

Finance and Quantitative Management

School

Greehey School of Business (<https://www.stmarytx.edu/academics/business/>)

School Dean

Rowena Ortiz-Walters, Ph.D. (rortizwalters@stmarytx.edu) (tsingh@stmarytx.edu)

Department

Finance and Quantitative Management (<https://www.stmarytx.edu/academics/programs/finance-risk-management/>)

Department Chair

Jialin "Jolene" Zhao, Ph.D. (jzhao1@stmarytx.edu)

Finance and Risk Management Major

The finance and risk management major develops the student's ability to analyze financial information and recommend sound financing and investment options, as well as the ability to identify, analyze and manage the risks faced by individuals and organizations.

Individuals who enjoy using analytical skills, making decisions, and explaining decision outcomes to others should consider the finance and risk management major. Additionally, students who enjoy working with people, are challenged by continuous learning requirements and have a strong commitment to career advancement will enjoy a professional career path in finance and risk management.

Business Analytics Minor

The Minor in Business Analytics at the Greehey School of Business is designed to encourage both business and non-business students to manage data-driven decision-making.

Students in the program will be well-equipped to apply quantitative models and derive business insights from data. Combining the Minor in Business Analytics with other fields such as finance and risk management, marketing, computer science, engineering, and political science will give our students an edge in the job market.

Majors in Finance

- B.B.A. in Finance and Risk Management (<https://catalog.stmarytx.edu/undergraduate/majors-programs/greehey-school-business/finance/finance-risk-management-bba/>)

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Finance

FN 3310. Principles of Finance. 3 Semester Hours.

This course introduces students to key components of the modern financial environment, such as financial markets, financial intermediaries, and financial institutions. Students will be equipped with the necessary tools to make informed financial decisions: financial statement analysis, time value of money, valuation, and estimation of risk. Recent events in Finance are also discussed. Prerequisites: EC 2301, EC 2303, MT 1305 or MT 2303, MT 1306 or MT 2306 or MT 2412, AC 2310 or AC 2301. (Fall; Spring; Summer).

FN 3320. Corporate Finance. 3 Semester Hours.

Introduction to analytical financial management. Emphasis placed on the sources, uses, and cost of short, intermediate, and long-term funds; capital budgeting; leverage; cost of capital; valuation of securities; and financial statement analysis. Prerequisites: AC 2320 or AC 2302, FN 3310. (Fall, Spring).

FN 3330. Financial Institutions. 3 Semester Hours.

Review of operations of financial intermediaries including banks, savings institutions, and insurance companies. Principles of money and credit; review of central banking and monetary policies, both national and international. (Fall only) Prerequisites: FN 3310.

FN 3340. Fundamentals of Risk Management. 3 Semester Hours.

Study of risk and its impact on individuals, organizations and society. Analysis of fundamental risk management concepts and techniques. Examination of insurance as a risk management tool, including coverage of insurance economics, law, regulation and market structure. Prerequisites: MT 1305 (or MT 2303), MT 1306 or MT 2306 (or MT 2412), AC 2310 or AC 2301, EC 2301, EC 2303 (Fall, Spring).

FN 3360. Financial Counseling. 3 Semester Hours.

Analysis and application of the financial planning process for executives and small business owners. Emphasis on life and health insurance, annuities, social security, and real estate investments; developing client data; fundamentals of estate planning and taxation relating to insurance, investments and estates. (Fall, Spring). Prerequisites: FN 3310.

FN 4100. Special Studies in Finance. 1 Semester Hour.

A study of selected topics in Finance. Specific subject indicated each time the course is offered. May be used as elective credit and repeated when specific subject changes. Prerequisites: EC 2301, EC 2303, MT 1305 or MT 2303, MT 1306 or MT 2412, AC 2310 or AC 2301, AC 2320 or AC 2302, FN 3310, Consent of Instructor.

FN 4200. Special Studies in Finance. 2 Semester Hours.

A study of selected topics in Finance. Specific subject indicated each time the course is offered. May be used as elective credit and repeated when specific subject changes. Prerequisites: EC 2301, EC 2303, MT 1305 or MT 2303, MT 1306 or MT 2412, AC 2310 or AC 2301, AC 2320 or AC 2302, FN 3310, Consent of Instructor.

