

Masters in Financial Engineering (MFE)

MFE 230A Investments and Derivatives 3 Units

Department: Masters in Financial Engineering

Course level: Graduate

Terms course may be offered: Fall, spring and summer

Grading: Letter grade.

Hours and format: 4 hours of lecture per week for 8 weeks.

The course discusses the basic theories of asset pricing. It begins with the standard discounted cash flow analysis, and generalizes this approach to develop the No Arbitrage Pricing Technique for security valuation.

Topics will be fixed income securities, derivatives, contingent claims, basic principles of optimal portfolio theory, models of equilibrium asset pricing, including CAPM and related Factor Models.

Formerly known as Business Administration 230A.

MFE 230E Empirical Methods in Finance 2 Units

Department: Masters in Financial Engineering

Course level: Graduate

Terms course may be offered: Fall, spring and summer

Grading: Letter grade.

Hours and format: 6 hours of lecture per week for 8 weeks.

Prerequisites: Business Administration 230A-230B.

This course reviews probability and statistical techniques commonly used in quantitative finance. It includes a review of normal, lognormal, CEV distribution, estimation and nonparametric techniques commonly used in finance (MLE, GMM, GARCH). Students will be introduced to financial databases and estimation application software to estimate volatilities and correlations and their stability.

Formerly known as Business Administration 230E. Instructor: Valkanov

MFE 230F The Design of Securities for Corporate Financing 1 Unit

Department: Masters in Financial Engineering

Course level: Graduate

Terms course may be offered: Fall, spring and summer

Grading: Letter grade.

Hours and format: 2 hours of lecture per week for 8 weeks. 2 hours of lecture per week for 8 weeks. 2 hours of lecture per week for 8 weeks. 2 hours of lecture per week for 8 weeks.

Prerequisites: 230D.

The view of corporate finance presented in this course stems from an analysis of two related issues: 1) how firms create value, and 2) how corporate finance facilitates the process of value creation. As part of this process, we will examine the factors that help determine financial strategy, thereby putting the design of financial packages in perspective. In particular, the course focuses on how corporate financing needs lead to the need for financial engineering and spur financial innovation.

MFE 230G Equity and Currency Markets 2 Units

Department: Masters in Financial Engineering

Course level: Graduate

Terms course may be offered: Fall, spring and summer

Grading: Letter grade.

Hours and format: 4 hours of Lecture and 4 hours of Lecture per week for 7.5 weeks.

Prerequisites: Business Administration 230A-230B.

This course reviews various aspects of equity and currency markets and their relative importance. It provides models of and historical evidence on the average returns and volatility of returns on equities, on the trade-to-trade equity price behavior, on trading volume and patterns, and primary financial risks. Determination of spot and forward rates and volatility, volume, high frequency dynamics and dealer behavior are examined.

Formerly known as Business Administration 230G.