**Capital Markets – B7306-001-20201**

**Spring 2021**

**Saturdays**

**Uris 142**

**PROFESSORS MARK ZURACK and MICHAELA PAGEL**

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**TEACHING ASSISTANT: TBD**

**REQUIRED COURSE MATERIAL**

Investments

*Zvi Bodie, Alex Kane, and Alan J. Marcus, eleventh edition* (BKM)

Selected Readings are on electronic reserve and accessible through the Study.net (SN) and Library Reserves (LR) tabs in Canvas. The Yale case and GM case can be accessed by control clicking in the electronic version of the syllabus or single clicking in the Canvas folder class description where the case titles are referenced under the Readings heading. The article on Options Strategies can be accessed by clicking the Canvas “Files” tab and then clicking on the “D. Miscellaneous” folder.

**CONNECTION WITH THE CORE**

Capital Markets and Investments builds on knowledge from the Corporate Finance, Managerial Statistics, and Decision Models courses to understand asset valuation and investment decisions. Capital Markets uses and builds upon the basic valuation tools developed in Corporate Finance such as arbitrage valuation, time value of money, understanding risk-return tradeoffs, the CAPM, and asset valuation. In analyzing various markets and assets, Capital Markets uses a large amount of material from Statistics, including the following: statistical modeling, random variables and distributions, parameter estimators, hypothesis testing, and regression. Optimization methods and stochastic modeling tools from Decision Models are also widely used, especially in portfolio construction and risk control. There are also some connections, though to a lesser degree, with Global Economic Environment especially in the Fixed Income Unit in discussing bond markets and the role of central banks and monetary policy.

**COURSE DESCRIPTION AND OBJECTIVES**

This course has two purposes: (1) To introduce the principles of asset valuation from an applied perspective, and (2) To introduce different techniques to manage investment portfolios. It is designed to provide you sufficient background to understand current events in Global Markets,
take more advanced Markets classes in the school, as well as give you a framework to manage
your own assets.

The course breaks down into four areas:

Asset Allocation – Reviews different quantitative techniques used to measure returns and risk. Compares long term behavior of different asset classes and how investors allocate
their wealth across Asset Classes.

Equity Markets – Covers theory on measuring expected returns and risks of individual stocks as well as constructing stock portfolios. We also touch on the different forms of both
active and passive investing.

Fixed Income Markets – Teaches basic bond valuation focusing on the yield curve as well
as notion of forward rates as well as the evaluation of credit risk.

Derivatives Markets – The valuation and use of futures and options markets are introduced.

The materials will be delivered through a combination of lectures, guest speakers, case studies
and readings.

**ASSIGNMENTS**

**All assignments must be completed in writing with hard copies handed in before class.** Some assignments will be Type A, some Type B.

For Type A assignments, each student must participate in a group discussion regarding the assignment before submission and review and if needed edit the final submission. **Collaboration across groups is not allowed.**

For Type B assignments, each student should attempt to answer the questions on their own before collaborating with other students. Each student should hand in their own submission for Type B assignments.

**METHOD OF EVALUATION**

|  |  |
| --- | --- |
| Class Participation and Assignments | 40% |
| Take-home Exam (in 2 parts) | 35% |
| Final Project | 25% |

An important component of Class Participation is attendance which will be tracked. We reserve the right to downgrade (including failing) any student who misses a significant number of classes, or does not complete all of the assignments. We will try to avoid cold calling, with the exception being case discussions. It is expected that your camera is on during class, unless there are special circumstances which you should discuss with us in advance.

Notice that there is a Final Project in the Method of Evaluation. The Final Project is an oral presentation in response to a case study we will hand out toward the end of the semester.
Each group will meet with one of us for 20 minutes at a mutually convenient time to present your
project. Attendance is mandatory.

**PRE-CLASS CHATS**

Beginning this semester, we have added a series of video-chats for many of the classes. The chats will be available in advance of when the class is given. They are designed to provide background information on the topic we are discussing. For those of you new to financial markets, we hope
they will be useful

**CONCEPT QUIZZES**

Following most of the classes in the course, we will offer quizzes in Canvas for you to reinforce some of the concepts we covered. THE QUIZZES ARE OPTIONAL, and have no impact on your grade. Hopefully, some of you will find them beneficial.

**COURSE OUTLINE**

1. The Tools of Investing/Asset Allocation (01/23)

After a brief discussion on the structure of the course, the class begins by exploring the metrics used to evaluate public investments. We go over return measures like Arithmetic and Geometric averages, and risk measures like Variance, Standard Deviation and Correlation. We then define what an Asset Class is and the different Asset Classes used to construct an investment portfolio.

The class then explores the process of determining what percent of an overall portfolio should be allocated to each asset class. This requires understanding not only the returns and risk of each asset class, but also how the correlation of different asset classes affects the overall risk of the portfolio.

Readings:

* Chapter 5, pp. 126-136, BKM
* Glossary, BKM
* Issues in Strategic Asset Allocation (Litterman, Robert B.), pp. 104-109 (SN)

2. Asset Allocation – Investing in Equities (01/30)

After completing our discussion on Asset Allocation we move onto Equities, the asset class investors spend the most time on. A guest speaker will start by describing how Fundamental research is used to construct an Equities portfolio whose goal is to outperform the market.

Guest Speakers: t/b/d

Assignments:

Assignment (1) – Asset Allocation Introduction (Type B)

3. Yale Case Study/Active Equity Portfolio Management (02/06)

In the first half of the class we return to Active Equities management. With the help of a guest speaker we discuss Quantitative Equities Investing, which is often referred to as Factor Investing or Smart Beta Strategies.

