



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Building Physics - Sanitary Fittings

### Course

Field of study

ARCHITECTURE

Area of study (specialization)

-

Level of study

First-cycle studies

Form of study

full-time

Year/Semester

III/6

Profile of study

general academic

Course offered in

polish/english

Requirements

compulsory

### Number of hours

Lecture

15

Laboratory classes

0

Other (e.g. online)

0

Tutorials

0

Projects/seminars

15

### Number of credit points

2

### Lecturers

Responsible for the course/lecturer:

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Responsible for the course/lecturer:

mgr inż. arch. Aneta Biała

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mgr inż. Jerzy Kosmatka

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### Prerequisites

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 improved 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.



## Social competences

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

An exam in the form of a test on the eMoodle platform 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 on the eMoodle platform.

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.

### Teaching methods

1. Lecture with multimedia presentation and access to materials in the form of slides.
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.
3. E-skrypt dla przedmiotu „Instalacje budowlane – systemy sanitarne” (w opracowaniu).

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.

Additional

1. Heidrich Z.: Wodociągi i kanalizacja. Część I. Wodociągi. WSiP, Warszawa 1999

2. Heidrich Z.: Wodociągi i kanalizacja. Część II. Kanalizacja. WSiP, Warszawa 1999

**Breakdown of average student's workload**

	Hours	ECTS
Total workload	60	2,0
Classes requiring direct contact with the teacher	36	1,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) <sup>1</sup>		

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