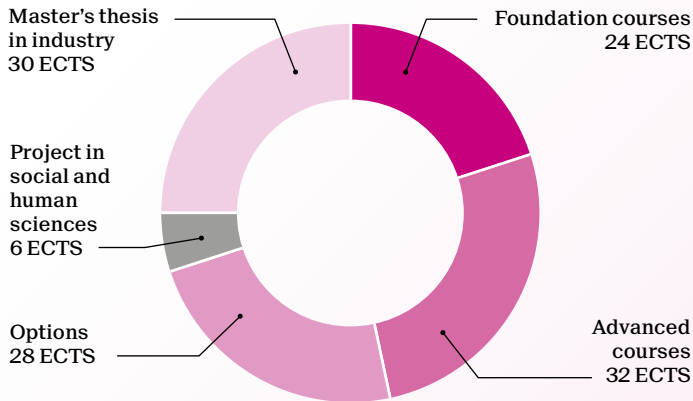


Master of Science in FINANCIAL ENGINEERING

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	24
Accounting for finance	2
Econometrics	4
Global business environment	4
Introduction to finance	6
Optimization methods	2
Probability and stochastic calculus	6

	Credits
Advanced courses	32
Advanced derivatives	4
Derivatives	6
Financial econometrics	6
Interest rate and credit risk models	6
Investments	6
Quantitative risk management	4

	Credits
Options	28
Advanced machine learning	4
Advanced numerical analysis	5
Applied data analysis	8
Applied machine learning	4
Apprentissage et intelligence artificielle	4
Artificial neural networks /reinforcement learning	5
Causal inference	4
Computational finance	5
Cryptography and security	8
Data science for business	6
Deep learning	4
Ethical behavior in the financial industry	2
Financial applications of blockchains and distributed ledgers	3
Financial big data	3
Financial intermediation	4
Information security and privacy	8
Intelligent agents	6
Machine learning	8
Machine learning programming	2
Macrofinance	4
Mathematical modeling of behavior	5
Numerical analysis and computational mathematics	4
Numerical approximation of PDEs	5
Numerical integration of stochastic differential equations	5
Principles of microeconomics	4
Real options and financial structuring	4
Regression methods	5
Risk, rare events and extremes	5
Statistical inference and machine learning	4
Statistical machine learning	5
Time series	5
Venture capital	4