

USC Marshall

School of Business

Department of Finance and Business Economics Graduate Elective Courses Fall 2024

The department of Finance and Business Economics (FBE) offers classes in the fields of finance, business economics, business law and real estate. Subjects include microeconomics, macroeconomics, economic forecasting, corporate finance, investments and valuation, financial institutions and markets, risk management, and real estate finance, among others. These subjects are important for business planning and consulting, evaluation of capital investments and corporate strategies, and securities investment analysis, advising and trading.

Contact Information

FBE Office:	HOH-231
Email:	fbe@usc.edu
Phone:	(213) 740-6515

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2	Department of Finance and Business Economics				
3	Course	Course Title	Fall 2024	Spring 2025	Summer 2025
4	FBE 501	Investment Banking Fundamentals	X	X	
5	FBE-504	The FinTech and Blockchain Revolution		X	
6	FBE 505	Behavioral Finance	X	X	
7	FBE 506	Quantitative Methods in Finance	X		
8	FBE-523	Venture Capital and Private Equity	X		
9	FBE-524	Money and Capital Markets	X		
10	FBE-526	Macroeconomic Analysis for Business	X		
11	FBE-527	Entrepreneurial Finance: Financial Management for Developing Firms	X	X	
12	FBE-529	Financial Analysis and Valuation	X	X	
13	FBE -530	Decentralized Finance (DeFi)	X		
14	FBE-531	Corporate Financial Policy and Corporate Governance	X		
15	FBE-532	Corporate Financial Strategy	X	X	
16	FBE-535	Applied Finance in Fixed Income Securities		X	
17	FBE-540	Hedge Funds		X	X
18	FBE-543	Forecasting and Risk Analysis	X		
19	FBE-545	Applied Financial Modeling		X	
20	FBE-550	High Yield Bond Investing - Managing Credit Risk		X	
21	FBE-551	Quantitative Investing	X	X	
22	FBE-553a	Applied Portfolio Management	X		
23	FBE-553b	Applied Portfolio Management		X	
24	FBE-554	Trading and Exchanges		X	
25	FBE-555	Investment Analysis and Portfolio Management	X	X	
26	FBE-557	Business Law and Ethics		X	
27	FBE-558	Law for Structuring, Financing, and Managing Businesses	X	X	
28	FBE-559	Management of Financial Risk	X	X	
29	FBE-560	Mergers and Acquisitions		X	
30	FBE-565	Economics of Urban Land Use: Feasibility Studies		X	
31	FBE-566	Real Estate Finance Analysis and Modeling		X	
32	FBE-567	Advanced Real Estate Investment Trust (REIT) Analysis		X	
33	FBE 588	Real Estate Law and Transaction			X
34	FBE-589	Mortgages and Mortgage-Backed Securities and Markets	X		
35	FBE-591	Real Estate Finance and Investment	X	X	
36	FBE-599	Special Topics: Greentech Finance, Banking, Capital Markets and Insurance		X	

FBE 501: Investment Banking Fundamentals (1.5 units)
6:30-9:30 Thursdays, Session 411
Course Instructor: Professor Brian Little

COURSE DESCRIPTION

This course provides a unique view into the role of an investment banking Associate, where students will effectively function as a junior banker through a sell-side M&A process. Students will gain practical knowledge and insight into the specific duties of a junior banker, as well as the actual steps and deliverables required in the course of a transaction. This eight-week intensive course will integrate skills taught in current Valuation, M&A, Corporate Finance and Business Law courses. The curriculum will leverage traditional M&A text, case studies, and instruction from a variety of M&A practitioners (i.e. banking, legal, accounting), with all assignments designed to replicate real-world deliverables. As a result of this class, students will have a better grasp of the role of a sell-side investment banker and skillset required to be an exceptional Associate, ultimately making them better prepared for interviews and a career in the investment banking industry.

The course will follow a logical progression through the various phases of a sell-side process: i) evaluation of opportunities and pitching, ii) preparation of marketing materials, iii) execution of due diligence, and iv) negotiation of definitive documents. Students will work both individually and in teams to prepare the analysis and materials necessary for each of the various phases. Key to this process is a review of valuation methodologies and development of defensible assumptions, with the ultimate objective of valuing a company within the context of making a strategic alternatives recommendation.

COURSE OBJECTIVES

This course is designed to reinforce key valuation principals through a practical application of specific deliverables that are critical to the role of an Investment Banking Associate. Upon successful completion of the course, students will be able to:

1. Develop defensible assumptions when limited information is provided to create a credible valuation of a business.
2. Analyze a discounted cash flow model (DCF)
3. Create and assess a leveraged buyout model (LBO)
4. Research and compare public comparable companies, and comparable transactions.
5. Build a three-statement model.
6. Interpret the respective output data within the context of evaluating sell-side opportunities.
7. Develop successful pitch materials.
8. Create an offering memorandum highlighting the key investment criteria and growth opportunities that will ultimately drive value for the client.
9. Assess a number of competing bids for their client with respect to price, capital structure, financing sources, plan for management subsequent to the transaction, potential for an "earn-out", as well as size and type of bidder.
10. Prepare a bid summary for their client's board of directors and management team.
11. Deliver a recommendation as to which buyer should be granted exclusivity to perform confirmatory diligence.
12. Work effectively on a team of junior bankers on a sell-side M&A project.

