COURSE DESCRIPTION CARD - SYLLABUS

Course name
Theory of Desinging a Service Architecture with Complex Functions with EL.Pr.Universal Design [S2Arch2E>TPAUoZFzEPU]

Course

Field of study
Architecture

Year/Semester
1/1

Area of study (specialization)
–

Profile of study
general academic

Level of study
second-cycle

Course offered in
English

Form of study
full-time

Requirements
compulsory

Number of hours

Lecture
30

Laboratory classes
0

Other
0

Tutorials
0

Projects/seminars
0

Number of credit points

2,00

Coordinators

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Lecturers

Prerequisites

• the student has ordered and theoretically founded general knowledge covering key issues in the field of architectural design, • the student has a structured basic knowledge of designing service facilities, • the student has basic technical knowledge in the field of architecture, • the student has basic knowledge of ergonomics, • the student has basic knowledge of development trends in architectural design, structured general knowledge about development trends in designing service architecture, • the student has basic knowledge necessary to understand the social, economic, legal and non- technical determinants of architectural design. • the student is able to obtain information from literature, databases and other, properly selected sources, also in English, is able to integrate information, interpret it, as well as draw conclusions and formulate and justify opinions, • the student has the ability to self-studying, • 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 related responsibility for decisions made, • ability to cooperate and work in a group, assuming different roles in it, • ability to correctly assess and define priorities for the implementation of a specific goal, • ability to search for optimal solutions: correct identification and resolution of dilemmas in the scope of various spatial situations on an architectural scale

Course objective

• implementation of universal design principles for highly complex buildings, learning the principles of designing healthcare facilities, • familiarization with issues related to architectural and urban aspects that affect the quality of life in cities, taking into account the requirements of sustainable development and climate protection (water, renewable energy), • improvement of methods for recognizing the relationship between the designed facility and its surroundings - spatial and social context, • learning the methodology for developing architectural concepts for service facilities with a high and great degree of complexity, • mastering the use of the functional schemes learned in various configurations, • acquiring knowledge on the design of complex architectural structures, • understanding modern methods of searching for innovative design solutions with the use of conceptual modeling, • expanding knowledge in the field of functional programming of facilities with complex functions, using methods of analyzing functional connections,

Course-related learning outcomes

Knowledge:
knows and understands the principles of architectural design of facilities with a complex function in a complex context, in particular: public facilities, as well as their complexes of various scale and complexity in an open landscape or urban environment;
knows and understands the principles of universal design, including the idea of designing spaces and service buildings accessible to all users, in particular people with disabilities, and the principles of ergonomics, including the ergonomic parameters necessary to ensure full functionality of the designed space and service facilities for all users, in particular people with disabilities;
knows and understands advanced analysis methods, tools, techniques and materials necessary to prepare design concepts for complex service buildings in an interdisciplinary environment, with particular emphasis on inter-branch cooperation;
knows and understands the interdisciplinary nature of architectural and urban design and the need to integrate knowledge from other fields, as well as its application in the design process in cooperation with specialists in these fields.

Skills:
can integrate information on complex service buildings obtained from various sources, formulate their interpretation and critical, detailed analysis and draw conclusions from them, as well as formulate and justify opinions and demonstrate their relationship with the design process, based on the available scientific achievements in the discipline;

Social competences:
is capable to effectively use imagination, intuition, creative attitude and independent thinking in order to solve complex design problems, particularly complex service buildings;
is capable of public speaking and presentations;
is capable to take 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:

Formative assessment:
• Active participation in lectures, engaging in discussions on topics covered during lectures. Active participation in lectures may be the basis for raising the summative grade for the subject.
Summative assessment:
• Final test (exam). Two credit terms are provided, with the second term being a correction term.
A passing grade (3.0) is obtained after exceeding 50% of correct answers. The exam result in points converted to a percentage scale corresponds to the following grades:
0-50% = 2.0
51-60% = 3.0
61-70% = 3.5
71-80% = 4.0
81-90% = 4.5
91-100% = 5.0
Grading scale: 2.0; 3.0; 3.5; 4.0; 4.5; 5.0.

Programme content

The lecture series provides substantive support for the design of architectural objects with complex, specialized functions, such as hospitals. The issues discussed include functional, structural, technical, economic, and pro-ecological issues, as well as elements of universal design. The thematic scope refers not only to practical aspects of design but also emphasizes the implementation of sustainable development goals.

Course topics

Lectures
Part One (architecture of healthcare facilities)
1. Origins and history of hospital development
2. Technology and function. Functional systems with examples and a case study - Healing environment
3. Principles of universal design on the example of functionally complex objects
4. The role of the architect in implementing the guidelines of the Accessibility Act
5. Designing for ageing societies
6. Green hospitals
7. Visual identification systems in health care facilities
8. Modern materials and interior furnishings
Part two (architecture of service facilities)
9. Designing educational facilities - modern kindergarten, school, campus
10. Modern libraries and media libraries - educational and social spaces
11. Shopping centers and retail parks - new trends in designing commercial spaces
12. Designing hotels, guesthouses and places of collective residence
13. Designing catering facilities
14. Museums, art galleries, theaters - designing spaces for culture and art
15. Designing railway stations and passenger terminals - functionality, logistics

