

1.	Field of study	Mathematics
2.	Faculty	Faculty of Science and Technology
3.	Academic year of entry	2022/2023 (winter term)
4.	Level of qualifications/degree	second-cycle studies
5.	Degree profile	general academic
6.	Mode of study	part-time
7.	Academic year for which the revised course structure applies	—

Specialization: Mathematical Methods in Computer Science

Grupa treści kierunkowych										year 1						year 2					
No.	Module	Lang.	E/C	form of teaching			Total ECTS	semester 1			semester 2			semester 3			semester 4				
				Total	L	O		L	O	E	L	O	E	L	O	E	L	O	E		
1	Algebra and Geometry	PL	E	45	15	30	6	15	30	6											
2	Complex Analysis	PL	E	45	15	30	6	15	30	6											
3	Functional Analysis	PL	E	45	15	30	6				15	30	6								
4	Differential Equations	PL	E	45	15	30	6							15	30	6					
TOTAL Grupa treści kierunkowych:				180	60	120	24	30	60	12	15	30	6	15	30	6	0	0	0		

Grupa treści specjalnościowych										year 1						year 2					
No.	Module	Lang.	E/C	form of teaching			Total ECTS	semester 1			semester 2			semester 3			semester 4				
				Total	L	O		L	O	E	L	O	E	L	O	E	L	O	E		
1	Algorithms and data structures	PL	E	45	15	30	5	15	30	5											
2	Computational Mathematics	PL	Z	30	15	15	3	15	15	3											
3	Operating systems with elements of computer architecture	PL	Z	30	15	15	3	15	15	3											
4	Specialized Module	PL	E	150	75	75	30	15	15	6	15	15	6	15	15	6	30	30	12		
5	Advanced Programming	PL	E	45	15	30	6				15	30	6								
6	Database systems	PL	E	30	15	15	4				15	15	4								
7	Monograph Course in English	EN	E	30	15	15	6				15	15	6								
8	Robotics - laboratory	PL	Z	15		15	2				15	2									
9	Graduate Seminar I	PL	Z	30		30	2							30	2						
10	Mathematical modelling and computer simulation	PL	E	30	15	15	6							15	15	6					
11	Monograph Course	PL	E	30	15	15	6							15	15	6					
12	Workshops on mathematical modelling and computer simulation	PL	Z	15		15	2							15	2						
13	Graduate Seminar II	PL	Z	30		30	2											30	2		
14	Graduate Workshop	PL	Z	45		45	10											45	10		
15	Team Project	PL	Z	15		15	3											15	3		
TOTAL Grupa treści specjalnościowych:				570	195	375	90	60	75	17	60	90	24	45	90	22	30	120	27		

Inne wymagania										year 1						year 2					
										form of teaching			semester 1			semester 2			semester 3		
No.	Module	Lang.	E/C	Total	L	O	Total ECTS	L	O	E	L	O	E	L	O	E	L	O	E		
1	Entrepreneurship, Intellectual Property Protection	PL	Z	15	15		1	15		1											
2	General Academic Module (Social Sciences)	-	Z	20		20	2								20	2					
3	General Academic Module (Humanities)	-	Z	30		30	3											30	3		
TOTAL Inne wymagania:				65	15	50	6	15	0	1	0	0	0	0	20	2	0	30	3		
TOTAL:				815	270	545	120	240	30		195	30	200	30	180	30					
TOTAL										815											

The study ends with the awarding of a Master's Degree in the field of Mathematics: Mathematical Methods in Computer Science.

Legend

Each semester consists of 15 weeks

E/C - examination/course work

E - ECTS

L - lecture, O - all forms of teaching excluding lecture (practical classes, laboratory classes, discussion classes, seminar, proseminar, language classes, field practice, workshop, internship, tutoring)

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5.	Degree profile	general academic
6.	Mode of study	part-time
7.	Academic year for which the revised course structure applies	—

Specialization: Mathematics for Finance and Economics

Grupa treści kierunkowych								year 1						year 2									
								semester 1			semester 2			semester 3			semester 4						
No.	Module	Lang.	E/C	form of teaching			Total ECTS	L	O	E	L	O	E	L	O	E	L	O	E				
1	Algebra and Geometry	PL	E	45	15	30	6	15	30	6													
2	Complex Analysis	PL	E	45	15	30	6	15	30	6													
3	Functional Analysis	PL	E	45	15	30	6				15	30	6										
4	Differential Equations	PL	E	45	15	30	6							15	30	6							
				TOTAL Grupa treści kierunkowych:				180	60	120	24	30	60	12	15	30	6	15	30	6	0	0	0

Grupa treści specjalnościowych								year 1						year 2									
								semester 1			semester 2			semester 3			semester 4						
No.	Module	Lang.	E/C	form of teaching			Total ECTS	L	O	E	L	O	E	L	O	E	L	O	E				
1	Computational Mathematics	PL	Z	30	15	15	3	15	15	3													
2	Mathematical Foundations of Computer Science	PL	Z	30	15	15	2	15	15	2													
3	Stochastic Methods	PL	E	30	15	15	6	15	15	6													
4	Specialized Module	PL	E	210	105	105	42	15	15	6	30	30	12	30	30	12	30	30	12				
5	Monograph Course in English	EN	E	30	15	15	6				15	15	6										
6	Statistics	PL	E	30	15	15	6				15	15	6										
7	Graduate Seminar I	PL	Z	30		30	2							30	2								
8	Monograph Course	PL	E	30	15	15	6							15	15	6							
9	Problem Workshops	PL	E	15		15	2							15	2								
10	Graduate Seminar II	PL	Z	30		30	2											30	2				
11	Graduate Workshop	PL	Z	45		45	10											45	10				
12	Team Project	PL	Z	15		15	3											15	3				
				TOTAL Grupa treści specjalnościowych:				525	195	330	90	60	60	17	60	60	24	45	90	22	30	120	27

