FINANCIAL ENGINEERING (MS)

Finance and Risk Engineering Department (https://engineering.nyu.edu/academics/departments/finance-and-risk-engineering/)

NYSED: 19840 **HEGIS:** 0599.00 **CIP:** 27.0301

Program Description

The Master of Science in Financial Engineering (FE) is a 33-credit program designed to provide students with the skills required to operate at the cutting-edge of financial engineering in today's financial services industry. The program is rigorous, demanding and selective. The MS in Financial Engineering is a well-established program with a diverse curriculum. Our faculty are recognized leaders in their fields, all with extensive practical expertise. They produce world-class research while teaching both introductory and advanced courses in small class settings. The financial and practical components of the educational program have been further strengthened by developing a large and versatile body of adjunct faculty consisting of leading financial market practitioners from major Wall Street firms as well as international affiliated faculty. These adjunct faculty members work closely with full-time faculty emphasizing both applied and theoretical research in bringing to financial engineering students a greater sensitivity to the needs and the demands of financial markets and the management of financial services and institutions.

This program requires strong, deep knowledge of advanced mathematics as well as the ability to write efficient, effective code. For details, please see the MS FE website (https://engineering.nyu.edu/academics/programs/financial-engineering-ms/).

The FRE department does not accept change-of-major requests from students in other NYU programs. In all instances, students must formally apply to this MS FE program.

Admissions

To apply for admission to any Tandon graduate program, please contact the Office of Graduate Admissions (https://engineering.nyu.edu/admissions/graduate/).

Program Requirements

The program requires the completion of 33 credits, comprised of the following:

Course	Title	Credits
Bloomberg Terminals		
FRE-GY 5500	Bloomberg Certification	0
Core Courses		
FRE-GY 6073	Introduction to Derivative Securities	3
FRE-GY 6083	Quantitative Methods in Finance	3
FRE-GY 6103	Valuation for Financial Engineering	3
Select two of the following:		6
FRE-GY 6023	Financial Economics	
FRE-GY 6123	Financial Risk Management	
FRE-GY 7773	Machine Learning in Financial Engineering	
Electives		
Select 13.5 credits of Elective coursework		13.5
Laboratory Learning		
Select one Lab course		1.5
Capstone		
Select three credits of Capstone		3
FRE-GY 5990	Capstone Assessment	0
Total Credits		**33**

Vertically Integrated Projects

The Finance and Risk Engineering Department offers two sections in the VIP-GY 5000 Vertically Integrated Projects series. These sections are:

- Merger & Acquisition Outcome Prediction (https://engineering.nyu.edu/research-innovation/student-research/vertically-integrated-projects/vip-teams/merger-acquisition-outcome-prediction-gy-only/)
- Active Portfolio Management with Machine Learning and Time Series Forecasting (https://engineering.nyu.edu/research-innovation/student-research/vertically-integrated-projects/vip-teams/active-portfolio-management/)

These are optional projects interested students may choose to take.

Sample Plan of Study

Four-Semester Plan

Course	Title	Credits
1st Semester/Term		
FRE-GY 5030	FRE Bootcamp III -- From Brain Teasers to Black-Scholes	0
FRE-GY 5040	FRE Bootcamp IV - Econometrics and Machine Learning with Python	0
FRE-GY 5500	Bloomberg Certification	0
Three Core Courses		9
	Credits	**9**
2nd Semester/Term		
Two Core Courses		6
Elective		3
	Credits	**9**
3rd Semester/Term		
Lab		1.5
Electives		7.5
	Credits	**9**
4th Semester/Term		
FRE-GY 5990	Capstone Assessment	0
Capstone		3
Elective		3
	Credits	**6**
	Total Credits	**33**

Three-Semester Plan

Course	Title	Credits
1st Semester/Term		
FRE-GY 5030	FRE Bootcamp III -- From Brain Teasers to Black-Scholes	0
FRE-GY 5040	FRE Bootcamp IV - Econometrics and Machine Learning with Python	0
FRE-GY 5500	Bloomberg Certification	0
Three Core Courses		9
	Credits	**9**
2nd Semester/Term		
Two Core Courses		6

Electives		6
	Credits	**12**
3rd Semester/Term		
FRE-GY 5990	Capstone Assessment	0
Capstone		3
Lab		1.5
Electives		7.5
	Credits	**12**
	Total Credits	**33**

Learning Outcomes

Upon successful completion of the program, graduates will:

1. Assess learning by conducting a review of students' performance in each of the core courses, totaling 15 credits.
2. Possess a solid foundation of financial concepts and the practical know-how to bridge theory and practice.
3. Be proficient in the use of financial software, databases, and technologies used by professionals in the field.

Policies

NYU Policies

University-wide policies can be found on the New York University Policy pages (https://bulletins.nyu.edu/nyu/policies/).

Tandon Policies

Additional academic policies can be found on the Tandon academic policy page (https://bulletins.nyu.edu/graduate/engineering/academic-policies/).