Subject card

Subject name and code	CAD. Integrated Architectural Design, PG_00055651
Field of study	Architecture

Date of commencement of studies	October 2021	Academic year of realisation of subject	2022/2023
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	blended-learning
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 Urban Architecture and Waterscapes -> Faculty of Architecture

Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. arch. Joanna Badach
	Teachers	dr inż. arch. Joanna Badach

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: 15.0						

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	During the course, students will learn about: the concept of integrated design and the use of modern digital tools in an integrated design process. During the course, students will prepare architectural project that can be reused in: environmental analyzes, traditional architectural design documentation and architectural visualization.

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K6_U02] is able to design an architectural object or a simple urban complex that meets the aesthetic and technical requirements	Student can collect ans analyse field information about the project's context, including the use of the GIS platform. Student can develop a digital model of the design concept and the 2D documentation of the architectural object or urban complex using BIM software.	[SU4] Assessment of ability to use methods and tools [SU3] Assessment of ability to use knowledge gained from the subject
	[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	Student can clearly present the method of developing the architectural or urban design concept and the local conditionings, which had an impact on this process.	[SU5] Assessment of ability to present the results of task [SU1] Assessment of task fulfilment

Subject contents	During the course students will learn how to use GIS (Geographic Information System) and BIM (Building Information Modelling) tools to obtain data about the project site, including on-site inventories and open geographic data, and to use it to conduct urban analysis, formulate design guidelines and develop preliminary design concept.
	Students will use the ArcGIS Pro software, ArcGIS Online platform and ArcGIS applications for collecting field data and observations and the Autodesk Revit software for terrain, site and building modelling.
	The course consists of the following phases:
	1. Introduction 2. Obtaining and processing GIS field data 3. GIS data visualisation 4. The GIS and BIM systems integration 5. The basics of BIM conceptual modelling 6. Developing building model in BIM
	(*part 2 Obtaining and processing GIS field data - implemented thanks to a grant under the IDUB / The Didactic Innovation Competition organized by the Center for Innovative Teaching*)
Prerequisites and co-requisites	Basic skills of any CAD drawing program. Basic skills of any 3d modeling program. Basic skills of any raster graphics editing program. Ability to use the PG eLearning platform.

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
		51.0%	50.0%
		51.0%	50.0%

Recommended reading	Basic literature	**Books:** • D. Kasznia, J. Magiera, P. Wierzowiecki (2018), BIM w praktyce, Wydawnictwo naukowe PWN, Warszawa. **Webpages:** • https://www.autodesk.com/autodesk-university • https://learn.arcgis.com/en/arcgis-book/
	Supplementary literature	Dokumentacja Autodesk Revit 2021. Dokumentacja Esri 2021.
	eResources addresses	Adresy na platformie eNauczanie: CAD. Integrated Architectural Design BSc in Arch., sem 3 2022/2023 - Moodle ID: 25774 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=25774

Example issues/ example questions/ tasks being completed	• Creating a project to collect field data • Analysing field data • Developing a building and terrain model
Work placement	Not applicable

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