the aesthetic and technical requirements	Capacity to work, design and understand the role and application of Building information Modelling technology (BIM) in the process of architectural design, using computer visual software. The student knows how to use properly selected computer simulations, analyzes and information technologies supporting architectural design;	[SU1] Assessment of task fulfilment [SU4] Assessment of ability to use methods and tools

Subject contents

The lesson plan introduces students to the typical design workflow of creating a full BIM model and related architectural documentation. The teaching topics include: learning the functions and advanced techniques of creating databases of BIM buildings, working with parametric objects and plug-ins, automatic generation of architectural elements based on study models (Form, Mass Study), learning tools for generating organic facades, multi-level parametric objects, elevations, sections and perspectives. Additionally, during classes, students learn techniques for creating presentation of architectural design, and publishing it in digital format.

Prerequisites and co-requisites

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
		60.0%	100.0%
Recommended reading	Basic literature	User manuals available from the help menu of the program and online manuals - www.autodesk.com	
	Supplementary literature	Mastering Autodesk Revit 2020. Robert Yori, Marcus Kim, Lance Kirby Revit 2020 for Architecture. Wing, Eric	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed	1. Link a CAD file to REVIT project, adjust the scale, maintain connection between the file and the model, 2. Set up interactive construction grids, 3. Draw and build 3D forms using AutoCAD Reference Lines, 4. Join multiple forms into One Solid Geometry (Mass) and generate Mass Floors, 5. Generate Curtain Grid System from Mass Instances.		
Work placement	Not applicable		