



# **Investment Analysis and Portfolio Management**

## **(QST FE 445)**

### Syllabus

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**Course Credits:** 4

**Intellectual Toolkit:** Research and Information Literacy (RIL)  
Teamwork/Collaboration (TWC)  
Creativity/Innovation (CRI)

## **1. Course Description**

This course provides a comprehensive introduction to finance and investment analysis, equipping you with the tools to critically assess financial securities and build portfolios tailored to specific risk and return profiles.

We will begin by identifying your goals and constraints as an investor before exploring critical theories such as the Modern Portfolio Theory and the Capital Asset Pricing Model. The course covers a range of investment strategies, from passive index investing to more active approaches like those used by hedge funds. You'll also learn how to analyse securities, make informed trading decisions, and construct well-diversified portfolios. Additionally, we will examine the use of derivatives, including futures, options, and forwards, for both hedging and speculation purposes.

By the end of the course, you will have a thorough understanding of the assumptions, limitations, and practical applications of various investment strategies, all reinforced through discussions of recent financial events and market trends.

## **2. Learning Outcomes**

### **2.1. HUB Area: Research and Information Literacy (RIL)**

1. Students will critically assess the credibility of academic and industry sources in investment contexts. They will demonstrate ethical sourcing practices by ensuring proper attribution, citation, and interpretation of data to make informed securities and portfolio management decisions.

2. Students will comprehensively understand the investment research process by developing relevant research questions or hypotheses. They will employ appropriate inquiry methods and strategically select and evaluate sources to address their research inquiries.

## **2.2. HUB Area: Teamwork/Collaboration (TWC)**

1. Students will identify and describe the characteristics of effective teams within the context of the paper trading exercise, enhancing their understanding of communication, role allocation, and decision-making processes in investment strategies.
2. Students will demonstrate effective teamwork strategies during the paper trading exercise, including role assignment, feedback processing, and collective reflection, contributing to enhanced group performance and investment decision-making.

## **2.3. HUB Area: Creativity/Innovation (CRI)**

1. Students will participate in a creative and iterative process while developing investment strategies for the paper trading exercise, reflecting on how feedback influences their methodologies and decision-making.
2. Students will demonstrate the ability to conceive and implement original investment strategies in the paper trading exercise, showcasing their innovative thinking and adaptability through class presentations of their methods and outcomes.

## **3. Plagiarism**

Each student is responsible for reading the Boston University statement on plagiarism, available on the Academic Conduct Code. Students should be aware that the penalty for plagiarising or cheating in a Boston University program includes “.... expulsion from the program or the University or such other penalty as may be recommended by the Committee on Student Academic Conduct, subject to approval by the Dean.” The Academic Conduct Code can be viewed in its entirety here:

<http://www.bu.edu/academics/resources/academic-conduct-code/>

## **4. Assessment**

Grading for the course will be weighed as follows:

Class Participation and Attendance	10%
Group: Paper Trading Exercise	40%
Group: Presentation	20%
Final Exam	30%

### **4.1. Attendance, Review and Evaluation (10%):**

Participative class discussion is an integral part of the course; students are encouraged to ask questions and actively engage in discussion during class.

### **4.2. Group: Paper Trading Exercise (40%):**

Students will participate as groups in a paper or simulated trading exercise, starting with a fictional trading balance of \$100,000. The goal is to design the optimum investment strategy for a fictional individual.

Students (as a group) must execute at least 20 trades and record their decisions in a Paper Trading Journal. For each trade, students should document the following details: date, asset class, trade type, entry/exit price, quantity, exit strategy (if applicable), rationale, and notes/graphs. At the end of the term, a report reflecting on their trading decisions must be submitted to the lecturer for evaluation. Grading will reflect the rationale shown by the student and the application of theory

rather than the outcomes of the trades. The final report should be approximately 3,000 words in length.

To facilitate trading, students can download the Trading View Application [here](#). Upon logging in, a trading chart for AAPL will appear, with four options below: "Stock Screener," "Pine Editor," "Strategy Tester," and "Trading Panel." Students should click the "Trading Panel" and select the "Paper Trading App." Further information on how to get set up is available in this [tutorial](#).

