



Subject card

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|---|---|--|---|------------|--|---------|-----|
| Subject name and code | CAD. Integrated Architectural Design, PG_00055651 | | | | | | |
| Field of study | Architecture | | | | | | |
| 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 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 Arts -> 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_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; | | [SU4] Assessment of ability to use methods and tools [SU1] Assessment of task fulfilment | | |
| | [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; | | [SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject [SU5] Assessment of ability to present the results of task | | |
| 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% |
| 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 eNauczenie: CAD. Integrated Architectural Design, BSc Arch (2023-24) - Moodle ID: 33935 https://enauczenie.pg.edu.pl/moodle/course/view.php?id=33935 | |
| Example issues/ example questions/ tasks being completed | <ol style="list-style-type: none"> 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 | | |

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