



MS Applied Quantitative Finance (45-57 Credit-Hours)

Course Descriptions – Fall 2024

Pre-requisite Courses

ACTG 4610 – Financial Accounting and Reporting (4 credits)

In this course, students will gain a strong understanding of corporate financial statements that are consumed by parties such as managers, shareholders, creditors, and financial analysts. The course covers the fundamentals of accounting from recording individual business transactions through the preparation of a company's summarized financial statements. The course closely examines how economic events and business decisions impact the three main financial statements – Income Statement, Balance Sheet and Statement of Cash Flows. Students gain significant experience from analyzing Form 10-K annual reports of publicly traded companies.

FIN 4630 - Managerial Finance (4 credits)

This course introduces concepts and analytical techniques to identify and solve financial management problems. It serves as the basis for all other courses in the area of finance as well as provides those basic tools that every business student will need to be successful in her/his chosen career. Those students majoring in marketing, management and accounting, as well as those going further in the study of finance, will find this material an essential part of their business education. Regardless of the student's chosen career, these tools and techniques will provide the basic knowledge to make personal financial decisions.

Prerequisite: ACTG 4610

STAT 4610 (4 credits)

This course introduces students to basic analytical tools in statistics and operations management and provides theoretical concepts and skills that are building blocks for future courses. The approach is to present students with a "corporate" view of how statistical tools are used to analyze data and facilitate business decision-making. Students will familiarize themselves with all of the statistical techniques and models presented in the course and will demonstrate knowledge in applying the appropriate techniques and models to various data sets and interpreting the results of the analysis. The Microsoft Excel Data Analysis and Solver Toolkits will be used to conduct statistical analyses, allowing students to become more proficient overall in using Microsoft Excel and to place their emphasis on applications to core business disciplines, statistical reasoning, and proper interpretation of results. A rich variety of such problems and settings will be discussed in class.

Core Courses

FIN 4000 - Financial Modeling and Databases Bootcamp (1 credit)

This bootcamp is designed to introduce students to financial databases and to familiarize them with basic financial data analysis using Excel. The goal is for students to become comfortable with platforms such as Capital IQ and WRDS, which they will be using throughout their academic and/or professional careers. In addition, students will acquire a basic command of Excel functionality and efficiency in data analysis, together with modeling best practices and practical finance applications.

FIN 4110 - Ethics in Finance (4 credits)

This course is specifically designed for the Master of Science in Applied Quantitative Finance (MSAQF) curriculum and focuses on the ethical, professional, social, and legal responsibilities of finance professionals, organizations, and markets. Financial institutions are facing a crisis of confidence. Trust is an essential ingredient to maintaining efficient and effective financial markets. The finance industry has acquired a reputation for unethical and unsavory behavior. In doing so, it has lost much of the trust of general society members. Many

financial professionals believe that they are encouraged and rewarded for engaging in unethical activities. We will discuss the ethical issues facing financial professionals and institutions. We will explore solutions for resolving these issues and restoring essential trust.

FIN 4180 - Global Finance (2 credits)

This course explores financial management in the international arena. Principal content elements include: The market for foreign exchange, interest rate parity, hedging currency risk, international portfolio management.

Prerequisites: FIN 4630

FIN 4200 - Financial Investments and Markets (4 credits)

Students will learn how households, institutions, firms, and governments interact in financial markets to channel funds from savers to productive uses of capital and provide firms with opportunities to hedge certain risks. This comprehensive understanding of how markets function is essential for anyone with a finance or high-level management role. We will begin by identifying the key institutions in financial markets and how securities come into existence and subsequently trade. We will then learn to measure the risk and return of financial assets while identifying techniques to improve and assess the performance of investment portfolios. Finally, we will introduce derivatives and techniques to wisely hedge firm risks.

Prerequisite: FIN 4630, STAT 4610

FIN 4410 - Financial Planning & Analysis (4 credits)

This course integrates financial decision-making tools, techniques and theory in order to allow students to better understand and analyze corporate finance activities. The main objective of this course is that students can critically analyze corporate issues from a financial perspective so that they are able to provide financial analysis and financial planning inputs to support major corporate decisions. Students will acquire the financial analytical knowledge, skills and abilities required to deal with new problems that arise in the ever-changing business environment. Specific topics will include cost of capital and capital structure, financial planning, business valuation, as well as an introduction to corporate events such as mergers and acquisitions or IPOs.

