GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	, PG_00059063		
Field of study	Environmental Engineering		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2025/2026
Education level	first-cycle studies	Subject group	Optional subject group 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	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 Geotechnical and Hydraulic Engineering -> Faculty of Civil and Environmental Engineering -> Faculties of Gdańsk University of Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Angelika Duszyńska	
	Teachers		

Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	5.0	0.0	0.0	0.0	20
	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	20	3.0	52.0	75

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	[SK5] Assessment of ability to solve problems that arise in practice
[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	[SU3] Assessment of ability to use knowledge gained from the subject
[K6_U03] can prepare documentation regarding the implementation of an engineering task/project and prepare a text or presentation including a discussion of the results of the implementation	the student is able to prepare documentation regarding the geotechnical calculation of a water tank	[SU1] Assessment of task fulfilment
[K6_K01] can think and act in a creative and enterprising way; can set priorities for the implementation of an individual or group task; understands the need for continuous training and professional responsibility for their activities and team	the student is able to determine priorities for carrying out exercises related to the foundation of a tank	[SK3] Assessment of ability to organize work
[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.	[SW3] Assessment of knowledge contained in written work and projects

Subject contents

Course content – lecture
Geotechnical conditions of building foundation. Excavations construction, walls, drainage. Slope stability landslides, retaining structures. Geosyntetics in civil and environmental egineering. Soil improvement methods and range of applications. Non-excavation technologies of underground pipes. Landfills - construction and reclamation. Foundation problems of selected sanitary structures

Prerequisites and co-requisites

Knowledge of soil mechanics

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
project	60.0%	60.0%
test on lectures	55.0%	40.0%

Recommended reading

Basic literature

Eurocode 7: Geotechnical design. Part 1: General rules.

1. Bzówka J. i inni: Geotechnika komunikacyjna. Wydawnictwo Politechniki Śląskiej. 2012.
2. Pisarczyk S.: Elementy budownictwa ochrony środowiska, Oficyna Wydawnicza PW, Warszawa 2008.
3. Pisarczyk S.: Geoinżynieria. Metody modyfikacji podłoża gruntowego, OW PW, Warszawa 2020.
4. Urbański (red.): Podstawy projektowania geotechnicznego. Wprowadzenie do nowych technologii w geotechnice, Wydawnictwo Politechniki Krakowskiej, 2016
5. Wiłun Z.: Zarys geotechniki. WKiŁ, Wyd. 10. Warszawa 2013.

Supplementary literature

1. Dąbska A., Gołębiewska A.: Podstawy geotechniki. Zadania według Eurokodu 7, Wydawnictwo: Politechnika Warszawska, 2012.

eResources addresses

Example issues/ example questions/ tasks being completed	- Checking the Limit States: UPL and GEO, - Checking the serviceability limit state (SLS)
Practical activites within the subject	Not applicable

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