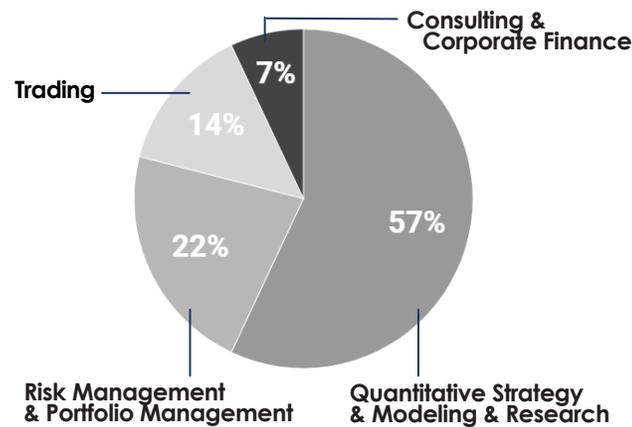




**Dr. Emanuel Derman**  
Director, MSFE Program

*“Several of our courses are taught by people who make a living doing what they teach. Learning the equations is not enough. You have to know where they come from, when to trust them, and how to modify them to take account of the world beyond theory.”*

The Master of Science in Financial Engineering (MSFE) is a multidisciplinary 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. It is designed for students who seek positions in the securities, banking, financial management, and consulting industries, or as quantitative analysts in finance departments.



100% of students in this program are employed by the time of graduation

Students are employed by companies such as:

- AQR**
- Barclays**
- BlackRock**
- Bloomberg**
- Goldman Sachs**
- JP Morgan**
- Morgan Stanley**

**Meet an Admissions Officer**

Mondays & Fridays  
10:30-11:30am

**RSVP**  
[admit@ieor.columbia.edu](mailto:admit@ieor.columbia.edu)

**Application Deadline  
January 5**

of the year of matriculation

[ieor.columbia.edu/masters/financial-engineering](http://ieor.columbia.edu/masters/financial-engineering)  
[ieor.columbia.edu/ieor-admissions](http://ieor.columbia.edu/ieor-admissions)

The Columbia MSFE Program provides students with the tools of the trade and their use in modeling financial markets and instruments. The core curriculum includes courses in stochastic processes, optimization, numerical techniques, Monte Carlo simulation, and data analysis. Students also study portfolio theory, derivatives valuation, and financial risk analysis, making use of the methods they have learned. In addition, the Program features five concentration areas in *Asset Management*, *Computation & Programming*, *Computational Finance & Trading Systems*, *Derivatives*, and *Finance & Economics*.



**Dr. Ali Hirsa**  
MSFE Program  
Director

*“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/practitioners who are offering them. That is our pledge to our esteemed students.”*



**Dr. Tamar Hofer**  
MSFE Career  
Placement Director

*“I work with our elite and talented group of MSFE students to hone their ability to demonstrate their highly technical quantitative skills through a polished professional presentation. To paraphrase our top Wall Street firm contacts, ‘Columbia MSFE students are by far the most well-rounded students we interview on the street’ and this has helped us place students at top investment banks, hedge funds, and other financial services firms.”*

## Course Highlights

Students can specialize in a number of professional concentrations including:

### Asset Management

- Algorithmic Trading
- Asset Allocation
- Credit Risk & Credit Derivatives
- Quantitative Risk Management

### Computation & Programming

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

### Computational Finance & Trading Systems

- Computational Methods in Finance
- Financial Correlations - Modeling, Trading, Risk Management & AI
- Foreign Exchange & Related Derivatives Instruments
- Quantitative Risk Management

### Derivatives

- Credit Risk and Credit Derivatives
- Fixed Income & Term Structure Modeling
- Implied Volatility Smile
- Structured and Hybrid Products

### Finance & Economics

- Advanced Corporate Finance
- Stochastic Control & Financial Applications
- Quantitative Corporate Finance
- Quantitative Risk Management

### Financial Technology

- Applications Programming
- Computing for Business Research
- Quantitative Pricing & Revenue Analysis

### Machine Learning for Financial Engineering

- Big Data in Finance
- Deep Learning
- Machine Learning
- Pricing Strategies