FN 4300. Special Studies in Finance. 3 Semester Hours.

A study of selected topics in Finance. Specific subject indicated each time the course is offered. May be used as elective credit and repeated when specific subject changes. Prerequisites: EC 2301, EC 2303, MT 1305 or MT 2303, MT 1306 or MT 2306 or MT 2412, AC 2310 or AC 2301, AC 2320 or AC 2302, FN 3310. Consent of Instructor.

FN 4310. Intermediate Corporate Finance. 3 Semester Hours.

This course will build on Corporate Finance (FN 3310) and will introduce the student to basic elements of finance theory. In particular, emphasis will be placed on dividend policy theories, corporate structure theories, and real options. While the emphasis is on the theoretical aspects of corporate finance, the students will also be exposed to applications of theory in a practical corporate finance environment. Prerequisites: FN 3320. (Fall, Spring).

FN 4320. Investments. 3 Semester Hours.

The quantitative and qualitative analysis of stock, bonds, and derivative securities such as futures and options. Quantitative analyses including valuation models and strategy design. Review of securities markets: functions and operations. (Fall, Spring) Prerequisites: AC 2320 or AC 2302, FN 3310.

FN 4330. Student Managed Portfolio (Beginning). 3 Semester Hours.

Application of portfolio management theories through the active participation in an asset management team assigned the responsibility of attaining a reasonable rate of return commensurate with acceptable risk levels. Investment decisions are further guided by the investment policy guidelines of the U.S. Conference of Catholic Bishops. The U.S. Catholic bishops have highlighted seven key themes that embody Catholic social thought and social teaching. Stewardship of investment resources is covered by objectives that are framed by these themes. (Fall, Spring) Prerequisites: FN 3320, FN 4320 (FN 4320 must be completed with a B- or better) or Permission of the instructor.

FN 4340. Student Managed Portfolio (Advanced). 3 Semester Hours.

Application of portfolio management theories through the active participation in an asset management team assigned the responsibility of attaining a reasonable rate of return commensurate with acceptable risk levels. Investment decisions are further guided by the investment policy guidelines of the U.S. Conference of Catholic Bishops. The U.S. Catholic bishops have highlighted seven key themes that embody Catholic social thought and social teaching. Stewardship of investment resources is covered by objectives that are framed by these themes. (Fall, Spring) Prerequisites: FN 4330 (FN 4330 must be completed with a B- or better), Permission of the instructor.

FN 4350. International Finance. 3 Semester Hours.

The course addresses the historical, institutional, and empirical aspects of the foreign exchange market, the Eurocurrency market and the international bond market. The managerial implementation of international financial instruments in global oriented business organizations is stressed. (Fall, Spring) Prerequisites: FN 3310, IB 3321.

FN 4360. Financial Counseling. 3 Semester Hours.

Analysis and application of the financial planning process for executives and small business owners. Emphasis on life and health insurance, annuities, social security, and real estate investments; developing client data; fundamentals of estate planning and taxation relating to insurance, investments and estates. (Fall & Spring). Prerequisites: FN 3310.

FN 4361. Financial Modeling. 3 Semester Hours.

This course is intended to provide a seminar of the principles associated with the application of information technologies in business organizations. It will cover hardware technologies, software applications, personnel, procedures, and issues associated with management of an information systems function. It will also address the challenges IT managers face managing IT enabled organizations. (Spring only). Prerequisites: AC 2320 or AC 2302, QM 3321, AC 3310 or FN 3310.

FN 4370. Corporate Risk Management. 3 Semester Hours.

Analysis of the purpose and process of risk management in organizations from an enterprise risk management perspective. Examination of various methods of risk identification, risk analysis, risk control and risk financing. Study of key areas of risk in modern organizations. Prerequisites: FN 3310, and FN 3340 (Fall, Spring).

FN 4375. Internship in Finance. 3 Semester Hours.

The opportunity to gain knowledge through experiential activities in professional life. (Fall; Spring; Summer) Prerequisites: FN 3310. Consult academic adviser).

FN 4380. Employee Benefits Management. 3 Semester Hours.

Analysis of objectives, techniques, and markets for employee benefit plans. Examination of group life and health insurance coverages, social security, and retirement planning, including pension and profit-sharing plan management. Prerequisites: MT 1305 or MT 2303, MT 1306 or MT 2306 or MT 2412, AC 2310 or AC 2301, AC 2320 or AC 2302, EC 2301, EC 2303, FN 3310. (Not currently offered. Check with Dept. Chair).

