



Subject card

Subject name and code	Sanitary equipment of houses, PG_00059171						
Field of study	Environmental Engineering						
Date of commencement of studies	October 2024		Academic year of realisation of subject			2026/2027	
Education level	first-cycle studies		Subject group			Obligatory subject group in the field of study Subject group related to scientific research 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	5		ECTS credits			4.0	
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. Jakub Drewnowski				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	15.0	0.0	15.0	0.0	60
	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	60		5.0		45.0	110
Subject objectives	The aim of the course is to present basic theoretical knowledge of conventional and modern solutions used in water and sewage sanitary installations, rainwater management, the use of conventional and ecological systems. Students will gain practical knowledge of the range of available technical and material solutions. In addition to the presentation of theoretical knowledge, another objective of the course is to provide students with practical skills in the advanced design of sanitary installations.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K6_W07] has a structured and theoretically founded knowledge in the field of materials used in the sanitary industry, their physico-chemical properties; knows and understands the basic processes of their production	The student assesses the abilities to employ the innovative solutions (including novel achievements in the domain of materials and devices) to optimally design sanitary installations.	[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects
	[K6_W09] has ordered, theoretically founded knowledge in the field of water supply, sewage, heating, ventilation and air conditioning, and the principles of shaping the microclimate of rooms; knows legal regulations, standardization issues and recommendations for the design of water supply, sewage, heating and gas networks and installations	The student is able to use the acquired knowledge in the field of basic sciences in order to understand the principles of operation and practical application of knowledge for the purposes of designing installations and sanitation networks, with particular emphasis on solutions based on the use of renewable water/ wastewater or energy in heat/gas systems sources	[SW3] Assessment of knowledge contained in written work and projects [SW2] Assessment of knowledge contained in presentation [SW1] Assessment of factual knowledge
	[K6_U12] can design installations, networks and facilities: water supply, sewage, heating and gas	The student is able to use the acquired knowledge in the field of basic sciences in order to understand the principles of operation and practical application of knowledge for the purposes of designing sanitary installations and networks.	[SU1] Assessment of task fulfilment [SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools [SU5] Assessment of ability to present the results of task
	[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	The student makes intentional use of computer-aided design software, while conducting design tasks the student applies enhanced and in-depth fundamentals of hydraulics and sanitary installation design.	[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
	[K6_U06] knows and applies the basic provisions of construction law, water law and environmental law	The student is able to find and properly use sources of information, legal acts and norms relating to the area problematic design of sanitary installations and networks.	[SU3] Assessment of ability to use knowledge gained from the subject [SU5] Assessment of ability to present the results of task [SU1] Assessment of task fulfilment
Subject contents	Course content – lecture		
	Conventional and modern solutions in water supply systems as well as in sanitary sewage and storm sewer systems. Conventional energy sources for the preparation of domestic hot water and central heating systems. Gas systems. Sanitary techniques using renewable water sources.		
	Course content – exercises		
	Design principles and calculation examples for water supply systems, sanitary and storm sewer systems, and gas installations.		
	Course content – project		
	Development of a water and sewage system project based on the use of renewable energy sources and grey water, eventually storm sewer to flush the toilet in accordance with the applicable legal provisions, good engineering practice and the scope of topics presented in the lectures.		
Prerequisites and co-requisites	Basic knowlage in the field of environmental engineering.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Final test and passing project	60.0%	100.0%

Recommended reading	Basic literature	1) Chudzicki, J., Sosnowski, S. (2011). Instalacje wodociągowe projektowanie, wykonanie i eksploatacja, Wydawnictwo SeidelPrzywecki, W-wa 2) Chudzicki, J., Sosnowski, S. (2011). Instalacje kanalizacyjne projektowanie, wykonanie, eksploatacja , Wyd. Seidel-Przywecki, W-wa 3) Gassner, A. (2008). Instalacje sanitarne, Wyd. Wydawnictwa Naukowo-Techniczne, W-wa 4) Zajada, R. Instalacje gazowe na paliwa gazowe, Wyd. COBO Profil 5) Bąkowski K. (2007). Sieci i instalacje gazowe, Wyd. Wydawnictwa Naukowo-Techniczne, W-wa 6) Stec, A., Słyś, D. (2016). Instalacje ekologiczne w budownictwie mieszkaniowym Wyd. KaBe, Krosno 7) Słyś, D., Kordana, S. (2013) Odzysk ciepła odpadowego w instalacjach i systemach kanalizacyjnych Wyd. KaBe, Krosno 8) Oszczak W., (2019) Kolektory słoneczne i fotoogniwa w Twoim domu Wyd. Komunikacji i Łączności sp. z o.o. 9) Dedykowane normy i akty prawne.
	Supplementary literature	1. Katalogi wyrobów i firmowe poradniki dla projektantów: Geberit, PipeLife, Wavin, LPM Danfoss, COMAP, PURMO, KanTherm, PoWoGaz S.A., Metron, AQUATHERM, Cuprum, COPRAX, ROCKWOOL, Thermaflex i in.; 2. Obowiązujące normy, przepisy i wytyczne, a w szczególności: Warunki Techniczne Wykonania i Odbioru Robót Budowlano Montażowych, Tom II: Instalacje Sanitarne i Przemysłowe, ARKADY, Warszawa 1988 oraz Wymagania Techniczne COBRTI INSTAL zeszyt, 1-10, Warszawa, 1999 do 2005.
	eResources addresses	
Example issues/ example questions/ tasks being completed	Preparation of drawing documentation and carrying out engineering calculations in the field of installation internal for Water-WasteWater-Gas	
Practical activities within the subject	Not applicable	

Document generated electronically. Does not require a seal or signature.