



Subject card

Subject name and code	, PG_00059186						
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	Part-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. Dominika Derwis					
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	15.0	0.0	0.0	15
	E-learning hours included: 0.0						
	eNauczanie source address: https://enauczanie.pg.edu.pl/2025/course/view.php?id=5443						
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	15		1.0		34.0	50
Subject objectives	<p>The aim of this course is to familiarize students with advanced, computer-aided design of building sanitary installations, such as central heating systems, cold water and domestic hot water systems, and sanitary sewer systems. We focus both on conventional installations and on systems designed in accordance with the latest solutions and technologies in the field.</p> <p>To achieve the course objective-computer-aided design of the above-mentioned installations-an overview of current professional software used by designers is provided, and students apply this software in the design of installations during laboratory classes.</p>						

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 interactive, graphical design.	[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 good engineering practice in construction, but also all relevant legal regulations necessary for the design of 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 sanitary building installations (including central heating and water and sewer systems) using advanced IT tools.	[SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools
	[K6_U11] can use selected computer programs to support design, including CAD graphics programs	Is proficient in using a wide range of professional software applied in the design of sanitary building installations. The leading design approach is interactive, graphical design.	[SU1] Assessment of task fulfilment [SU5] Assessment of ability to present the results of task
		Zaloga Belony	
Subject contents	<p>Course content – laboratory Course content laboratories The course is a continuation and extension of the subject Sanitary Installations delivered in the fifth semester. This extension includes a comprehensive, multi-aspect overview of the latest advanced installation solutions and technologies used in various types of buildings, with particular emphasis on residential buildings.</p> <p>Classes are conducted in the form of laboratory sessions. Students design central heating systems, cold water and domestic hot water systems, as well as sanitary sewer systems. They develop modern sanitary building installations using current versions of professional design software dedicated to sanitary engineering.</p> <p>Students prepare design projects and present them, including the defense of their proposed solutions.</p>		
Prerequisites and co-requisites	Completed courses: Sanitary Installations and Heating Engineering, taken in the fifth semester.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Preparation of a central heating system design using professional software.	75.0%	50.0%
	Preparation of a design for cold and hot water systems, as well as sanitary sewer systems, using professional software.	75.0%	50.0%
Recommended reading	Basic literature	<ol style="list-style-type: none"> Applicable legal regulations and current standards. Academic textbooks and professional literature for designers. Lecture materials provided by the instructors. 	
	Supplementary literature	<ol style="list-style-type: none"> Catalogues of manufacturers of installation materials and fittings. Manuals for the software used during the classes. 	
	eResources addresses		
Example issues/ example questions/ tasks being completed	<ul style="list-style-type: none"> Calculation of heat demand for a three-storey multi-family building using specialized software. Design of radiator and underfloor heating systems. Principles of control and regulation of these systems. Design and sizing of radiator and underfloor heating systems using current software tools. Principles of pressure control in water supply systems using pump units with variable speed control. Principles of balancing domestic hot water systems and determining valve settings using computer software. Design of sewer systems in buildings with underground parking garages. Overview of IT tools used for the sizing of sanitary sewer systems. 		
Practical activities within the subject	Not applicable		