FN 4390. Seminar in Finance. 3 Semester Hours.

Advanced analyses of recent developments in financial and/or investment theory, and in quantitative and qualitative techniques for risk management and financial planning decisions. A seminar approach is used to provide a high degree of student-instructor interaction. (Fall, Spring) Prerequisite: FN 3320, FN 4320, Senior Standing or Permission on the instructor, Finance majors only.

Quantitative Management**QM 3321. Business Analytics. 3 Semester Hours.**

This hands-on, intensive course in Business Analytics will introduce a range of tools and techniques that can help business professionals uncover important information and make better decisions based on data. Topics are covered under course modules and include: presenting data using visuals and descriptive statistics, measuring and understanding the relationships between variables, making the most of customer feedback, and developing skills for effectively explaining the role quantitative reasoning plays in business decision making. Applications for the business environment include supply chain, marketing, pricing, and finance. Prerequisites: MT 1305 or MT 2303, MT 2306 or MT 2412, AC 2310 or AC 2301, EC 2301, EC 2303. (Fall, Spring).

QM 3330. Management Infor Systems. 3 Semester Hours.

An introduction to the use of computers and information for problem solving and decision making in management environments; introduction to essential computer technology, information systems development methodology, and management of computer and information as strategic resources; spreadsheet and database applications for management. Prerequisites: MT 1305 or MT 2303 or MT 1306 or MT 2306 or MT 2412, AC 2310 or AC 2301, EC 2301, EC 2303. (Fall, Spring).

QM 3340. Project Management. 3 Semester Hours.

This course provides a management perspective on managing projects. It examines the basic nature of managing business, public, engineering, and information systems projects, including the specific in sights and techniques required. Issues such as the selection and management of the project team, project initiation, implementation, and termination are addressed. Prerequisites: MT 1305 or MT 2303, MT 1306 or MT 2306 or MT 2412, AC 2310 or AC 2301, AC 2320 or AC 2302, EC 2301, EC 2303, QM 3330. (Not currently offered. Check with Dept. Chair).

QM 3342. Database Management. 3 Semester Hours.

Introduction to theory of database management systems as applied in private and public, profit and non-profit organizations. Balance of managerial and technical issues. Strategic aspects of information as a corporate resource and database planning. Database design, development, and administration using commercial database management systems for personal and multiuse computers and fourth generation languages. Prerequisites: QM 3330 or AC 3331. (Spring only).

QM 3360. Enterprise Resource Planning. 3 Semester Hours.

This course is intended to explain how fundamental business processes interact using ERP in the functional areas such as Sales and Distribution, Production Planning, Cost and Financial Accounting, and Human Capital Management. Students should gain an understanding of the impact ERP systems have on organizations using SAP as a working example. Prerequisites: Prerequisites: AC 2320 or AC 2302, QM 3330 or AC 3331. (Fall only).

QM 4300. Special Studies in Information Systems Management. 3 Semester Hours.

A study of selected topics of Information Systems Management. Specific subject indicated each time the course is offered. May be used as elective credit and repeated when specific subject changes. (Fall, Spring) Prerequisites: EC 2301, EC 2303, MT 1305 or MT 2303, MT 1306 or MT 2306 or MT 2412, AC 2310 or AC 2301, AC 2320 or AC 2302, QM 3330 or AC 3331, Consent of Instructor.

QM 4320. Systems Analysis & Design. 3 Semester Hours.

An introduction to the use of current methodologies for the analysis and design of various types of systems. Methodologies studied involve the traditional approach as well as the object-oriented approach to analysis and design, which includes use of Unified Modeling Language. Prerequisites: EC 2301, EC 2303, MT 1305 or MT 2303, MT 1306 or MT 2306 or MT 2412, AC 2310 or AC 2301, AC 2320 or AC 2302, QM 3330 or AC 3331. (Not currently offered. Check with Dept. Chair).

QM 4330. Operations Management. 3 Semester Hours.

The management of the production and operations functions will be examined. Qualitative and quantitative methods will be used to analyze forecasting, system design, quality, inventory management, scheduling, supply chain management, and project management. Prerequisites: QM 3330 or AC 3331, QM 3321. (Fall, Spring, Summer).

