

STUDY PROGRAMME CURRICULUM COMPUTER SCIENCE AND MATHEMATICS

2023/2024

Name of study programme	Computer science and mathematics
Programme characteristics	interdisciplinary
Type	academic
Cycle	bachelor
University of Ljubljana members	<ul style="list-style-type: none"> • Faculty of Mathematics and Physics, Jadranska ulica 19, 1000 Ljubljana, Slovenija • Faculty of Computer and Information Science, Večna pot 113, 1000 Ljubljana, Slovenija - coordinator

Year 1

	University Course Code	Course title	Lecturers	Contact hours					Individual student work	Total hours	ECTS	Semesters	Elective
				Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study					
1.	0039511	Analysis 1	Janez Mrčun, Sašo Strle	45		45			120	210	7	1st semester	no
2.	0039514	Discrete Structures 1	Primož Potočnik, Riste Škrekovski	45		45			90	180	6	1st semester	no
3.	0039580	Introduction to Digital Circuits	Nikolaj Zimic	45		30			105	180	6	1st semester	no
4.	0039583	Programming 1	Luka Fürst	45		30			105	180	6	1st semester	no
5.	0039516	Linear algebra	Jakob Cimprič, Karin Cvetko-Vah	60		60			180	300	10	All-year	no
6.	0039512	Analysis 2	Barbara Drinovec Drnovšek, Janez Mrčun, Sašo Strle	45		45			120	210	7	2nd semester	no
7.	0039515	Discrete Structures 2	Primož Potočnik, Riste Škrekovski, Sandi Klavžar	45		45			90	180	6	2nd semester	no

8.	0039584	Programming 2	Boštjan Slivnik	45		30			105	180	6	2nd semester	no
9.	0039576	Computer Systems Architecture	Branko Šter	45		30			105	180	6	2nd semester	no
Total				420	0	360	0	0	1020	1800	60		

Year 2

	University Course Code	Course title	Lecturers	Contact hours					Individual student work	Total hours	ECTS	Semesters	Elective
				Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study					
1.	0039522	Analysis 3	Aleš Vavpetič, Barbara Drinovec Drnovšek, Pavle Saksida	30		30			90	150	5	1st semester	no
2.	0039525	Combinatorics	Matjaž Konvalinka, Primož Potočnik, Sandi Klavžar	45		45			120	210	7	1st semester	no
3.	0039586	Algorithms and data structures 1	Igor Kononenko	45		30			105	180	6	1st semester	no
4.	0039591	Basics of Databases	Marko Bajec	45		30			105	180	6	1st semester	no
5.	0039588	Computability and Computational Complexity	Borut Robič	45		30			105	180	6	1st semester	no
6.	0039523	Topics in Mathematics	Petar Pavešič, Primož Potočnik	30		30			90	150	5	2nd semester	no
7.	0039526	Optimization Methods	Arjana Žitnik	45		45			120	210	7	2nd semester	no
8.	0070335	Principles of Programming Languages	Andrej Bauer	45		30			105	180	6	2nd semester	yes
9.	0039587	Algorithms and data structures 2	Borut Robič	45		30			105	180	6	2nd semester	no

10.	0039585	Computer Communications	Zoran Bosnić	45		30			105	180	6	2nd semester	no
Total				420	0	330	0	0	1050	1800	60		

Year 3

	University Course Code	Course title	Lecturers	Contact hours					Individual student work	Total hours	ECTS	Semesters	Elective
				Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study					
1.	0039531	Numerical methods	Bor Plestenjak, Emil Žagar, Marjetka Knez	45		45			120	210	7	1st semester	no
2.	0039610	Introduction to Artificial Intelligence	Zoran Bosnić	45		30			105	180	6	1st semester	no
3.	0101002	Modulski izbirni predmet 1/3		45		30			105	180	6	1st semester	yes
4.	0101003	Modulski izbirni predmet 2/3		45		30			105	180	6	1st semester	yes
5.	0039533	Probability and Statistics	Mihael Perman, Roman Drnovšek	60		60			180	300	10	All-year	no
6.	0101005	Modulski izbirni predmet 3/3		45		30			105	180	6	2nd semester	yes
7.	0070324	General elective course FMF		45		30			75	150	5	2nd semester	yes
8.	0070326	Specialist elective course		60		60			180	300	10	2nd semester	yes
9.	0039530	Undergraduate Thesis						20	100	120	4	2nd semester	no
Total				390	0	315	0	20	1075	1800	60		

