

1.	Field of study	Mathematics
2.	Faculty	Faculty of Science and Technology
3.	Academic year of entry	2021/2022 (winter term)
4.	Level of qualifications/degree	second-cycle studies
5.	Degree profile	general academic
6.	Mode of study	full-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	5	15	30	5											
2	Complex Analysis	PL	E	60	30	30	5	30	30	5											
3	Functional Analysis	PL	E	60	30	30	6				30	30	6								
4	Differential Equations	PL	E	60	30	30	6							30	30	6					
5	Graduate Seminar I	PL	Z	30		30	2								30	2					
6	Graduate Seminar II	PL	Z	30		30	2											30	2		
7	Graduate Workshop	PL	Z	45		45	10											45	10		
TOTAL Grupa treści kierunkowych:				330	105	225	36	45	60	10	30	30	6	30	60	8	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	Algorithms and data structures	PL	E	75	30	45	6	30	45	6											
2	Computational Mathematics	PL	Z	45	15	30	4	15	30	4											
3	Operating systems with elements of computer architecture	PL	Z	60	30	30	3	30	30	3											
4	Specialized Module	PL	E	300	150	150	30	30	30	6	30	30	6	30	30	6	60	60	12		
5	Advanced Programming	PL	E	60	15	45	6				15	45	6								
6	Database systems	PL	E	60	15	45	4				15	45	4								
7	Monograph Course in English	EN	E	60	30	30	6				30	30	6								
8	Robotics - laboratory	PL	Z	30		30	2					30	2								
9	Mathematical modelling and computer simulation	PL	E	60	30	30	6							30	30	6					
10	Monograph Course	PL	E	60	30	30	6							30	30	6					
11	Workshops on mathematical modelling and computer simulation	PL	Z	30		30	2								30	2					
12	Team Project	PL	Z	30		30	3											30	3		
TOTAL Grupa treści specjalnościowych:				870	345	525	78	105	135	19	90	180	24	90	120	20	60	90	15		

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 in Social Sciences	-	Z	30		30	2								30	2					
3	General Academic Module in Humanities	-	Z	45		45	3											45	3		
TOTAL Inne wymagania:				90	15	75	6	15	0	1	0	0	0	0	30	2	0	45	3		
TOTAL:				1290	465	825	120	360	30		330	30	330	30	330	30	270	30			
TOTAL								1290													

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)

1.	Field of study	Mathematics
2.	Faculty	Faculty of Science and Technology
3.	Academic year of entry	2021/2022 (winter term)
4.	Level of qualifications/degree	second-cycle studies
5.	Degree profile	general academic
6.	Mode of study	full-time
7.	Academic year for which the revised course structure applies	—

Specialization: Mathematics for Finance and Economics

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	5	15	30	5											
2	Complex Analysis	PL	E	60	30	30	5	30	30	5											
3	Functional Analysis	PL	E	60	30	30	6				30	30	6								
4	Differential Equations	PL	E	60	30	30	6							30	30	6					
5	Graduate Seminar I	PL	Z	30		30	2								30	2					
6	Graduate Seminar II	PL	Z	30		30	2											30	2		
7	Graduate Workshop	PL	Z	45		45	10											45	10		
TOTAL Grupa treści kierunkowych:				330	105	225	36	45	60	10	30	30	6	30	60	8	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	Computational Mathematics	PL	Z	45	15	30	4	15	30	4											
2	Mathematical Foundations of Computer Science	PL	Z	30	15	15	3	15	15	3											
3	Stochastic Methods	PL	E	60	30	30	6	30	30	6											
4	Specialized Module	PL	E	420	210	210	42	30	30	6	60	60	12	60	60	12	60	60	12		
5	Monograph Course in English	EN	E	60	30	30	6				30	30	6								
6	Statistics	PL	E	60	30	30	6				30	30	6								
7	Monograph Course	PL	E	60	30	30	6							30	30	6					
8	Problem Workshops B	PL	Z	30		30	2								30	2					
9	Team Project	PL	Z	30		30	3											30	3		
TOTAL Grupa treści specjalnościowych:				795	360	435	78	90	105	19	120	120	24	90	120	20	60	90	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 in Social Sciences	-	Z	30		30	2								30	2					
3	General Academic Module in Humanities	-	Z	45		45	3											45	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:								90	15	75		6	15	0	1	0	0	0	0	30	2	0	45
TOTAL:								1215	480	735	120	315	30	300	30	330	30	270	30				
TOTAL										1215													

