> Students must decide for **one** specific area within the Interdisciplinary Electives and attend **at least two courses** worth 8-12 credits within this area.

The course compilation Finance and Insurance introduces students to quantitative finance with a combination of economic theory and mathematical methods, supported by the knowledge on probability and statistics that Data Science students acquired from their Bachelor's degree.

These courses are offered by ETH and the Finance Group at the University of Zurich. They transfer skills typically used in quantitative-oriented areas of the financial services industry, such as risk or asset management or financial product development.

Data Scientists with a very strong mathematical background will be increasingly needed in this field in the future because of the high degree of complexity involved, both in terms of data analysis and in terms of domain-specific knowledge.

Basic Courses

Number	Title	Credits	Semester	Language
363-1000-00L	Financial Economics	3	spring	EN
401-3888-00L	Introduction to Mathematical Finance	10	spring	EN
401-3913-01L	Mathematical Foundations for Finance	4	autumn	EN
401-3925-00L	Non-Life Insurance: Mathematics and Statistics	8	autumn	EN
401-3922-00L	Life Insurance Mathematics	4	autumn	EN
401-3928-00L	Reinsurance Analytics	4	spring	EN

Advanced Courses

Number	Title	Credits	Semester	Language
UZH MFOEC207	Asset Management: Advanced Investments	3	autumn	EN
401-8905-00	Financial Engineering (UZH)	6	spring	EN
401-8915-00	Advanced Financial Economics (UZH)	6	spring	EN
401-3915-73L	Machine Learning in Finance and Insurance	5	autumn	EN
401-4889-00L	Mathematical Finance	11	autumn	EN
401-3629-00L	Quantitative Risk Management	4	spring	EN
401-3936-00L	Data Analytics for Non-Life Insurance Pricing	4	spring	EN
401-4658-00L	Numerical Methods for Finance	6	spring	EN
363-1100-00L	Risk Case Study Challenge	3	spring	EN