



KARTA OPISU PRZEDMIOTU - SYLABUS

Nazwa przedmiotu

Information technologies

Przedmiot

Kierunek studiów

ARCHITECTURE

Studia w zakresie (specjalność)

–

Poziom studiów

first-cycle

Forma studiów

full-time

Rok/semestr

II/4

Profil studiów

general academic

Język oferowanego przedmiotu

Polish/English

Wymagalność

obligatory

Liczba godzin

Wykład

15

Laboratoria

30

Inne (np. online)

Ćwiczenia

0

Projekty/seminaria

0

Liczba punktów ECTS

3

Wykładowcy

Odpowiedzialny za przedmiot/wykładowca:

Doctor of Architectural Engineering Borys

Siewczyński

e-mail: borys.siewczynski@putpoznan.pl

tel. 61 665 32 90

Wydział Architektury

ul. Jacka Rychlewskiego 2 61-131 Poznań

tel. 061 665 32 55

Odpowiedzialny za przedmiot/wykładowca:

Doctor of Architectural Engineering Borys

Siewczyński

Doctor of Architectural Engineering Rafał

Graczyk

Doctor of Architectural Engineering Bartosz

Kaźmierczak

Wymagania wstępne

- the student has basic knowledge about the rules of safe use of computer equipment;
- the student has basic knowledge about graphics software;
- the student can obtain information from literature, databases, and properly selected sources, integrate information, interpret it, and draw conclusions, as well as form and justify opinions;
- the student can use computer equipment;



– the student can correctly identify and solve dilemmas related to the practice of the profession.

Cel przedmiotu

1. The aim of the course is to teach students the foundations of the current theoretical and practical knowledge about computer-aided design.
2. Within the framework of the course, the basic knowledge about computer-aided design is taught in the context of architectural skills. Specific design/graphics exercises are done during the classes in order to teach students the knowledge about the topic, that is, contemporary IT skills. The exercises are preceded by an introduction to the use of particular design applications.

Przedmiotowe efekty uczenia się

Wiedza

B.W7. the ways of communicating the ideas of architectural, urban, and planning designs, and creating them;

B.W8. the role and application of graphics, drawing, painting, and information technologies in the process of architectural and urban design;

Umiejętności

B.U3. making use of appropriately selected computer simulations, analyses, and information technologies which support architectural and urban design;

Kompetencje społeczne

Metody weryfikacji efektów uczenia się i kryteria oceny

Efekty uczenia się przedstawione wyżej weryfikowane są w następujący sposób:

Formative evaluation:

– Lectures:

test – verifying the knowledge.

– Laboratory classes:

An evaluation of the work during the semester, including the following components:

practical work – technical drawing in CAD software,

practical work – computer visualization.

The grading scale: 2.0; 3.0; 3.5; 4.0; 4.5; 5.0

Summative evaluation:

– laboratory classes: the grade for a graphics design work,

– lectures: the grade for the written test; the grading scale:



The grading scale: 3.0; 3.5; 4.0; 4.5; 5.0

Treści programowe

Within the framework of the course, the basic knowledge about computer-aided design is taught in the context of architectural skills.

During classes, examples of the applications of contemporary computer tools. Students also learn the theoretical foundations of computer-aided design. The broad spectrum of the application of computer software and equipment is discussed. The IT problems are presented in connection with the engineering and architectural practice. Such elements of contemporary skills as raster graphics, vector graphics, and the theoretical and practical basics of the functioning of drawing and parametric software are introduced. Also presented are issues related to the use of IT tools in spatial planning.

There is a special focus on the role of the visual presentation of the design works in the context of design and functional graphics, visualization. Another topic covered in this course is the role of IT techniques in the coordination and exchange of design data.

The issues are exemplified with particular design applications. The subject matter of the course is to provide the basis for the students' own creative quests directly related to the laboratory classes.

The aim of the course is to teach students the foundations of the current theoretical and practical knowledge about computer-aided design. The lectures are also a theoretician introduction to the practical tasks done within the framework of laboratory classes.

