GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Sanitary Engineering , PG_00043359		
Field of study	Environmental Engineering		
Date of commencement of studies	October 2021	Academic year of realisation of subject	2023/2024
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	Department of Geotechnics, Geology and Marine Civil Engineering -> 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_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	
[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	
[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	

<table>
<tr><td>Subject contents</td><td>Lectures:
- 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
Auditorial classes:
Calculations regarding design of such constructions as: open and subsurface tanks, stiff or elastic pipeline, stiff or elastic manhole</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>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</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>test</td><td>50.0%</td><td>50.0%</td></tr>
<tr><td>design</td><td>100.0%</td><td>50.0%</td></tr>
</table></td></tr>
<tr><td>Recommended reading</td><td><table>
<tr><td>Basic literature</td><td>[1]Rangwala, S.C., Water Supply And Sanitary Engineering, Charotar Publishing House 2005</td></tr>
<tr><td>Supplementary literature</td><td>[2]Braja M. Das Fundamentals of Geotechnical Engineering, Cengage Learning, 2012</td></tr>
<tr><td>eResources addresses</td><td>Adresy na platformie eNauczanie:</td></tr>
</table></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td>Exemplary test questions:
1. Describe constructions used for gathering rainwater
2. List trenchless methods and describe them
3. Characterise reinforced concrete underground tank construction problems
Exemplary project topic:
1. Construction design of a rigid pipeline
2. Construction design of a tank</td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
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