Quantitative Finance Concentration

BS in Management with a Concentration in Quantitative Finance

Recent innovations in financial markets have led to an increased demand for analytically skilled students. Understanding pricing models in derivatives and other exotic securities requires knowledge in finance and also statistics, stochastic processes, and differential equations. The financial engineering program is designed to provide students with opportunities to pursue a mathematically challenging program of study.

Investment Banking Careers
Investment Banks help companies and governments issue securities, help investors purchase securities, manage financial assets, trade securities and provide financial advice. The leading investment banks including Merrill Lynch, Salomon Smith Barney, Morgan Stanley Dean Witter, Chase H&Q, and Goldman Sachs are said to be in the bulge bracket.

Eligibility
The program is designed for placement of students in investment banks. Only outstanding undergraduate students with a cumulative GPA above 3.5 will be admitted into the program. It is in their best interest to maintain that GPA while they are in the program.

References:
- The Vault Guide to Finance
- So, You Want to be an Investment Banker: The WetFeet Insider’s Guide To Landing a Job on Wall Street
- Job Seekers Guide to Wall Street Recruiters. By Christopher Hunt and Scott Scanlon
Program of study
In addition to meeting the usual School of Management requirements, students would complete courses in the following groups:
(i) MATH requirements:
   Two semesters of calculus (Math 221 and Math 222) – Math 221 MUST be taken prior to FIN 311.
   Linear Algebra (Math 304)
(ii) Additional Economics Course
   Introduction to Econometrics (Economics 466)
(iii) Required Finance Courses (descriptions follow below)
   Investment Courses:
      Investments (FIN 322)
      Derivatives (FIN 450)
      Arbitrage Strategies (FIN 465)
(iv) Finance elective (1 additional elective required): Corporate Finance (FIN 324), Financial Statement Analysis (FIN 430)
(v) Advanced Spreadsheet Modeling (SCM 360)

Course Descriptions

FIN 322 – Investments (required course):
Various institutional, analytical, and pragmatic aspects of security analysis and investment management; securities market, sources of investment information, bond and stock valuation models, risk return analysis, behavior of security prices, portfolio management, and capital market theory. The course is normally taken first semester senior year in the Trading Room. The Trading Room would be continued in the following Spring semester as a 1 credit independent study. **Offered each semester, but recommended for Fall semester.**

FIN 450 – Derivatives (required course):
Introduction to and a comprehensive analysis of the derivatives markets in the US. Topics include discussions of options, futures, swaps, and futures markets. **Offered Spring only**

FIN 465 – Arbitrage Strategies (required course):
This is an advanced, research based, seminar course targeted at students majoring in Finance and/or Accounting. It teaches students to apply the latest research techniques used in research. The skills taught in this course are used in research related jobs in auditing, consulting, corporate finance, forensic accounting, hedge funds, investment banking quantitative financial analysis, securities litigation consulting, etc. The course will build upon accounting and finance concepts covered in introductory classes. Prerequisites: FIN 311 and FIN 322. **Offered Fall semesters only.**

SCM 360 – Advanced Spreadsheet Modeling (required course):
Supplements other courses in the business curriculum by discussing decision making and risk management using spreadsheet analysis. Improves students' decision-making ability in an uncertain and complex environment. Teaches techniques widely used to assess and manage risk, structure problems, determine the optimal decision and estimate the impact of a decision on performance measures of interest. Through cases, lectures and exercises, sharpens students' problem-solving skills and analytical and logical thinking ability. Greatly enhances students' proficiency in spreadsheet analysis and modeling, an invaluable skill in today's
business environment in which spreadsheets, with 40 million users, have become the primary platform for business analysis.

Finance Electives or a course approved by faculty (one elective required)

FIN 324 - Corporate Finance:
An in-depth examination of valuation and financial decision making in the corporate setting, including some cases analysis. Topics include capital market efficiency, required rates of return, options in the corporate setting, long-term investments, capital structure, financial planning, and dividend policy. **Offered each semester.**

FIN 430 - Financial Statement Analysis:
In-depth analysis of financial statements from the equity analyst perspective. Students will write a thorough, credible equity research report that. This report will include both a quantitative and qualitative assessment of the firm and the industry in which it operates. **Offered Fall semesters only.**