Year 3, Informatics (module)

			Contact hours

	University Course Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study	Individual student work	Total hours	ECTS	Semesters	Elective
1.	0039614	Electronic Business	Denis Trček	45		30			105	180	6	1st semester	yes
2.	0039622	Data Management Technologies	Matjaž Kukar	45	10	20			105	180	6	1st semester	yes
3.	0100860	Information Systems Development	Marko Bajec	45	20	10			105	180	6	2nd semester	yes
Total				135	30	60	0	0	315	540	18		

Year 3, Software (module)

				Contact hours									
	University Course Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study	Individual student work	Total hours	ECTS	Semesters	Elective
1.	0039629	Software Development Processes	Branko Matjaž Jurič	45	10	20			105	180	6	1st semester	yes
2.	0039613	System Software	Tomaž Dobravec	45	10	20			105	180	6	1st semester	yes
3.	0100984	Analysis of Algorithms and Heuristic Problem Solving	Marko Robnik Šikonja	45	10	20			105	180	6	2nd semester	yes
Total				135	30	60	0	0	315	540	18		

Year 3, Computer systems and networks (module)

				Contact hours									
	University Course Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study	Individual student work	Total hours	ECTS	Semesters	Elective
1.	0039625	Computer Networks Modeling	Miha Mraz	45	10	20			105	180	6	1st semester	yes

2.	0039627	Distributed Systems Computer	Uroš Lotrič	45	10	20			105	180	6	1st semester	yes
3.	0039623	Mobile and Wireless Networks	Nikolaj Zimic	45	10	20			105	180	6	2nd semester	yes
Total				135	30	60	0	0	315	540	18		

Year 3, Artificial intelligence (module)

				Contact hours									
	University Course Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study	Individual student work	Total hours	ECTS	Semesters	Elective
1.	0039643	Intelligent Systems	Marko Robnik Šikonja	45	6	24			105	180	6	1st semester	yes
2.	0070358	Machine Perception	Matej Kristan	45	10	20			105	180	6	1st semester	yes
3.	0100896	Introduction to Data Mining	Blaž Zupan	45	20	10			105	180	6	2nd semester	yes
Total				135	36	54	0	0	315	540	18		

Year 3, Media technologies (module)

				Contact hours									
	University Course Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study	Individual student work	Total hours	ECTS	Semesters	Elective
1.	0039619	Computer Graphics and Game Technology	Matija Marolt	45	10	20			105	180	6	1st semester	yes
2.	0070361	Multimedia Systems	Luka Čehovin Zajc	45	10	20			105	180	6	1st semester	yes
3.	0069537	Platform Based Development	Veljko Pejović	45		30			105	180	6	2nd semester	yes
Total				135	20	70	0	0	315	540	18		

Year 3, Discipline related electives FMF

				Contact hours									
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	University Course Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study	Individual student work	Total hours	ECTS	Semesters	Elective
1.	0039569	General Topology	Dušan Repovš, Janez Mrčun, Petar Pavešić	30		30			90	150	5	1st semester	yes
2.	0039565	Algebraic Curves	Pavle Saksida, Tomaž Košir	30		30			90	150	5	2nd semester	yes
3.	0039572	Introduction to Geometric Topology	Dušan Repovš, Sašo Strle	30		30			90	150	5	2nd semester	yes
4.	0039564	Affine and Projective Geometry	Aleš Vavpetič, Tomaž Košir	30		30			90	150	5	2nd semester	yes
5.	0039571	Coding Theory and Cryptography	Arjana Žitnik, Primož Potočnik	30		30			90	150	5	2nd semester	yes
6.	0039566	Financial Mathematics 1	Janez Bernik, Mihael Perman, Tomaž Košir	30		30			90	150	5	2nd semester	yes
7.	0039570	Game Theory	Matjaž Konvalinka, Sergio Cabello Justo	45		45			90	180	6	1st semester	yes
8.	0039567	Mathematical Modelling	Emil Žagar, George Mejak	30		30			90	150	5	2nd semester	yes
9.	0039568	Numerical Methods 2	Bor Plestenjak, Marjetka Knez	30		30			90	150	5	2nd semester	yes
Total				285	0	285	0	0	810	1380	46		