

1.	Field of study	Mathematics
2.	Faculty	Faculty of Science and Technology
3.	Academic year of entry	2024/2025 (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	4	15	30	4											
2	Complex Analysis	PL	E	60	30	30	6	30	30	6											
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	C	30		30	2								30	2					
7	Monograph Course	PL	E	60	30	30	6							30	30	6					
8	Graduate Seminar II	PL	C	30		30	2											30	2		
9	Graduate Workshop	PL	C	45		45	10											45	10		
<b>TOTAL Grupa treści kierunkowych:</b>				<b>450</b>	<b>165</b>	<b>285</b>	<b>48</b>	<b>45</b>	<b>60</b>	<b>10</b>	<b>60</b>	<b>60</b>	<b>12</b>	<b>60</b>	<b>90</b>	<b>14</b>	<b>0</b>	<b>75</b>	<b>12</b>		

  

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	C	45	15	30	4	15	30	4											
3	Operating systems with elements of computer architecture	PL	C	60	15	45	4	15	45	4											
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	C	60	15	45	4				15	45	4								
7	Robotics - laboratory	PL	C	30		30	2					30	2								
8	Elements of artificial intelligence	PL	C	30		30	2								30	2					
9	Mathematical modelling and computer simulation	PL	E	60	30	30	6							30	30	6					
10	Team Project	PL	C	30		30	3											30	3		
<b>TOTAL Grupa Treści Specjalnościowych:</b>				<b>720</b>	<b>255</b>	<b>465</b>	<b>66</b>	<b>75</b>	<b>135</b>	<b>19</b>	<b>60</b>	<b>150</b>	<b>18</b>	<b>60</b>	<b>90</b>	<b>14</b>	<b>60</b>	<b>90</b>	<b>15</b>		

Inne Wymagania							year 1						year 2						
							form of teaching			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	E
1	Entrepreneurship, Intellectual Property Protection	PL	C	15	15		1	15		1									
2	General academic module (Social Sciences)	-	C	30		30	3								30	3			
3	General academic module (Humanities)	-	C	30		30	3										30	3	
<b>TOTAL Inne Wymagania:</b>				<b>75</b>	<b>15</b>	<b>60</b>	<b>7</b>	<b>15</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>30</b>	<b>3</b>	<b>0</b>	<b>30</b>	<b>3</b>
<b>TOTAL:</b>				<b>1245</b>	<b>435</b>	<b>810</b>	<b>121</b>	<b>330</b>	<b>30</b>		<b>330</b>	<b>30</b>		<b>330</b>	<b>31</b>	<b>255</b>	<b>30</b>		
<b>TOTAL EXCLUDING INTERNSHIPS</b>								<b>1245</b>											
<b>TOTAL</b>								<b>1245</b>											

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 - exam/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.	<b>Field of study</b>	<b>Mathematics</b>
2.	Faculty	Faculty of Science and Technology
3.	Academic year of entry	2024/2025 (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	4	15	30	4											
2	Complex Analysis	PL	E	60	30	30	6	30	30	6											
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	C	30		30	2								30	2					
7	Monograph Course	PL	E	60	30	30	6							30	30	6					
8	Graduate Seminar II	PL	C	30		30	2											30	2		
9	Graduate Workshop	PL	C	45		45	10											45	10		
<b>TOTAL Grupa treści kierunkowych:</b>				<b>450</b>	<b>165</b>	<b>285</b>	<b>48</b>	<b>45</b>	<b>60</b>	<b>10</b>	<b>60</b>	<b>60</b>	<b>12</b>	<b>60</b>	<b>90</b>	<b>14</b>	<b>0</b>	<b>75</b>	<b>12</b>		