FBE 505: Behavioral Finance – 3.0 units
6:30-9:30 Thursdays
Course Instructor: Professor David Hirshleifer

COURSE DESCRIPTION

Behavioral finance studies how the psychological biases of investors and managers affect financial decisions and markets. This course covers scientific evidence about what causes misvaluation, how investors can exploit market inefficiency in their trading decisions, how managers can address market mispricing in corporate financing and investment decisions, and how managers can correct for their own biases. To prepare students for practical financial decision making, the course has a quantitative component that includes factor models, portfolio theory, risk-adjusted discounting, and statistical data analysis, including regression methods. The course primarily involves lecture, discussion, in-class exercises, and student presentation, which will be applied to real-world examples and evidence.

COURSE OBJECTIVES

Through lecture, readings, and assignments, you will acquire the skills to:

1. Describe key principles of psychology relevant for financial markets.
2. Describe key aspects of how psychological processes affect the decisions of individual and institutional investors and other market participants.
3. Explain key aspects of how psychological processes affect equilibrium prices and other market outcomes in financial markets.
4. Explain key aspects of how psychological processes affect firm and managerial behavior.
5. Apply these concepts to applied financial problems, including appropriate data analysis in support of well-considered decisions.

FBE 506: Quantitative Methods in Finance – 3.0 units
12:30 and 2:00 p.m. TTh
Course Instructor: Professor Mohammad Safarzadeh

Course Description:

FBE 506 is a required course in the MS Finance program that aims to develop single and multi-variable mathematical and statistical models used in many practical problems of modern finance and economics.

Course Objectives:

The subject matter that modern economics and finance students are expected to master requires significant mathematical and statistical knowledge. The main objective of FBE 506 is to help students acquire enough quantitative skills to understand the literature that is most relevant to their studies and to succeed in their courses and in their careers. Upon successfully completing this course, students will be able to:

1. Summarize sample data in descriptive statistics for making inference from sample to population using proper distribution theories.
2. Build simple economic and financial models, collect data and apply statistical methods for estimating the model, hypothesis testing, and forecasting.
3. Compute different measures of risk to investment and learn about their use in practice.
4. Combine several stocks into a portfolio and optimize the risk and return relation of the portfolio by minimizing the risk for an expected return or by maximizing return for an assumed risk tolerance.
5. Use statistical techniques to measure the effects of the changes in economic conditions or the effects of the special events on risk and return to securities and portfolios.
6. Do pricing of complex securities such as American and European options.

Course Textbook:

I will be using chapters of my own manuscript titled, *Quantitative Methods in Finance Using R* as the text book for the course. The chapters of the manuscript will be posted under the Content tab of the course site on Blackboard. A recommended textbook for the course is, *Quantitative Methods in Finance: Market Risk Analysis I*, by Carol Alexander, John Wiley & Sons Ltd, 2010, ISBN: 978-0-470-99800.

Course Delivery:

The course delivery will be in a lecture format, with sufficient flexibility to alter allotted time and emphasis as questions arise. From time to time, class will be conducted on application and discussion format. We will do plenty applications in the class so that you can see how the quantitative techniques can facilitate a clear and organized presentation of the theories or by casting them into simple models for applications.

FBE 523: Venture Capital and Private Equity – 3.0 units
Course Instructor: Professor Steve Moyer

COURSE DESCRIPTION

Venture Capital and Private Equity immerses the student in all facets of the venture capital and private equity investment process and industry. As much as possible, it will be taught from the perspective of how investment professionals source, analyze, structure, execute and exit investments. Consistent with the nature and demands of the industry it explores, the course is demanding and requires collaboration and significant pre-class preparation.

The course will primarily use the case study method to challenge the student to think about the investment process from the perspective of an investor. The first half of the course will focus on basic valuation skills, the business of venture capital and private equity, the venture capital investment process, and investments in growth companies. The second half of the course will examine leveraged private equity investments/buyouts, the process of investing in late-stage companies and strategies for managing distressed investments. Accounting is the language of business, so students need to have sufficient command of accounting concepts to be able to analyze and value businesses. The course will also require modeling of businesses and investments using Excel.

COURSE OBJECTIVES

Upon successful completion of this course, students will be able to:

1. Describe the terminology, concepts and theories used in the investment process.
2. Describe the diligence techniques and analytical tools employed to make investments.
3. Describe the terms and structures of the securities through which investments are made.
4. Create Excel projection and valuation models.
5. Collaborate in teams to analyze/resolve investment opportunities/problems.
6. Develop critical thinking and communications skills in a financial context.

COURSE MATERIALS

1. Course reading packets (via HBS website) that contain HBS and Darden cases and other miscellaneous articles. The packets will be divided into two groups: Beginning of Course and VC/PE. (Links in Brightspace)
2. Video Lectures: To reduce the amount of class time spent on basic concepts/materials, links to a variety of background lectures will be provided in Brightspace.

