GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Geotechnics, PG_00042897		
Field of study	Environmental Engineering		
Date of commencement of studies	October 2021	Academic year of realisation of subject	2022/2023
Education level	first-cycle studies	Subject group	Optional subject group 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	2	Language of instruction	Polish
Semester of study	4	ECTS credits	3.0
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. Angelika Duszyńska	
	Teachers	dr inż. Angelika Duszyńska	

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	30.0	0.0	0.0	15.0	0.0	45

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	45	5.0	35.0	85

Subject objectives

The aim of the course is to familiarize students with geotechnical design.

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 non-technical aspects and effects of activities in the field of geotechnical engineering, sanitary structures foundations	
[K6_W04] possesses elementary knowledge in the field of land mechanics, ground science, land reclamation and geotechnics; has basic knowledge about the composition of air, water and soil, environmental pollution and processes responsible for their formation and ways to reduce them, knows the principles and organization of sustainable water management	Students using the knowledge of soil mechanics distinguishes types of subsoil. He knows how to improve soft soils. He knows the principles of sustainable management of ground resources.	
[K6_U16] can, when formulating and solving engineering tasks in environmental engineering, evaluate, select and apply appropriate methods and tools, recognize their non-technical aspects, including environmental, economic and legal aspects	The student is able to solve geotechnical problems in environmental engineering, select and apply appropriate methods of design and construction of objects	

<table>
<tr><td>Subject contents</td><td>Geotechnical conditions of building foundation. Excavations – construction, walls, drainage. Slope stability – landslides, retaining structures. Geosyntetics in civil and environmental egineering. Direct foundations – types, design principles, construction. Pile foundations – types of piles, design principles, construction. Soil improvement – methods and range of applications. Non-excavation technologies of underground pipes. Landfills - construction and reclamation. Foundation problems of selected sanitary structures</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>Knowledge of soil mechanics</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 on lectures</td><td>55.0%</td><td>40.0%</td></tr>
<tr><td>project</td><td>60.0%</td><td>60.0%</td></tr>
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<tr><td>Recommended reading</td><td>
<table>
<tr><td>Basic literature</td><td>EN 1997-1 Eurocode 7: Geotechnical design. Part 1: General rules.</td></tr>
<tr><td>Supplementary literature</td><td>-</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>- Checking the Limit States: UPL and GEO,

- Checking the serviceability limit state (SLS)

and pipeline in cohesive soiil, checking the slopes stability in construction stage</td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
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