☑ **MSc Program:** Probability, Actuarial sciences and Statistics (education in English)

CURRICULUM 2025/2026

Courses	*ECTS-credits*	*Number of classes* *total*	*per week*
I semester			
Introduction in actuarial mathematics (C)	7	75	3+2+0
Probability and statistics (E) / Statistcs and empirical methods (E)*	11	90	2+2+2
Bayesian data analysis (E)	4	30	2+0+0
Mathematical theory of financial market (E)	4	60	2+2+0
Mathematical Foundations of Machine Learning and Artificial Intelligence (E)	5	30	2+0+0
Optimal control (E)	5	45	3+0+0
Game theory (E)	5	45	3+0+0
Measure Theory and Integration (Lebegue integral) (E)	7	60	3+1+0
Introduction in Biostatistics (E)	5	60	2+0+2
Introduction in functional analysis (E)	7.5	60	3+1+0
II semester			
Applied Statistics (C)	6	60	2+0+2
Random processes (C)	7	60	2+2+0
Actuarial Mathematics (C)	7	75	3+2+0
Biostatistics (E)	7	60	2+0+2
Time series (E)	5	45	3+0+0
Geostatistics (E)	6	60	2+0+2
Models in social sciences (E)	5	30	2+0+0
Mortality models (E)	6	45	3+0+0
Stochastic numerical methods and simulations (E)	5	60	2+0+2
Intrduction in actuarial sciences (Statistical methods in Actuarial sciences) (E)	5	60	2+0+2
III semester			
Probability theory 2 (C)	7	60	2+2+0
Mathematical statistics 2 (C)	4	60	2+2+0
Seminar on Probability and Statistics (C)	7.5	30	0+2+0
Probability Methods in Combinatorics (E)	4	30	2+0+0
EM Algorithms (E)	6	60	2+0+2
Design of experiments (E)	5	60	2+0+2
Branching processes (E)	5	45	3+0+0
Financial models with market shocks (E)	5	45	3+0+0
Linear modelseriments (E)	5	60	2+0+2
Internship (E)	7.5		
IV semester			
Introduction to rating systems (E)	6.5	45	3+0+0
Generalized linear models and models of extremes (E)	6	45	3+0+0
Seminar on mathematical modeling in finance (E)	5.5	30	0+2+0
Stochastic differential equations and applications (E)	4	30	2+0+0
Stochastic processes 2 (E)	9	75	3+2+0
Master Thesis (C)	15		

C – compulsory course
E – elective course

* student have to select one of the courses “Probability and statistics” and “Statistcs and empirical methods”

Students can choose up to 3 / four / courses, up to 15 credits in total, from other FMI programs on a list agreed with the head of the master's program.