GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	, PG_00058829		
Field of study	Environmental Engineering		
Date of commencement of studies	October 2022	Academic year of realisation of subject	2024/2025
Education level	first-cycle studies	Subject group	Obligatory subject group in the field of study
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	3	Language of instruction	Polish
Semester of study	6	ECTS credits	2.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department Of Sanitary Engineering -> Faculty Of Civil And Environmental Engineering -> Wydziały Politechniki Gdańskiej		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Maria Orłowska-Szostak	
	Teachers	dr inż. Joanna Majtacz dr inż. Maria Orłowska-Szostak	

Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	30.0	0.0	0.0	30
	E-learning hours included: 0.0						

Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan	Participation in consultation hours	Self-study	SUM
	Number of study hours	30	5.0	20.0	55

Subject objectives	The aim of this subject is to familiarize students with advanced, computer-aided design of building installations in the sanitary industry, such as central heating installations, cold water and central hot water installations, and sanitary sewage installations. We focus on both classic installations and installations implemented in accordance with the latest design solutions and installation technologies. In order to achieve the objective of the subject, i.e. computer-aided design of the above-mentioned installations, it is necessary to review the current, professional software for designers used in this field and the use of this software by students in designing installations as part of laboratory classes.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_U07] can read architectural, construction and geodesy drawings, and can use the known computer programs to prepare a drawing part of technical documentation for the sanitary industry	Designing sanitary installations using computer software familiarizes the student with designing in an interactive graphical mode.	[SU4] Assessment of ability to use methods and tools [SU3] Assessment of ability to use knowledge gained from the subject
[K6_U12] can design installations, networks and facilities: water supply, sewage, heating and gas	Is able to design modern building installations in the sanitary sector (including central heating installations and water and sewage installations) using modern IT tools.	[SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools
[K6_U06] knows and applies the basic provisions of construction law, water law and environmental law	The student becomes familiar with and applies not only the principles of construction art, but also all legal acts as necessary in the design of the subject sanitary building installations.	[SU2] Assessment of ability to analyse information [SU1] Assessment of task fulfilment
[K6_U11] can use selected computer programs to support design, including CAD graphics programs	Is proficient in using a wide range of professional software used in the design of building sanitary installations. Is proficient in using a wide range of professional software used in the design of building sanitary installations.	[SU5] Assessment of ability to present the results of task [SU1] Assessment of task fulfilment

Subject contents

The subject is a continuation and extension of the subject called "Sanitary installations" taught in the fifth semester.

The aforementioned extension includes a review and substantive, multi-faceted familiarization with the latest advanced solutions and installation technologies in various types of facilities, with particular emphasis on residential buildings. Classes are conducted in the form of laboratories. Central heating installations, cold water and central hot water installations, and sanitary sewage installations are designed. Students design modern building installations for the sanitary industry using current versions of professional computer software for sanitary installation designers.

Students prepare projects and present them, along with a defense of the designed solutions.

Prerequisites and co-requisites

Passed subjects "Sanitary installations" and "Heating" taken in the fifth semester.

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Design of a central heating installation using professional software	75.0%	50.0%
Design of cold and hot water installations using professional software	75.0%	50.0%

Recommended reading

Basic literature	1. Applicable legal acts, current standards. 2. Academic and designer textbooks. Applicable legal acts, current standards. 3. Class presentations provided by the instructor.
Supplementary literature	1. Catalogs of manufacturers of installation materials and fittings. 2. Instructions for computer programs used in classes.
eResources addresses	Adresy na platformie eNauczanie:

Example issues/ example questions/ tasks being completed	Calculation of the heat demand for a three-storey multi-family building in an industry-specific programme. Design of radiator and floor heating systems. Principles of regulation of these systems. Design and dimensioning of radiator and floor heating installations using up-to-date software. Principles of pressure regulation in water supply installations using units with stepless pump operation regulation. Principles of balancing central hot water installations, determining fitting settings using a computer program. Design of sewage installations in buildings with underground garages. Discuss IT tools in the dimensioning of sanitary sewage installations.
Work placement	Not applicable

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