

Financial Analysis and Quantitative Risk Management (M.S.)

About The Program:

The financial analysis of evolving global market opportunities draws on the principles of economics, financial reporting, corporate finance, investments, and quantitative methods. Effective enterprise risk management requires added expertise in complex derivative products and structured capital market transactions. This range of financial expertise drives the sales and trading, investment banking, equity research, credit analysis, quantitative research, asset management, valuation advisory services, and corporate audit and risk management operations of today's financial services industry. In the same way, the Fox School of Business and Management's master's degree program in Financial Analysis and Quantitative Risk Management (MSFA-QRM) develops a pinnacle breadth and depth of financial expertise. To fuel their career ambitions, MSFA-QRM students may complete the CFA® Level I, II, and III and FRM Part I and II exams over the program's 22-month time frame.

Career Options: Graduates have developed specialized skills in the field of finance that distinguish them for employment with accounting firms, commercial banks, consulting companies, financial technology firms, government and regulatory agencies, hedge funds, insurance companies, investment banks, and investment companies.

Requirements of Programs:

- **Total Credit Hours:** 43
- **Culminating Events:**

Successful completion of coursework is required to earn the MSFA-QRM degree.

Year 1

Fall (Finance Academy, August)

Corporate Finance – This course reviews economic principles governing financial markets and corporate management and develops financial analysis skills. Topics include capital budgeting and cost of capital.

Financial Accounting – This course reviews the practice of financial accounting and develops skills in analyzing financial statements. Topics include financial reporting quality and International standards.

Derivative Markets – This course covers global exchange-traded and over-the-counter futures, options and swap instruments and financial applications. Topics include option investment strategies and structured swap applications.

Fixed Income – This course examines the features and trading behavior of global fixed income markets. Topics include features of debt securities, bond valuation, interest rate risk immunization and foreign exchange.

Fall Term

Financial Technology – This course teaches specialized financial software, financial market databases and quantitative financial tools. Financial Technology may be repeated up to one credit hour.

Asset Pricing – This course examines the relationship between financial risk and rates of return. Topics include equilibrium and empirical approaches to asset pricing and international asset pricing.

Corporate Value Management – This course examines the drivers of firm value and develops financial statement analysis skills. Topics include free cash flow valuation, industry analysis and valuation in emerging markets.

Structured Finance – This course covers the valuation of asset-backed securities and credit derivatives. Topics include mortgage-backed securities, credit default obligations and credit default swaps.

Financial Econometrics – This course examines linear regression and time series models with applications to corporate finance and investments theory. Topics include interpreting regression coefficients and estimating correlation and volatility using GARCH models.

Global Economy – This course examines global macro-economic conditions. Topics include monetary and fiscal economics, economic indicators, the European Monetary Union and the causes of financial crises.

Financial Analysis I – This course explores the CFA Program's CFA Level I Candidate Body of Knowledge: ethical and professional standards, quantitative methods, economics, financial reporting, corporate finance, equity investments, fixed income, derivatives, alternative investments and portfolio management.

Professional Development – This course examines the importance of professional growth to the financial analyst. Topics include career development goals, effective professional communication, leadership and management skills and ethical issues specific to careers in finance.

Spring Term

Investment Management – This course explores portfolio management for individual and institutional investors. Coursework includes formulating a strategic equity and fixed income asset allocation strategy.

Applied Corporate Finance – This course examines corporate financial restructuring and mergers and acquisitions. Topics include leveraged buyouts, industry capital structure and corporate governance.

Behavioral Finance – This course examines insights of efficient market theory and behavioral finance for the historical pattern of asset prices. Topics include bubbles, momentum and limits to arbitrage.

Financial Reporting Analysis – This course examines advanced financial accounting practices, theory, and issues. Topics include employee compensation, multinational operations and financial reporting quality.

Quantitative Portfolios – This course examines portfolio management based on quantitative techniques versus fundamental valuation methods. Topics include statistical arbitrage and computer-based models for trading.

Financial Analysis II – This course examines the CFA Program's CFA Level I and II Candidate Body of Knowledge emphasizing the application of investment tools and concepts in asset pricing.

Year 2

Fall (Finance Academy, August)

Stochastic Calculus Finance – This course covers the mathematical foundations of stochastic calculus with financial applications. Topics include Brownian motion, stochastic integrals and stochastic differential equations.

Fall Term

Financial Technology – This course teaches specialized financial software, financial market databases and quantitative financial tools. Financial Technology may be repeated up to one credit hour.

Continuous Time Finance – This course covers continuous-time financial theory and option pricing methods. Topics include risk-neutral pricing and equilibrium asset pricing.

