COURSE DESCRIPTION CARD - SYLLABUS

Course name
Architectural Design of Residential Buildings/project_2 [S1Arch1E>PAOM2]

Course

Field of study
Architecture

Year/Semester
3/5

Area of study (specialization)
–

Profile of study
general academic

Level of study
first-cycle

Course offered in
English

Form of study
full-time

Requirements
compulsory

Number of hours

Lecture
30

Laboratory classes
30

Other
0

Tutorials
0

Projects/seminars
45

Number of credit points

9,00

Coordinators

Lecturers

Prerequisites

- structured and theoretically based general knowledge covering the key issues in architectural design; - basic knowledge of development trends in architectural design; basic knowledge necessary to understand social, economic, legal and non-technical conditions of architectural design; - acquiring information from literature, databases and other properly selected sources, also in English, integrating information, aggregating and interpreting, drawing conclusions and formulating and justifying opinions, - critical functional analysis, evaluation of existing solutions, systems and processes; - identify and formulate specifications of practical tasks in architectural design; - design of facilities at the scale of a single dwelling and a single-family house; - understanding the need for lifelong learning, ability to inspire and organize the process of learning process of others; - awareness and understanding of non-technical aspects and effects of engineering activities, including their The ability to co-operate and work in a group, assuming various roles in the group; - ability to cooperate and work in a group, taking various roles in it; - correct identification and solving of dilemmas in various spatial situations on an architectural scale architectural scale.

Course objective

- acquaintance with issues, contemporary tendencies and trends in architectural design of residential buildings; - perfecting skills of recognizing formal and legal localization conditions, interpretation of higher order project (so called "extract and extraction" or decision on land development conditions); - training skills of recognizing the localization potential: analysis of various connections, existing values and surrounding conditions such as cultural context, existing functional problems and socio-economic aspects; - perfecting skills of applying tools and techniques of qualitative and quantitative analysis in design practice; acquiring skills of obtaining functional-metric parameters for designing an architectural object in a specific location; - acquiring and training skills to construct the utility program of an object with a complex function, training skills of functional integration of the object and its environment; - cognition of issues connected with shaping of human residential environment of medium and high intensity, - getting to know types of multi-family housing, - getting to know functional diagrams of different types of housing, - develop skills of site analysis on urban and architectural scale, - mastering the application of the known functional diagrams in various configurations, - developing skills of graphical presentation of architectural concepts (projections, sections, elevations), - deepening knowledge and skills of making conceptual drawings (projections, sections, elevations) based on construction knowledge; - practical application of the theoretical knowledge learned in the lectures "ARCHITECTURAL DESIGN OF RESIDENTIAL OBJECTS 2" in own conceptual design.

Course-related learning outcomes

Knowledge:
A.W1. architectural design for the implementation of simple tasks, in particular: simple facilities taking into account the basic needs of users, single- and multi-family housing, service facilities in residential complexes, public facilities in an open landscape or in an urban environment;
A.W4. principles of universal design, including the idea of designing spaces and buildings accessible to all users, in particular for people with disabilities, in architecture, urban planning and spatial planning, and ergonomic principles, including ergonomic parameters necessary to ensure full functionality of the designed space and facilities for all users, especially for people with disabilities

Skills:
A.U1. design an architectural object by creating and transforming space so as to give it new value - in accordance with a given program that takes into account the requirements and needs of all users;
A.U4. make a critical analysis of the conditions, including the valorization of the land development and building conditions;
A.U5. think and act creatively, using the workshop skills necessary to maintain and expand the ability to implement artistic concepts in architectural and urban design;
A.U6. integrate information obtained from various sources, formulate their interpretation and critical analysis;
A.U7. communicate using various techniques and tools in a professional environment appropriate for architectural and urban design;
A.U8. prepare architectural and construction documentation in appropriate scales in relation to the conceptual architectural design;
A.U9. implement the principles and guidelines of universal design in architecture, urban planning and spatial planning.

Social competences:
A.S1. independent thinking to solve simple design problems;
A.S2. taking responsibility for shaping the natural environment and cultural landscape, including the preservation of the heritage of the region, country and Europe.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Important evaluation criteria are:
- Knowledge of the functional assumptions necessary to develop a multi-family residential building concept;
- ability to critically perceive and analyze the surroundings of the designed object and to draw conclusions being the basis and one of the guidelines in shaping the architectural form,
- method of shaping the architectural composition based on the principles derived from theoretical

