

# QUANTITATIVE FINANCE, MSQF

The Master of Science in Quantitative Finance (MSQF) is a rigorous degree designed to prepare students for analytically intensive careers in finance. Combining advanced quantitative methods, economic intuition, and applied financial skills, the MSQF equips graduates with the skills needed to navigate the challenges of modern financial markets.

Open to current University of Pennsylvania undergraduates across all schools, the program follows a structured submatriculation format. Students apply in their third year, begin MSQF coursework during their fourth year while completing their undergraduate degree, and then continue into a dedicated post-graduation fifth year focused entirely on advanced MSQF study.

The degree and major requirements displayed are intended as a guide for students entering in the Fall of 2026 and later. Students should consult with their academic program regarding final certifications and requirements for graduation.

## Curriculum

Code	Title	Course Units
<b>Pre-requisite Foundations (2 CUs) – Required pre-admission or by the end of 4th year</b> <sup>1</sup>		
FNCE 1000	Corporate Finance	
ACCT 1010	Accounting and Financial Reporting	
<b>Core Requirements (6 CUs)</b> <sup>3</sup>		<b>6</b>
FNCE 5050	Investment Management <sup>2</sup>	
FNCE 5170	Financial Derivatives	
FNCE 5250	Fixed Income Securities	
FNCE 5370	Data Science for Finance	
FNCE 5570	Foundations of Asset Pricing	
FNCE 5900	Applied Research Practicum	
<b>Electives (4 CUs)</b>		<b>4</b>
<i>Students must choose at least 3 of the below:</i>		
ACCT 5700	Forensic Analytics	
ACCT 7420	Financial Reporting and Business Analysis	
ACCT 7470	Financial Disclosure Analytics	
BEPP 7640	Climate and Financial Markets	
BEPP 8050	Risk Management	
FNCE 5070	Valuation	
FNCE 5190	International Financial Markets and Cryptocurrencies	
FNCE 5310	Global Valuation and Risk Analysis	
FNCE 5380	Capital Markets	
FNCE 5390	Behavioral Finance	
FNCE 9210	Introduction to Empirical Methods in Finance	

OIDD 6530	Mathematical Modeling and its Application in Finance
OIDD 7770	Introduction to Python for Data Science
OIDD 9120	Introduction to Optimization
OIDD 9300	Stochastic Models
OIDD 9310	Stochastic Processes II
OIDD 9340	Dynamic Programming and Stochastic Models
REAL 7210	Real Estate Investment: Analysis and Financing
REAL 8700	Real Estate Data Analytics
STAT 5100	Probability
STAT 5150	Advanced Statistical Inference I
STAT 5160	Advanced Statistical Inference II
STAT 5200	Applied Econometrics I
STAT 5210	Applied Econometrics II
STAT 5330	Stochastic Processes
STAT 5350	Forecasting Methods for Management
STAT 5420	Bayesian Methods and Computation
STAT 5440	Applied Bayesian Modeling
STAT 5710	Modern Data Mining
STAT 5800	Advanced Statistical Computing
STAT 5810	Convex Optimization for Statistics and Data Science
STAT 5900	Causal Inference
<i>Students may choose up to 1 of the below:</i>	
CIS 5150	Fundamentals of Linear Algebra and Optimization
CIS 5190	Applied Machine Learning
CIS 5200	Machine Learning
CIS 5450	Big Data Analytics
CIT 5900	Programming Languages and Techniques
CIT 5910	Introduction to Software Development
ENM 5310	Data-driven Modeling and Probabilistic Scientific Computing
ESE 5420	Statistics for Data Science
ESE 5450	Data Mining: Learning from Massive Datasets
MATH 5130	Computational Linear Algebra
MATH 5300	Mathematics of Finance
MATH 6480	Probability Theory
MATH 6490	Stochastic Processes
<b>Total Graduate Level Coursework</b>	<b>10</b>

<sup>1</sup> Prior to admission, students must have completed MATH 2400 Calculus Part III or ESE 2030 Linear Algebra with Applications to Engineering and AI.

<sup>2</sup> Students must take FNCE 5050 Investment Management by the end of their fourth year.

<sup>3</sup> Students who took any of FNCE 2050, FNCE 2170 and FNCE 2250 prior to their fourth years and received at least a B- grade can waive the requirement to take FNCE 5050, FNCE 5170 and FNCE 5250, respectively, toward the MSQF.

Waiving a course does not reduce the number CUs taken for the MSQF degree. Any student waiving one of these courses will have to replace it with an elective to get to 10 CUs of graduate level coursework.

<sup>4</sup> All coursework counting toward the MSQF degree must be completed at Penn. Transfer, study abroad, 'credit away' courses are not permitted.

**Fourth Year**

Pre-requisite Foundations - ACCT 1010 & FNCE 1000 <sup>1</sup>

FNCE 5050	Investment Managemen 2	1
FNCE 5170 & FNCE 5250 or FNCE 5250	Financial Derivatives 2  or Fixed Income Securities	1
	<b>Course Units</b>	<b>2.00</b>

<b>Summer</b>		<b>Course Units</b>
Summer Internship		
	<b>Course Units</b>	<b>0.00</b>

**Fifth Year**

<b>Fall</b>		
FNCE 5170 & FNCE 5250 or FNCE 5250	Financial Derivatives  or Fixed Income Securities	1
FNCE 5370	Data Science for Finance	1
FNCE 5570	Foundations of Asset Pricing	1
Electives to bring student schedule to at least 4 CUs for the term		1
	<b>Course Units</b>	<b>4.00</b>

<b>Spring</b>		
FNCE 5900	Applied Research Practicum	1
Electives to bring student schedule to at least 4 CUs for the term and at least 10 graduate level CUs for the program		3
	<b>Course Units</b>	<b>4.00</b>
	<b>Total Course Units</b>	<b>10.00</b>

<sup>1</sup> Pre-admission or by the end of the Fourth Year  
<sup>2</sup> Students waiving out of FNCE 5050, FNCE 5170, and/or FNCE 5250 can replace these courses with an approved MSQF elective  
 Undergraduate courses must be at least 50% of the student's course load per university policy.