Quant Fixed Income – The course covers the mathematics driving fixed income markets. Topics include term structure modeling, interest rate immunization and fixed income derivatives.

Numerical Methods – This course examines numerical lattice, Monte Carlo and finite difference methods for pricing vanilla and exotic options. Topics include implied trinomial trees and variance reduction techniques.

Value at Risk – This course examines advanced quantitative methods for estimating the risk of financial loss and risk management applications. Topics include scenario analysis, incremental risk and VaR back testing techniques.

Financial Risk Management I – This course explores the FRM Program's Part I Curriculum covering the tools used to assess financial risk: quantitative analysis, fundamental risk management concepts, financial markets and products, and valuation and risk models.

Spring Term

Financial Time Series – This course teaches methods for analyzing time series data and for forecasting future events. The course offers a mix of financial data analysis together with statistical theory.

Stochastic Volatility – This course examines alternative models of implied volatility and model calibration to observed market data. Topics include the term structure of volatility and jump diffusion models of the volatility smile.

Quantitative Risk Modeling – This course covers advanced quantitative analysis and assessment of market, credit and operational financial risks. Topics include hedging exotic options and default risk measures.

Alternative Investments – This course explores proprietary hedge fund strategies and performance measures. Topics include relative value strategies, distressed debt and real estate investment trusts.

Structured Products – This course teaches the financial engineering of structured product and hybrid security offerings. Topics include exotic derivatives and tailored investment strategies.

Enterprise Risk Management – This course covers the analysis and development of a best in practice enterprise-wide risk management system. Topics include corporate risk tolerance and strategic risk and capital management issues.

Financial Risk Management II – This course examines the FRM Program's Part I and Part II Curriculum focusing on the application of financial risk management tools.

Courses:

Click [HERE](#) for more information on the courses below.

- Financial Analysis and Strategy
- Fixed Income Analysis
- Management of Financial Institutions
- Financial Risk Management
- Advanced Corporate Finance
- Advanced Option Theory
- Interest Rate Options
- Derivatives
- Investments
- Mergers and Acquisitions
- Capital Struc Business
- Financial Analysis & Planning
- Financial Markets and Institutions
- Financial Modeling for Investments and Corporate Finance
- Financial Modeling: Corporate
- Portfolio Analysis
- Project Analysis & Valuation
- Mergers, Acquisitions and Restructurings
- Continuous Time Finance
- Financial Markets and Institutions I
- Financial Markets and Institutions II
- Working Capital Management Strategies
- Corporate Governance and Financing Decisions
- Financial Risk Management I: Application of Futures
- Global Finance I: Markets
- Global Finance II: Management
- Securities Analysis
- Int'l Fin Mkt & Corp Fin
- Private Equity
- Special Topics
- Special Topics Finance
- Independent Study
- Understanding the Finance of Business
- Valuation for Business Decisions Opportunities
- Practicum in Financial Analysis and Strategy
- Understanding the Finance of Business
- Valuation for Business Decisions Opportunities
- International Financial Markets
- International Financial Management
- Financial Technology
- Corporate Finance
- Financial Accounting
- Derivative Markets
- Fixed Income
- Stochastic Calculus & Finance
- Ethics and Leadership I

- Ethics and Leadership II
- Asset Pricing
- Derivative Valuation
- Continuous Time Finance
- Financial Institutions & Risk
- Corporate Value Management
- Quant Fixed Income
- Structured Finance
- Risk Measurement
- Numerical Methods
- Financial Econometrics
- Global Economy
- Value at Risk
- Financial Time Series
- Investment Management
- Stochastic Volatility
- Applied Corporate Finance
- Behavioral Finance
- Quantitative Risk Modeling
- Alternative Investments
- Entrepreneurial Companies
- Structured Products
- Financial Reporting & Analysis
- Quantitative Portfolios
- Enterprise Risk Management
- Financial Analysis I
- Financial Analysis II
- Financial Risk Management I
- Financial Risk Management II
- Professional Development
- Special Study in Finance
- Special Topics in Finance
- Financing the Enterprise
- Enterprise Financial Management
- Independent Study
- Special Topics
- Corp Finance Theory
- Empirical Research in Corporate Finance
- Banking and Financial Institutions
- Seminar in Global Finance and Governance
- Empirical Asset Pricing
- Proseminar in Finance
- Alternative Investments
- Best Practices in Valuation
- Corporate Governance
- Derivatives and Risk Management
- Dissertation Methodologies
- Financial Markets and Institutions
- Investment Allocation and Management
- Mergers and Acquisitions
- Private Equity
- Real Estate Finance
- Spec Topic Finance
- Directed Study in Fin