



Subject card

Subject name and code	Sanitary Engineering , PG_00043359						
Field of study	Environmental Engineering						
Date of commencement of studies	October 2020	Academic year of realisation of subject			2022/2023		
Education level	first-cycle studies	Subject group			Optional subject group		
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	Faculty of Civil and Environmental Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Krzysztof Szarf					
	Teachers	dr inż. Krzysztof Szarf					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	30.0	0.0	0.0	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 class is to introduce the students of Environmental Engineering course to civil engineering problems with a special focus on sanitary engineering topics.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K6_U06] knows and applies the basic provisions of construction law, water law and environmental law	Student is aware of his part in the construction process Student knows current building codes			[SU1] Assessment of task fulfilment		
	[K6_U01] has the ability to self-education, can obtain information from literature, databases and other sources, uses information technology, Internet resources; can integrate the obtained information, make their interpretation, as well as draw conclusions and formulate and justify opinions	Student is able to choose a design method Student can interpret results of engineering calculations			[SU3] Assessment of ability to use knowledge gained from the subject		
	[K6_W08] has elementary knowledge of construction: including building materials, their strength, construction mechanics and building physics, moisture migration in buildings, heat transfer through building partitions	Student learns about methods of construction design Student gathers knowledge about engineering calculations of sanitary constructions			[SW1] Assessment of factual knowledge		

Subject contents	<p>Lectures:</p> <ul style="list-style-type: none"> - Introduction to civil engineering design in the framework of Eurocodes - Classification and review of sanitary engineering constructions used for: water supply, stormwater drainage, sewage transport and treatment - Basics of reinforced concrete construction design - Basics of foundation engineering - Trenchless technologies <p>Auditorial classes: Calculations regarding design of such constructions as: open and subsurface tanks, stiff or elastic pipeline, stiff or elastic manhole</p>		
Prerequisites and co-requisites	A number of classes passed covering the following topics: classical mechanics, soil mechanics, hydraulics and hydrology, foundation engineering, mechanics of materials, general construction. technology of concrete		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	design	100.0%	50.0%
	test	50.0%	50.0%
Recommended reading	Basic literature	[1]Rangwala, S.C., Water Supply And Sanitary Engineering, Charotar Publishing House 2005	
	Supplementary literature	[2]Braja M. Das Fundamentals of Geotechnical Engineering, Cengage Learning, 2012	
	eResources addresses	Adresy na platformie eNauczenie: Budownictwo Sanitarne (V inż st IS) - zima 2022/2023 - Moodle ID: 24058 https://enauczenie.pg.edu.pl/moodle/course/view.php?id=24058	
Example issues/ example questions/ tasks being completed	<p>Exemplary test questions:</p> <ol style="list-style-type: none"> 1. Describe constructions used for gathering rainwater 2. List trenchless methods and describe them 3. Characterise reinforced concrete underground tank construction problems <p>Exemplary project topic:</p> <ol style="list-style-type: none"> 1. Construction design of a rigid pipeline 2. Construction design of a tank 		
Work placement	Not applicable		