Teaching methods

1. Lecture with multimedia presentation
2. eKursy (a system supporting the teaching process and distance learning).

Bibliography

Basic:
1.1. Gawlak A. Szpitale bez ścian. Projektowanie dla przyszłych siebie. Wyd. Politechniki Poznańskiej, Poznań, 2022.
1.2. Idem R., Architektura służby zdrowia. Wybór przepisów i literatury przedmiotu, Wydawnictwo Politechniki gdańskiej, Gdańsk 20143.
1.3 Tomanek M., Technologia medyczna w projektowaniu obiektów szpitalnych, Politechnika Śląska, Gliwice 20154.
1.4 Korzeniewski W., Warunki techniczne dla budynków i ich usytuowanie-poradnik z komentarzem, (wydanie 8 i późniejsze) Polcen, Warszawa 2009.
1.3. Kuryłowicz E., Ludzki wymiar architektury. Teoria dla praktyki, NIAiU, Warszawa, 2024.
1.4. Podgórska-Klawe, Od hospicjum do współczesnego szpitala, Wyd. Ossolineum, Wrocław, 1981.
1.5. Poplatek J. red., Architektura ochrony zdrowia. Teoria i praktyka, Wydawnictwo Politechniki Gdańskiej, Gdańsk, 2018.
1.7. Szewczenko A. Przestrzenie opieki geriatrycznej. Kształtowanie jakości architektury szpitalnych oddziałów geriatrycznych, Wyd. Politechniki Śląskiej, Gliwice, 2018.
2.1. E-script for the course "Architectural Design of Service Buildings with a Complex Function, Including Elements of Universal Design" (in preparation).
2.2. Rozporządzenie Ministra Infrastruktury z 12 kwietnia 2002 r. w sprawie warunków technicznych, jakim powinny odpowiadać budynki i ich usytuowanie (Dz.U. 2002, Nr 75, poz. 690).
2.3. Rozporządzenia Ministra Pracy i Polityki Socjalnej z 26 września 1997 r. w sprawie ogólnych przepisów bezpieczeństwa i higieny pracy (Dz.U. 1997, Nr 129, poz. 844).
2.4. Rozporządzenie Ministra Spraw Wewnętrznych i Administracji z dnia 24 lipca 2009 r. w sprawie przeciwpożarowego zaopatrzenia w wodę oraz dróg pożarowych (Dz.U.2009, Nr 124, poz. 1030).
2.5. Rozporządzenie Ministra Infrastruktury z dnia 24 czerwca 2022 r. w sprawie przepisów techniczno-budowlanych dotyczących dróg publicznych (Dz.U. 2022, poz. 1518).

Additional:
Araujo de Carvalho, I., Epping-Jordan, J., Pot, A. M., Kelley, E., Toro, N., Thiyagara-jan, J. A., & Beard, J. R., Organizing integrated health-care services to meet older peo-ple's needs. Bulletin Of The World Health Organization, 95(11), 756.
Bell P.A., Greene Th.C., Fisher J.D., Baum A.: Psychologia środowiska. Gdańskie Wydawnictwo Psychologiczne, Gdańsk, 2004.
Biercewicz M., Szrajda J., Haor B., Kornatowska-Kędziora K., Polipragmazja istotnym zagadnieniem w opiece nad pacjentem w wieku podeszłym, Problemy Pielęgniarstwa 2012; 20 (1): s.102-105.
Błądek Z. Hotele. Programowanie, projektowanie, wyposażenie , Palladium s.c. Architekci Błądek, Manikowski, Poznań, 2001.
Carp F.M., Impact of Improved Living Environment on Health and Life Expectancy, The Gerontologist, Volume 17, Issue 3, 1977.
Castro E.M., Malfait S., Regenmortel T.V., Hecke A.V., Sermeus W., Vanhaecht K., Co-design for implementing patient participation in hospital services: A discussion pa-per, Patient Education and Counseling 101 (2018) 1302-1305, https://doi.org/10.1016/j.pec.2018.03.019.
Czyński M., Architektura w przestrzeni ludzkich zachowań. Wybrane zagadnienia be-zpieczeństwa w środowisku zbudowanym, Wyd. Politechniki Szczecińskiej, Szczecin, 2006.
Gholami R., Higon A.D., Emrouznejad A., Hospital Performance: Efficiency or quality? Can we have both with IT?, Expert System with Applications 42 (2015) 5390-5400.
Goldsmith S., Universal Design. A Manual of Practical Guidance for Architects, Archi-tectural Press, Oxford, 2000.
Kasali A., Nersessian J. N., Architects in interdyscyplinary contexts: representational practices in healthcare design, 0142-694X Design Studies 41 (2015) 205-223.
Koziorowska B. Projektowanie technologiczne zakładów gastronomicznych, Wydawnictwo SGGW, Warszawa, 1998.
McKee M., Healy J., Hospitals in a changing Europe, WHO, Open University Press, Buckingham, 2002.
Price A.D.F., Lu J., Impact of hospital space standardization on patient health and safety, Architectural Engineering and Design Management, 2013, volume 9, 49-61.

Breakdown of average student's workload

	Hours	ECTS
Total workload	50	2,00
Classes requiring direct contact with the teacher	30	1,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	20	1,00