#### **4.3. Group: Presentation (20%)**

Students must deliver a 20-minute group presentation on their paper trading experience to the class. The presentation should loosely follow the structure: (1) Introduction, (2) Investment Philosophy/Goals, (3) Sample Trades, (4) Lessons Learned, (5) Conclusion.

#### **4.4. Final Exam (30%)**

At the end of the module, a two-hour examination will be conducted. The exam will consist of two sections: (1) mathematical and (2) an essay section. Mathematical questions will account for 40% of the exam grade. The questions themselves will be taken from the lecture material with minor modifications to the numbers. The essay questions will account for the remaining 60% of the grade. Students will be given six questions and asked to complete four.

## 5. Course Structure

Lecture	Date	Title (Reading)	Description
<b>Part I - Socio-Historical Context</b>			
Lecture 1		Introduction to the Investment Process, Asset and Security Classes	Overview of the investment process, including asset and security classes, and an introduction to investment companies, mutual funds, and ETFs. <b>Reading:</b> Bodie, Chapters Sect 1: 1-4; Sect 4: 1-6, 22
Lecture 2		Short-Term Investments and Liquidity & Trading, Margin, and Short Sales	Exploration of short-term investments, liquidity, and various trading strategies, including margin and short selling. <b>Reading:</b> Bodie, Chapters 1: 6; 2: 1; 3: 1-9; S 3: 10
Lecture 3		Performance of Securities & Investment Risks and The Complete Portfolio	Analysis of security performance metrics and understanding investment risks within the context of a complete portfolio. <b>Reading:</b> Bodie, Chapters 5: 1-3; 5: 4-6
Lecture 4		Efficient Diversification and The Optimal Risky Portfolio & Index Models and The Capital Asset Pricing Model	Examination of diversification strategies, the construction of optimal risky portfolios, and an introduction to index models and the Capital Asset Pricing Model. <b>Reading:</b> Bodie, Chapters 6: 1-4; 6: 5; 7: 1-3
Lecture 5		Fama-French Factors & Arbitrage Pricing Theory, Market Indices	Discuss Fama-French factors and their implications for asset pricing, along with an overview of arbitrage pricing theory and market indices. <b>Reading:</b> Bodie, Chapters 7: 4-5; 18: 1-3
Lecture 6		Evaluating Portfolios, Alpha & Market Efficiency	Focus on portfolio evaluation techniques, the concept of alpha, and understanding market efficiency. <b>Reading:</b> Bodie, Chapters 18: 4-5; 8
<b>Part II - Contemporary Ireland</b>			
Lecture 7		Equity Ownership and Equity Valuation: Dividend Discount Models & Equity Valuation: Price-Earnings Ratios	An in-depth look at equity ownership and valuation methods, including dividend discount models and price-earnings ratios. <b>Reading:</b> Bodie, Chapters 2: 3; 13: 1-3; 13: 4-6
Lecture 8		Field Trip: The Gaelic Experience	Field trip: Learn about the significance of Gaelic Games to Irish identity through a visit to a GAA club.
Lecture 9		Bond Market Overview: Prices, Yields, and the Yield Curve & Duration and Managing Bond Portfolios	Overview of the bond market, focusing on price dynamics, yields, the yield curve, and strategies for managing bond portfolios. <b>Reading:</b> Bodie, Chapters 2: 3; 13: 1-3; 13: 4-6
Lecture 10		Credit and Default Risk, Credit Default Swaps & Behavioural Finance Risk Arbitrage	Analysis of credit risk, the role of credit default swaps, and insights into behavioural finance and risk arbitrage strategies. <b>Reading:</b> Bodie, Chapters 10: 5; 9: 1; S 9: 2

