

Subject card

Subject name and code	Elementary Mathematics, PG_00145459						
Field of study	Mathematics						
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		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 Iwona Krzyżanowska				
	Teachers						
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
	[MATL3_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 in the context of the course content	[SK8] observation of student's independent or team work
	[MATL3_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
	[MATL3_K04] is ready to understand and appreciate the importance of intellectual honesty in one's own and other people's actions; is willing to act ethically	The student is ready to understand and appreciate the importance of intellectual honesty in his own and other people's actions; ethical conduct.	[SK8] observation of student's independent or team work
	[MATL3_W02] knows and understands the basic concepts, methods and theorems of mathematical analysis as well as basic examples illustrating specific concepts in this field and enabling the refutation erroneous 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
	[MATL3_U02] is able to correctly use the known concepts of mathematical analysis, is able - at a simple and medium level of difficulty - to apply the known theorems and methods of this field and is able to interpret the obtained results	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.	[SU5] implementation of a problem task
	[MATL3_K06] is ready to formulate opinions on basic mathematical issues	The student is ready to formulate opinions on basic mathematical issues regarding the content of the subject.	[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. 8. Cyclometric functions. 9. Exponential and logarithmic functions. 10. Solving equations and inequalities based on the graph of a function.		
Prerequisites and co-requisites	none		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	tests and quizzes	51.0%	100.0%
	observation of the student's attitude	51.0%	0.0%
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		

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