FBE 524: Money and Capital Markets – 3.0 units
12:30-1:50 MW

Course Instructor: Professor Fatemeh Ibrahimi Nazarian

COURSE DESCRIPTION

An overview of the global financial system, introducing the important institutional players, describing, and classifying financial/capital markets where institutions and individuals operate, and developing an analytical framework to understand the determinants of prices and yields at which financial transactions occur. Emphasizes understanding and evaluating the significance of financial market events, focusing on the financial crisis that occurred in the summer of 2007, the global economic recession outlook during the Covid-19 Pandemic Crisis, the ongoing Russia-Ukraine war, as well as current and future developments in financial and capital markets leading to uncertainty for investors. Provides an integrated analytical framework for understanding the effects of economic forces and economic policy on key financial market variables that determine the success of business strategies and present risks to firms or individuals from changes in interest rates, equity values, and exchange rates.

COURSE OBJECTIVES

The First Component covers the Financial Markets: Money and Payment System, the Capital Markets (The Bond market, the Stock Market, Derivative Markets (Forward, Futures, Options, and Swaps), and the Market for Foreign Exchange). **The Second Component** covers Banking: Commercial Banks, Investment Banks, and Investment institutions (Mutual funds, Hedge Funds, and Finance companies). **The Third Component** covers Federal Reserve, Monetary policy, and the Macroeconomy utilizing Dynamic Aggregate Demand and Supply Model and Analysis covering Business Cycles understanding past, current, and future developments in the economy, financial and Capital markets. The objective of this course is to make a wide range of financial market events comprehensible within an integrated framework. At the conclusion of this course students will be able to:

1. Utilize an analytical framework and conduct research into an institution's background to describe how financial institutions and capital markets interact and affect financial markets and the world economy.
2. Describe a framework to the behavior of central banks (e.g., the Fed and the ECB) and how these institutions impact financial and capital markets and economic activity.
3. Utilize a framework to argue persuasively a business investment decision or a strategic business plan; and to shape personal financial plans.
4. Demonstrate a broad understanding of global financial and economic policy.
5. Explain current financial market developments as well as an ability to place current events into an historical context and to anticipate likely future developments.

These skills will be especially useful for students considering careers in commercial or investment banking, investment management, or managing small or start-up firms, real estate, or other financial services. Given the almost universal importance of these issues, students with a broad spectrum of career interests—including, consulting, marketing, and international relations will also find the course highly relevant. Finally, the course will be helpful in shaping personal financial plans. **The Grading** will be based on Class Participation, Five Article Summaries, Team Project and non-cumulative Midterm and Final Exams.

FBE 526: Macroeconomics Analysis for Business – 3.0 units
11:00-12:20 MW
Course Instructor: Professor Baizhu Chen

COURSE DESCRIPTION

This course covers concepts and tools for macroeconomic analysis for business decision makings, by adopting a case study approach to bridge the theories and the realities. Making sound business decisions requires knowing the economic environment in which firms operate. It requires an understanding of key economic indicators, the relationship among economic variables, the mechanics of how the economy works, and the role of economic institutions. We will use cases covering various real-world issues, ranging from the US-China trade war and Singapore growth model to the rise of Bitcoin and Indian Rupee crisis. The course provides a good macroeconomic perspective for students who intend to develop a career in consulting, finance, international trade, technology, real estates, and public policy making, etc.

DELIVERABLES

The course deliverables are:

1. A series of open-book & open-notes quizzes in multiple choice or T/F format (20%)
2. Two short data analysis group projects using actual data (15%)
 - a. First project is forecasting the US GDP.
 - b. Second project is analyzing the US monetary policy and inflation.
3. One country analysis group project (20%)
4. One open-book & open-notes final exam (35%)
5. Class participation (10%)

CASES TO BE USED

1. The US-China Trade War: Deal or No Deal, UV8014-PDF-ENG, April 2022
2. China Moves Up the Value Chain – Foxconn’s Dilemma, HKU 2021
3. Singapore: “Facing Challenges Together”, HBS, 9-720-036, 2021
4. Bitcoin Investment or Illusion? Darden Business Publishing, UV7394, Feb. 21, 2018
5. Indian Rupee Crisis of 2013, Ivey Case W15525, 2019
6. The Classic Gold Standard, UV7903, 2019
7. Breaking Bad (the Rules): Argentina Defaults, Inflates (and Grows), 1997 – 2015, HBS, 9-714-036, 2019
8. Japan’s Economy: Abenomics from the Front and Rearview Mirrors. University of Virginia: UV7557, 2021

FBE 527: Entrepreneurial Finance: Financial Management for Developing Firms - 3.0 units
5:00 and 6:30 pm TTH
Course Instructor: Professor Duke Bristow

Course Description:

- ❖ Financing of start-up firms, and the tough decisions, pitfalls and challenges that new enterprises face in raising initial and follow-on financing.
- ❖ We develop tools and concepts of corporate finance, in particular valuation, modeling, corporate governance, and investment decisions within an entrepreneurial context. Second, we use cases with firms at different stages of their life cycle to tackle the issues that arise when applying these principles in practice. There are three modules:

Module 1: Evaluating entrepreneurial opportunities; Module 2: Financing Alternatives and Module 3: Growth and Exit:

Learning Objectives:

- ❖ Critically evaluate the potential of a new start-up idea and build supporting spreadsheet financial models; Determine the amount and source of external capital for an entrepreneurial firm, including venture capital, angel financing, venture debt, crowd-funding, as well as traditional funding sources such as bank loans.
- ❖ Negotiate a term sheet from both an entrepreneur's and an investor's perspective. Analyze a firm's working capital management and explain its relation to growth. Describe liquidity choices for private firms, and the timing of exit decisions.