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	C	45	15	30	4	15	30	4											
2	Mathematical Foundations of Computer Science	PL	C	30	15	15	3	15	15	3											
3	Stochastic Methods	PL	C	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	Statistics	PL	E	60	30	30	6				30	30	6								
6	Problem Workshops B	PL	C	30		30	2							30	2						
7	Team Project	PL	C	30		30	3											30	3		
<b>TOTAL Grupa Treści Specjalnościowych:</b>				<b>675</b>	<b>300</b>	<b>375</b>	<b>66</b>	<b>90</b>	<b>105</b>	<b>19</b>	<b>90</b>	<b>90</b>	<b>18</b>	<b>60</b>	<b>90</b>	<b>14</b>	<b>60</b>	<b>90</b>	<b>15</b>		

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	C	15	15		1	15		1											
2	General academic module (Social Sciences)	-	C	30		30	3							30	3						
3	General academic module (Humanities)	-	C	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:								75	15	60		7	15	0	1	0	0	0	0	30	3	0	30
<b>TOTAL:</b>								1200	480	720	121	315	30	300	30	330	31	255	30				
<b>TOTAL EXCLUDING INTERNSHIPS</b>										<b>1200</b>													
<b>TOTAL</b>										<b>1200</b>													

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 - exam/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	2024/2025 (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					
								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	4	15	30	4									
2	Complex Analysis	PL	E	60	30	30	6	30	30	6									
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	Monograph Course	PL	E	60	30	30	6							30	30	6			
<b>TOTAL Grupa treści kierunkowych:</b>				<b>345</b>	<b>165</b>	<b>180</b>	<b>34</b>	<b>45</b>	<b>60</b>	<b>10</b>	<b>60</b>	<b>60</b>	<b>12</b>	<b>60</b>	<b>60</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>0</b>

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	Algorithms and data structures	PL	E	45	15	30	5	15	30	5									
2	Computational Mathematics	PL	C	45	15	30	4	15	30	4									
3	Operating systems with elements of computer architecture	PL	C	60	15	45	4	15	45	4									
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	C	60	15	45	4				15	45	4						
7	Robotics - laboratory	PL	C	30		30	2					30	2						
8	Elements of artificial intelligence	PL	C	30		30	2							30	2				
9	Graduate Seminar I	PL	C	30		30	2							30	2				
10	Mathematical modelling and computer simulation	PL	E	60	30	30	6							30	30	6			
11	Graduate Seminar II	PL	C	30		30	2											30	2
12	Graduate Workshop	PL	C	45		45	10											45	10
13	Team Project	PL	C	30		30	3											30	3
<b>TOTAL Grupa Treści Specjalnościowych:</b>				<b>825</b>	<b>255</b>	<b>570</b>	<b>80</b>	<b>75</b>	<b>135</b>	<b>19</b>	<b>60</b>	<b>150</b>	<b>18</b>	<b>60</b>	<b>120</b>	<b>16</b>	<b>60</b>	<b>165</b>	<b>27</b>

Inne Wymagania							year 1						year 2								
							form of teaching			Total ECTS			semester 1			semester 2			semester 3		
No.	Module	Lang.	E/C	Total	L	O	L	O	E	L	O	E	L	O	E	L	O	E			
1	Entrepreneurship, Intellectual Property Protection	PL	C	15	15				1												
2	General academic module (Social Sciences)	-	C	30		30			3						30	3					
3	General academic module (Humanities)	-	C	30		30			3								30	3			
<b>TOTAL Inne Wymagania:</b>				<b>75</b>	<b>15</b>	<b>60</b>			<b>7</b>	<b>15</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>30</b>	<b>3</b>	<b>0</b>	<b>30</b>	<b>3</b>
<b>TOTAL:</b>				<b>1245</b>	<b>435</b>	<b>810</b>			<b>121</b>	<b>330</b>	<b>30</b>		<b>330</b>	<b>30</b>	<b>330</b>	<b>31</b>	<b>255</b>	<b>30</b>			
<b>TOTAL EXCLUDING INTERNSHIPS</b>										<b>1245</b>											
<b>TOTAL</b>										<b>1245</b>											

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 - exam/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	2024/2025 (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

