

UP FAMNIT

STUDY PROGRAMME: **MATHEMATICAL SCIENCES (2nd bologna cycle), in English**
COMPULSORY AND ELECTIVE COURSE IN THE ACADEMIC YEAR 2024/205

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Last change: /

COURSE	ECTS CREDITS	COURSE DESCRIPTION (BASIC, INTERNAL, EXTERNAL ELECTIVE)	POSSIBLE TO CHOOSE AS	COURSE LEADER	LANGUAGE	SEMESTER
BASIC COURSES						
Mathematical Practicum	6	BC	BC, IS, ES	Karla Ferjančič	English	autumn
Selected Topics in Algebra I	6	BC	BC, IS, ES	Edward Tauscher Dobson	English	autumn
Selected Topics in Analysis I	6	BC	BC, IS, ES	Jasna Prezelj	English	autumn
Selected Topics in Functional Analysis	6	BC	BC, IS, ES	Igor Klep	English	autumn
Selected Topics in Mathematical Statistics I	6	BC	BC, IS, ES	Mihael Perman	English	spring
Selected Topics in Discrete Mathematics I	6	BC	BC, IS, ES	Istvan Kovacs	English	spring
Selected Topics in Cryptography I	6	BC	BC, IS, ES	Enes Pasalic	English	spring
ELECTIVE COURSES						
Selected Topics in Theory of Finite Geometries	6	IS	IS, ES	Gyorgy Kiss	English	autumn
Coding Theory	6	IS	IS, ES	Enes Pasalic	English	autumn
Graph Algorithms	6	ES	ES	Martin Milanič	English	autumn
Symmetry and Traversability in Graphs	6	IS	IS, ES	Edward Tauscher Dobson	English	autumn
Theory of Permutation Groups	6	IS	IS, ES	Istvan Kovacs	English	spring
Selected Topics in Number Theory ¹	6	IS	IS, ES	Štefko Miklavič	English	spring
Game Theory	6	IS	IS, ES	Aljaž Ule	Slovene	spring
Selected Topics in Numerical Mathematics	6	IS	IS, ES	Vito Vitrih	English	spring
Selected Topics in Topology	6	IS	IS, ES	Štefko Miklavič	English	spring

IMPORTANT INFORMATION:

During studies, students must take altogether 12 courses (3 basic courses (BC), 6 internal elective (IS) and 3 external elective (ES)), 4 seminars and prepare as well as defend their Master's thesis.

The **STRUCTURE** of the study programme is available at our website: <https://www.famnit.upr.si/en/education/master/mathematical-sciences/#heading4>

Students choose basic courses and internal elective courses related to their selected **STUDY FIELD**.

More information about the study fields is available here: <https://www.famnit.upr.si/en/education/master/mathematical-sciences/#heading5>

OFFERED STUDY FIELDS IN 2024/25:

Three study fields are available: **GENERAL MATHEMATICS, CRYPTOGRAPHY, FINANCIAL MATHEMATICS**.

Student must choose the study field by enrolling in the 1st year of study.

Students will be assigned to the study field General Mathematics. If the student wants to choose another study field, he/she must inform Student Services (referat@famnit.upr.si) before starting to fulfill the enrolment paper in ŠIS.

Student Services will enter the chosen field in ŠIS, after that the student can fulfill the enrolment paper.

The courses that are not chosen as basic/internal/external elective can be chosen as internal or external elective courses.

Students can also choose some courses from the Master's study programme Computer Science as external elective courses.

For the enrolment in **1st year of study**, student must choose:

GENERAL MATHEMATICS:

* 3 BASIC courses from the General, Theoretical and Discrete Mathematics Core - student chooses 3 courses upon fulfilling the enrolment paper.

* 3 INTERNAL ELECTIVE courses - student chooses 3 courses upon fulfilling the enrolment paper.

* 2 EXTERNAL ELECTIVE courses - student chooses 2 courses upon fulfilling the enrolment paper.

FINANCIAL MATHEMATICS:

* 2 BASIC courses from the General, Theoretical and Discrete Mathematics Core - student chooses 3 courses upon fulfilling the enrolment paper.

* 1 BASIC course from the Financial Mathematics core - the basic course will not be available in 2024/25.

Instead of the one missing BASIC course from the Financial Mathematics core student chooses 1 INTERNAL ELECTIVE course for the 2nd year.

In fulfilling the advancement requirements into the 2nd year, this course (internal elective course for the 2nd year) will be counted as a study obligation for the 1st year.

Student will choose the missing BASIC course upon enrollment in the 2nd year.

* 3 INTERNAL ELECTIVE courses from the Financial Mathematics core - as only 2 will be offered, they will be entered in the students' index and it won't be necessary to choose them.

Student chooses the remaining 1 INTERNAL ELECTIVE courses upon fulfilling the enrolment paper.

Upon enrolment in the 2nd year student will have to choose also 1 INTERNAL ELECTIVE courses of this field of study (so there are 3 INTERNAL ELECTIVE courses of the chosen field).

* 2 EXTERNAL ELECTIVE courses - student chooses 2 courses upon fulfilling the enrolment paper.

CRYPTOGRAPHY:

* 2 BASIC courses from the General, Theoretical and Discrete Mathematics Core - student chooses 3 courses upon fulfilling the enrolment paper.

* 1 BASIC course from the Cryptography core - the course will be entered in the students' index and it won't be necessary to choose.

* 3 INTERNAL ELECTIVE courses from the Cryptography core - as only 2 will be offered, they will be entered in the students' index and it won't be necessary to choose them.

Student chooses the remaining 1 INTERNAL ELECTIVE courses upon fulfilling the enrolment paper.

Upon enrolment in the 2nd year student will have to choose also 1 INTERNAL ELECTIVE courses of this field of study (so there are 3 INTERNAL ELECTIVE courses of the chosen field).

* 2 EXTERNAL ELECTIVE courses (for the 1st year of study) - student chooses 2 courses upon fulfilling the enrolment paper.

For the enrolment in **2nd year of study**, student must choose:

GENERAL MATHEMATICS:

* 1 BASIC course from the General, Theoretical and Discrete Mathematics Core for the 1st year of study - student chooses 1 missing basic course, as he/she chosen only 2 basic courses in the 1st year of study.

* 2 INTERNAL ELECTIVE courses for the 2nd year of study - student chooses courses upon fulfilling the enrolment paper.

* 1 EXTERNAL ELECTIVE courses for the 2nd year of study - student chooses 1 course upon fulfilling the enrolment paper.

NOTES:

[1] This course can be chosen by students that passed the course Number Theory at undergraduate level.

Subsequent changes of a chosen elective course (at enrollment):

* until 30 September 2024: the student informs Student Services (referat@famnit.upr.si) and the change is entered in the students' index;

* from 1 October 2024: the student sends a request through ŠIS in the first 2 weeks of the semester for the course, chosen in the current academic year.

Detailed information (submission, last dates,...) will be published by Student Services at the beginning of each semester, so students should follow notices from the Student Services (<https://www.famnit.upr.si/sl/obvestila>). The decision is made by the Committee for Study and Student Affairs UP FAMNIT.

SUBSEQUENT CHANGES OF OFFERED COURSES:

Possible subsequent changes of the offered courses will be published on Faculty website. Please follow the published information on the Faculty website.