



Subject card

Subject name and code	Water Supply Systems I, PG_00059084						
Field of study	Environmental Engineering						
Date of commencement of studies	October 2022	Academic year of realisation of subject			2024/2025		
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	Part-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						
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Dominika Sobotka					
	Teachers	dr inż. Dominika Sobotka					
Lesson types and methods of instruction	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	3.0		68.0		101
Subject objectives	Obtaining knowledge about the construction and operation of water supply networks. Obtaining knowledge about methods of obtaining and storing water. Obtaining knowledge about the principles of designing and dimensioning water supply networks.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K6_K02] understands the need to formulate and communicate to the public information and opinions on the achievements of environmental engineering and other aspects of the sanitary industry engineer's activity; is aware of the importance and understands the non-technical aspects and effects of engineering activities; makes efforts to provide such information and opinions in a widely understandable way, presenting different points of view	The student understands the need to inform the public and the effects of engineering activities in the field of water supply systems.			[SK5] Assessment of ability to solve problems that arise in practice		
	[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 has structured, theoretically supported knowledge in the field of waterworks, knows standardization and legal issues.			[SW1] Assessment of factual knowledge		
[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 has structured and theoretically supported knowledge in the field of materials used in water supply systems.			[SW1] Assessment of factual knowledge			

Subject contents	Water supply systems, general definitions, concepts. Cooperation between elements of water supply systems. Forecast of water consumption for the prospective period as a quantitative basis for designing a water supply system. Water intakes for surface water and groundwater. Materials used to build water supply networks and methods of connecting them. Types and methods of dimensioning water supply tanks. Raising the pressure in the water supply network. Zoning of the water supply network.		
Prerequisites and co-requisites	Knowledge of the basics of fluid mechanics, hydraulics and geology. Knowledge of the principles of hydraulic calculations, knowledge of installation material science and soil mechanics.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Test	60.0%	50.0%
	Exam	60.0%	50.0%
Recommended reading	Basic literature	<ul style="list-style-type: none"> Gabryszewski T., Wieczysty A.: Ujęcia wód podziemnych. Arkady Warszawa 1985. Janson E., Molin J.: Projektowanie i wykonawstwo sieci zewnętrznych z tworzyw sztucznych. Wavin, Arhus 1991. Janson L.-E.: Rury z tworzyw sztucznych do zaopatrzenia w wodę i odprowadzania ścieków. BOREALIS i Polskie Stowarzyszenie Producentów Rur i Kształtek z Tworzyw Sztucznych, Toruń 2010. Suligowski Z., Fudala-Książek S.: Zaopatrzenie w wodę. Seidel-Przywecki Warszawa 2014. Dz.U. 2001 nr 72 poz. 747. Ustawa z dnia 7 czerwca 2001 r. o zbiorowym zaopatrzeniu w wodę i zbiorowym odprowadzaniu ścieków z późniejszymi zmianami. Dz.U. 2004 nr 202 poz. 2072. Rozporządzenie Ministra Infrastruktury z dnia 2 września 2004 w sprawie szczegółowego zakresu i formy dokumentacji projektowej, specyfikacji technicznych wykonania i odbioru robót budowlanych oraz programu funkcjonalno-użytkowego. PN-EN 805:2002/Ap1:2006 z dnia 7 sierpnia 2006 r. Zaopatrzenie w wodę Wymagania dotyczące systemów zewnętrznych i ich części składowych. PN-ENV 1046:2002E z dnia 13 sierpnia 2002 r. Systemy przewodów rurowych z tworzyw sztucznych - Systemy do przesyłania wody i ścieków na zewnątrz konstrukcji budowli - Praktyczne zalecenia układania przewodów pod ziemią i nad ziemią. 	
	Supplementary literature	<ul style="list-style-type: none"> Rozporządzenie Ministra Infrastruktury z dnia 2 września 2004 w sprawie szczegółowego zakresu i formy dokumentacji projektowej, specyfikacji technicznych wykonania i odbioru robót budowlanych oraz programu funkcjonalno użytkowego. Dziennik Ustaw 202/2004. PN-ENV1046: Systemy z tworzyw sztucznych. Systemy do przesyłania wody i ścieków na zewnątrz konstrukcji budowli. Praktyczne zalecenia układania przewodów pod ziemią i nad ziemią Rozporządzenie Ministra Infrastruktury z dnia 3 lipca 2003 w sprawie szczegółowego zakresu i formy projektu budowlanego. Dziennik Ustaw 120/2003 . Strony internetowe firmy Wavin. Poradnik Inwestora. Normy 	
	eResources addresses	Adresy na platformie eNauczanie: Wodociągi I sem. V (zima 2024/2025, NST) - Moodle ID: 42355 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=42355	
Example issues/ example questions/ tasks being completed	<p>- Cooperation of water supply system components.</p> <p>- Types of water intakes.</p> <p>- Dimensioning of water supply networks.</p>		
Work placement	Not applicable		

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