QM 4340. Business Intelligence. 3 Semester Hours.

Development and application of the strategies, methods, and techniques used in data mining, predictive analytics, and other decision support systems. The course employs testing, documenting and using software programs in functional areas of business such as Finance, Production, Marketing, and Accounting. The use of SAS software is employed for hands-on experience. Prerequisites: AC 2320 or AC 2302, QM 3321, QM 3330 or AC 3331. (Fall, Maymester).

QM 4350. Blockchain and Fintech. 3 Semester Hours.

Blockchain technology has been highlighted as one of the most important technologies for the era of fourth industrial revolution. Students will learn about the fundamentals of blockchain technologies and its business applications by focusing on finance industry through lectures, labs, and case studies. This course is also designed to give students a new perspective about data analytics by introducing a new paradigm of decentralized database systems running on P2P (Peer to Peer) network. No prior programming experience is required. Prerequisites: QM 3330 or AC 3331. (Spring only).

QM 4360. Python for Business Analytics. 3 Semester Hours.

Programming languages can be used to analyze data and create visualizations for business. Python is one of the most popular languages for business analytics today due to being powerful but simple to learn. In this course, students will learn basic knowledge on Python and solve simple business problems with it. No prior programming experience is required. This course will be the basis for understanding more advanced skill sets such as Artificial Intelligence and Machine Learning. Prerequisites: Prerequisites: QM 3321.

QM 4361. Financial Modeling. 3 Semester Hours.

This course is intended to provide a seminar of the principles associated with the application of information technologies in business organizations. It will cover hardware technologies, software applications, personnel, procedures, and issues associated with management of an information systems function. It will also address the challenges IT managers face managing IT enables organizations. Prerequisites: AC 2320 or AC 2302, QM 3321. (Spring only).

QM 4363. Applied AI for Business. 3 Semester Hours.

This course is designed to equip and encourage students to embrace Artificial Intelligence (AI) as part of their transformative skillsets. With a focus on the organizational, ethical, and social implications, this course discusses key AI technologies such as deep learning, natural language processing, and robotics, and their applications in business models such as personal and consumer finance, fraud detection, and high-frequency trading. In addition, one key element of the course is an individual programming project in which students learn how to develop simple AI applications using Python. Prerequisites: QM 3321, QM 4360. (Spring only).

QM 4367. Information Systems Controls and Audit. 3 Semester Hours.

An in-depth study of the techniques, systematic procedures, and tools available for conducting IT audits. Demonstrates the use of audit software to assist in the audit process. Utilizes ACL software for hands on experience. Prerequisites: EC 2301, EC 2303, MT 1305 or MT 2303, MT 1306 or MT 2306 or MT 2412, AC 2310 or AC 2301, AC 2320 or AC 2302, QM 3330 or AC 3331. (Fall only).

QM 4370. E-Business. 3 Semester Hours.

The course provides an introduction to eBusiness in a global environment. The material covered includes: (1) technologies, infrastructures and mechanisms that enable the development of eBusiness, (2) business models that include foreign outsourcing and their impact on organizational culture and diversity, (3) issues that are being raised in the areas of privacy, intellectual property, and security, and (4) the impact of the digital divide and other ethical and political topics. (Semester Offered Varies. Contact Dept. Chair).

QM 4375. Internship in Information Systems Management. 3 Semester Hours.

Prerequisites: Consent of the associate dean, faculty supervisor, major adviser, and department chairperson, minimum overall GPA of 2.8, successful completion of QM 3330, and completion or concurrent enrollment in an Information Systems Management major course. Pass/No Pass credit is given. (Fall; Spring; Summer). Prerequisites: QM 3321, QM 3330 (Registration requires approval. Consult academic advisor). (Fall, Spring, Summer).

QM 4380. Senior Project. 3 Semester Hours.

Application of information systems software techniques to a comprehensive information systems development project. Prerequisites: EC 2301, EC 2303, MT 1305 or MT 2303, MT 1306 or MT 2306 or MT 2412, AC 2310 or AC 2301 AC 2320 or AC 2302, QM 3330 or AC 3331, Consent of the instructor, Senior Standing . (Not currently offered. Check with Dept. Chair).