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	4	15	30	4									
2	Complex Analysis	PL	E	60	30	30	6	30	30	6									
3	Monograph Course	PL	E	300	150	150	30	30	30	6	30	30	6	60	60	12	30	30	6
4	Functional Analysis	PL	E	60	30	30	6				30	30	6						
5	Monograph Course in English	EN	E	60	30	30	6				30	30	6						
6	Differential Equations	PL	E	60	30	30	6							30	30	6			
7	Graduate Seminar I	PL	C	30		30	2							30	2				
8	Graduate Seminar II	PL	C	30		30	2										30	2	
9	Graduate Workshop	PL	C	45		45	10										45	10	
<b>TOTAL Grupa treści kierunkowych:</b>				<b>690</b>	<b>285</b>	<b>405</b>	<b>72</b>	<b>75</b>	<b>90</b>	<b>16</b>	<b>90</b>	<b>90</b>	<b>18</b>	<b>90</b>	<b>120</b>	<b>20</b>	<b>30</b>	<b>105</b>	<b>18</b>

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	Applications of GeoGebra in teaching mathematics	PL	C	15		15	1		15	1									
2	Education	PL	C	30	15	15	2	15	15	2									
3	Fundamentals of Didactics II	PL	C	30	30		2	30		2									
4	Psychological and Pedagogical Practice	PL	C	15		15	1		15	1									
5	Psychological and Pedagogical Workshops	PL	C	30		30	2		30	2									
6	Psychology	PL	C	30	15	15	2	15	15	2									
7	Specialized Subject	PL	C	60	30	30	6	15	15	3				15	15	3			
8	Assessment and diagnosis in secondary education	PL	C	30		30	2				30	2							
9	Didactics of Mathematics I	PL	C	30		30	2				30	2							
10	Education Practicum from Mathematics, Tutoring I	PL	C	62		62	3				62	3							
11	Elements of Cryptography	PL	C	45	15	30	3				15	30	3						
12	Geometry in secondary school	PL	C	30		30	2				30	2							
13	Didactics of Mathematics II	PL	C	30		30	2							30	2				
14	Education Practicum from Mathematics, Tutoring II	PL	C	61		61	3							61	3				
15	Mathematical Competition Tasks	PL	C	60	15	45	6										15	45	6
16	Robotics for Math Teachers	PL	C	15		15	1										15		1

Grupa Treści Specjalnościowych										year 1						year 2							
										form of teaching			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	E				
17	Selected problems of school mathematics in tasks	PL	C	30		30	2												30	2			
				<b>TOTAL Grupa Treści Specjalnościowych:</b>				<b>603</b>	<b>120</b>	<b>483</b>	<b>42</b>	<b>75</b>	<b>105</b>	<b>13</b>	<b>15</b>	<b>182</b>	<b>12</b>	<b>15</b>	<b>106</b>	<b>8</b>	<b>15</b>	<b>90</b>	<b>9</b>
Inne Wymagania										year 1						year 2							
										form of teaching			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	E				
1	Entrepreneurship, Intellectual Property Protection	PL	C	15	15		1	15		1													
2	General academic module (Humanities)	-	C	30		30	3												30	3			
				<b>TOTAL Inne Wymagania:</b>				<b>45</b>	<b>15</b>	<b>30</b>	<b>4</b>	<b>15</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>30</b>	<b>3</b>	
Praktyki										year 1						year 2							
										form of teaching			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	E				
1	Continuous Didactic Practicum in Mathematics	PL	C	30		30	2										30	2					
				<b>TOTAL Praktyki:</b>				<b>30</b>	<b>0</b>	<b>30</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>30</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	
				<b>TOTAL:</b>				<b>1368</b>	<b>420</b>	<b>948</b>	<b>120</b>	<b>360</b>	<b>30</b>	<b>377</b>	<b>30</b>	<b>361</b>	<b>30</b>	<b>270</b>	<b>30</b>	<b>270</b>	<b>30</b>		
<b>TOTAL EXCLUDING INTERNSHIPS</b>										<b>1338</b>													
<b>TOTAL</b>										<b>1368</b>													

