

# QUANTITATIVE FINANCE

MAJOR

## Quantitative Finance Highlights

**The adoption by financial firms of ever-more sophisticated computational techniques has led to explosive growth in the field of quantitative finance.**

Our Quantitative Finance major (QFIN) is an interdisciplinary program covering the design, development and implementation of innovative financial processes. It encourages the formulation of creative solutions to problems in finance. It is unique among College of Business offerings in that it leads to a B.S. degree with minors in economics and math (or a double major with math) rather than a B.B.A.

The required major courses provide Quantitative Finance majors with the foundation and tools for a variety of financial situations and problem solving. Electives permit the student to emphasize economics, mathematics, statistics or finance.

This major is a highly structured program and students must begin their mathematics courses in their freshman year in order to progress through the major in a timely manner.

- It is the **only QFIN program in the state of Virginia.**
- QFIN is **classified as a STEM program.**
- **Gaglioti Capital Markets Lab** features computers at every seat, with access to important industry software applications such as SAS, Analytic Solver and Crystal Ball. Bloomberg terminals keep the students and faculty connected to up-to-the-minute and relevant data for the finance world that is vital to their research and learning.
- Each fall, **the Meet the Firms event** offers ACTG, FIN and CIS majors a unique opportunity to network with firms in a career fair format.
- The College of Business is **one of 5% of business schools with AACSB international accreditation** (Association to Advance Collegiate Schools of Business).

## Career Possibilities

Commodities Analyst  
Financial Analyst  
Financial Product Designer  
Financial Risk Manager  
Investment Analyst  
Mutual Fund Manager  
Portfolio Analyst  
Portfolio Manager  
Quantitative Management Associate  
Securities Trader Underwriter

### RECOMMENDED MINORS

Computer Science  
Data Analytics  
Statistics

### CO-CURRICULAR ORGANIZATIONS

Choose from more than 25 College of Business co-ed fraternities, clubs and honor societies to connect with peers and build leadership skills.

The Madison Investment Fund is a student-run equity investment fund that manages a portion of the JMU endowment.



For more details, scan the QR code or visit: [jmu.edu/cob/quantitative-finance](http://jmu.edu/cob/quantitative-finance)



## Differential Tuition

As a student in the College of Business (CoB), you'll pay "differential tuition," an additional fee over JMU's standard tuition. This enables us to add significant value to your overall academic experience, and is a practice common among top business schools. These funds help ensure that our students gain a competitive edge for internships and job openings by providing hands-on experiences such as career treks, professional networking opportunities and career-development activities.



— ROMAN PAOLUCCI ('22),  
Ph.D STUDENT,  
UNIVERSITY OF TENNESSEE

"The quantitative finance coursework in tandem with exploration of the formal academic literature and independent projects sufficiently prepared me for graduate school and the beginning of my career. I'm grateful for my experience at JMU CoB, and look forward to the future."

## Starting Compensation\*

College of Business Major	Avg. Starting Compensation
Quantitative Finance, B.S.	\$87,811
<b>Avg. / Bus. Majors</b>	<b>\$75,969</b>

\*This report highlights the post-graduation pursuits of the Spring QFIN bachelor's degree recipients as of Feb '23.

## Curriculum Highlights

### THERE ARE TWO MAJOR PROGRAM OPTIONS IN THE QFIN MAJOR

- QFIN major with minors in economics and mathematics
- QFIN double major with mathematics

Either major may opt for a concentration in financial analysis or risk management

### TWO CONCENTRATIONS

#### Risk Management Concentrations

A focus in risk management is designed for quantitative finance majors pursuing a more in-depth review of the issues facing organizations and the tools needed to address those uncertainties. In the risk management concentration, students focus on the theory of risk management, risk identification, risk measurement and applications in the form of risk modeling techniques such as Value-at-Risk and Monte Carlo simulations.

#### Financial Analysis Concentration

The financial analysis concentration helps prepare students for careers as financial analysts and also Levels I and II of the Chartered Financial Analyst (CFA) exam.

### SOFTWARE AND TECHNICAL SKILLS

- Python
- Bloomberg
- Statistical Analysis System (SAS), Matlab, Excel VBA
- Finance Databases such as CRSP and Compustat

### WHAT IS THE DIFFERENCE BETWEEN FINANCE AND QUANTITATIVE FINANCE?

Finance is a Bachelor's degree in Business Administration (B.B.A), and QFIN is a Bachelor of Science (B.S.) degree and a STEM major. The QFIN major includes minors in mathematics and economics.

Rather than taking B.B.A. core courses that aren't financial in nature (such as interpersonal skills, managerial accounting, computer information systems, COB 300, etc), QFIN majors take math courses like calculus, linear algebra and an introductory coding class.

Finance & QFIN coursework deviate significantly at the 400 level, where QFIN majors take more classes focused on risk management, volatility, options pricing, etc.