



Subject card

Subject name and code	, PG_00058829									
Field of study	Environmental Engineering									
Date of commencement of studies	October 2023	Academic year of realisation of subject		2025/2026						
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 -> Faculties of Gdańsk University of Technology									
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Maria Orłowska-Szostak							
	Teachers									
Lesson types	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_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.		[SU1] Assessment of task fulfilment [SU5] Assessment of ability to present the results of task					
	[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.		[SU1] Assessment of task fulfilment [SU2] Assessment of ability to analyse information					
	[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.		[SU4] Assessment of ability to use methods and tools [SU3] Assessment of ability to use knowledge gained from the subject					
	[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.		[SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools					

Subject contents	<p>Course content – laboratory The subject is a continuation and extension of the subject called "Sanitary installations" taught in the fifth semester.</p> <p>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.</p> <p>Students prepare projects and present them, along with a defense of the designed solutions.</p>									
Prerequisites and co-requisites	Passed subjects "Sanitary installations" and "Heating" taken in the fifth semester.									
Assessment methods and criteria	<table border="1"> <thead> <tr> <th data-bbox="446 521 794 552">Subject passing criteria</th><th data-bbox="794 521 1157 552">Passing threshold</th><th data-bbox="1157 521 1491 552">Percentage of the final grade</th></tr> </thead> <tbody> <tr> <td data-bbox="446 552 794 637">Design of cold and hot water installations using professional software</td><td data-bbox="794 552 1157 637">75.0%</td><td data-bbox="1157 552 1491 637">50.0%</td></tr> <tr> <td data-bbox="446 637 794 720">Design of a central heating installation using professional software</td><td data-bbox="794 637 1157 720">75.0%</td><td data-bbox="1157 637 1491 720">50.0%</td></tr> </tbody> </table>	Subject passing criteria	Passing threshold	Percentage of the final grade	Design of cold and hot water installations using professional software	75.0%	50.0%	Design of a central heating installation using professional software	75.0%	50.0%
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Recommended reading	<p>Basic literature</p> <ol style="list-style-type: none"> 1. Applicable legal acts, current standards. 2. Academic and designer textbooks. Applicable legal acts, current standards. 3. Class presentations provided by the instructor. <p>Supplementary literature</p> <ol style="list-style-type: none"> 1. Catalogs of manufacturers of installation materials and fittings. 2. Instructions for computer programs used in classes. <p>eResources addresses</p>									
Example issues/ example questions/ tasks being completed	<p>Calculation of the heat demand for a three-storey multi-family building in an industry-specific programme.</p> <p>Design of radiator and floor heating systems. Principles of regulation of these systems.</p> <p>Design and dimensioning of radiator and floor heating installations using up-to-date software.</p> <p>Principles of pressure regulation in water supply installations using units with stepless pump operation regulation.</p> <p>Principles of balancing central hot water installations, determining fitting settings using a computer program.</p> <p>Design of sewage installations in buildings with underground garages.</p> <p>Discuss IT tools in the dimensioning of sanitary sewage installations.</p>									
Practical activites within the subject	Not applicable									

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