FBE 529: Financial Analysis and Valuation – 3.0 units
2:00-3:20 TTH
Course Instructor: Professor Ayca Altintig

COURSE DESCRIPTION

This course develops and uses tools of financial analysis to evaluate the performance and assess the value of companies. Using various cases and examples, the course covers methods of utilizing financial data and applying valuation techniques to make strategic and financial decisions. The course covers valuation methods from both a conceptual and practical framework. It is an applications-oriented course designed to provide a conceptual framework as well as a comprehensive set of tools for tackling the practical challenges of performance evaluation and business valuation. The course introduces topics such as mergers and acquisitions, private equity and venture capital and the valuation of private companies and leveraged buyout analysis.

The course covers the theory and practice of financial analysis and valuation. We will consider the key aspects of financial analysis for both performance evaluation and valuation. Our coverage of the material is designed to allow you to become comfortable with the fundamentals so that you may improve your proficiency in participating in future financial and strategic discussions within a company or organization and with external analysts and service providers.

COURSE OBJECTIVES

By the end of the course, students should be able to:

1. Describe the key aspects of financial analysis for both performance evaluation and valuation.
2. Utilize and interpret financial data to make decisions about courses of action for a firm.
3. Perform valuations for public and private firms for purposes of fundamental research, strategic analysis, transactions such as an IPO or a merger, or s structuring.
4. Apply valuation frameworks such as discounted cash flows (DCF) technique, market multiples approach, and transaction-based approaches such as an LBO model.
5. Understand other valuation issues and special situations such as the challenges of valuing high-growth and private companies, the process of venture capital and early-stage financing and the approach to valuing highly leveraged companies and LBO transactions.
6. Conduct research using a broad range of sources, synthesizing and judging the quality of collected information and support written or oral claims logically and persuasively.
7. Apply valuation in a global context, considering the interplay of international markets, and economic, social and cultural issues.

FBE 530: Decentralized Finance (DeFi) – 1.5 units
This course was formally offered as FBE 599
9:30-10:20 am TTH
Course Instructor: Professor Vincenzo Quadrini

COURSE DESCRIPTION

The goal of this course is to introduce students to the growing phenomenon of 'decentralized finance,' also known as 'DeFi.' Technological advances are at the core of DeFi, as they are for the broader FinTech. However, the market structure and functioning of DeFi are fundamentally different. Simply put, traditional finance and most of today's FinTech do not change the fundamental organizational structure of financial markets. They are still based on companies offering financial services to customers. The provision of these services with advanced technological tools increases the variety and quality of the services while reducing their cost. However, financial services are still provided by identifiable companies, whether traditional banks or FinTech companies. Companies collect a variety of information from their customers and typically do not share information with their competitors. In contrast, in DeFi, information is publicly accessible to all operators in the system but maintains anonymity thanks to data encryption. Everybody can participate in the marketplace for financial services, not only as users (customers) but also as providers (suppliers of services). That said, each provider has limited control over the system, unlike the traditional marketplace in finance.

At the center of DeFi is a network system that relies upon blockchains. The course will begin with a brief description of the architecture underlying decentralized finance. A part of the course will cover the financial analysis of investments in cryptocurrencies, including the assessment of the risk-return trade-off associated with these investments. Some of the data analysis will be performed with Python. We will use Python because it is widely used in the finance industry. During the course, we will present and discuss various applications, starting with the financial analysis of cryptocurrencies. Cryptocurrencies are just one component of DeFi. Many other applications are made operational with Smart Contracts. They include some of the most popular transactions in finance, including borrowing and lending. But the range of financial transactions that can be implemented through smart contracts is unlimited and potentially quite complex. A further topic covered in the course will be digital assets and Non-Fungible Tokens (NFT). We will study how the tokenization of non-tangible and non-fungible production can revolutionize certain industries.

COURSE OBJECTIVES

Upon successful completion of this course, students will be able to:

1. Explain how DeFi works and how it could revolutionize the market structure of finance.
2. Identify the advantages and disadvantages of DeFi compared to traditional finance.
3. Assess the role of cryptocurrencies as mean of transaction and store of value.
4. Describe the difference between digital currencies and cryptocurrencies.
5. Explain how smart contracts work and why they are important for finance.
6. Assess the risk that the value of digital assets diverges from the fundamental value (price bubbles)

To achieve these goals, the course will be divided in three parts. The first part will focus on the mechanics of decentralized finance. Here the goal is to introduce students to the basic technological architecture of DeFi. The second part will focus on financial analysis with special attention to cryptocurrencies. Since cryptocurrencies are a type of money, the course will review the basic theory of money and compares the role of cryptocurrencies to more traditional government sponsored money, whether digital or not. The third part covers other applications in decentralized finance that are implemented with smart contracts.