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

#### Legend

Each semester consists of 15 weeks

E/C - exam/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	2024/2025 (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: Teacher Training Programme with Chemistry

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	4	15	30	4											
2	Complex Analysis	PL	E	60	30	30	6	30	30	6											
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	C	30		30	2								30	2					
7	Monograph Course	PL	E	60	30	30	6							30	30	6					
8	Graduate Seminar II	PL	C	30		30	2											30	2		
9	Graduate Workshop	PL	C	45		45	10											45	10		
<b>TOTAL Grupa treści kierunkowych:</b>				<b>450</b>	<b>165</b>	<b>285</b>	<b>48</b>	<b>45</b>	<b>60</b>	<b>10</b>	<b>60</b>	<b>60</b>	<b>12</b>	<b>60</b>	<b>90</b>	<b>14</b>	<b>0</b>	<b>75</b>	<b>12</b>		

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	Analytical Chemistry	PL	E	90	15	75	7	15	75	7											
2	Applications of GeoGebra in teaching mathematics	PL	C	15		15	1		15	1											
3	Chemistry everyday life	PL	C	15		15	2		15	2											
4	Education	PL	C	30	15	15	2	15	15	2											
5	Fundamentals of Didactics II	PL	C	30	30		2	30		2											
6	Psychological and Pedagogical Practice	PL	C	15		15	1		15	1											
7	Psychological and Pedagogical Workshops	PL	C	30		30	2		30	2											
8	Psychology	PL	C	30	15	15	2	15	15	2											
9	Didactics of Chemistry	PL	C	30		30	2				30	2									
10	Didactics of Mathematics I	PL	C	30		30	2				30	2									
11	Education Practicum from Chemistry, Tutoring I	PL	C	31		31	2				31	2									
12	Education Practicum from Mathematics, Tutoring I	PL	C	62		62	3				62	3									
13	Elements of Cryptography	PL	C	45	15	30	3				15	30	3								
14	Geometry in secondary school	PL	C	30		30	2				30	2									
15	Physical Chemistry with Elektrochemistry	PL	E	60	15	45	4				15	45	4								
16	Advanced Inorganic Chemistry	PL	C	30		30	3							30	3						

Grupa Treści Specjalnościowych										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		
17	Didactics of Mathematics II	PL	C	30		30	2									30	2				
18	Education Practicum from Chemistry, Tutoring II	PL	C	31		31	2									31	2				
19	Education Practicum from Mathematics, Tutoring II	PL	C	61		61	3									61	3				
20	Environmental Chemistry	PL	C	30		30	3									30	3				
21	Applied Chemistry and Chemicals Management	PL	C	15		15	2											15	2		
22	Chemistry in Exercise	PL	C	45		45	4											45	4		
23	Coordination Compounds	PL	C	15		15	2											15	2		
24	Modern Instrumental Techniques	PL	C	45		45	4											45	4		
25	Robotics for Math Teachers	PL	C	15		15	1											15	1		
26	Selected problems of school mathematics in tasks	PL	C	30		30	2											30	2		
<b>TOTAL Grupa Treści Specjalnościowych:</b>				<b>890</b>	<b>105</b>	<b>785</b>	<b>65</b>	<b>75</b>	<b>180</b>	<b>19</b>	<b>30</b>	<b>258</b>	<b>18</b>	<b>0</b>	<b>182</b>	<b>13</b>	<b>0</b>	<b>165</b>	<b>15</b>		
Inne Wymagania										year 1						year 2					
			form of teaching			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	E		
1	Entrepreneurship, Intellectual Property Protection	PL	C	15	15		1	15		1											
2	General academic module (Humanities)	-	C	30		30	3											30	3		
<b>TOTAL Inne Wymagania:</b>				<b>45</b>	<b>15</b>	<b>30</b>	<b>4</b>	<b>15</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>30</b>	<b>3</b>	
Praktyki										year 1						year 2					
			form of teaching			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	E		
1	Continuous Didactic Practicum in Mathematics	PL	C	30		30	2									30	2				
2	Continuous Education Practicum from Chemistry	PL	C	15		15	1									15	1				
<b>TOTAL Praktyki:</b>				<b>45</b>	<b>0</b>	<b>45</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>45</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	
<b>TOTAL:</b>				<b>1430</b>	<b>285</b>	<b>1145</b>	<b>120</b>	<b>375</b>	<b>30</b>	<b>408</b>	<b>30</b>	<b>377</b>	<b>30</b>	<b>270</b>	<b>30</b>	<b>1385</b>	<b>1430</b>	<b>1385</b>	<b>1430</b>		
<b>TOTAL EXCLUDING INTERNSHIPS</b>										<b>1385</b>											
<b>TOTAL</b>										<b>1430</b>											