By studying the issues faced by the Yale Endowment Fund in developing an asset allocation strategy the second half of the class attempts to give you a real world perspective on how both institutions and individuals construct investment portfolios.

Readings:

* Yale University Investments Office: February 2015 (<https://hbsp.harvard.edu/tu/aca5272b>)
* [The Yale Endowment 2017](http://investments.yale.edu/endowment-update/) (Yale University) (LR)
* [Norway: The New Yale?](https://search.proquest.com/docview/1315212980?accountid=10226) (Zweig, Jason) (LR)

Guest Speaker: t/b/d

Assignments:

Assignment (2) – Questions on Yale Case (Type A)

4. Passive Management/Efficient Markets and the Capital Asset Pricing Model (02/13)

We start class with a lively discussion on whether it is possible to outperform the stock market through Active Management. We then try to demonstrate that the market portfolio is the superior Passive portfolio. This brings us to the Capital Asset Pricing Model (CAPM), a theory which is the basis of modern investing. We then discuss how investment managers would use CAPM to help them manage an Active Equity portfolio. We then use CAPM to evaluate an Environmental, Social and Governance (ESG) portfolio.

Readings:

* Chapter 9, pp. 277-288 - BKM
* [The Arithmetic of “All-In” Investment Expenses](https://search.proquest.com/docview/1560650476?accountid=10226) (Bogle, John C.) (LR)
* If You Can’t Beat ‘Em (Silver, Nate) Chapter 11, pp. 329-369 (SN)

5. Behavioral Finance/Indices and ETFs/Trading and Short Selling (02/20)

We start the class by discussing the Martingale case, which highlights possible market efficiencies attributable to biases resulting from investor behavior. We then review implementing investment decisions in Equities markets. We start with Indices and Exchange Traded Funds, one of the great financial innovations in the 21st century. We then discuss how Equities are traded and how short sales are executed.

Readings:

* Why Did Wall Street Crash and Warren Buffet Prosper? (Cain, Susan)
Chapter 7, pp. 155-177 (SN)
* [Investor, Know Yourself](https://search.proquest.com/docview/1330990342?accountid=10226) (Statman, Meir) (LR)
* Chapter 3, pp. 62-73 – BKM
* [GM Asset Management and Martingale’s Low Volatility Strategy](https://www8.gsb.columbia.edu/caseworks/ProfessorMarkZurack/11d70)(<https://www8.gsb.columbia.edu/caseworks/ProfessorMarkZurack/1c020>)
* Chapter 4, pp. 103-106 - BKM

Assignments:

Assignment (3) – Portfolio Analysis, Martingale Case (Type A/B)

6. Introduction to Fixed Income (02/27)

We now move on to Fixed Income. Professor Michaela Pagel will provide all Fixed Income materials for classes 6-8. We start by reviewing key concepts (for instance No-arbitrage and Shorting). That is followed by an introduction to the Treasury market and pricing of Treasury bonds.

Readings:

* Chapter 14, pp. 426-448 - BKM

**Exam: Part 1 handed out**

7. Term Structure of Interest Rates and Interest Rate Risk (Duration and Convexity) (03/06)

We then move on to discussing the Term Structure of Interest Rates and Interest Rate Risk including the concept of Duration.

Readings:

* Chapter 15 – pp. 467-480

**Exam: Part 1 due**

8. Portfolio Immunization and Corporate Bond Pricing (03/13)

Finally, we will learn how to manage Interest Rate Risk and immunize bond portfolios. The Fixed Income portion of the course is completed with a discussion on Corporate Bonds and Credit Risk.

Readings:

* Chapter 16, pp. 495-508 – BKM

Assignments:

Assignment (4) – Bond Pricing and Interest Rate Risk (Type A/B)

**Exam: Part 2: handed out**

9. Introduction to Derivatives - (03/27)

After completing Fixed Income, we move on to the last portion of the course, Derivatives.
I start by describing how Stock Index Futures are traded and valued.

I then introduce Swaps, focusing on Equity, Interest Rate and Credit Default Swaps.

Readings:

* Chapter 22, pp. 747-757, Chapter 23, pp. 790-797 – BKM

**Exam: Part 2 due**

10. Introduction to Options/Options Valuation (04/10)

The class focusses on Options, starting with basic strategies and valuation. Although options pricing can be complex, I try to provide you intuition on what drives pricing leaving out the higher mathematics.

Readings:

* Chapter 20, pp. 657-667; 675-678; Chapter 21, pp. 699-705 – BKM

11. Options Strategies/Events That Shaped Capital Markets (04/17)

After completing Options Valuation, I provide a broad overview of the Options strategies most frequently followed by investors.

The class then moves to a discussion of Market events that show some of the vulnerabilities in the Capital Markets.

Readings:

* Chapter 20, pp. 667-675 - BKM
* Tutorial on Using Options in Active Strategies (Tsu, Maria E.) (Canvas Misc Files)
* [Findings Regarding the Market Events of May 6, 2010](https://www.sec.gov/reportspubs/special-studies/newsstudies2010marketevents-reportpdf.html) (CFTC & SEC),
Executive Summary only, pp. 1-8 (LR)

Assignments:

Assignment (5) – Futures and Options Valuation (Type B)

12. The Future of Capital Markets (04/24)

We end the course with a broad discussion on the future of Capital Markets.