## Subject card

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| Subject name and code | CAD. Integrated Architectural Design, PG_00055703 |
| Field of study | Architecture |

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| Date of commencement of studies | October 2022 | Academic year of realisation of subject | 2023/2024 |
| Education level | first-cycle studies | Subject group | Optional subject group<br>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 | Polish |
| Semester of study | 3 | ECTS credits | 2.0 |
| Learning profile | general academic profile | Assessment form | assessment |

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| Conducting unit | Department of Urban Architecture and Waterscapes -> Faculty of Architecture |

| Name and surname of lecturer (lecturers) | Subject supervisor | dr inż. arch. Robert Juchnevič |
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| | Teachers | dr hab. inż. arch. Maria Helenowska-Peschke<br><br>dr inż. arch. Jarosław Bąkowski<br><br>Artur Dubis<br><br>mgr inż. arch. Kacper Radziszewski<br><br>dr inż. arch. Robert Juchnevič |

| 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 |

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| 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_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 is able to define the key features of the concept of integrated design. Student is able to choose proper tools to implement this concept. | [SU4] Assessment of ability to use methods and tools |
| | [K6_U02] is able to design an architectural object or a simple urban complex that meets the aesthetic and technical requirements | The student understands the advantages of using the concept of integrated design. Student is able to create an integrated model of a single-family building. Student is able to reuse an integrated model through entire design process. | [SU1] Assessment of task fulfilment |

| Subject contents | The classes will use the Autodesk Revit in the concept of integrated design. Discussion about the concept of integrated design and digital tools dedicated to it. Overview of the IFC standardized format. Overview of Autodesk Revit and workflow methods. Development of a model of a simple sample building. Overview of graphic properties of component objects. Preparing projections, elevations, cross-sections, site plan. Overview of the basics of creating families. Development of simple parametric family. Introduction to rendering techniques in Revit and external rendering engines (Enscape,Vray, Lumion). Discussion of the possibility of publishing the project to archiving formats. Discussion of the possibility of conducting environmental analyzes based on the modelnormalized. Creating an integrated model of your own design. Development of comprehensive documentation of the conceptual design. |
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| 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 |
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| | | 40.0% | 30.0% |
| | | 40.0% | 70.0% |

| Recommended reading | Basic literature | **Books:** Eastman C.M., BIM handbook : a guide to building information modeling for owners, managers, designers, engineers, and contractors, Wiley 2008.

**Webpages:** https://www.autodesk.com/autodesk-university https://www.youtube.com/channel/UC0y73dD7p4gjV2x9etIeL4w https://www.chaosgroup.com/vray/revit/tutorial-videos |
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| | Supplementary literature | **Books:** A. Tedeschi, AAD, Algorithms-aided design: parametric strategies using Grasshopper, 2014. |
| | eResources addresses | Adresy na platformie eNauczanie:

SAOZ-2023-2024 Projektowanie zintegrowane 3 - Moodle ID: 32530 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=32530

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| Example issues/ example questions/ tasks being completed | |
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| Work placement | Not applicable |