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

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)

1.	Field of study	Mathematics
2.	Faculty	Faculty of Science and Technology
3.	Academic year of entry	2021/2022 (winter term)
4.	Level of qualifications/degree	second-cycle studies
5.	Degree profile	general academic
6.	Mode of study	full-time
7.	Academic year for which the revised course structure applies	—

Specialization: Mathematical Modelling

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	5	15	30	5											
2	Complex Analysis	PL	E	60	30	30	5	30	30	5											
3	Differential Equations	PL	E	60	30	30	6				30	30	6								
4	Functional Analysis	PL	E	60	30	30	6				30	30	6								
TOTAL Grupa treści kierunkowych:				225	105	120	22	45	60	10	60	60	12	0	0	0	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	75	30	45	6	30	45	6											
2	Computational Mathematics	PL	Z	45	15	30	4	15	30	4											
3	Operating systems with elements of computer architecture	PL	Z	60	30	30	3	30	30	3											
4	Specialized Module	PL	E	300	150	150	30	30	30	6	30	30	6	30	30	6	60	60	12		
5	Advanced Programming	PL	E	60	15	45	6				15	45	6								
6	Database systems	PL	E	60	15	45	4				15	45	4								
7	Robotics - laboratory	PL	Z	30		30	2					30	2								
8	Graduate Seminar I	PL	Z	30		30	2								30	2					
9	Mathematical modelling and computer simulation	PL	E	60	30	30	6							30	30	6					
10	Monograph Course	PL	E	60	30	30	6							30	30	6					
11	Monograph Course in English	EN	E	60	30	30	6							30	30	6					
12	Workshops on mathematical modelling and computer simulation	PL	Z	30		30	2								30	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	30		30	3											30	3		
TOTAL Grupa treści specjalnościowych:				975	345	630	92	105	135	19	60	150	18	120	180	28	60	165	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 in Social Sciences	-	Z	30		30	2								30	2					
3	General Academic Module in Humanities	-	Z	45		45	3											45	3		
TOTAL Inne wymagania:				90	15	75	6	15	0	1	0	0	0	0	30	2	0	45	3		
TOTAL:				1290	465	825	120	360	30		330	30		330	30		270	30			
TOTAL										1290											

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

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)

1.	Field of study	Mathematics
2.	Faculty	Faculty of Science and Technology
3.	Academic year of entry	2021/2022 (winter term)
4.	Level of qualifications/degree	second-cycle studies
5.	Degree profile	general academic
6.	Mode of study	full-time
7.	Academic year for which the revised course structure applies	—

Specialization: Teaching Specialty - Teaching of Mathematics and 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	5	15	30	5											
2	Complex Analysis	PL	E	60	30	30	5	30	30	5											
3	Functional Analysis	PL	E	60	30	30	6				30	30	6								
4	Monograph Course in English	EN	E	60	30	30	6				30	30	6								
5	Differential Equations	PL	E	60	30	30	6							30	30	6					
6	Graduate Seminar I	PL	Z	30		30	2								30	2					
7	Monograph Course	PL	E	60	30	30	6							30	30	6					
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:				450	165	285	48	45	60	10	60	60	12	60	90	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	Algorithms and data structures	PL	E	75	30	45	6	30	45	6											
2	Education	PL	Z	15		15	1		15	1											
3	Education Practicum from Mathematics, Tutoring I	PL	Z	63		63	3		63	3											
4	Emisja głosu	PL	Z	15	15		1	15		1											
5	Fundamentals of Didactics	PL	Z	15	15		1	15		1											
6	Multimedia	PL	Z	15		15	1		15	1											
7	Operating systems with elements of computer architecture	PL	Z	60	30	30	3	30	30	3											
8	Psychological and Pedagogical Practice (15) and Workshops (15)	PL	Z	30		30	2		30	2											
9	Psychology	PL	Z	15		15	1		15	1											
10	Database systems	PL	E	60	15	45	4				15	45	4								
11	Didactics of Computer Science	PL	Z	30	15	15	2				15	15	2								
12	Didactics of Mathematics I	PL	Z	30		30	2				30	2									
13	Education Practicum from Computer Science, Tutoring I	PL	Z	31		31	2				31	2									
14	Education Practicum from Mathematics, Tutoring II	PL	Z	62		62	3				62	3									
15	Introduction to Cryptography	PL	Z	45	15	30	4				15	30	4								
16	Prawo oświatowe	PL	Z	15	15		1				15		1								