studies;
- quality of functional-spatial solutions;
- connection of the functional-spatial system with the built and natural environment,
- quality of shaping the architectural composition,
- quality of technical representation of the spatial composition in the form of flat layouts (plans, sections, views, etc.), axonometric sketches and perspectives,
- way of using basic tools and materials helpful in presentation of achieved solutions of architectural composition,
- functionality, efficiency and profitability of applied technologies, sanitary installations and building materials,
- technical correctness and energy efficiency of the adopted design solutions,
- quality of technical reproduction of the spatial composition in the form of mock-ups,
- quality of the presentation of the design solutions in the form of composed/designed boards,
- aesthetics and legibility of the design solutions presentation.
Assessments include:
- completeness and coherence of the work in the analytical, design and descriptive parts, graphic quality of the project,
- adopted design and functional-spatial solutions,
- relationship of the designed building with the built and/or natural environment,
- relations between public, semi-private and private space,
- the way of satisfying the psycho-physical and social needs of the resident (house user),
- innovation of formal and functional solutions,
- proper solution of technical issues in the building,
- aesthetics and legibility of the graphic and descriptive part and the model.
Formative Assessment:
- The advancement of design work and technical knowledge are evaluated on an ongoing basis during subsequent exercises in the form specified by the instructor,
- Partial reviews, including individual project tasks, checking the progress of the student"s work, presented on the group and in front of other lecturers, joint discussion, brainstorming,
- Required elements of the design: drawing and photographic inventory, analytical part, land development design, floor plans of all floors, cross-sections (min. 2, one through the staircase), elevations with consideration given to the materials and colors used, perspectives: external and internal, descriptive part: surface and volume indicators, summary of areas, urban layout model (including the surroundings) and architectural model in scales adequate for the presentation of the design.;
- assessment of knowledge and skills affects the semester grade,
- the adopted grading scale: 2,0; 3,0; 3,5; 4,0; 4,5; 5,0.
Summative Assessment:
- Final review, including the final project task, which is a summary of the knowledge and skills acquired in the course of previous projects (tasks), a presentation in the group or at a collective review in the presence of other instructors;
- a condition for passing the course is obtaining positive grades from all reviews,
- The adopted grading scale: 2,0; 3,0; 3,5; 4,0; 4,5; 5,0.

Programme content

The semester design task includes the performance of a conceptual design of a multi-family residential building on the basis of guidelines and information received from the teacher, e.g. location of the study area.
Design task is performed in two stages:
1. Analysis portion (classes #1 - #4) including:
- analysis of situation and altimetric maps and other cartographic data,
- qualitative analyses: view studies, analyses of compositional connections, studies of the architectural environment and genius loci, documentation of landscape values,
- quantitative analyses: studies of land absorption, identification of location potential, functional connections with the surroundings, pedestrian and vehicular communication, identification of service infrastructure,
- analysis of local law provisions, summary analysis of land development conditions,
- SWOT analysis,
- determination of program of the designed object,
- determination of social structure of target users.

The student presents the materials during a discussion with the teacher in paper or computer form. The analytical part ends with a partial review. The scope of the review is presented by the class instructor at the beginning of the semester.
2. Design portion (classes #5 - #14) including:
- creation of a functional and spatial program for the study area and the designed object,
- development of the form of the building along with its surroundings,
- technical description of the architectural design (in the form of projections, sections, elevations, details, etc.) and land development design,
- development of a coherent presentation of the architectural design with the use of selected graphic methods (board format, a model of the designed building on the plot together with the surroundings).
The materials are presented in class during a discussion with the instructor in paper or computer form. The design part ends with a final review. The scope of the review is presented by the class instructor at the beginning of the semester.
3. Final review nd credit (classes #15) as a review in the student group and/or with other instructors.

Course topics

none

Teaching methods

1. Design exercises have the character of individual consultations conducted in a student group. Discussion and correction of solutions applied in the project with the participation of all students, discussion of special cases of recurrent design problems.
2. Exercises based on the use of various sources of knowledge (film, photographs, archival materials, source texts, documents, statistical yearbooks, maps, Internet, etc.),
3. project method / case study (sample study) - discussing different ways of solving project problems
4. eLearning Moodle (distance learning and teaching support system).

Bibliography

Basic
1. Alexander Ch., Język wzorców, wyd. GWP, Gdańsk, 2008
2. Bonenberg W., Przestrzeń publiczna w osiedlach mieszkaniowych. Metoda analizy społecznoprzestrzennej, WA Politechnika Poznańska, 2007
3. Fikus, M., Przestrzeń w autorskich zapisach graficznych, wyd. PP, Poznań, 1991
4. Grandjean E., Ergonomia mieszkania, Arkady, 1978
5. Jastrząb T., Urbanistyczno-architektoniczne wyznaczniki jakości współczesnych struktur mieszkalnych, wyd. PP, Poznań, 2014
6. Pallado J., Zabudowa wielorodzinna. Podstawy projektowania, wyd. PŚ, Gliwice, 2014
7. Pruszewicz-Sipińska E. Architektura usługowa i mieszkaniowa w programach nauczania, tom 1, Wyd. PP, Poznań, 2010
8. Yi - Fu Tuan, Przestrzeń i miejsce, PIW, 1987
9. Żórawski J., O budowie formy architektonicznej, 1962 5
10. E-skrypt dla przedmiotu „Teoria i zasady projektowania architektury mieszkaniowej 2 i Projektowanie architektury mieszkaniowej 2” (w opracowaniu).
Legislation:
1. ROZPORZĄDZENIE MINISTRA INFRASTRUKTURY z dn. 12 kwietnia 2002 r. w sprawie warunków technicznych, jakim powinny odpowiadać budynki i ich usytuowanie (Dz.U.Nr75,poz.690 z późniejszymi zmianami.)
2. Ustawa z dnia 7 lipca 1994 r. Prawo budowlane.
Additional
1. Czarnecki W., Planowanie miast i osiedli, Wydawnictwo PWN, Warszawa, 1965
2. Jodidio P., Architecture Now!, Taschen, Kolonia, 2011
3. Neufert E., Podręcznik projektowania architektonicznego, Arkady, 1995
4. The New Athens Charter. A Vision for 21st Century Cities, 2003.
5. Periodicals: architectural journals, urban planning journals, scientific journals, f.e. Zeszyty Naukowe Politechniki Poznańskiej seria Architektura i Urbanistyka, itp.
6. Renowned architectural journals (domestic and foreign)

Breakdown of average student's workload

	Hours	ECTS
Total workload	225	9,00
Classes requiring direct contact with the teacher	105	4,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	120	5,00