UNIVERSITY OF LJUBLJANA | SEB School of Economics and Business

Presentation document

Master in Quantitative finance and actuarial sciences

Academic year 2026/2027

EQUIS ACCREDITED
AACSB ACCREDITED
EFMD AMBA ACCREDITED

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INFORMATION ABOUT THE STUDY PROGRAMME QUANTITATIVE FINANCE AND ACTUARIAL SCIENCES

General information

Programme	**Quantitative finance and actuarial sciences**
Programme characteristics	
Level of the qualification	Second cycle - Master's study programme SQF level: 8 EQF level: 7 Q F-EHEA level: Second cycle
Name of qualification	Diploma druge stopnje / Master's degree Second cycle master's study programme in Quantitative finance and actuarial sciences
Field(s) of study:	KLASIUS-SRV: Master's education (second Bologna cycle)/Master (second Bologna cycle) (17003) ISCED: Social and behavioural science (31) KLASIUS-P-16: Finance, banking and insurance (0412) Frascati: Social Sciences (5)
Duration of study	2 years (4 semesters)
Scope of ECTS	120 ECTS
UL member	School of Economics and Business, Kardeljeva ploščad 17, 1000 Ljubljana, Slovenija

Study programme learning outcomes

The key objectives and competencies of the Quantitative finance and actuarial sciences master's programme are as follows:

- to acquire basic knowledge in the fields of statistics and econometrics, microeconomics, finance and actuarial sciences,
- to impart to graduates knowledge of specialties of financial and actuarial quantitative models as well as their use in practice,
- to teach graduates critical thinking and the ability to make complex decisions based on available data in the fields of risk management and achieving appropriate returns,
- to train graduates how to search for new sources of knowledge and create new knowledge as well as to apply modern interdisciplinary scientific and research methods to respond to the challenges and questions they encounter in their work in financial institutions.

General competencies (learning outcomes)

A graduate has acquired the following knowledge, abilities, skills and competencies:

- comprehensive and critical thinking based on analysis of a problem and synthesis,
- efficient use of information communication technology and modern software tools,
- appropriate use of databases and other sources,
- the ability to use modern knowledge, methodological approaches and skills to identify problems and resolve them on the level of an individual financial institution or company,

- the ability to understand the impact of wider natural, social and technological environments on the changing conditions of the financial sector's operations, particularly the impact of changes on financial institutions' risk exposure,
- the ability to practically apply knowledge and skills while making decisions on individual issues regarding financial institutions' operations,
- the ability to work in a team, participate in an expert discussion and adopt decisions based on consensus,
- to develop the ability to identify and pose research questions in the fields of actuarial sciences and quantitative finances as well as to plan and implement research work.

Subject-specific competencies (learning outcomes)

The Quantitative Finance and Actuarial Sciences master's programme is a unified programme containing two groups of field-specific subjects, namely from the Quantitative Finance and Actuarial Sciences.

The subject-specific competencies for Quantitative Finance are as follows:
- to recognise the importance of financial models and financial modelling on the level of financial institutions,
- to acquire the knowledge needed for appropriate support to analysis and evaluation, quantitative selection methods and financial investment management,
- to be aware of the processes of the changing regulation and supervision of financial institutions as well as the impact of regulation and supervision on the operations of financial institutions and financial investment selection and management,
- to be aware of the operations of different fields of financial sector.

The subject-specific competencies for Actuarial Sciences are as follows:
- to recognise the characteristics of actuarial jobs and the specific knowledge required to work as an actuary,
- to be familiar with the problem of managing risks within an insurance company and pension insurance funds,
- to be aware of the processes of the changing regulation and supervision of financial institutions, the impact of regulation and supervision on the operations of financial institutions as well as the role of the actuarial function in insurance companies and pension insurance funds,
- to be familiar with the operations in different business areas in pension insurance funds and insurance companies,
- to acquire the ability to formulate proposals for policy measures for supervision of the above-mentioned areas.

Admissions Criteria

Anyone that has completed the following is eligible to enrol in the first year of the Master's programme Quantitative Finance and Actuarial Sciences:

- Graduates of first-level programmes in relevant study areas with at least 180 ECTS;
- Graduates of a programme of study for graduate qualification in relevant areas of study;
- Graduates of equivalent courses listed in the above paragraphs from other areas of study and completing additional academic requirements of 12 ECTS: Microeconomics 1 (6 ECTS) and Mathematics for Business and Economic Sciences (6 ECTS).

Undergraduate programmes in the first and second paragraphs that are considered relevant areas of study for entry into the Master's Degree Programme are those by Iscedovo classification for Social Sciences (31), Mathematics and Statistics (46) and those by the Klassius classification Economics (314), Physics (440), and Physics and Astronomy (441).

In cases where available spots are limited:

In cases where the number of available spots is limited, students will be chosen based on their undergraduate grade point average (100%).

