GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Testing of Geosynthetics, PG_00045888		
Field of study	Civil Engineering		
Date of commencement of studies	February 2024	Academic year of realisation of subject	2024/2025
Education level	second-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	1	Language of instruction	Polish
Semester of study	2	ECTS credits	2.0
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	0.0	0.0	15.0	0.0	0.0	15

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	15	5.0	30.0	50

Subject objectives

The aim of the course is to familiarize students with the procedures of the laboratory testing of geosynthetics and interpretation of results.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K7_U16] is able to estimate the technical condition of engineering object; can interpret the results of constructions and materials examination;	ability to interpret the results of geosynthetics tests and their proper use in various functions and applications	[SU2] Assessment of ability to analyse information
[K7_W12] has deep and theoreticaly firm knowledge about geotechnical investigation, the rules of geotechnical design and engineering geology; knows the complcated processes in soil, techniques of foundations, draining systems, soil strengthening, geosynthetics applications, underground constructions and earthworks	detailed knowledge in the field of geosynthetics research as well as the use of geosynthetics in earth structures	[SW1] Assessment of factual knowledge
[K7_U11] is able to plan and execute laboratory experiments to evaluate quality of construction materials and to determine strength of construction elements	knowledge of testing procedures of geosynthetics used in civil , maritime and environmental engeenering	[SU1] Assessment of task fulfilment
[K7_K02] Rocognizes the significance of knowledge in solving cognitive and practical problems; reliably evaluates results of his own and team research	ability to evaluate the results of tests of geosynthetic products made by the team and their use for practical engineering problems	[SK1] Assessment of group work skills [SK5] Assessment of ability to solve problems that arise in practice

Subject contents

Identification of geosynthetics (geotextiles and related products, geocomposite, geosynthetic barrier). Tests of the physical characteristics: mass per unit area and thickness under load. Strength characteristics: tensile-elongation relationship and static puncture resistance - CBR and the pyramid method for rigid and soft support. Tests of hydraulic characteristics: water permeability normal to the plane under load and the characteristic pore size. Geosythetics-soli interaction tests.

<table>
<tr><td>Prerequisites and co-requisites</td><td colspan="3">Knowledge of Geosynthetics (engineering course)</td></tr>
<tr><td>Assessment methods and criteria</td><td colspan="3"><table><tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr><tr><td>Practical exercise</td><td>60.0%</td><td>100.0%</td></tr></table></td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td colspan="2">Polish standards on geosynthetics (see www.pkn.com.pl)</td></tr>
<tr><td>Supplementary literature</td><td colspan="2">Holtz R., Christopher B., Berg R.: „Geosynthetic Engineering“, BiTech Publish Ltd, Canada, 1997.</td></tr>
<tr><td>eResources addresses</td><td colspan="2">Adresy na platformie eNauczanie:</td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="3">Identification of geosynthetics. Procedures for aboratory tests of geotextiles and related products. Interpretation of test results and their use in engineering practice.</td></tr>
<tr><td>Work placement</td><td colspan="3">Not applicable</td></tr>
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