FBE 531: Corporate Financial Policy and Corporate Governance – 3.0 units
8:00 and 9:30 a.m. TTH
Course Instructor: Professor Kenneth Ahern

Course Description

The course covers advanced analysis of the determinants of corporate capital structure and payout policies, allocation and value of corporate control, and security issuance and retirement. The conceptual framework and applications developed in this course will be useful to students who seek to understand both the institutional details of, and substantive motivations for, important corporate financing decisions. In terms of career tracks, the skill set developed in this course will provide a strong foundation for analyzing corporate financial policies for (i) those people who will work for corporations, with or without a specialization in finance, (ii) those who will serve as outside consultants to corporations on appropriate financial policies, (iii) those who will work as external financial analysts, or more generally for (iv) anyone interested in understanding the financial decisions made by corporate management.

Course Objectives

Upon successful completion of this course, students will be able to:

1. Apply theories, models, and frameworks to analyze capital markets.
2. Apply analytic tools to solve specific problems central to corporate finance.
3. Develop abstract ideas to generalize solutions to corporate finance problems.
4. Understand the ethical and professional standards in corporate financial decision-making.
5. Work with colleagues to solve problems.

Prerequisites. The prerequisite for this class is GSBA 521 or GSBA 521b or GSBA 548.

FBE 532: Corporate Financial Strategy – 3.0 units
9:30 a.m. TTH
Course Instructor: Professor Ayca Altintig

COURSE DESCRIPTION

This course examines how the finance theory that developed in your prior finance class(es) can be applied in “real world” situations. More importantly, we will be concerned with the *implementation* of a financial strategy in the corporation. The course will build on the corporate finance principles studied in introductory finance classes with an emphasis on financial and corporate strategy. We will investigate the key financial choices of a corporation and their impact on the overall strategy of the firm, including financial analysis, capital structure choice, payout policy, value creation, mergers and acquisitions, and corporate financial restructuring.

COURSE OBJECTIVES

Upon successful completion of this course students will be able to:

1. Explain the linkages between the operating strategy of the enterprise and its choice of financial decisions.
2. Analyze the impact of major financial strategic decisions on firm value.
3. Apply theoretical financial knowledge to real business scenarios.
4. Understand the various roles of a financial managers in an enterprise.

COURSE MATERIALS

The required textbook from your introductory finance classes will be your reference guide.

All other required readings and cases for the class can be found online in our HBS Coursepack: <https://hbsp.harvard.edu/import/1133642>

Course lecture notes and other supplemental material will be provided on Brightspace. If you have any questions or need assistance with Brightspace Course Pages, please contact the Marshall Help Desk at (213) 740-3000, or HelpDesk@marshall.usc.edu.

GRADING

Grading will be based on the following criteria

GRADING	% of Grade
Midterm Exam	20%
Final Exam	20%
Cases	60%
TOTAL	100%

FBE 543: Forecasting and Risk Analysis – 3.0 units
5:00-6:20 TTH

Course Instructor: Mohammad Safarzadeh, safar zad@marshall.usc.edu

Course Description: Application of econometric tools and versions of Capital Asset Pricing Models to estimate financial risk and stock market risk premium for portfolio management.

Course Objectives: FBE 543 is an advanced finance elective course that aims to develop econometric tools used in many practical problems of modern economics and finance. The quantitative tools developed in this course will enable practitioners to estimate various asset-pricing models and obtain estimates of asset return correlations and volatility. We will cover the three main statistical tools, (i) the Classical Linear Regression Model, (ii) Smoothing Techniques, (iii) Modern Time Series Econometrics.

Course Textbook: Introductory Econometrics for Finance, 4th edition by Chris Brooks, Cambridge University Press, 2019, ISBN: 978-1-108-43682-3.

Recommended Textbook: Applied Econometric Time Series, 4th edition by Walter Enders, Wiley, 2014, ISBN-13: 978-1-11-880-856-6.

Course Delivery: The course delivery will be in a lecture format, with sufficient flexibility to alter allotted time and emphasis as questions arise. From time to time, class will be conducted on application and discussion format. We will do plenty of applications in the class so that you can see how the econometric techniques can be used to test the theories, make inference, or forecast the future.

Grading Policy: The course grade will be computed based on the following table:

	<u>Points</u>	<u>% of Grade</u>
Five assignments, each 10 points	50	10%
Course project and report	100	20%
Test #1	100	20%
Test #2	100	20%
Final Exam	<u>150</u>	<u>30%</u>
Total	500	100%

The target course *GPA* for this course is 3.5. Your course grade represents how you performed in the class relative to other students.

FBE 551: Quantitative Investing – 3.0 units
9:30-10:50 MW
Course Instructor: Professor Shane Shepherd
6:30-9:30pm W
Course Instructor: Professor Engin Kose

The investment management profession has been transformed in the past two decades by two competing forces. First, the rise of low-cost and easily implementable passive index strategies has directed a large portion (over 50% in some cases) of assets into these vehicles. Secondly, the response of active managers has been to pull in the opposite direction and offer increasingly sophisticated and data-driven strategies to remain competitive and justify higher fees. Thus, modern active investment management has become increasingly quantitative in nature, and investment strategies are more and more determined by the output of data-driven models rather than the subjective views of fundamental analysts and portfolio managers. In this course, we will learn the skills to build, test, and implement the types of models used by quantitative asset managers to make investment decisions.