Inne wymagania								year 1						year 2					
								semester 1			semester 2			semester 3			semester 4		
No.	Module	Lang.	E/C	form of teaching			Total ECTS	L	O	E	L	O	E	L	O	E	L	O	E
1	Entrepreneurship, Intellectual Property Protection	PL	Z	15	15		1	15		1									
2	General Academic Module (Social Sciences)	-	Z	20		20	2							20	2				
3	General Academic Module (Humanities)	-	Z	30		30	3											30	3

Inne wymagania										year 1						year 2							
										form of teaching			Total ECTS	semester 1			semester 2			semester 3			semester 4
No.	Module					Lang.	E/C	Total	L	O	Total ECTS	L		O	E	L	O	E	L	O	E	L	O
TOTAL Inne wymagania:								65	15	50		6	15	0	1	0	0	0	0	20	2	0	30
TOTAL:								770	270	500	120	225	30	165	30	200	30	180	30				
TOTAL										770													

The study ends with the awarding of a Master's Degree in the field of Mathematics: Mathematics for Finance and Economics.

Legend

Each semester consists of 15 weeks

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5.	Degree profile	general academic
6.	Mode of study	part-time
7.	Academic year for which the revised course structure applies	—

Specialization: Teaching Specialty - Teaching of Mathematics

Grupa treści kierunkowych										year 1						year 2					
No.	Module	Lang.	E/C	form of teaching			Total ECTS	semester 1			semester 2			semester 3			semester 4				
				Total	L	O		L	O	E	L	O	E	L	O	E	L	O	E		
1	Algebra and Geometry	PL	E	45	15	30	6	15	30	6											
2	Complex Analysis	PL	E	45	15	30	6	15	30	6											
3	Monograph Course	PL	E	90	45	45	18	15	15	6	15	15	6	15	15	6					
4	Functional Analysis	PL	E	45	15	30	6				15	30	6								
5	Monograph Course in English	EN	E	30	15	15	6				15	15	6								
6	Differential Equations	PL	E	45	15	30	6							15	30	6					
7	Graduate Seminar I	PL	Z	30		30	2								30	2					
8	Graduate Seminar II	PL	Z	30		30	2											30	2		
9	Graduate Workshop	PL	Z	45		45	10											45	10		
TOTAL Grupa treści kierunkowych:				405	120	285	62	45	75	18	45	60	18	30	75	14	0	75	12		

Grupa treści specjalnościowych										year 1						year 2					
No.	Module	Lang.	E/C	form of teaching			Total ECTS	semester 1			semester 2			semester 3			semester 4				
				Total	L	O		L	O	E	L	O	E	L	O	E	L	O	E		
1	Education	PL	Z	30	15	15	2	15	15	2											
2	Fundamentals of Didactics II	PL	Z	30	30		2	30		2											
3	Geometry in secondary school	PL	Z	15		15	2		15	2											
4	Psychological and Pedagogical Practices	PL	Z	15		15	1		15	1											
5	Psychological and Pedagogical Workshops	PL	Z	30		30	2		30	2											
6	Psychology	PL	Z	30	15	15	2	15	15	2											
7	Applications of GeoGebra in teaching mathematics	PL	Z	15		15	2				15	2									
8	Didactics of Mathematics I	PL	Z	30		30	2				30	2									
9	Education Practicum from Mathematics, Tutoring I	PL	Z	46		46	4				46	4									
10	Elements of Cryptography	PL	Z	30	15	15	3				15	15	3								
11	First Aid	PL	Z	5		5	1				5	1									
12	Didactics of Mathematics II	PL	Z	30		30	2							30	2						
13	Education Practicum from Mathematics, Tutoring II	PL	Z	46		46	4							46	4						
14	Robotics for teachers	PL	Z	15		15	2							15	2						
15	Specialized Module	PL	E	60	30	30	12							15	15	6	15	15	6		
16	Mathematical Competition Tasks	PL	Z	30	15	15	6										15	15	6		

Grupa treści specjalnościowych										year 1						year 2							
No.	Module	Lang.	E/C	form of teaching			Total ECTS	semester 1			semester 2			semester 3			semester 4						
				Total	L	O		L	O	E	L	O	E	L	O	E	L	O	E				
17	Selected problems of school mathematics in tasks	PL	Z	30		30	3											30	3				
				TOTAL Grupa treści specjalnościowych:			487	120	367	52	60	90	11	15	111	12	15	106	14	30	60	15	
Inne wymagania										year 1						year 2							
No.	Module	Lang.	E/C	form of teaching			Total ECTS	semester 1			semester 2			semester 3			semester 4						
				Total	L	O		L	O	E	L	O	E	L	O	E	L	O	E				
1	Entrepreneurship, Intellectual Property Protection	PL	Z	15	15		1	15		1													
2	General Academic Module (Humanities)	-	Z	30		30	3												30	3			
				TOTAL Inne wymagania:			45	15	30	4	15	0	1	0	0	0	0	0	0	0	30	3	
Praktyka										year 1						year 2							
No.	Module	Lang.	E/C	form of teaching			Total ECTS	semester 1			semester 2			semester 3			semester 4						
				Total	L	O		L	O	E	L	O	E	L	O	E	L	O	E				
1	Continuous Didactic Practicum in Mathematics	PL	Z	30		30	2									30	2						
				TOTAL Praktyka:			30	0	30	2	0	0	0	0	0	0	30	2	0	0	0	0	
				TOTAL:			967	255	712	120	285	30	231	30	256	30	195	30	967				

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Legend

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