

Subject card

Subject name and code	Didactics of mathematics in secondary school I, PG_00155384						
Field of study	Mathematics						
Date of commencement of studies	October 2025		Academic year of realisation of subject		2025/2026		
Education level	Master's studies		Subject group		Optional subject group Specialty 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		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 Agnieszka Demby				
	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		15.0	50
Subject objectives	The aim of the course is to prepare students in the field of mathematics didactics to teach mathematics at post-primary school level.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[MATMU2_K04] is ready to understand and appreciate the importance of intellectual honesty in one's own and other people's actions; ethical conduct		Is ready to understand and appreciate the importance of intellectual honesty in one's own and others' actions; ethical conduct.		[SK8] observation of student's independent or team work		
	[MATMU2_K01] is willing to acknowledge the limitations of his or her own knowledge and is willing to pursue further education		Is willing to acknowledge the limitations of his or her own knowledge and is willing to pursue further education.		[SK8] observation of student's independent or team work		

Subject contents	1. Objectives and content of teaching mathematics in secondary school. Context of education law and the diversified school system at this stage. 2. Scope of theoretical material and mathematical tasks for secondary school students. Context of mathematics and mathematics didactics. 3. Analysis of proposals for detailed methodological solutions, in particular from various programs, didactic plans and school textbooks. 4. Solving tasks from selected areas of mathematics implemented in secondary school. Reflection on different ways of solving and their adequacy for different groups of students. Context of the requirements of the core curriculum and the needs of the matriculation exam. 5. Taking into account the specificity of mental development and the great diversity in this respect among students when organizing mathematics teaching in secondary school. Adjusting the method of communication and creating didactic situations. 6. Methods of working with students, in particular searching and activating, as well as facilitating effective repetition and consolidation of material. 7. Control of student work. Assessment. Evaluation. 8. Problems of correlation between mathematics teaching in secondary and primary schools, the application of mathematics in practical life and interdisciplinary correlation.		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Activity	51.0%	30.0%
	Project	51.0%	35.0%
	Test	51.0%	35.0%
	Observation of student's attitude	51.0%	0.0%
Recommended reading	Basic literature	1. Education law documents concerning the organization of mathematics teaching. 2. Articles selected for the subject topic from the magazines "Dydaktyka Matematyki", "Matematyka", "Matematyka w Szkole". 3. Websites devoted to the theory of mathematics teaching and practical solutions and good practices in this area of mathematics teaching in secondary school. 4. Examples of mathematics teaching programs and didactic plans as well as textbooks and sets of tasks for mathematics teaching in secondary school.	
	Supplementary literature	1. S. Turnau: Wykłady o nauczaniu matematyki, PWN, Warszawa 1991. 2. P.Zarzycki: Dydaktyka matematyki. Zagadnienia ogólne, PWN, Warszawa 2023. 3. P.Zarzycki: Dydaktyka matematyki. Nauczanie w szkole ponadpodstawowej, PWN, Warszawa 2023. 4. Popular science books and articles.	
	eResources addresses		
Example issues/ example questions/ tasks being completed	a) Solve the following equation (it is important to describe the solution carefully and understandably to the student): $ x+1 -4= x -4 $. b) Provide 2 important skills, "tricks / ideas" that the student should have in order to have a chance of success in solving tasks from the section: Linear equations and inequalities (including equations and inequalities with absolute value, with parameter and application to solving word problems).		
Work placement	Not applicable		

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