A traditional investments course (e.g., FBE 555) is generally theory-focused, and students learn the instruments used in portfolio management, various theories about the pricing of those instruments, and methods for forming investment portfolios that maximize some risk-adjusted return. While some discussion of data is included, students in a typical investments course are usually digesting summaries of that data rather than doing any deep data analysis themselves, as these courses typically lack the programming component required to do this analysis.

In a typical quantitative finance course, such as those offered in the Viterbi School or in the USC Mathematics Department, stochastic calculus and derivatives pricing are often the focus. These courses often do often contain a substantial programming component, but it is usually geared towards implementing models of derivatives pricing via Monte Carlo simulation or solving a set of differential equations. A more technical way to describe these courses is that they often focus on methods to understand the risk-neutral distribution of security prices. In industry jargon, these courses tend to focus on skills more useful on the “sell side” (investment banks, brokerage firms, etc.).

Like an investments course, this course focuses on the real-world (as opposed to risk-neutral) distribution of prices, with the goal of constructing profitable investment strategies. Differently from that type of course, it relies less on theory and much more on original data analysis. We will discuss what is already known about financial markets, but our focus will be on learning how to create knowledge rather than acquire it second-hand. In addition, this course does not focus on construction of optimal portfolios (which is still an important step in many quantitative investment strategies) but rather on finding specific investment strategies, with attractive risk/return properties, that are useful as components of a larger, more diversified portfolio. Put differently, a typical investments course teaches the skills to be a portfolio manager. In this course, we are learning the skills to be a buy side quantitative researcher.

The course will have a substantial programming component, which will be carried out in Python. That said, learning to code is not the main goal and will not encompass a majority of class time. Students will apply a working knowledge of research-driven functional programming, rather than writing production-level code designed with efficiency in mind. This style is likely very different from that which a derivatives-focused course would use, and much more limited than those that a general programming course would cover.

COURSE OBJECTIVES

Upon successful completion of this course, students will be able to:

1. Describe the most common strategies used in quantitative investing.
2. Propose, test, and implement novel quantitative investing strategies.
3. Perform the statistical analysis and computer programming necessary for estimating models of security prices.
4. Present their investment ideas and results in a way that is understandable to the layperson and to the finance professional.
5. Articulate the research analyst role at quantitative buy-side firms.

FBE 553: Applied Portfolio Management – 3.0 units

2:00-4:50 M

Course Instructor: Professor Shane Shepherd

COURSE DESCRIPTION

This course offers a year-long seminar in applied portfolio management. It is designed to give students rigorous exposure to the theory and practice of contemporary investment and portfolio management. It also allows the students to practice real-money skills of investment managers. Analytical tools for the valuation of stocks, bonds, and derivatives (options and futures) will be presented. The course will also cover risk management and portfolio optimization, behavioral finance, macroeconomic events, and performance attribution. Students will demonstrate and refine their ability to apply analytical concepts and techniques through fund management, sector reports, company research reports, investment research, and security pitches.

The purpose of this seminar is fourfold:

1. To provide a select group of up to 20 MBA students with experience in managing a portion of the University's equity endowment;
2. To provide an academic background for the appreciation of security analysis and portfolio management through class lectures, assigned readings, and self-selected readings;
3. To enhance the academic experience through interaction with individuals and institutions engaged in the money management business;
4. To produce and present an Annual Report which will provide description of the course experience and a record of achievement.

The students are selected based on their genuine interest in pursuing a long-term career in asset management, investment banking, and/or corporate finance. The number of students allowed to enroll in this two-semester program is limited to 20 so that (a) each student may have direct, hands-on experience in managing one of five portfolios and (b) the class, as a group, can visit with a variety of money managers both inside and outside the classroom. The class requires a daytime availability on Mondays and Fridays so that the student managers can meet with their teams and make off-campus visits during normal business hours. The expected time commitment is 8-10 hours a week.

FBE 555: Investment Analysis and Portfolio Management – 3.0 units
3:30-4:50 TTH

Course Instructor: Professor Tanakorn Makaew

Course Objectives

The main goal is to help you develop a framework from which to think about *financial investment* decisions. Financial investment refers to investment in financial assets, such as stocks, bonds, and derivatives. The course is taught from the perspective of an investor. Some of the topics that we will study include: risk and return, investor utility, diversification, asset-pricing models, market efficiency, behavioral finance, and security valuation. We will focus on the practical application of these topics, although we will learn enough theories to understand why the practical applications make sense.

Upon successful completion of this course, you will be able to:

- Measure the relation between risk and return
- Perform optimal portfolio selection based on mean-variance analysis and asset-pricing models
- Explain how equity, bond, future, and option prices are determined and how to make investment decisions based on economic theories and quantitative tools.

Course Materials

The main readings for the course will be the lecture slides, which are provided. In addition, there will be a textbook from which I will assign supplemental reading materials:

- *Bodie, Kane and Marcus, Investments, Mc-Graw-Hill/Irwin*

Since the materials do not change much year to year, a less-expensive option is to get an earlier edition of the textbook. The current edition is the 13th, but any of the 12th, 11th, 10th, or even 9th editions will be similarly useful. Materials in the textbook that are not covered in the slides will not be tested on exams. Lecture slides, assignments, and other reading materials will be available on Brightspace (<http://Brightspace.usc.edu>). You are responsible for timely downloads of the materials.

