University of Primorska, Faculty of Mathematics, Natural Sciences and Information Technologies

MATHEMATICS – undergraduate study programme, 1st Bologna cycle

Elective courses and study fields for students enrolled in the academic years 2007/08 – 2016/17 (MA-07)

Elective courses

Elective courses are internal or external elective courses.

Internal elective courses are courses within the study programme; the list of all internal elective courses is available in the section Course structure (Table 4).

Every Academic year, the Faculty offers a different selection of elective courses from the internal elective courses listed. The Faculty tries to meet student interests within the limits of the Faculty's resources. The final selection of elective courses for the next Academic year is published in July. The coordinator will help guide students when choosing their study field and elective courses after the second year.

Students may select external elective courses from study programmes provided by other institutions of higher education in Slovenia and internationally.

Study fields

On completing the 1st year, students can opt for one of the following seven study fields: *Discrete Mathematics, Financial Mathematics, Cryptography*, *Computer intensive methods and applications, Statistics*, *General Mathematics* and *Theoretical Mathematics*. From the above description it is evident that the study programme provides for a large scope of selectivity. All courses are awarded 6 ECTS-credits.

Based on the chosen study field student then chooses elective courses. These must include at least 6 mathematical subjects, 4 of which must be from the core of subjects which belong to the chosen study field (i.e. a student which decides to specialize in statistics must choose at least 4 subjects from the Statistics core). The study field General Mathematics is an exception in the sense that the student can choose 6 of his/her favorite mathematical subjects.

Every study field in the study program, apart from the study field of General Mathematics, belongs to a subject core (i.e. Discrete Mathematics Core, Financial Mathematics Core, Cryptography Core, Computer Intensive Methods and Applications Core, Statistics Core or Theory of Mathematics Core) as shown in the following table:

Study fields and internal elective courses:
- Discrete Mathematics (courses core): Algebraic Graph Theory, Selected Topics from Discrete Mathematics, Finite Geometries, Optimization Methods, Graph Theory;
- Financial Mathematics: Introduction to Financial Mathematics, Programming III - Concurrent Programming, Game Theory, Financing the Health System, Introduction to Statistics;

- Criptography: Algebra IV Algebraic Structures, Cryptography and Computer Safety, Symmetric Codes, Coding Theory, Number Theory;
- Computer Intensive Methods and Applications: Differential Equations, Mathematical Methods in Physics, Molecular Modelling, Selected Topics in Computing Methods and Applications, Introduction to Bioinformatics;
- Statistics: Combinatorics, Programming III - Concurrent Programming, Selected Topics from Statistics, Stochastic Processes;
- Theoretical Mathematics: Algebra IV Algebraic Structures, Analysis IV Real Analysis, Functional Analysis, Permutation Groups, Number Theory, Topology.