MASTER OF MATHEMATICAL FINANCE

Admission Requirements

Admission to the Master of Mathematical Finance program requires a bachelor's degree in a quantitative discipline such as mathematics, quantitative finance, engineering, or statistics with a minimum cumulative GPA of 3.0/4.0. Applicants are required to have a background in undergraduate-level probability theory, multivariate calculus, and linear algebra. Background in ordinary differential equations will enhance the chance of admission to the program. If required, TOEFL scores should be a minimum of 90/250 (internet-based/computer-based test score) or the IELTS score should be a minimum of 6.5. A professional statement of goals/objectives (two pages) and a curriculum vitae must be submitted. Two letters of recommendation are required (at least one must be from academia). An interview may also be required.

Typically, admitted students score at least 156 on the quantitative portion of the GRE and at least 3.0 on the analytical writing portion. However, meeting the minimum or typical GPA test score requirements does not guarantee admission. GPA and test scores are just some of several important factors considered for admission to the program, including grades in mathematics courses, letters of recommendation, and the student's overall record of achievements.

Curriculum

Code	Title	Credit Hours
Core Courses		**(21)**
MSF 505	Futures/Option/OTC Derivatives	3
or MSF 524	Models for Derivatives	
MATH 527	Machine Learning in Finance:	3
MATH 542	Stochastic Processes	3
MATH 548	Mathematical Finance I	3
MATH 565	Monte Carlo Methods in Fin	3
MATH 582	Mathematical Finance II	3
MATH 588	Advanced Quant Risk Mgmt	3
Applied Mathematics and CS Elective Courses		**(6)**
Select a minimum of two courses from the following:		6
CS 522	Advanced Data Mining	3
MATH 512	Partial Differential Equations	3
MATH 522	Mathematical Modeling	3

Code	Title	Credit Hours
MATH 540	Probability	3
MATH 543	Stochastic Analysis	3
MATH 544	Stochastic Dynamics	3
MATH 545	Stochastic Partial Diff Equatn	3
MATH 546	Introduction to Time Series	3
MATH 566	Multivariate Analysis	3
MATH 567	Adv Design of Experiments	3
MATH 569	Statistical Learning	3
MATH 577	Computational Mathematics I	3
MATH 578	Computational Mathematics II	3
MATH 579	Complexity of Numerical Prob	3
MATH 584	Math for Algorithmic Trading	3
MATH 586	Ther&Prac Fixed Income Modelng	3
MATH 587	Thry/Prac Modlng&Crdt Deritvs	3
MATH 589	Num Meth for Partial Diff Equa	3
MATH 590	Meshfree Methods	3
Finance Elective Courses		**(3)**
Select a maximum of one course from the following:		3
MSF 524	Models for Derivatives	3
MSF 525	Term Struc Mod & Int Rate Der	3
MSF 526	Computational Finance	3
MSF 545	Struct Fixed Income Portfolios	3
MSF 546	Quant Investment Strategies	3
MSF 554	Market Risk Management	3
MSF 555	Credit Risk Management	3
MSF 566	Time Series Analysis	3
MSF 567	Bayesian Econometrics	3
MSF 574	.NET and Database Management	3
MSF 575	C++ with Financial Markets	3
MSF 576	OOP & Algorithmic Trading Sys	3
MSF 577	High Frequency Finance	3
MSF 584	Equity & Equity Deriv Trading	3
MSF 585	FOREX & Fixed Income Strat	3
Total Credit Hours		**30**

Core Requirement

All mathematical finance students must complete seven core classes unless they have obtained written permission from their academic adviser to substitute an alternative class for a core class.

Course Substitutions

To the extent that students have completed commensurate coursework or professional experience, substitutions to the required curriculum may be permitted, with the approval of the academic adviser.

Transfer Credit

Students may also transfer up to two classes from a graduate program at another accredited university if the student has not used the classes to satisfy the requirements for a degree at the previous university. Additional classes may be transferred with the permission of the program director.

Prerequisite Courses

Some students may be required to take prerequisite courses in mathematics, statistics, or computer programming before being admitted to a graduate course.