University of Gdańsk

Subject card

Subject name and code	Mathematics - laboratory, PG_00193783		
Field of study	Geography		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2026/2027
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	credit
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	0.0	20.0	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	5.0	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-W06] knows advanced methods of acquiring, processing, and compiling geographic environmental data, as well as methods of analyzing and interpreting such data	Student 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	[SW4] test/exam - oral or written
[GEOGRL3-W02] knows and understands key concepts and theories in geography, as well as advanced processes and phenomena related to spatial diversity and the distribution of processes and phenomena on the Earth's surface at various spatial scales, particularly in Poland	Student 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	[SW4] test/exam - oral or written
[GEOGRL3-K02] is prepared to 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	Student 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

Subject contents

1. Designations, mathematical symbols.

2.Elements of trignometry.

3.Elements of vector and matrix calculus.

4.Examples of methods of solving systems of equations.

5.Elements of differential calculus.

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
assessment of students' individual or group work	51.0%	10.0%
activity during classes	51.0%	10.0%
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

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