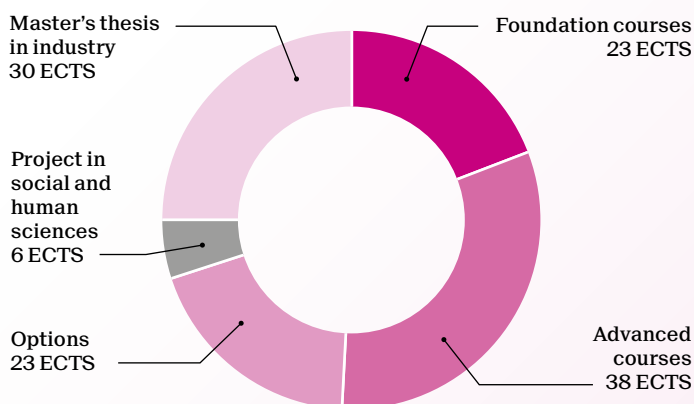


Master of Science in FINANCIAL ENGINEERING

2-year program - 120 ECTS



Career prospects

At the end of their studies, MFE students have the perfect profile to start a career in a bank, a hedge fund, a rating or consulting company, an insurance company, a commodity trading firm, or an asset management company. The unique combination of knowledge in economics, finance, and artificial intelligence provided by the MFE also makes them attractive candidates for a broad range of high-tech companies and startups. They will be able to apply their knowledge of cutting-edge techniques and practical know-how to arrive at well-balanced, sound, and socially responsible financial decisions. For students interested in an academic career, the MFE is also an ideal stepping stone to join a top-level Ph.D. program in finance.

Admission requirements

- Bachelor's degree in a technical discipline such as Mathematics, Physics, Computer science, Engineering or Economics.
- Solid background in mathematical analysis, statistics and probability theory.
- Command of either one programming language such as C, C++ or Python or an interpreted one (Matlab or Mathematica).
- Fully at ease with computers and fluent in English.

College of Management of Technology
go.epfl.ch/master-financial-engineering
 contact: mfe@epfl.ch

	Credits
Foundation courses	23
Accounting for finance	2
Convex optimization	5
Introduction to econometrics	4
Introduction to finance	6
Probability and stochastic calculus	6

Advanced courses	38
Advanced derivatives	4
Derivatives	6
Ethical behavior in the financial industry	2
Interest rate and credit risk models	6
Investments	6
Machine learning in finance	6
Macroeconomics and monetary policy	4
Quantitative risk management	4

Options	23
Advanced numerical analysis II	5
Algorithmic game theory	4
Applied data analysis	8
Apprentissage et intelligence artificielle	4
Causal inference	4
Cryptography and security	8
Data science for business	6
Data visualization	6
Deep learning	4
Deep reinforcement learning	6
Financial applications of blockchains and distributed ledgers	3
Financial big data	3
Financial intermediation	4
Information security and digital trust	4
Information security and privacy	8
Information: strategy and economics	4
Introduction to stochastic PDEs	5
Machine learning	8
Machine learning I	4
Machine learning II	4
Machine learning methods in econometrics	4
Machine learning programming	2
Mathematical modeling of behavior	5
Multivariate statistics	5
Nature finance	3
Numerical analysis and computational mathematics	4
Numerical approximation of PDEs	5
Numerical integration of stochastic differential equations	5
Principles of microeconomics	4
Regression methods	5
Statistical analysis of network data	5
Statistical machine learning	5
Stochastic simulation	5
Sustainable finance	6
Time series	5
Venture capital	4