



## FINANCIAL AND ACTUARIAL MATHEMATICS

Programme type	Master's studies (university)
Field of study	Applied Mathematics
Study area	Mathematical Sciences
Degree	Master's degree in Mathematical Sciences
Duration	1,5 years (3 semesters)
Workload	90
Language of instruction	English
Location	Vilnius, Lithuania
Starting date	1 <sup>st</sup> of September

### PROGRAMME DESCRIPTION

- *The objective*

High-profile education in financial and actuarial mathematics with an emphasis on theoretical foundation of various methods and techniques of probability theory, stochastic analysis, risk theory, and related fields. Graduates of the programme are qualified to analyze and solve problems in theoretical models of finance and insurance, with implementation of obtained solutions in practice.

- *Career opportunities*

Upon completion of the studies, a student may work in the insurance companies, banks, pension and investment funds, consulting firms, government agencies, etc. (e.g., as actuaries, financial analysts, risk assessors, consultants both for Lithuanian and foreign institutions supervising financial and insurance markets).

- *Access to further studies*

The graduates can also pursue further studies at the Ph.D. level in Mathematics and/or Statistics.

### KEY LEARNING OUTCOMES

Students possess logical thinking, creative view toward professional activities, know how to apply theory in practice. Any Master program graduate in actuarial and financial mathematics can also pursue an academic career by enrolling into a Ph.D. program either at Vilnius University or abroad.

### COURSE INFORMATION

The programme has the following structure:

Course Type	1st Semester	2nd Semester	3rd Semester
<b>Compulsory Courses</b>	Time Series Analysis (5 ECTS)	Risk Management (5 ECTS)	Final Thesis (30 ECTS)
	Nonlife Insurance (5 ECTS)	Life Insurance and Pension Funds (10 ECTS)	
	Selected Topics in Analysis (5 ECTS)	Risk Theory (5 ECTS)	
	Stochastic Analysis (5 ECTS)		
	Probability Theory and Mathematical Statistics (10 ECTS)		
<b>Elective Courses*</b>		Asset Allocation (5 ECTS)	
		Stochastic Models of Financial Mathematics (5 ECTS)	
		Discrete Market Models (5 ECTS)	
		Java Technologies (5 ECTS)	

\* Available elective courses might vary from year to year.

### GRADUATION REQUIREMENTS

The Master of Mathematical Sciences is awarded upon a successful completion of the entire programme and the Master Thesis, which is defended in a viva voce examination before the board of scholars.

### ADMISSION REQUIREMENTS AND SELECTION CRITERIA

- At least first level studies leading with a bachelor diploma are required.
- English language proficiency: the level not lower than B2 (following the Common Framework of Reference for Language approved by the Council of Europe).
- Assessment of motivation is held by electronic means remotely.

## EXAMINATION AND ASSESSMENT REGULATIONS

The system of assessment is specified in the course unit description. Academic progress may be assessed in different ways; several methods may be combined, such as continuous, mid-term, and final assessment. The final mark for the course unit may be cumulative, calculated on the basis of the proportions specified in the course unit description. The form of the final assessment is a written examination.

### Academic contact

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### Admission contact

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