

Subject card

Subject name and code	Solving Maths Problems for Maths Teachers, PG_00207044						
Field of study	Mathematics						
Date of commencement of studies	October 2026		Academic year of realisation of subject		2026/2027		
Education level	Master's studies		Subject group		Obligatory subject group in the field of study Optional subject group		
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		5.0		
Learning profile	academic		Assessment form		exam		
Conducting unit	Division of Didactics of Mathematics -> Institute of Mathematics -> Faculty of Mathematics, Physics and Informatics -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Elżbieta Mrożek				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	30.0	0.0	0.0	0.0	60
	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	60		3.0		62.0	125
Subject objectives	Deepening and broadening students knowledge of school mathematics						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[MATMU2_K04] is ready to take care of the achievements and traditions of professions related to analytical modeling and data analysis by thinking and acting in an entrepreneurial manner, improving his/her competences and popularizing knowledge		Student deepens and develops mathematical competencies through task analysis, the selection of appropriate solution strategies, and the critical evaluation of the correctness and effectiveness of applied methods		[SK4] test/exam - oral or written [SK8] observation of student's independent or team work		
Subject contents	1. Advanced approaches to mathematics education, with particular emphasis on problembased and realistic perspectives, as well as strategies for analysing and constructing tasks. 2. Forms and levels of mathematical reasoning, including empirical, intuitive, and formal modes, and their role in developing mature mathematical thinking. 3. Problemsolving and constructive tasks related to key topics in advanced mathematics, together with an analysis of their structure, cognitive potential, and opportunities for generalisation. 4. Mathematical reasoning and proof as tools for building coherent theories, justifying theorems, and developing argumentative competencies. 5. Designing, solving, and critically analysing examination tasks at the advanced level of the uppersecondary curriculum, with attention to curricular requirements, examination standards, and methodological considerations.						
Prerequisites and co-requisites							

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	exam	51.0%	50.0%
	test	51.0%	30.0%
	activity	51.0%	20.0%
	observation of the student's attitude	51.0%	0.0%
Recommended reading	Basic literature	[1] S. Kopański, In Search of Mathematical Talents, Wydawnictwo Dla Szkoły, 2003 [2] A. Birkholc, Mathematical Analysis for Teachers, PWN [3] W. Żakowski, Mathematics for Candidates for Higher Education [4] G. Polya, How to Solve?, PWN 1964 [5] Collections of Matura exam tasks at an advanced level [6] Collections of tasks and school textbooks	
	Supplementary literature	[1] M. Szurek, On Teaching Mathematics, GWO 2005	
	eResources addresses		
	Example issues/ example questions/ tasks being completed	not included	
Work placement	Not applicable		

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