University of Gdańsk

Subject card

Subject name and code	Mathematics - laboratory, PG_00054145						
Field of study	Geography						
Date of commencement of studies	October 2025		Academic year of realisation of subject		2025/2026		
Education level	Bachelor's studies		Subject group		Obligatory subject group 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	1		ECTS credits		2.0		
Learning profile	academic		Assessment form				
Conducting unit	Institute of Mathematics -> Faculty of Mathematics, Physics and Informatics -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Jacek Tryba				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	10.0	0.0	0.0	0.0	10
	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	10		15.0		25.0	50
Subject objectives	1 To familiarize students with the elements of mathematical analysis and linear algebra, which can be used in the methods of description of research objects, phenomena and processes of geographical sciences. 2 To develop in students the ability to understand problems abstractly.						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[GEOGRL3-W03] in an advanced degree the processes and phenomena occurring in the natural environment of the Earth, with particular emphasis on the processes and phenomena occurring on the territory of Poland, especially the Coastal and South Baltic Lake Districts	KW_03 - chooses the techniques of higher mathematics to the extent necessary for understanding and describing the processes and phenomena occurring in the natural environment of the Earth, Curriculum content: 1-5	[SW4] test/exam - oral or written
[GEOGRL3-K02] bear full responsibility for the actions taken actions and adhere to the principles of professional ethics and principles of intellectual honesty, is aware of the importance of a professional approach in professional life professional life	K_02 - is ready to take full responsibility for his actions and to observe the principles of intellectual honesty	[SK1] oral statement/conversation/ discussion [SK8] observation of student's independent or team work
[GEOGRL3-W08] at an advanced level methods and principles development of data on the natural and anthropogenic environment, and methods of their analysis and interpretation	KU_01 - is able to use mathematical methods in the process of analyzing basic natural and socio-economic processes and phenomena, their causes and course, select and apply appropriate methods and tools to specific problems, communicate with the use of specialized mathematical terminology, plan and organize individual and team work and cooperate with others in teamwork, Curriculum content: 1-5	[SW4] test/exam - oral or written
[GEOGRL3-W07] on advanced level methods of aquiring data on the natural and anthropogenic environment, including operation of specialized equipment	KW03- selects the techniques of higher mathematics to the extent necessary for understanding and describing processes and phenomena occurring in the natural environment of the Earth, Curriculum content: 1-5	[SW4] test/exam - oral or written
[GEOGRL3-U01] identify and analyze basic natural and socio-economic processes and phenomena and analyze their causes and course	KK_02 - is ready to take full responsibility for the actions taken and adhere to the principles of intellectual honesty, Curriculum content: 1-5	[SU4] test/exam - oral or written

Subject contents

1. designations, mathematical symbols.
2. elements of trigonometry.
3.Elements of vector and matrix calculus.
4.Examples of methods of solving systems of grooves.
5.Elements of differential calculus.

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
test	51.0%	100.0%

Recommended reading

Basic literature	n/a
Supplementary literature	n/a
eResources addresses	

Example issues/ example questions/ tasks being completed

1. Find the determinant of a matrix

2. Find the derivative of a function

Work placement

Not applicable