The study ends with the awarding of a Master's Degree in the field of Mathematics: Teacher Training Programme with Chemistry.

#### Legend

Each semester consists of 15 weeks

E/C - exam/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	2024/2025 (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	4	15	30	4											
2	Complex Analysis	PL	E	60	30	30	6	30	30	6											
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	C	30		30	2								30	2					
7	Monograph Course	PL	E	60	30	30	6							30	30	6					
8	Graduate Seminar II	PL	C	30		30	2											30	2		
9	Graduate Workshop	PL	C	45		45	10											45	10		
<b>TOTAL Grupa treści kierunkowych:</b>				<b>450</b>	<b>165</b>	<b>285</b>	<b>48</b>	<b>45</b>	<b>60</b>	<b>10</b>	<b>60</b>	<b>60</b>	<b>12</b>	<b>60</b>	<b>90</b>	<b>14</b>	<b>0</b>	<b>75</b>	<b>12</b>		

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	Applications of GeoGebra in teaching mathematics	PL	C	15		15	1		15	1											
3	Education	PL	C	30	15	15	2	15	15	2											
4	Fundamentals of Didactics II	PL	C	30	30		2	30		2											
5	Operating systems with elements of computer architecture	PL	C	60	15	45	4	15	45	4											
6	Psychological and Pedagogical Practice	PL	C	15		15	1		15	1											
7	Psychological and Pedagogical Workshops	PL	C	30		30	2		30	2											
8	Psychology	PL	C	30	15	15	2	15	15	2											
9	Database systems	PL	C	60	15	45	4				15	45	4								
10	Didactics of Computer Science	PL	C	30		30	2					30	2								
11	Didactics of Mathematics I	PL	C	30		30	2					30	2								
12	Education Practicum from Mathematics, Tutoring I	PL	C	62		62	3					62	3								
13	Elements of Cryptography	PL	C	45	15	30	3				15	30	3								
14	Geometry in secondary school	PL	C	30		30	2					30	2								
15	Praktyka nauczycielska z informatyki, tutoring I	PL	C	31		31	2					31	2								
16	Didactics of Mathematics II	PL	C	30		30	2							30	2						

