

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

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

**Study fields for students enrolled in the academic years 2007/08 - 2017/18 (MS-07)**

Students choose the study field by enrolling.

The study programme has 7 study fields: General Mathematics, Discrete Mathematics, Financial Mathematics, Theoretical Mathematics, Probability and Statistics, Cryptography, Computer Intensive Methods and Applications.

Students choose basic courses and internal elective courses related to their selected study field:

Study field	Basic course	Internal elective course
General Mathematics	Student has to pass: <ul style="list-style-type: none"> <li>- 2 basic courses from the General, Theoretical and Discrete Mathematics Core</li> </ul>	Student has to pass: <ul style="list-style-type: none"> <li>- Elective courses (student's choice)</li> </ul>
Theoretical Mathematics	Student has to pass: <ul style="list-style-type: none"> <li>- 2 basic courses from the General, Theoretical and Discrete Mathematics Core</li> </ul>	Student has to pass: <ul style="list-style-type: none"> <li>- 2 internal elective courses from the Analysis core</li> <li>- 2 internal elective courses from the Algebra core</li> </ul>
Discrete Mathematics	Student has to pass: <ul style="list-style-type: none"> <li>- 2 basic courses from the General, Theoretical and Discrete Mathematics Core</li> </ul>	Student has to pass: <ul style="list-style-type: none"> <li>- 2 internal elective courses from the Discrete Mathematics core</li> <li>- 2 elective courses by student's choice</li> </ul>
Cryptography	Student has to pass: <ul style="list-style-type: none"> <li>- 1 basic course from the General, Theoretical and Discrete Mathematics Core</li> <li>- 1 basic course from the Cryptography core</li> </ul>	Student has to pass: <ul style="list-style-type: none"> <li>- 2 internal elective courses from the Cryptography core</li> <li>- 2 elective courses by student's choice</li> </ul>
Probability and Statistics	Student has to pass: <ul style="list-style-type: none"> <li>- 1 basic course from the General, Theoretical and Discrete Mathematics Core</li> <li>- 1 basic course from the Probability and Statistics core</li> </ul>	Student has to pass: <ul style="list-style-type: none"> <li>- 2 internal elective courses from the Probability and Statistics core</li> <li>- 2 elective courses by student's choice</li> </ul>
Financial Mathematics	Student has to pass: <ul style="list-style-type: none"> <li>- 1 basic course from the General, Theoretical and Discrete Mathematics Core</li> <li>- 1 basic course from the Financial Mathematics core</li> </ul>	Student has to pass: <ul style="list-style-type: none"> <li>- 2 internal elective courses from the Financial Mathematics core</li> <li>- 2 elective courses by student's choice</li> </ul>
Computer Intensive Methods and Applications (RIMA)	Student has to pass: <ul style="list-style-type: none"> <li>- 1 basic course from the General, Theoretical and Discrete Mathematics Core</li> <li>- 1 basic course from the RIMA core</li> </ul>	Student has to pass: <ul style="list-style-type: none"> <li>- 2 internal elective courses from the RIMA core</li> <li>- 2 elective courses by student's choice</li> </ul>

## Basic courses:

Basic courses core:	Courses:
General, Theoretical and Discrete Mathematics Core	Selected Topics in Analysis (1)
	Selected Topics in Algebra (1)
	Selected Topics in Discrete Mathematics (1)
	Selected Topics in Functional Analysis
Cryptography Core	Selected Topics in Cryptography (1)
Probability and Statistics Core	Selected Topics in Mathematical Statistics (1)
Financial Mathematics Core	Selected Topics in Financial Mathematics (1)
Computer Intensive Methods and Applications core	Molecular Modelling Course

## Internal elective courses:

Internal elective courses for the core:	Courses:
Algebra Core	Algebraic Combinatorics
	Selected Topics in Algebra (2)
	Selected Topics in Number Theory
	Characters of Finite Groups
	Theory of Finite Fields
	Theory of Permutation Groups
Analysis Core	Selected Topics in Analysis (2)
	Selected Topics in Complex Analysis
	Selected Topics in Numerical Mathematics
	Selected Topics in Topology
	Chaotic Dynamical Systems
Discrete Mathematics Core	Algebraic Combinatorics
	Groups, Covers and Maps
	Selected Topics in Discrete Mathematics (2)
	Selected Topics in Theory of Association Schemes
	Selected Topics in Theory of Finite Geometries
	Symmetry and Traversability in Graphs
	Theory of Finite Fields
Cryptography Core	Algebraic Combinatorics
	Elliptic Curves in Cryptography
	Coding Theory
	Theory of Finite Fields
	Introduction to Public-key Cryptography
	Introduction to Public-key Cryptography
Probability and Statistics Core	Selected Topics in Mathematical Statistics (2)
	Mathematical Modelling
	Stochastic Processes
	Probability with Measure (1)
	Probability with Measure (2)
Financial Mathematics Core	Healthcare Financing
	Selected Topics in Mathematical Statistics (1)
	Computer Security
	Mathematical Modelling
	Mathematical Finances in Real Time
	Game Theory
Computer Intensive Methods and Applications core	Selected Topics in Discrete Mathematics (1)
	Selected Topics in Numerical Mathematics
	Selected Topics in Computing Methods and Applications
	Combined Quantum and Classical Methods for Molecular Simulations
	Selected Topics in Mathematical Statistics (1)
	Molecular Dynamics Simulation Methods
	Molecular Graphics