In addition, you might consider some of these materials if you are interested in Investments beyond the scope of the course:

- Daily reading of the Wall Street Journal
- Weekly reading of the Economist
- Journal articles from Journal of Portfolio Management, Financial Analysts Journal, and other research journals to be listed in class.

Attendance

Classroom Policies

Regular attendance is critical for success in this class. Attendance is expected in person² or, if necessary, in live Zoom sessions. Any students formally exempted from real-time participation (for example, by USC OSAS) should let the instructor know and submit relevant documents as soon as possible. I will then provide regular access to a recording of the class and an alternative assignment to replace class participation.

FBE 558 Law for Structuring, Financing, and Managing Businesses – 3.0 units
6:30-9:30 p.m. T
Course Instructor: Professor Kerry Fields

What will you learn?

- How to avoid acquiring liability through agents of the enterprise.
- Selecting the form of and operating the entity. Coverage: *from formation to operating problems—including employment agreements, NDAs, buy-outs, and covenants not to compete.*
 - partnerships (general and limited) and limited liability companies (LLCs)
 - franchising, joint ventures, and cooperatives
 - related governance issues
- The significant parts of federal employment law. Navigating your way through employment discrimination claims.
- How you can be personally liable for wage and hour violations.
- A working knowledge of mergers and acquisitions (reviewing actual deal documents)
 - buying and selling businesses—the practical approaches
 - Analyze letters of intent, purchase and sale agreements
 - credit and securitization issues
 - In class negotiation exercises
- The applications of bankruptcy proceedings—sharks, targets, and how to “right size” an organization.
- The basics of industry regulation—how to use administrative law to your advantage.
- An understanding of securities and finance law—raising equity.
 - credit and secured transactions
- The role of the corporate compliance officer—managing beyond compliance within a regulated environment.

Who should enroll?

- Those who want to learn the practical legal strategies in the management of businesses.
- Those who desire an engaging learning experience—*straightforward night course!*
- Those want to learn and apply solutions to routine legal issues. Those seeking a “why and how” course.
- *No prerequisites.*

Faculty Bio: Kerry Fields has taught this class dozens of times. He has represented private companies from start-up through sale on Wall Street. On the Marshall full time faculty for more than 20 years. He has received several teaching awards, including the Golden Apple. Quoted frequently in major news outlets and media. He has authored five textbooks in national use. The course is often cited by Marshall MBA students as one of their favorite courses for its practical applications.

FBE 559: Management of Financial Risks – 3.0 units
6:30-9:30 T
Course Instructor: Professor Jason Donaldson

COURSE DESCRIPTION

The notional value of open derivatives contracts is c. 600 trillion USD, about 25 times US GDP. What are derivatives? Who uses them and why? How are they priced? What risks to they pose?

To address these questions, we will learn some of the core theories in financial economics. We start the Law of One Price, then develop the binomial model and the risk-neutral pricing methodology (for which Robert Merton got the Nobel Prize), which leads to the Black–Scholes formula (for which Myron Scholes got the Nobel Prize).

We will implement these theories in real-world cases and discuss their limitations in light of recent research.

OBJECTIVES

By the end of the course, you should:

- Know how markets for futures and options markets work.
- Know how to price the most common derivatives.
- Know how to use the Law of One Price and the Fundamental Theorem of Asset Pricing
- Know how to use derivatives to manage risk.
- Know how to use derivatives to speculate.
- Know how to identify and value real options.
- Know how to use derivatives data to understand the broader economy.

EXPECTATIONS

- You should complete assigned readings and problem sets prior to class.
- You should try to stay abreast of current finance news. We will sometimes refer to articles in the *Financial Times* and the *Wall Street Journal*.

You are responsible to catch up if you miss class. You should get notes from your classmates

**FBE 589: Mortgages, Mortgage-backed Securities, and Real Estate Capital Markets –
3.0 units
6:30 p.m. H
Course Instructor: Professor Richard Green**

This course provides graduate-level exposure to theory and analytical methods for valuing and pricing mortgages, mortgage-backed securities, and derivatives. In doing so, this course offers insight into how mortgage-backed securities and real estate capital markets operate and why. It provides a broad overview of mortgage-backed securities, an in-depth discussion of specific structured finance products, and hands-on exercises to enhance learning key concepts. The course is structured so that about half the material covered involves the residential mortgage market, and half involves the commercial mortgage market. Within these categories, it spends about half the time on mortgage originations and banking finance, and about half on capital markets. It also discusses banks' vulnerabilities to certain risks embedded in mortgages, including interest rate risk and default risk. Finally, it will examine whether Chat GPT/AI will be able to take over some mortgage underwriting functions (spoiler, not as of March 2024, but it may by the end of the semester).

Requirements:

7-8 short assignments: 10 percent.

Two in-semester examinations: 30 percent.

Group Presentation: 30 percent.

Final: 30 percent.

