Univerza v Ljubljani

Pedagogical mathematics – curriculum (academic year 2019/20)

« Academic year 2018/19
Academic year 2020/21 »

Integrated Master's study programme

	Autumn Semester	Spring Semester	ECTS
Year 1			
Analysis 1	4/4	4/4	18
Algebra 1	3/3	3/3	14
Logic and sets	2/2		6
Computer practical	1/3		6
Introduction to programming		2/3	6
Physics 1		3/3	6
Elective course	1/2	1/2	4
Year 2			
Analysis 2a	4/3		8
Analysis 2b		4/3	8
Physics 2	4/2		6
Algebra 2	2/2	2/2	10
Discrete mathematics 1		2/2	5
Point-set topology	2/2		5
Affine and projective geometry		2/2	5
Elementary geometry	3/2		6
Astronomy	2/1	2/1	7
Year 3			
Analysis 3	3/3		6
Introduction to numerical methods	3/3		6
Probability	2.5/2.5		5
Pedagogy with andragogy (cycle)	3	2	5

Didactics of mathematics 2 (cycle)		4/2	6
Teaching work experience 1	1	1	6
Astronomy	2/1	2/1	7
Elementary number theory		3/2	6
Seminar 1		2	3
Didactics 1 (cycle)		2/1	3
Psychology of learning and teaching (cycle)	2/1	2/1	7
Year 4			
Didactics of mathematics 2 (cycle)		4/2	6
Pedagogy with andragogy (cycle)	3	2	5
Teaching work experience 2	1	1	6
Mathematical horizons (cycle)	3/2		5
Mathematics for gifted students (cycle)		2/2	5
Modern trends in the teaching of mathematics (cycle)		2/2	5
Seminar 2		2	3
Psychology of learning and teaching (cycle)	2/1	2/1	7
Didactics 1 (cycle)		2/1	3
Elective (B)	2/2		5
Pedagogical elective course		2/2	5
General elective (recommendation)		2/2	5
Year 5			
Mathematical horizons (cycle)	3/2		5
Modern trends in the teaching of mathematics (cycle)		2/2	5
Mathematics for gifted students (cycle)		2/2	5
Teaching work experience 3	1		5
Mathematical elective course	3/2		6
Pedagogical elective course	2/2		5
General elective (recommendation)	2/2		4
Master's thesis and final exam		0*	25

Elective courses in year 1

	Autumn Semester	Spring Semester	ECTS
Introductory seminar A	2/2	0/2	4
Introductory seminar B	0/2	2/2	4

Introductory seminars A and B are electives. Introductory seminar A is intended as a review of selected high school topics in mathematics, while Introductory seminar B should be chosen by students with a strong mathematical background. Problem sessions for both Introductory seminars are a supplement to the other courses in the first year's curriculum.

Elective courses in years 3 and 4

		Autumn Semester	Spring Semester	ECTS
Theoretical physics	B1	2/1	2/1	7
Science horizons	B1		3/1	5
Physics project laboratory	B1		0/2	3
Algebra 3	B		2/2	5
Introduction to differential geometry	B	2/2		5
Introduction to geometric topology	B		2/2	5
Programming 1	B	2/2		5
Algebraic curves	B		2/2	5
Mechanics 1	B	2/2		5
Numerical linear algebra	B		2/2	5
Mathematical modelling	B		2/2	5
Coding theory and cryptography	B		2/2	5
Optimization 1	B	2/2		5
Financial mathematics 1	B		2/2	5

Pedagogical elective courses in years 4 and 5:
Teaching mathematics and physics in English and courses at the Faculty of Philosophy

	ECTS

History of adult education	5
Didactic strategies	5
Introduction to adult education	5
Family andragogy	5
Vocational pedagogy and andragogy	5
Theory of education	5
Ethics of education	5
Pedagogical treatment of children with special needs	7
Teaching mathematics and physics in English *	5

Mathematical elective courses

Mathematical courses are selected among Master's level courses. The courses are divided into groups:

M1 Analysis and mechanics
M2 Algebra and discrete mathematics
M3 Geometry and topology
M4 Numerical mathematics
M5 Probability, statistics and financial mathematics
R1 Computer science

Student's choice of electives must be approved by the department's study committee.