Lecture 11		Bubbles and the 2008-2009 Crisis & International Investments, Introduction to Foreign Exchange	Examination of financial bubbles, the 2008-2009 crisis, and an introduction to international investments and foreign exchange dynamics. <b>Readings:</b> Bodie, Chapters 2: 5; 17: 1-5; S 17: 6; 15: 1-3
Lecture 12		Forwards and Futures & Option Basics, Embedded Options	Introduction to derivative instruments, including forwards, futures, and options, focusing on their basic structures and applications. <b>Reading:</b> Bodie, Chapters 2: 5; 17: 1-5; S 17: 6; 15: 1-3
Lecture 13		Options Pricing & Hedge Funds	Introduction to options pricing models and the structure of hedge funds, including their investment strategies and risk management. <b>Reading:</b> Bodie, Chapters 20: 1-4; 21: 2-5
Lecture 14		<b>Assessment:</b> Group Report (30%)/Group Presentation (20%)	Exploration of international investment strategies, including the dynamics of foreign exchange markets and currency risk.
Lecture 15		International Investments & Foreign Exchange	Experience Irish theatre and its cultural significance. <b>Readings:</b> Bodie, Chapters 17: 1-6; 18: 1-3
Lecture 16		Student Feedback Session	Gather student feedback on the course content and delivery. Provide students with feedback on materials submitted and their progress to date.
Lecture 17		<b>Assessment:</b> Final Exam (30%)	A comprehensive evaluation covering all course content.

## 6. Readings

1. Bank for International Settlements. (n.d.). *Central Bank Resource Center*. <http://www.bis.org/cbanks.htm>
2. Bank for International Settlements. (n.d.). *Derivatives' market volume data*. <http://www.bis.org/statistics/derstats.htm>
3. Bernstein, P. L. (1993). *Capital ideas*. Free Press.
4. Bernstein, P. L. (1996). *Against the gods: The remarkable story of risk*. Wiley.
5. Bodie, Z., Kane, A., & Marcus, A. J. (2013). *Essentials of investments* (9th ed.). McGraw-Hill Irwin.
6. Chicago Mercantile Exchange. (n.d.). *CME Group*. <http://www.cmegroup.com>
7. European Central Bank. (n.d.). *ECB*. <http://www.ecb.europa.eu/euro/html/index.en.html>
8. Global Financial Data. (n.d.). *Global Financial Data*. <http://www.globalfinancialdata.com>
9. International Economics Gateway. (n.d.). *Directory of national government statistical pages*. <http://altaplana.com/Gate.national.html>
10. Investopedia. (n.d.). *Dictionary of financial terms and concepts*. <https://www.investopedia.com/dictionary/>
11. iShares. (n.d.). *iShares*. <http://www.ishares.com/us/>
12. Lewis, M. (2010). *The big short*. Norton.
13. London International Financial Futures Exchange. (n.d.). *NYSE Euronext*. <https://derivatives.euronext.com/en/products/currencies>

14. Lynch, P. (1991). *Beating the street*. Simon & Schuster.
15. Mauldin, J. (2004). *Bull's eye investing*. Wiley.
16. Mauldin, J. (n.d.). *InvestorsInsight Newsletter*. Retrieved from <https://www.investorsinsight.com>
17. Malkiel, B. G. (2011). *A random walk down Wall Street* (10th ed.). Norton.
18. Morningstar. (n.d.). *Morningstar*. <http://www.morningstar.com>
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<http://www.nasdaqtrader.com/Micro.aspx?id=phlx>
20. New York Stock Exchange. (n.d.). *NYSE*. <https://www.nyse.com>
21. Shiller, R. (2000). *Irrational exuberance*. Broadway Books.
22. Standard and Poor's. (n.d.). *S&P Global*. <http://www.standardandpoors.com/home/en/us>
23. The Economist. (n.d.). *The Economist*. <http://www.economist.com>
24. U.S. Securities and Exchange Commission. (n.d.). *SEC filings*.  
<http://www.sec.gov/edgar.shtml>
25. Vanguard. (n.d.). *Vanguard Personal Investing*.  
<https://personal.vanguard.com/us/insights/newsarchive>
26. World Trade Organization. (n.d.). *International trade statistics*.  
[https://www.wto.org/english/res\\_e/statis\\_e/statis\\_e.htm](https://www.wto.org/english/res_e/statis_e/statis_e.htm)
27. Yahoo Finance. (n.d.). *Company data*. <http://finance.yahoo.com>