

MASTER OF SCIENCE FINANCIAL ENGINEERING



The Master of Science in Financial Engineering (MSFE) is a multidisciplinary STEM program involving financial theory, the methods of engineering, the tools of mathematics, and the practice of programming. Our MSFE Program provides a one-year 36-point training in the application of engineering methodologies and quantitative methods to finance and FinTech. Guided by a distinguished faculty comprising experts and industry veterans, the program fosters a skill set primed for success in various financial roles.

“Financial Engineering has been and will be evolving. We at the Columbia MSFE have been the pioneer in the field, from new innovated courses to professors and practitioners who are offering them. That is our pledge to our esteemed students.”

Dr. Ali Hirsra
Director, MSFE Program



The program embraces the evolving landscape of finance by incorporating machine learning, AI, and cutting-edge Fin Tech solutions. This integration underscores graduates' adaptability, equipping them not only with a profound grasp of financial theories but also with the practical proficiency to harness the latest financial technology. Armed with these insights, graduates emerge ready to design robust strategies, harness data-driven insights, and navigate the intricacies of modern financial markets using the power of financial technology.

Application Deadline
January 15

<https://ieor.columbia.edu/financial-engineering-msfe>



Department of Industrial Engineering & Operations Research

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“We empower students on their journey to securing internships and careers, a fulfilling effort that enables us to channel top talent into the dynamic and evolving landscape of quantitative fields.”

David Fitzgerald
Assistant Director,
Career Placement



Course Highlights

Asset Management

- Quantitative Risk Management
- Algorithmic Trading
- Credit Risk Modeling and Derivatives

Asset Management

- Applications Programming for Financial Engineering
- Analysis of Algorithms
- Programming for Financial Engineers

Computational Finance and Trading Systems

- Computational Methods in Derivatives Pricing
- Blockchain & Cryptocurrency Investing
- Stochastic Control & Financial Applications

Derivatives

- Fixed Income and Term Structure Modeling
- Credit Risk Modeling and Derivatives
- The Implied Volatility Smile

Finance and Economics

- Stochastic Control & Financial Applications
- Quantitative Corporate Finance
- Behavioral Finance

Financial Technology

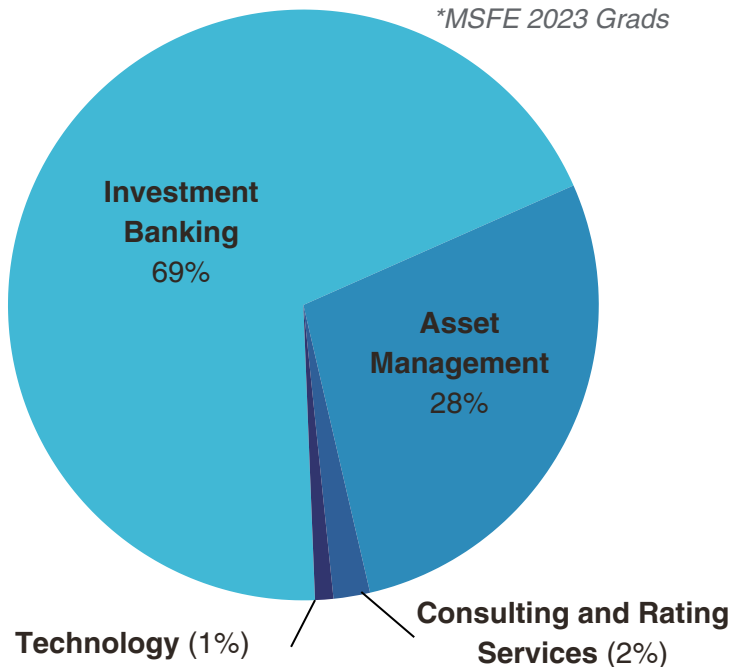
- Applications Programming
- Computing for Business Research
- Big Data in Finance

Machine Learning for Financial Engineering

- Data Mining for Engineers
- Deep Learning
- Pricing Strategies

Career Outcomes for Alumni

**MSFE 2023 Grads*



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