1. Introductory issues, computer-aided design in architect's work. Ergonomics for working with a computer. Legal issues and a architect's digital skills. Intellectual property, software licensing.
2. CAD history. Basic IT and CAD concepts. Architectural engineering applications, selected aspects of combining traditional and contemporary skills.
3. Raster computer graphics, introduction to its use in architectural work. Vector computer graphics the engineering work.
4. BIM. Engineering software, civil engineering structures, IT tools and inter-branch coordination.
5. Architectural visualizations in the design process. Theory and practice.
6. Architectural visualizations in the design process. An overview lecture discussing digitally aided spatial decision making, in relation to such issues as: spacial development, artificial intelligence, generative architecture, parametric architecture, or expert systems.
7. Virtual reality in architectural digital skills. Digital architectural reconstructions.
8. Summing up, trends in software development and in architect skills. Final test.

Metody dydaktyczne



1. An overview illustrated lecture – multimedia presentation.
2. Doing experiments with the use of the software which illustrates the typical design problems, having received instructions; project method: project – practical; case analysis / discussion / problem solving
3. e-Learning Moodle (system for supporting the learning process and for distance learning).

Literatura

Podstawowa

1. Bruce Fraser, Chris Murphy, Fred Bunting, Profesjonalne zarządzanie barwą. Second edition, HELION, Gliwice, 2008.
2. Gawrysiak P.; Cyfrowa Rewolucja. Rozwój cywilizacji informatycznej, Wydawnictwo Naukowe PWN S.A., Warsaw 2008.
3. Jeremy Birn, Cyfrowe oświetlenie i rendering. Second edition, HELION, Gliwice, 2008.
4. Tomana A.: BIM. Innowacyjna technologia w budownictwie, Kraków 2015.
5. E-script for the subject “Information technologies.”

Uzupełniająca

1. Austin T., Doust R.; Projektowanie dla nowych mediów, Wydawnictwo Naukowe PWN, Warsaw 2008.
2. Brito A.; Blender 3D: Architecture, Buildings, and Scenery: Create photorealistic 3D architectural visualizations of buildings, interiors, and environmental scenery, Packt Publishing 2008.
3. Deutsch R., BIM and Integrated Design. Strategies for Architectural Practice, The American Institute of Architects, Wiley and Sons Ins, Hoboken, New Jersey, 2011
4. Linbergh Van: Intellectual Property and Open Source. A Practical Guide to Protecting Code, O'Reilly 2008.
5. Masłowski K., Darmowe oprogramowanie w codziennym życiu, Helion, Gliwice 2009.
6. Milgram P. i Kishino A. F. Taxonomy of mixed reality visual displays, IEICE Transactions on Information Systems, volume E77-D, No.12, December 1994.
7. Pasek J., Modelowanie wnętrz w 3D z wykorzystaniem bezpłatnych narzędzi, Helion, Gliwice 2011.
8. Pikoń A.:AutoCAD 2017 PL. Pierwsze kroki. Helion, Gliwice, 2016.
9. Pikoń A.:AutoCAD 2014 PL. Helion, Gliwice, 2015.



10. Siewczyński B., Analiza rzeczywistości rozszerzonej w aspekcie wirtualnego uzupełnienia przestrzeni miejskiej, in: Zeszyty Naukowe Politechniki Poznańskiej, series: Architektura i Urbanistyka, no. 26, 2012, Wydawnictwo Politechniki Poznańskiej, pp. 81–90.
11. Siewczyński B., The urban context in digital, variable space, in: Architecture, context, responsibility, edited by Bonenberg A.
12. Siewczyński B., Zabytki architektoniczne ostrowa lednickiego w rekonstrukcji komputerowej, Biblioteka Studiów Lednickich, volume 10, Lednica–Poznań 2004.
13. Stallman R.M., Free Software, free Society, Free Software Foundation, Boston 2002.
14. Toffler A., Szok przyszłości, Zysk i S-ka, Warsaw 1998.
15. Zimek R.: ABC CorelDRAW X7 PL, Helion, Gliwice, 2016.
16. Zimek R., Oberlan Ł., ABC grafiki komputerowej. Second edition, HELION, Gliwice, 2005.

Bilans nakładu pracy przeciętnego studenta

	Hours	ECTS
Total labor input	90	3,0
these classes require direct contact with the instructor.	45	1,5
student's own work (study of literature, preparing for laboratory classes / classes, preparing for tests/exams, doing a project) ¹	45	1,5

¹ Delete as appropriate, or add other actions.