Prerequisite: FIN 4630

FIN 4500 - Financial Modeling (4 credits)

Financial managers today need a good knowledge of both financial model building and financial theory. This course focuses on the construction and development of financial models from corporate finance, investments and financial markets. It is intended for students that already have familiarity with Excel, but are not necessarily familiar with R. The course addresses advanced topics such as pro-forma modeling in Excel and uncertainty modeling and portfolio optimization using R.

Prerequisites: FIN 4630

FIN 4740 - Managerial Microeconomics (2 credits)

This course combines the standard tools of microeconomic analysis with a well-rounded appreciation of the important perspectives that form the business environment in the contemporary world. The goal is to provide students with the tools from microeconomics, game theory, and industrial organization that they need to make sound managerial decisions. The course uses case studies to develop practical insights into managing the firm's resources to achieve competitive advantage. The course is divided into two principal modules based on market structure: perfect competition and imperfect competition. Both modules cover optimal behavior and strategies.

FIN 4750 - Managerial Macroeconomics (2 credits)

This course covers the theory and practice of modern macroeconomics. It teaches students how private market forces and government policy decisions drive fluctuations in the global economy and affect the business environment. It explores issues related to inflation, interest rates, foreign exchange rate, business cycles, and monetary and fiscal policies. The course uses case studies to analyze real-life macroeconomic issues, and students are encouraged to investigate the potential and limitations of macroeconomic theory with real-world

problems. The course is divided into two modules: the economy in the long run, and the economy in the short run. Both modules cover impacts of government policies on the business environment in a closed economy and an open economy.

FIN 4830 - Econometrics for Finance (4 credits)

Econometrics for Finance is designed to teach applied statistical tools relevant to understanding financial and economic data. It is designed to cover essential tools for working with financial data, including return forecasting, volatility and econometrics of asset pricing, such as testing market models. The emphasis is on empirical techniques which are used in the analysis of financial markets and how they are applied to actual data. It teaches how to use and apply techniques using R, a free software that is used by many finance professionals. The course is intended to prepare students to possess the quantitative tools to evaluate and implement in the finance arena.

Prerequisite: STAT 4610 and FIN 4500 (If no experience in R)

INFO 4140 – Business Databases (4 credits)

This course is designed to introduce the student to the most commonly used type of business software: the database. This class explains how to design a database, how to use a database management system to implement the design, and how to document the work. In the process, students will work with a variety of tools to support the mastery of business databases, including Visio for modeling, SQL Server for database development, and SQL for database querying.

Elective Courses

FIN 4030 Personal Finance (4 credits)

This course provides an overview of topics which are critical to lifetime personal financial planning. The premise of the course is that personal financial planning starts early in life and especially as a new college graduate begins a professional career. The main topics in the course include Principles of Taxation, Basics of Estate Planning, Lifetime Asset Allocation, Principles of Insurance, Proper Debt Management, the Real Estate Housing Decision, and College Financial Planning for Children.

Prerequisite: FIN 4200

FIN 4060 Financial Planning over the Lifecycle (4 credits)

This course is designed for students who are interested in Financial Planning, possibly as a profession. We will cover six of the areas of financial planning: cash flows, protection (insurance), investments, goals (education and retirement), income taxation, and estate planning. This course is part of University of Denver CFP® Certification Financial Planning Education Program.

Prerequisite: FIN 4030

FIN 4090 Wealth Management (4 credits)

Wealth Management offers students important skills to become a part of the growing wealth management industry. It includes such topics as the Financial Planning Process, Insurance Basics, Investment Basics and Strategies, Retirement Planning, and Estate Planning. We are pleased to work with the College for Financial Planning (CFFP), located in Denver, to provide instruction from their The Foundations in Financial PlanningSM program. This can lead to the Financial Paraplanner Qualified Professional™ or FPQP™ designation upon successful completion of an Examination. The Examination is administered through the CFFP. The FPQP™ will be a valuable addition to your resume.

