COURSE DESCRIPTION CARD - SYLLABUS

Course name
Universal design [S2Bud1-BDMiK>PU]

Course

Field of study
Civil Engineering

Year/Semester
1/1

Area of study (specialization)
Road, Bridge and Railway Engineering

Profile of study
general academic

Level of study
second-cycle

Course offered in
Polish

Form of study
full-time

Requirements
compulsory

Number of hours

Lecture
0

Laboratory classes
15

Other
0

Tutorials
0

Projects/seminars
0

Number of credit points

1,00

Coordinators

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Lecturers

Prerequisites

Basic information from the course: Universal Design I (1st cycle). The ability to obtain information from the indicated sources and readiness to cooperate as part of the team

Course objective

Provide students with basic knowledge of the principles of universal design, corresponding to the current social, economic and labor market needs. The aim of the course is to increase the acquired competences (knowledge and skills) by introducing new forms of education, based on a human-centered approach to designing private and public space.

Course-related learning outcomes

Knowledge
1. The student has detailed knowledge of the principles of universal design.
2. The student has a basic knowledge of the possibilities and limitations in the functioning of people with

various needs, both in biological, psychological and social aspects.
Skills
1. The student knows how to empathize with the role of a person with limitations.
2. The student knows how to use GERT-type old age simulators.
3. The student can design a space prepared for people with limitations (the elderly, people with disabilities, parents with young children).
4. The student knows how to use computer software supporting the design process.
Social competences
1. The student sees the need to systematically deepen and expand their competences.
2. The student understands the need for teamwork in solving theoretical and practical problems.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Course completion will be conducted in accordance with the Regulations for First- and Second-Cycle Studies (adopted by the Academic Senate of Poznan University of Technology, Resolution No. 55/2024-2028 of April 30, 2025).

The skills acquired during the laboratory classes are verified on the basis of a final test, a test consisting of 5 tasks with different scores depending on the degree of their difficulty taking into account the principles of universal design for the selected object. Passing threshold: 50% of points.
Grading scale: 100-90% - 5,0; 89-80% - 4,5; 79-70% - 4,0; 69-60% - 3,5; 59-50% - 3,0; 49% - 2,0

Programme content

Workshops with the use of GERT-type old age simulators, which allow young people to survive and understand age and disease-related limitations by simulating changes in the human body. During classes can used wheelchair and eyes illness simulation.

Course topics

Workshops with the use of GERT-type old age simulators, which allow young people to survive and understand age-related limitations by simulating changes in the human body. During the course, students will be able to personally test various types of aids allowing for age simulation, simulation of hemiparesis, simulation of back pain, spine defect simulation, simulation of dyspnea in chronic obstructive pulmonary disease (COPD), simulations of hearing loss and tinnitus, simulations of visual impairment, simulations hand tremors, unsteady gait simulations, knee mobility restriction simulations, knee pain simulations. People who try the above-mentioned simulators will be able to feel the difficulties faced by people with limitations. Students dressed in the above-mentioned simulators will explore the facilities of the Poznań University of Technology, paying particular attention to the availability of sanitary facilities, lifts, etc. They will feel first hand what difficulties people with various limitations may encounter, which will facilitate their approach to designing public buildings.
In the second part of the course, students after the workshop experience will use the principles of universal design in the arrangement of public space and / or living space, taking into account the individual or collective needs of people with disabilities and the elderly. The implementation of projects is aimed at creating new solutions that respond to the changing needs of users over time. It is also important to acquire teamwork skills

Teaching methods

Small group task, multimedia presentation, workshop with wheelchairs and eyes illness simulation

Bibliography

Basic
• Ustawa z dnia 19 lipca 2019 r. o zapewnianiu dostępności osobom ze szczególnymi potrzebami (Dz. U. 2019 poz. 1696)
• Rozporządzenie Ministra Infrastruktury z dnia 12 kwietnia 2002 r. w sprawie warunków technicznych, jakim powinny odpowiadać budynki i ich usytuowanie (Dz.U. z 7 czerwca 2019, poz. 1065)
• „Włącznik projektowanie bez barier”. Kamil Kowalski, Fundacja Integracja. Warszawa, wydanie 11.2017. Dostęp online:

• http://www.integracja.org/wp-content/uploads/2017/12/W%C5%82%C4%85cznik-projketowanie-bez-barier.pdf
• „Standardy dostępności budynków dla osób z niepełnosprawnościami” - uwzględniając koncepcję uniwersalnego projektowania – poradnik. Wydany przez Ministerstwo Infrastruktury i Budownictwa, jako kodeks dobrych praktyk. 4 / 4 Warszawa, 04.2018.
Additional
• Standardy dostępności przyjęte przez JST w Polsce (np. Gdynia, Warszawa, Łódź, Wrocław), np.: „Standardy dostępności dla miasta stołecznego Warszawy, Warszawa, 23.10.2017. Dostęp online: https://polskabezbarier.org/documents/standardy_dostepnosci_warszawa.pdf
• „Standardy dostępności dla polityki spójności 2014 – 2020”. Załącznik nr 2 Standardy dostępności dla polityki spójności 2014-2020 dotyczące takich obszarów jak: cyfryzacja, transport, architektura, edukacja, szkolenia, informacja i promocja wydany przez Ministerstwo Inwestycji i Rozwoju. Warszawa, 11.04.2018. Dostęp online: https://www.poir.gov.pl/media/56123/Zalacznik_nr_2_do_Wytycznych_w_zakresie_rownosci_szans_i_niedyskryminacji.pdf

Breakdown of average student's workload

	Hours	ECTS
Total workload	25	1,00
Classes requiring direct contact with the teacher	15	0,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	10	0,50