

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

MATHEMATICAL SCIENCES - Master's study programme, 2nd Bologna cycle

Course structure for students enrolled in the academic years 2007/08 - 2017/18 (MS-07)

During their studies, students must take a total of 9 courses (two basic and seven electives), 4 seminars, and prepare and defend their Master's Thesis.

1ST YEAR (60 ECTS-credits)

Courses	ECTS
Basic Course I	9
Basic Course II	9
Elective Course I - Internally Selected	9
Elective Course II - Internally Selected	9
Elective Course III - Externally Selected	6
Elective Course IV - Externally Selected	6
Seminar I	6
Seminar II	6

2ND YEAR (60 ECTS-credits)

Courses	ECTS
Elective Course V - Internally Selected	9
Elective Course VI - Internally Selected	9
Elective Course VII - Externally Selected	6
Seminar III	6
Seminar IV	6
Master's Thesis	24

BASIC COURSES

Courses	ECTS
Selected Topics in Algebra (1)	9
Selected Topics in Analysis (1)	9
Selected Topics in Discrete Mathematics (1)	9
Selected Topics in Financial Mathematics (1)	9
Selected Topics in Cryptography (1)	9
Selected Topics in Mathematical Statistics (1)	9
Molecular Modeling Course	9
Selected Topics in Functional Analysis	9

INTERNALLY SELECTED ELECTIVE COURSES

Courses	ECTS*
Algebraic Combinatorics	9 / 6
Elliptic Curves in Cryptography	9 / 6
Healthcare Financing	9 / 6
Groups, Covers and Maps	9 / 6
Selected Topics in Algebra (2)	9 / 6
Selected Topics in Differential Equations	9 / 6
Selected Topics in Discrete Mathematics (2)	9 / 6
Selected Topics in Complex Analysis	9 / 6
Selected Topics in Mathematical Statistics (2)	9 / 6
Selected Topics in Numerical Mathematics	9 / 6
Selected Topics in Theory of Association Schemes	9 / 6
Selected Topics in Theory of Finite Geometries	9 / 6
Selected Topics in Number Theory	9 / 6
Selected Topics in Topology	9 / 6
Selected Topics in Computing Methods and Applications	9 / 6
Chaotic Dynamical Systems	9 / 6
Characters of Finite Groups	9 / 6
Combined Quantum and Classical Methods for Molecular Simulations	9 / 6
Mathematical Modelling	9 / 6
Mathematical Finances in Real Time	9 / 6
Mathematical Topics in a Foreign Language	9 / 6
Molecular Dynamics Simulation Methods	9 / 6
Molecular Graphics	9 / 6
Symmetry and Traversability in Graphs	9 / 6
Stochastic Processes	9 / 6
Game Theory	9 / 6
Coding Theory	9 / 6
Theory of Finite Fields	9 / 6

Measure Theory	9 / 6
Theory of Permutation Groups	9 / 6
Introduction to Public-key Cryptography	9 / 6
Introduction to Symmetric-cipher Cryptography	9 / 6
Probability with Measure (1)	9 / 6
Probability with Measure (2)	9 / 6
Probability	9 / 6
Cryptographic Hash Functions and Block Chains	6

* The student may also select Internally Elective Courses from the list of Internal Elective Courses. However, in this case the courses will be awarded with 6 ECTS-credits (reduced study obligation).