Professor Richard K. Green

Richarkg@usc.edu

RGL 331B

213-740-4093

Assistant: Nina Tibayan (tibayan@price.usc.edu)

213-740-0969

Bio

Richard K. Green is the Director of the USC Lusk Center for Real Estate. He holds the Lusk Chair in Real Estate and is a Professor at the USC Sol Price School of Public Policy, the Marshall School of Business, and the Department of Economics. He is a non-resident fellow at the Urban Institute and a Global Trustee of the Urban Land Institute. He has been quoted in the New York Times, Wall Street Journal, the Economist, and the Los Angeles Times, and has been interviewed by Morning Edition, Marketplace Radio, KNX, KCRW, and KPCC, along with other media outlets. He was Senior Advisor to the HUD Secretary on Housing Finance from 2015-16 and consulted for the World Bank. He previously taught at George Washington University, the Wharton School, and the University of Wisconsin-Madison. His LinkedIn profile is <https://www.linkedin.com/in/richard-green-b0bb96/>.

FBE 591: Real Estate Finance and Investment – 3.0 units

5:00-6:20 MW

Course Instructor: TBA

Course Description

Real estate plays a vital role in the economy and wealth accumulation. This graduate-level course aims to provide a deep understanding of real estate investment and finance fundamentals. Grounded in modern finance theory, we explore topics such as investment analysis, property valuation, and financing at the individual property level in the first half. The latter part covers mortgages and offers a brief look into real estate capital markets. By course end, you will have essential tools to grasp real estate value determination, creation, and influence. This knowledge equips you with critical analytic concepts for diverse real estate careers. Particularly beneficial for finance-focused students eyeing corporate real estate roles or roles as investors, advisors, or capital providers in real estate.

Learning Objectives

Students successfully completing this course will be able to:

- Interpret current event articles and case studies through the lens of formal finance, real estate, economics concepts learned in the course.
- Perform a qualitative and quantitative evaluation of income-producing properties, which includes:
 - Using industry-standard terminology and techniques for valuing income producing real estate
 - Making cash flow projections and preparing proforma statements using spreadsheets
 - Evaluating risk of investments and developing expected return measures
- Explain the roles of debt and equity in the structure of real estate transactions.
- Understand the mechanics, pros and cons of different types of mortgages. Calculate the APR, payments of mortgages, understand how debt financing affects the risk of the investment.
- Navigate the loan underwriting process.
- Develop a basic cash flow model using ARGUS Enterprise.

FBE 599: Greentech Finance, Banking, Capital Markets and Insurance
6:30-9:30 pm W
Course Instructor: Professor Sanjay Sharma

COURSE DESCRIPTION

Climate change and its mitigation is an urgent issue that is affecting governmental, bank, and investment capital outlays and markets. The financial sector is critical for slowing and ultimately reversing global warming. Massive initiatives for making adjustments in our production and consumption patterns across food production, fossil fuel usage, and physical pollution are underway. It is expected that \$20-30 trillion will be invested over the next two decades towards arresting the rise in atmospheric temperatures and prevent catastrophic impact to our planet. Financial institutions and markets will be instrumental in allocating investments to sustainable projects and corporations in order to accelerate the transition to low-carbon and more circular economies.

To prepare you to pursue a leadership career in this domain this course will address five areas:

1. What is the economic threat of climate change from societal and economic perspectives? What will be the impact of the current path of global warming? How urgent is the need for change?
2. What are the government outlays for Greentech and how to access them? How are established corporates allocating for this sector? Which new companies are making meaningful progress?
3. How are the venture capital, private equity, investment management, banking, capital markets, and insurance firms mobilizing for Greentech investment and management?
4. Which Greentech areas (solar, wind, green hydrogen, electric vehicles, and others are economical and ripe for investment? What is the risk/return framework for Greentech investments?
5. Which new sectors and companies are emerging for pre- and post-graduation jobs and career leadership? What will it take to have a successful career in Greentech?

The central question we will address in this course is how capital and financial systems can be mobilized towards climate-mitigation and environmental goals. We will learn how capital investment should be feasibly deployed to ensure that current and future generations have the resources needed – sustainable energy, food, water, and health care – without stressing our planet's natural resources and processes.

In the second half of the course, we will cover practical applications in the creation and quantification of economic and shareholder value for corporations and banks. This will include thematic concepts including strategy, return expectations, governance, and integrated reporting. Several case studies will provide practical insights into sustainable finance investment across

equity and bonds, and implementation of Greentech strategies. The course will conclude with hands-on experience in bank loans and portfolio management on an institutional bank-lending system (GREENCAP) with “real-life” loan portfolios.

COURSE OBJECTIVES

At the end of this course, students will be able to:

1. Explain the current and foreseeable impact of climate change at societal and economic levels.
2. Demonstrate and apply the stages of Greentech finance and policy and technology uncertainties.
3. Critically analyze and the changing objectives of corporates in the context of market short-termism.
4. Analyze why and how companies should connect Greentech and sustainability to their competitive positions.
5. Evaluate the economic feasibility of wind, solar and green hydrogen technologies.
6. Evaluate the impact of electric vehicles on the automotive and transportation sectors and identify long-term winners?
7. Manage a dedicated long-short Greentech investment portfolio with publicly listed firms.
8. Understand and practice bank lending and credit portfolio management with legacy fossil fuel and Greentech firms.
9. Understand and apply incorporation of climate risk (flooding, forest fires, and crop damage) in insurance contracts.