Enrolment by transition criteria:

Candidate, who passes from one programme to the other, must meet the enrolment requirements of the other. Commission for Academic Affairs of the UL SEB defines possible additional study obligations if the study content of previous studies does not cover the content of the chosen master's study programme.

Title conferred in the original language: magister ekonomskih ved/ magistrica ekonomskih ved

Title conferred in the original language (abbreviated): mag. ekon. ved

Title conferred in English language (and title abbreviated): Master of Science (M.Sc.)

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STUDY PROGRAMME CURRICULUM
QUANTITATIVE FINANCE AND ACTUARIAL SCIENCES

Year 1

				Contact hours									
	University Course Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study	Individual student work	Total hours	ECTS	Semesters	Elective
1.	0090716	Probability and statistics	DAMJANA KOKOL BUKOVŠEK, MIHAEL PERMAN	45	45	0		15	195	300	10	1st semester	no
2.	0090714	Asset Pricing Theory	IGOR LONČARSKI	60	10	20		15	195	300	10	1st semester	no
3.	0090715	Financial institutions accounting	BARBARA MÖREC	45	15	30		15	195	300	10	1st semester	no
4.	0090717	Time-Series and Panel Data Econometrics	IGOR MASTEN, SAŠO POLANEC	30	30	30		15	135	240	8	2nd semester	no
5.	0644402	Machine Learning in Finance	IGOR LONČARSKI	45	15	30		15	135	240	8	2nd semester	no
6.	0090719	Contract theory in finance and insurance	MATEJ MARINČ	45	45	0		15	105	210	7	2nd semester	no
7.	0096978	Elective course		45	45	0		27	93	210	7	2nd semester	yes
		Total		315	205	110	0	117	1053	1800	60		

Year 2

				Contact hours									
	University Course Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study	Individual student work	Total hours	ECTS	Semesters	Elective
1.	0097270	Specialised programme course 1		45	30	15		15	135	240	8	1st semester	yes
2.	0097267	Specialised programme course 2		45	30	15		15	135	240	8	1st semester	yes
3.	0097268	Master's thesis disposition		20	7	0		15	378	420	14	1st semester	no
4.	0097269	Specialised programme course 3		45	45	0		15	105	210	7	2nd semester	yes
5.	0097823	Elective course		45	45	0		27	93	210	7	1st semester	yes
6.	0093910	Master thesis		0	10	0		15	455	480	16	2nd semester	no
		Total		200	167	30	0	102	1301	1800	60		

Year 2, Specialised programme courses

				Contact hours									
	University Course Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study	Individual student work	Total hours	ECTS	Semesters	Elective
1.	0093914	Risk Management	ALEŠ BERK, MARKO KOŠAK	45	30	15		15	135	240	8	1st semester	yes
2.	0093913	Risk modeling in insurance	ALEŠ AHČAN	45	30	15		15	135	240	8	1st semester	yes
3.	0093912	Empirical Finance	IGOR LONČARSKI	45	30	15		15	135	240	8	1st semester	yes
4.	0093911	Life and Pension insurance	ALEŠ AHČAN	45	30	15		15	135	240	8	1st semester	yes
5.	0093915	Quantitative Behavioral Finance	ALEŠ BERK, IGOR LONČARSKI	45	30	15		15	105	210	7	2nd semester	yes
6.	0093916	Non-life insurance	ALEŠ AHČAN	45	45	0		15	105	210	7	2nd semester	yes
		Total		270	195	75	0	90	750	1380	46		

The student selects one set of specialised programme courses:

Set 1 (Quantitative Finance) - Risk Management, Empirical Finance and Quantitative Behavioural Finance

or

Set 2 (Actuarial Sciences) - Risk Modeling in Insurance, Life and Pension insurance and Non-life Insurance.

Year 1, Year 2, Elective course

				Contact hours									
	University Course Code	Course title	Lecturers	Lectures	Seminar	Tutorials	Clinical tutorials	Other forms of study	Individual student work	Total hours	ECTS	Semesters	Elective
1.	0090721	Fixed Income Securities	IGOR LONČARSKI	45	45	0		0	120	210	7	2nd semester	yes
2.	0090723	Health insurance	ALEŠ AHČAN	45	30	15		0	120	210	7	2nd semester	yes
3.	0093908	Regulation and supervision of financial markets and institutions	MARKO KOŠAK, MATEJ MARINČ	45	45	0		0	120	210	7	2nd semester	yes
4.	0090720	Selected topics in mathematics	MATJAŽ KONVALINKA	35	0	35		27	113	210	7	2nd semester	yes
		Total		170	120	50	0	27	473	840	28		

Students may choose any elective course within the UL SEB or any other UL higher education institution which is properly accredited and has at least 7 ECTS and it is a course within second cycle programme.