



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Architecture Design with BIM elements (part II)

### Course

Field of study

Sustainable Building Engineering

Area of study (specialization)

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Level of study

First-cycle studies

Form of study

full-time

Year/Semester

2/IV

Profile of study

general academic

Course offered in

English

Requirements

compulsory

### Number of hours

Lecture

15

Laboratory classes

0

Other (e.g. online)

0

Tutorials

30

Projects/seminars

0

### Number of credit points

3

### Lecturers

Responsible for the course/lecturer:

dr hab. inż. arch. Maciej Janowski

Responsible for the course/lecturer:

### Prerequisites

- structured and theoretically founded general knowledge covering key issues in the field of designing residential buildings;
- basic knowledge about development trends in architectural design;
- basic knowledge necessary to understand social, economic; legal and non-technical conditions of architectural design
- obtaining information from literature, databases and other, properly selected sources, also in English, integrating information, aggregating and interpreting it, drawing conclusions and formulating and justifying opinions;
- critical functional analysis, evaluation of existing solutions, systems and processes;
- identification and formulation of the specification of practical tasks in the field of architectural design;



- designing objects on the scale of a single-family house;
- understanding the need for lifelong learning, the ability to inspire and organize the learning process of others;
- awareness and understanding of non-technical aspects and effects of engineering activities, including its impact on the environment and the associated responsibility for decisions made;
- ability to cooperate and work in a group, assuming various functions in it;
- correct identification and resolution of dilemmas in the field of various spatial situations on an architectural scale.

### **Course objective**

- getting to know the issues, contemporary trends and trends in architectural design of service buildings;
- improving the skills of recognizing formal and legal location conditions, interpretation of a higher order project (the so-called "extract and map" or a decision on building conditions and land development);
- developing the ability to recognize the location potential: analysis of various connections, existing values and environmental conditions, such as the cultural context, existing functional problems and socio-economic aspects;
- improving the ability to use tools and techniques of qualitative and quantitative analyzes in design practice, acquiring the ability to acquire functional and metric parameters for designing an architectural object in a specific location;
- the acquisition and training of the ability to construct a utility program for an object with a complex function, training the ability to integrate the facility and its surroundings.

### **Course-related learning outcomes**

#### Knowledge

- architectural design in terms of the implementation of tasks, in particular: facilities taking into account the needs of users, service facilities and public facilities in an urban environment;
- principles of universal design, including the idea of designing buildings accessible to all users, in particular for people with disabilities, in architecture;

#### Skills

- conducting a critical analysis of the conditions, including the valorization of the land development and building conditions;
- integrating information obtained from various sources, making its interpretation and critical analysis.

#### Social competences

- taking responsibility for shaping the human work environment and protecting natural resources, and preserving the heritage of the region, country and Europe.



### **Methods for verifying learning outcomes and assessment criteria**

Learning outcomes presented above are verified as follows:

The method of checking the learning outcomes - lecture: final work (essay) in the form of a written statement or in the form of a presentation on a selected issue concerning the design of sustainable public and semi-public space. The correctness and completeness of statements on a given topic are assessed as well as the correct application of the research apparatus. An equivalent form of getting credit is a multiple-choice test consisting of 10 questions in the e-moodle system.

Exercises: designing a small office building intended for one company or for rent on a site in Poznań, in accordance with the guidelines provided by the teacher; preparation of the site plan (scale 1: 500), the necessary plans, sections and elevations (scale 1: 100), details and models (any scale).

The basis for taking the credit is obtaining a credit for the exercises within the education module.

Summative assessment:

Approved grading scale: 2.0; 3.0; 3.5; 4.0; 4.5; 5.0.

### **Programme content**

Lecture 1. Program of the lectures and introduction

Lecture 2. History of the service buildings

Lecture 3. The elements of service buildings

Lecture 4. Construction design in office buildings

Lecture 5. Office interiors

Lecture 6. Sustainable office buildings - case studies

Lecture 7. Summary - the future of office work and architecture

### **Teaching methods**

1. Lecture with multimedia presentation with elements of conversation.
2. eLearning Moodle (a system supporting the teaching process and distance learning)
3. Design exercises and consultations on solutions proposed by the student.

### **Bibliography**

Basic

Advanced Energy Design Guide for Small to Medium Office Buildings [2012] American Society of Heating Refrigerating and Air-Conditioning Engineers,



Eberle D., Aicher F. [2015] Die Temperatur der Architektur / be 2226\_The Temperature of Architecture, Birkhäuser, Bazylea

Gillen N. [2019] Office: Next-generation workplace design, RIBA Publishing, Londyn

Neufert E. [2011] Podręcznik projektowania architektoniczno-budowlanego, Arkady, Warszawa

Steward M. [2004] The Other Office: Creative Workspace Design, Frame Publishers

#### Additional

Architectural papers and magazines, Poznań University of Technology Scientific Journals, series Architecture and Urban Planning.

#### **Breakdown of average student's workload**

	Hours	ECTS
Total workload	95	3,0
Classes requiring direct contact with the teacher	45	1,5
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) <sup>1</sup>	50	1,5

<sup>1</sup> delete or add other activities as appropriate