Prerequisite: FIN 4060

FIN 4150 - Advanced Business Valuation (4 credits)

In this course, students will learn theoretical development, analytical tools and practical approaches to analyze and tackle business valuation issues at the core of the financial professions. The theoretical section of the course provides in-depth coverage of the financial theories and models essential to value businesses. The application

section provides students with opportunities to apply the valuation principles and techniques to assess business value and develop strategies to create value in a real-world context.

Prerequisite: FIN 4410

FIN 4160 - Treasury Management (4 credits)

The objective of the course is to provide students with a comprehensive understanding of how various treasury functions are managed in a corporation and build students' capabilities to assume the role of a proficient treasury manager. This course will cover techniques used by major corporations to manage cash, the capital structure, financial risk and working capital.

Prerequisite: FIN 4630

FIN 4320 - Equity Analysis (4 credits)

This course is an advanced finance course that focuses on the analysis of equity securities. The curriculum is primarily derived from the Candidate Body of Knowledge (CBOK) from the Chartered Financial Analyst® (CFA®) Program. The goal is to teach students how to implement objective, unbiased valuations through an understanding of the valuation process in theory and practice.

Prerequisite: FIN 4200

FIN 4330 - Portfolio Management and Risk Analytics (4 credits)

Case and project approach to foundation of investment portfolio management. This course emphasizes the application of modern portfolio management concepts and risk management principles.

Prerequisite: FIN 4200.

FIN 4420 - Capital Expenditure Analysis (4 credits)

Advanced course in capital budgeting examining capital allocation processes and procedures and the theory and applied techniques of capital spending and divestment under conditions of certainty and uncertainty. Related issues of cost of capital and leasing also included.

Prerequisite: FIN 4630

FIN 4710 - Marsico Investment Fund I (4 credits)

A securities analysis and portfolio management practicum in which students manage a University endowment gift donated by Tom and Cydney Marsico. The selection of students for this class is competitive. Students must agree to participate for 2 consecutive quarters, and they must be willing to address portfolio issues during the between-quarter periods if necessary. (First quarter of two-quarter course.)

FIN 4720 - Marsico Investment Fund II (4 credits)

A securities analysis and portfolio management practicum in which students manage a University endowment gift donated by Tom and Cydney Marsico.

Prerequisite: FIN 4710 (Second part of two-quarter course.)

FIN 4800 - Organized Walk Down Wall Street (4 credits)

After four class sessions in Denver, participants will spend five days in New York visiting exchanges, brokerage firms, investment bankers, commercial banks, asset managers, and other institutions.

Prerequisite: Instructor Permission

FIN 4860 - Derivatives (4 credits)

This course provides a theoretical foundation for the pricing of contingent claims and for designing risk-management strategies. It discusses more advanced material in financial derivatives and is intended for students who have a quantitative background and are interested in enhancing their knowledge of the way in which derivatives can be analyzed. This course covers option pricing models, hedging techniques, and trading strategies. It also includes portfolio insurance, value-at-risk measure, multistep binomial trees to value American

options, interest rate options, and other exotic options.

Prerequisite: FIN 4200

FIN 4870 - Strategic Finance (4 credits)

Addresses theory, concepts, and techniques associated with asset management and creation of value from a strategic orientation. Links financial theory and practice to strategic and operational objectives of the firm, prepares student to incorporate risk and uncertainty into analytical decision-making process and to analyze divestiture, restructuring, and liquidation decisions.

Prerequisites: FIN 4410

FIN 4885 - Investment Banking and External Financing (4 credits)

This course is an advanced Corporate Finance course, focusing on the decisions by companies related to external sources of financing. There will be a mix of theory and practice, with outside speakers providing insight into the practice component. Topics will include business valuation, mergers and acquisitions, startup financing, angel investing and venture capital, bank loans, private equity, stock issuance, and going private.

Prerequisites: FIN 4410

FIN 4890 - Fixed Income Analysis (4 credits)

Emphasizes valuation and management of fixed income securities in prevailing environment of complex and innovative financial arrangements. Study of the nature of evolving markets, both domestically and internationally.

Prerequisite: FIN 4200

ACTG 4220 – Financial Accounting and Analysis (4 credits)

Consolidated financial statements, accounting for leases, currency translation, and options and futures impacts, GAAP to restate financial statements for differences between companies. Impact of financial transactions and evaluating a firm's performance from a user's perspective.

Prerequisite: FIN 4630