University of Gdańsk

Subject card

Subject name and code	Elementary Mathematics, PG_00153242		
Field of study	Mathematical Modeling and Data Analysis		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2024/2025
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	3.0
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 Danuta Jaruszewska-Walczak	
	Teachers	dr Danuta Jaruszewska-Walczak dr Elżbieta Mrożek	

Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	30.0	0.0	0.0	0.0	30
	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	30	5.0	40.0	75

Subject objectives	Familiarizing students with the basic issues and tools of elementary mathematics. Developing students' ability to abstractly understand problems.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[MMiADL3_W02] knows the basic concepts, methods and theorems of mathematical analysis, and basic examples both illustrating specific concepts in this field, and allowing to refute incorrect hypotheses or unauthorized reasoning	The student knows and understands proof methods, the importance of strict reasoning and precise formulation, knows the basic concepts regarding the properties of functions, knows the properties of elementary functions, knows basic examples both illustrating specific concepts in this field and allowing to refute erroneous hypotheses or unauthorized reasoning.	[SW5] implementation of a problem task
[MMiADL3_U02] correctly uses the concepts of mathematical analysis, is able - on a simple and medium level of difficulty - to apply the learned theorems and methods in this field, and is able to interpret the results obtained	The student is able to apply the known methods of solving tasks, correctly uses the learned concepts, is able to interpret the obtained results and solve practical tasks related to the subject.	[SU2] presentation/project/paper/ report [SU5] implementation of a problem task
[MMiADL3_K01] is ready to accept the limitations of his/her own knowledge and understands the need for further education	The student knows the limits of his or her own knowledge and is ready for further education.	[SK8] observation of student's independent or team work
[MMiADL3_K02] is ready to precisely formulate questions to deepen his/her own understanding of a given topic or to find missing elements of reasoning	The student is ready to precisely formulate questions to deepen his or her understanding of a given topic or find missing elements of reasoning.	[SK8] observation of student's independent or team work
[MMiADL3_K09] is ready to critically evaluate arguments, find gaps in reasoning, and constructively criticise other people's reasoning	The student is ready to critically evaluate arguments, find gaps in reasoning and constructively criticize other people's reasoning.	[SK2] presentation/project/paper/ report [SK5] implementation of a problem task
[MMiADL3_K06] is ready to formulate opinions on basic mathematical issues	The student is ready to formulate opinions on basic mathematical issues.	[SK2] presentation/project/paper/ report [SK5] implementation of a problem task [SK8] observation of student's independent or team work

Subject contents

1. Elements of logic and methods of proof.
2. Function properties.
3. Linear and quadratic function.
4. The absolute value. Polynomials.
5. Rational functions, domain.
6. Power function (rational exponent).
7. Trigonometry. Cyclometric functions.
8. Exponential and logarithmic functions.
9. Solving equations and inequalities based on a function graph.

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
project	0.0%	29.0%
quizzes	0.0%	14.0%
observation of the student's attitude	100.0%	0.0%
tests	50.0%	57.0%

Recommended reading

Basic literature	1. Hammack R., Book of Proof, Third eition, 2018 2. Bryński M., Dróbka N., Szymański K., Matematyka dla zerowego roku studiów, Wydawnictwo WNT, 2012; 3. Leksiński W., Macukow B., Żakowski W., Matematyka dla maturzystów, Wydawnictwo WNT; 4. Kowalczyk R., Niedziałomski K., Obczyński C., Matematyka dla studentów i kandydatów na wyższe uczelnie. Repetytorium, Warszawa, 2022
Supplementary literature	1. Uryga J., Nowa matura. Matematyka. Rozwiązywanie zadań, Wydawnictwo Szkolne PWN, 2010; 2. Karolak T., Repetytorium z matematyki, Skrypt, 2004; 3. Kurlyandchik L., Matematyka elementarna w zadaniach Tom I i II, Aksjomat Toruń, 2005.
eResources addresses	

Example issues/ example questions/ tasks being completed

none

Work placement

Not applicable

Document generated electronically. Does not require a seal or signature.