

Subject card

Subject name and code	Developing Mathematically Gifted Students, PG_00155382						
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	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 Mrozek				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	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 classes is to familiarize students of the teaching section with the issues of working with students gifted in mathematics.						
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		The student is able to follow the principles of law and ethical norms when working with a student with special mathematical talents.			[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		The student is ready to acknowledge the limitations of his or her own knowledge of working with gifted students and is ready for further education.			[SK8] observation of student's independent or team work	
Subject contents	Characteristics of a gifted student, and especially a student gifted in mathematics - problems of diagnosing mathematical abilities in students at different educational levels. Individual differences between students gifted in mathematics (levels of talent, type of interests, level of motivation to overcome difficulties, social problems in relationships with peers). Forms of work with gifted students during lessons, during extracurricular activities and outside of school. Individual work with a student exceptionally gifted in mathematics, with particular emphasis on research projects. Planning math circles at different educational levels, taking into account different types of students' interests (solving tasks and logical puzzles, games, reports expanding school material or concerning issues on the border of different fields). Planning preparation of students for various mathematical competitions or competitions with elements of mathematics. Organizing various forms of competition - individual and team. Solving more difficult, less typical tasks from different educational stages. Analysis of mathematical tasks in terms of different abilities and needs of the student. Laying out tasks. Methodology for solving tasks of increased difficulty.						
Prerequisites and co-requisites	Students choosing this course should have knowledge of mathematics didactics and practical skills in teaching mathematics - within the scope of classes preceding this subject in the teacher education program.						

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	observation of the student's attitude	51.0%	0.0%
	project	51.0%	50.0%
	activity	51.0%	50.0%
Recommended reading	Basic literature	W.Limont, A gifted student. How to recognize him and how to work with him, Gdańskie Wydawnictwo Psychologiczne, Sopot 2005. M.Mikołajczyk (ed.), How to work with a gifted student? Mathematics teacher's guide, Ośrodek Rozwoju Edukacji, Warsaw 2012. Articles from magazines for mathematics teachers (Mathematics, Mathematics in School, "Teachers Mathematics plus Information Technology", "Mathematics Teaching", "Mathematics in school" and others) Popular science books for primary and high school students. Collections of problems from mathematical competitions and olympiads. Competition websites: Mathematical Kangaroo, Junior Mathematical Olympiad, Mathematical Olympiad and others. Websites: Center for Education Development (www.ore.pl), Association for Education (www.sem.pl), Mathematical Association of America (www.maa.org) and others.	
	Supplementary literature	G.Polya, How to solve it?, PWN Scientific Publishing House, Warsaw 1993.	
	eResources addresses		
Example issues/ example questions/ tasks being completed	not applicable		
Work placement	Not applicable		

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