

。 GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	, PG_00061719								
Field of study	Environmental Engineering								
Date of commencement of studies	October 2023		Academic year of realisation of subject			2023/2024			
Education level	second-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	1		Language of instruction			Polish polish			
Semester of study	2		ECTS credits			3.0			
Learning profile	general academic profile		Assessment form			assessment			
Conducting unit	Department of Sanitary Engineering -> Faculty of Civil and Environmental Engineering								
Name and surname	Subject supervisor	dr hab. inż. Jakub Drewnowski							
of lecturer (lecturers)	Teachers	1		1					
Lesson types and methods	Lesson type	Lecture	Tutorial	Laboratory	Projec	roject Semina		SUM	
of instruction	hours	10.0	10.0	0.0			0.0	20	
	E-learning hours included: 0.0								
Learning activity and number of study hours	Learning activity	arning activity Participation ir classes includ plan		I didactic Participation in consultation hours		Self-study		SUM	
	Number of study hours	20		3.0		52.0		75	
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			
	K7_U11		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			
	[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 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 woter/energy sources			[SW1] Assessment of factual knowledge [SW2] Assessment of knowledge contained in presentation [SW3] Assessment of knowledge contained in written work and projects			
	K7_U12		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			

Subject contents							
	LECTURES.Conventional and modern solutions in water supply systems as well as in sanitary sewage and rain systems. Conventional energy sources for the preparation of domestic hot water and central heating systemsSanitary techniques using renewable water sources. Gas systems. Advanced design sanitary systems WOD-KAN and functional issues of fire protection systems Exercises. Development of a water and sewage system project based on the use of renewable energy sources and grey water accordance with the applicable legal provisions, good engineering practice and the scope of topics presented in the lectures.						
Prerequisites and co-requisites	Completed the basic program in the field of environmental engineering.						
Assessment methods	Subject passing criteria	Passing threshold	Percentage of the final grade				
and criteria	Final test and passing the Exercises	60.0%	100.0%				
Recommended reading	Basic literature	 Chudzicki, J., Sosnowski, S. (2011). Instalacje wodociagowe 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 Prolfil 5) Bąkowski K. (2007). Sieci i instalacje gazowe, Wyd. COBO Prolfil 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	 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.; 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	Adresy na platformie eNauczanie:	anie:				
Example issues/ example questions/ tasks being completed	Preparation of drawing documentation and carrying out engineering calculations in the field of installation internal markets - conventional, based on the use of advanced systems and the principles of sustainable development through the management of grey sewage and rainwater.						
Work placement	Not applicable						

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