



Subject card

Subject name and code	Testing of Geosynthetics, PG_00045888						
Field of study	Civil Engineering						
Date of commencement of studies	February 2023	Academic year of realisation of subject			2023/2024		
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_K02] Recognizes 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			[SK5] Assessment of ability to solve problems that arise in practice [SK1] Assessment of group work skills		
	[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 engineering			[SU1] Assessment of task fulfilment		
	[K7_W12] has deep and theoreticaly firm knowledge about geotechnical investigation, the rules of geotechnical design and engineering geology; knows the complicated 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_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			
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. Geosynthetics-soli interaction tests.						

Prerequisites and co-requisites	Knowledge of Geosynthetics (engineering course)		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Practical exercise	60.0%	100.0%
Recommended reading	Basic literature	Polish standards on geosynthetics (see www.pkn.com.pl)	
	Supplementary literature	Holtz R., Christopher B., Berg R.: „Geosynthetic Engineering“, BiTech Publish Ltd, Canada, 1997.	
	eResources addresses	Adresy na platformie eNauczanie: Badania geosyntetyków Geotechnika mgr 2023/24 - Moodle ID: 28606 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=28606	
Example issues/ example questions/ tasks being completed	Identification of geosynthetics. Procedures for laboratory tests of geotextiles and related products. Interpretation of test results and their use in engineering practice.		
Work placement	Not applicable		