GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	SANITARY INSTALLATIONS - ADVANCED ISSUES, PG_00060050		
Field of study	Environmental Engineering		
Date of commencement of studies	February 2026	Academic year of realisation of subject	2025/2026
Education level	second-cycle studies	Subject group	Optional subject group
Mode of study	Full-time studies	Mode of delivery	at the university
Year of study	1	Language of instruction	Polish
Semester of study	1	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 hab. inż. Ewa Zaborowska	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	15.0	0.0	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 the course is to familiarize students with modern solutions in the field of sanitary installations, software used in the industry, new trends and solutions in the field of installation technologies, as well as to acquire skills in designing selected advanced/non-standard installation solutions.

Learning outcomes

Course outcome	Subject outcome	Method of verification
K7_U12	The student assesses the abilities to employ the innovative solutions (includiing novel achievements in the domain of materials and devices) to optimally design sanitary installations.	[SU2] Assessment of ability to analyse information
[K7_W11] has knowledge to analyze, evaluate and optimize processes, objects and systems of environmental engineering and knows the principles of rational energy management and resources	The student exposes enhanced background in the field ofsanitary installations, enabaling analysis, optimization and regulation of the installations.	[SW1] Assessment of factual knowledge
K7_U11	While conducting design tasks the student applies enhanced and in-depth fundamentals of hydraulics and sanitary installation design. The student makes intentional use of computer-aided design software	[SU4] Assessment of ability to use methods and tools [SU3] Assessment of ability to use knowledge gained from the subject [SU1] Assessment of task fulfilment

<table>
<tr><td>Subject contents</td><td>Course content – lecture
The course includes lectures and design exercises.
As part of the lectures, students are introduced to modern solutions in the field of sanitary installations, including software used in the industry for design purposes, as well as new trends and solutions in the field of installation technologies provided by leading companies in this industry.The subject covers a wide spectrum of advanced issues related to water supply, sewage, heating and ventilation installations.

As part of the exercises, students design a selected sanitary installation using advanced/non-standard solutions.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>The course is an extension of the course Sanitary Installations taught during full-time undergraduate studies of Environmental Engineering. The student taking the course should have a structured, theoretically supported knowledge related to the design of sanitary installations.</td></tr>
<tr><td>Assessment methods and criteria</td><td><table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>Tutorials - grade</td><td>50.0%</td><td>80.0%</td></tr>
<tr><td>Lectures - attendance</td><td>75.0%</td><td>20.0%</td></tr>
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<tr><td>Recommended reading</td><td><table>
<tr><td>Basic literature</td><td>1. Academic and designer textbooks

2. Current standards, applicable regulations and guidelines from device and fitting manufacturers, conditions of execution and acceptance.</td></tr>
<tr><td>Supplementary literature</td><td>1. Industry and scientific journals.</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
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<tr><td>Example issues/ example questions/ tasks being completed</td><td>Hydraulic circuits of ventilation heaters and coolers (regulation systems).Ground heat exchangers in the ventilation system.Dual sewage system, water/wastewater renewal, closed-loop management elements.Tap hot water circulation system, dimensioning algorithms, regulation.</td></tr>
<tr><td>Practical activites within the subject</td><td>Not applicable</td></tr>
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