

UP FAMNIT: Courses and study fields in the Master's study programme MATHEMATICAL SCIENCES in academic year 2018/2019

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(The student decides which study field to follow at the enrolment in the 1st year of study.)

YEAR OF STUDY	SUGGESTED CHOICE OF COURSES REGARDING THE STUDY FIELD	THEORETICAL MATHEMATICS	CRYPTOGRAPHY	DISCRETE MATHEMATICS	GEOMETRY AND APPLICATIONS - GEO-APL (EN)	GENERAL MATHEMATICS
F I R S T Y E A R	Basic course I (6 ECTS)	Selected Topics in Analysis (1) (1st semester, EN, SI)	Selected Topics in Analysis (1) (1st semester, EN, SI)	Selected Topics in Analysis (1) (1st semester, EN, SI)	Selected Topics in Analysis (1) (1st semester, EN, SI)	Selected Topics in Analysis (1) (1st semester, EN, SI)
	Basic course II (6 ECTS)	Selected Topics in Discrete Mathematics (1) (2nd semester, EN, SI)	Selected Topics in Algebra (1) (2nd semester, EN, SI)	Selected Topics in Algebra (1) (2nd semester, EN, SI)	Selected Topics in Algebra (1) (2nd semester, EN, SI)	Selected Topics in Algebra (1) (2nd semester, EN, SI)
	Basic course III (6 ECTS)	Selected Topics in Algebra (1) (2nd semester, EN, SI)	Selected Topics in Cryptography (1) (2nd semester, EN)	Selected Topics in Discrete Mathematics (1) (2nd semester, EN, SI)	Mathematical Practicum (2nd semester, EN)	Selected Topics in Discrete Mathematics (1) (2nd semester, EN, SI)
	Internal elective course I (6 ECTS)	Selected Topics in Topology (2nd semester, EN)	Theory of Finite Fields (1st semester, EN)	Selected Topics in Theory of Finite Geometries (1st semester, EN)	Selected Topics in Dynamical Systems (6 ECTS, 1st semester, EN)	student's choice
	Internal elective course II (6 ECTS)	Selected Topics in Complex Analysis (2nd semester, EN)	Coding Theory (1st semester, EN)	Theory of Finite Fields (1st semester, EN)	Selected Topics in Topology (6 ECTS, 2nd semester, EN)	student's choice
	Internal elective course III (6 ECTS)	Selected Topics in Numerical Mathematics (1st semester, EN, SI)	Introduction to Symmetric-cipher Cryptography (1st semester, EN, SI)	Selected Topics in Theory of Association Schemes (1st semester, EN, SI)	Selected Topics in Complex Analysis (6 ECTS, 2nd semester, EN)	student's choice
	External elective course I (6 ECTS)				Foreign language (in the total amount of at least 6 ECTS)	
	External elective course II (6 ECTS)				History and Methodology of the Subject (3 ECTS, 1st semester, EN)	
	External elective course - GEO-APL				External elective course (in the amount of 3 ECTS) - If the student hasn't achieved enough ECTS with externally elective courses in the previous two paragraphs	
	Seminar I (6 ECTS)	Seminar I (1st semester, EN, SI)	Seminar I (1st semester, EN, SI)	Seminar I (1st semester, EN, SI)	Seminar I (1st semester, EN, SI)	Seminar I (1st semester, EN, SI)
Seminar II (6 ECTS)	Seminar II (2nd semester, EN, SI)	Seminar II (2nd semester, EN, SI)	Seminar II (2nd semester, EN, SI)	Seminar II (2nd semester, EN, SI)	Seminar II (2nd semester, EN, SI)	
S E C O N D Y E A R	Internal elective course IV (6 ECTS)	Theory of Finite Fields (1st semester, EN)	student's choice	Symmetry and Traversability in Graphs (2nd semester, EN)	Check the structure of the 2nd year of study at www.famn.it.upr.si	student's choice
	Internal elective course V (6 ECTS)	Selected Topics in Number Theory (2nd semester, EN)	student's choice	student's choice		student's choice
	Internal elective course VI (6 ECTS)	Theory of Permutation Groups (will be available in 2019/20)	student's choice	student's choice		student's choice
	External elective course III (6 ECTS)					
	Seminar III (6 ECTS)	Seminar I (1st semester, EN, SI)	Seminar I (1st semester, EN, SI)	Seminar I (1st semester, EN, SI)	Seminar I (1st semester, EN, SI)	Seminar I (1st semester, EN, SI)
Seminar IV (6 ECTS)	Seminar II (2nd semester, EN, SI)	Seminar II (2nd semester, EN, SI)	Seminar II (2nd semester, EN, SI)	Seminar II (2nd semester, EN, SI)	Seminar II (2nd semester, EN, SI)	
Master's Thesis (24 ECTS)	Master's Thesis	Master's Thesis	Master's Thesis	Master's Thesis	Master's Thesis	
	Recommendations for the choice of external elective courses or other internal elective courses (if are not determined by the study field)	Selected Topics in Theory of Finite Geometries (1st semester, EN) Probability (1st semester, SI) Selected Topics in Theory of Association Schemes (1st semester, EN) Mathematical Modelling (2nd semester, SI, compulsory course PMF)	Game Theory (2nd semester, SI) Selected Topics in Discrete Mathematics (1) (2nd semester, EN, SI)	Graph Algorithms (2nd semester, EN, SI) Mathematical Practicum (2nd semester, EN)		Mathematical Practicum (2nd semester, EN)