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	Basics of Educational Diagnosis for Teachers	PL	Z	15		15	1								15	1					
18	Computer networks	PL	Z	60	30	30	4							30	30	4					
19	Didactics of Mathematics II	PL	Z	30		30	2							30	2						
20	Education Practicum from Computer Science, Tutoring II	PL	Z	31		31	2							31	2						
21	Mathematical Competition Tasks	PL	Z	30		30	3							30	3						
22	Robotics - laboratory	PL	Z	15		15	1							15	1						
23	Advanced Programming	PL	E	60	15	45	6										15	45	6		
24	Didactics of Mathematics III	PL	Z	30	15	15	3										15	15	3		
25	Information and education technology and IT for teachers	PL	Z	30		30	2											30	2		
26	Website design	PL	Z	60	15	45	4										15	45	4		
TOTAL Grupa treści specjalnościowych:				937	225	712	65	90	213	19	60	213	18	30	151	13	45	135	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 in Humanities	-	Z	45		45	3											45	3		
TOTAL Inne wymagania:				60	15	45	4	15	0	1	0	0	0	0	0	0	0	0	45	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 Computer Science	PL	Z				1											1			
2	Continuous Didactic Practicum in Mathematics	PL	Z				2											2			
TOTAL Praktyka:				0	0	0	3	0	0	0	0	0	0	0	0	0	0	3	0	0	
TOTAL:				1447	405	1042	120	423	30	393	30	331	30	300	30	300	30	1447			

The study ends with the awarding of a Master's Degree in the field of Mathematics: Teaching Specialty - Teaching of Mathematics and 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)

1.	Field of study	Mathematics
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3.	Academic year of entry	2021/2022 (winter term)
4.	Level of qualifications/degree	second-cycle studies
5.	Degree profile	general academic
6.	Mode of study	full-time
7.	Academic year for which the revised course structure applies	—

Specialization: Theoretical 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	5	15	30	5											
2	Complex Analysis	PL	E	60	30	30	5	30	30	5											
3	Functional Analysis	PL	E	60	30	30	6				30	30	6								
4	Differential Equations	PL	E	60	30	30	6							30	30	6					
5	Graduate Seminar I	PL	Z	30		30	2								30	2					
6	Graduate Seminar II	PL	Z	30		30	2											30	2		
7	Graduate Workshop	PL	Z	45		45	10											45	10		
TOTAL Grupa treści kierunkowych:				330	105	225	36	45	60	10	30	30	6	30	60	8	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	Problem Workshops A	PL	Z	30		30	1		30	1											
2	Facultative Course	PL	E	240	120	120	24	90	90	18				30	30	6					
3	Monograph Course in English	EN	E	60	30	30	6				30	30	6								
4	Proseminar	PL	Z	45		45	3					45	3								
5	Scientific English	EN	Z	30		30	3					30	3								
6	Monograph Course	PL	E	180	90	90	18				30	30	6	30	30	6	30	30	6		
7	Specialized Module	PL	E	180	90	90	18				30	30	6	30	30	6	30	30	6		
8	Seminar 1	PL	Z	30		30	2								30	2					
9	Seminar 2	PL	Z	45		45	3											45	3		
TOTAL Grupa treści specjalnościowych:				840	330	510	78	90	120	19	90	165	24	90	120	20	60	105	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 in Social Sciences	-	Z	30		30	2								30	2					
3	General Academic Module in Humanities	-	Z	45		45	3											45	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:								90	15	75		6	15	0	1	0	0	0	0	30	2	0	45
TOTAL:								1260	450	810	120	330	30	315	30	330	30	285	30				
TOTAL										1260													

The study ends with the awarding of a Master's Degree in the field of Mathematics: Theoretical Mathematics.

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)