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			
				Total	L	O																
17	Education Practicum from Computer Science, Tutoring II	PL	C	31		31	2							31	2							
18	Education Practicum from Mathematics, Tutoring II	PL	C	61		61	3							61	3							
19	Programming	PL	E	60	15	45	6						15	45	6							
20	Computer networks	PL	C	60	15	45	6									15	45	6				
21	Robotics for Math Teachers	PL	C	15		15	1										15	1				
22	Selected problems of school mathematics in tasks	PL	C	30		30	2										30	2				
23	Website design	PL	C	60	15	45	6									15	45	6				
				TOTAL Grupa Treści Specjalnościowych:			890	165	725	65	90	165	19	30	258	18	15	167	13	30	135	15
Inne Wymagania										year 1						year 2						
No.	Module	Lang.	E/C	form of teaching			Total ECTS	L	O	E	L	O	E	L	O	E	L	O	E			
				Total	L	O																
1	Entrepreneurship, Intellectual Property Protection	PL	C	15	15		1	15		1												
2	General academic module (Humanities)	-	C	30		30	3											30	3			
				TOTAL Inne Wymagania:			45	15	30	4	15	0	1	0	0	0	0	0	0	30	3	
Praktyki										year 1						year 2						
No.	Module	Lang.	E/C	form of teaching			Total ECTS	L	O	E	L	O	E	L	O	E	L	O	E			
				Total	L	O																
1	Continuous Didactic Practicum in Computer Science	PL	C	15		15	1							15	1							
2	Continuous Didactic Practicum in Mathematics	PL	C	30		30	2							30	2							
				TOTAL Praktyki:			45	0	45	3	0	0	0	0	0	0	45	3	0	0	0	
				<b>TOTAL:</b>			<b>1430</b>	<b>345</b>	<b>1085</b>	<b>120</b>	<b>375</b>	<b>30</b>	<b>408</b>	<b>30</b>	<b>377</b>	<b>30</b>	<b>270</b>	<b>30</b>				
<b>TOTAL EXCLUDING INTERNSHIPS</b>										<b>1385</b>												
<b>TOTAL</b>										<b>1430</b>												

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 - exam/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	2024/2025 (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					
								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
				Total	L	O													
1	Algebra and Geometry	PL	E	45	15	30	4	15	30	4									
2	Complex Analysis	PL	E	60	30	30	6	30	30	6									
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	C	30		30	2								30	2			
7	Monograph Course	PL	E	60	30	30	6							30	30	6			
8	Graduate Seminar II	PL	C	30		30	2										30	2	
9	Graduate Workshop	PL	C	45		45	10										45	10	
<b>TOTAL Grupa treści kierunkowych:</b>				<b>450</b>	<b>165</b>	<b>285</b>	<b>48</b>	<b>45</b>	<b>60</b>	<b>10</b>	<b>60</b>	<b>60</b>	<b>12</b>	<b>60</b>	<b>90</b>	<b>14</b>	<b>0</b>	<b>75</b>	<b>12</b>

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
				Total	L	O													
1	Problem Workshops A	PL	C	30		30	1		30	1									
2	Optional Lecture	PL	C	240	120	120	24	90	90	18				30	30	6			
3	Proseminar	PL	C	45		45	3				45	3							
4	Scientific English	EN	C	30		30	3				30	3							
5	Specialized Module	PL	E	180	90	90	18				30	30	6	30	30	6	30	30	6
6	Monograph Course	PL	E	120	60	60	12				30	30	6				30	30	6
7	Seminar 1	PL	C	30		30	2							30	2				
8	Seminar 2	PL	C	45		45	3										45	3	
<b>TOTAL Grupa Treści Specjalnościowych:</b>				<b>720</b>	<b>270</b>	<b>450</b>	<b>66</b>	<b>90</b>	<b>120</b>	<b>19</b>	<b>60</b>	<b>135</b>	<b>18</b>	<b>60</b>	<b>90</b>	<b>14</b>	<b>60</b>	<b>105</b>	<b>15</b>

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
				Total	L	O													
1	Entrepreneurship, Intellectual Property Protection	PL	C	15	15		1	15		1									
2	General academic module (Social Sciences)	-	C	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	E			
3	General academic module (Humanities)	-	C	30		30	3												30	3		
				TOTAL Inne Wymagania:			75	15	60	7	15	0	1	0	0	0	0	30	3	0	30	3
				<b>TOTAL:</b>			1245	450	795	121	330	30	315	30	330	31	270	30				
<b>TOTAL EXCLUDING INTERNSHIPS</b>								<b>1245</b>														
<b>TOTAL</b>								<b>1245</b>														

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 - exam/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)