COURSE DESCRIPTION CARD - SYLLABUS

Course name
Building Physics - Sanitary Fittings [S1Arch1E>IBSS]

Course

Field of study
Architecture

Year/Semester
3/6

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
15

Laboratory classes
0

Other
0

Tutorials
15

Projects/seminars
0

Number of credit points

2,00

Coordinators

Lecturers

Prerequisites

1 Knowledge: the student has ordered, theoretically founded general knowledge covering key issues in the field of water and sewage systems the student knows the basic methods, techniques and materials used to solve simple engineering tasks in the field of water and sewage installations the student has a basic knowledge of development trends in the use of energy-saving internal plumbing 2 Skills: the student is able to obtain information from literature, databases and other, properly selected sources, to interpret them, is able to communicate using various techniques in the professional and other environments the student is able to use information and communication techniques appropriate to the implementation of tasks typical for engineering activities 3 Social competences: the student understands the need to obtain knowledge is aware of the importance and understands the non-technical aspects and effects of engineering activities, including its impact on the environment and the related responsibility for decisions made

Course objective

1. Acquiring the latest knowledge in the field of water supply and sewage systems. 2. Getting to know the methodology of calculating the water supply and sewage system of a residential building in inproved or unimproved areas. 3. Understanding the principles of selecting devices (water heaters, pumps, hydrophore units) to the values calculated in the design of cold, hot, circulation and sewage water installations. 4. Acquiring skills in the creativity of assessment in the design of water and sewage installations.

Course-related learning outcomes

Knowledge:
B.W4. mathematics, space geometry, statics, material strength, shaping, construction and dimensioning of structures, to the extent necessary to formulate and solve tasks in the area of architectural and urban design;
B.W7. ways of communicating the idea of architectural, urban and planning projects and their development;
B.W9. principles of occupational health and safety.

Skills:
B.U3. use properly selected computer simulations, analyzes and information technologies supporting architectural and urban design;
B.U4. develop solutions for individual building systems and elements in terms of technology, construction and materials;
B.U5. make a preliminary economic analysis of planned engineering activities;
B.U6. properly apply standards and legal regulations in the field of architectural and urban design.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

An exam in the form of a test is conducted as a way to check the learning outcomes from the lectures. As part of the design exercises, the student must prepare a design for a sanitary sewage system with a connection for a single-family building, a water supply system with a connection, and a design for a rainwater drainage system with a retention tank. The basis for passing the exercises is to verify the correctness of the project implementation and its defense in the form of a test.
Assessment scale: 2,0; 3.0; 3.5; 4.0; 4.5; 5.0

Programme content

As part of the education program, the student listens to lectures, from which he obtains the necessary information on technical and legal regulations and requirements for the installation of cold and hot water, sanitary and rainwater sewage systems and fire protection systems. The types of elements and devices used in the mentioned installations as well as basic diagrams and materials are discussed.
The exercises present the principles of designing and calculating the internal water supply as well as household and rainwater sewage systems.

Course topics

Lecture:
1. Internal sewage system.
2. External sewage system.
3. External water supply system.
4. Internal water supply system.
5. Hot water.
6. Storm sewer system.
7. Water fire protection systems.

Exercises:
1. Building design.
2. Sanitary sewer system.
3. Water supply system.
4. Storm sewer system.

Teaching methods

1. Lecture with multimedia presentation and access to materials in the form of slides and recordings of lectures.
2. Individual practical project.

Bibliography

Basic:
1. Chudzicki J., Sosnowski S.: Instalacje kanalizacyjne. Projektowanie, wykonanie, eksploatacja.
2. Chudzicki J., Sosnowski S.: Instalacje wodociągowe. Projektowanie, wykonanie, eksploatacja.

Legal acts:
1. PN-EN 12056-1: 2002 Gravity drainage systems inside buildings. General and operational requirements.
2. PN-EN 12056-2: December 2002 "Gravity sewage systems inside buildings. Part 2: Sanitary sewer, layout design and calculation. "
3. PN-EN 12056-3: December 2002 "Gravity sewage systems inside buildings. Part 3: Part 3: Rainwater pipes. Layout design and calculations. "
4. PN / 92-B-01707- Sewerage installations - Design requirements.
5. PN / 92-B- 01706 - Water supply installations. Design requirements.

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