

Fall 2019

FIN 650-851: Investment Analysis and Portfolio Theory

Bill Rapp

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**NEW JERSEY INSTITUTE OF TECHNOLOGY
SCHOOL OF MANAGEMENT**

Course Title: Investment Analysis And Portfolio Theory

Course Number: FIN 650-851

Semester: Fall 2019

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Office Hours: Wednesdays 3:45-5:45 or
by appointment

Office: CAB 2002

Class Schedule: Weekly

Classroom: On-line

Course Materials: *Investments*, Bodie, Kane & Marcus, 11th ed. (ISBN 978-0-13-306163-5); *Manias, Panics and Crashes*, R. Aliber & C. Kindleberger (7th ed., 2015); *Reminiscences Of A Stock Operator*, E. LeFevre; Posted Articles; Website Materials.

Course Description:

Finance 650, Investment, is a graduate course designed primarily for master's students that have taken or will also take other Graduate Level finance and accounting courses such as Global Macroeconomics, Corporate Finance, and Managerial Accounting. It introduces the students to various concepts relating to portfolio management and investment analysis including how to assess macro-economic environments, competitive dynamics, and the effect of foreign exchange on investment strategies from a theoretical, firm and institutional perspective.

Thus, the impact of fiscal and monetary policy and actions on financial markets are covered but are taught using macro and micro economic analyses that identify how specific actions can affect money, goods and securities markets as well as specific companies or financial institutions.

Thus, the course presents a framework for assessing the financial effects of certain events at both the micro and macro level and then how to manage these within an overall investment portfolio given an investor's or investment manager's specific objectives. While the effects of speculation will be covered, they will be presented as just another set of variables to be managed within an overall portfolio strategy.

The course takes the perspective of a portfolio manager or investment analyst facing the need to make investments using the various analytical tools and information at their disposal but also facing various issues such as inflation, recessions or bubbles as well as various government's policy or regulatory initiatives that may force them to adjust or modify their analytical and investment approach as they work to understand and respond to these events.

While the course considers many types of economies, firms and markets, the emphasis is on large developed market economies such as the US, the EU and Japan and investment management companies operating in those markets.

Various examples will be used throughout the course to illustrate certain concepts and to reflect the interaction between financial markets and institutions and what is happening in the physical economy. While most of the analysis is focused on US investment managers, the global context is addressed too. The examples discussed require students to examine a range of situations having diverse outcomes in how they affect particular markets and portfolios.

Students will see that making portfolio investment decisions in different financial and economic environments is not easy because such decisions frequently have different portfolio impacts both long-term and short-term depending on the economic and competitive context.

Because the course will be taught on an intensive on-line class schedule it really requires that students keep pace with the assignments and necessitates that students spend several hours each week to complete these tasks. Also, course participation requires not just knowledge of the material and logging into the class website, but also critical and creative thought regarding the actual application of this knowledge within specific situations and then discussing and explaining the outcomes on-line with the other students.

Outcomes: Upon course completion students should have advanced and integrated their skills in important financial and economic areas related to investment analysis, security selection and portfolio management as listed below, covering: Analysis and Communication; Economic and Financial Environments, the Business/Financial Markets Interface, Portfolio Selection Models, Approaches to Valuing Companies and Securities and the use of a Bloomberg Terminal and a portfolio simulation model.

Learning Goals & Learning Outcomes:

Learning Goal 1: Analytical & Problem Solving Skills

***Learning Outcome 1.1** Students will demonstrate problem-solving skills by proposing solutions to investment selection and portfolio management problems and by applying knowledge of financial concepts to develop investment and portfolio strategies.*

***Learning Outcome 1.2** Ability to use theory and data to analyze and evaluate financial and portfolio selection models to understand real economic and financial situations and their impact on investment portfolios over a period of time.*

***Learning Outcome 1.3** Students will be able to use quantitative methodologies as tools to help understand business and portfolio investment management problems including the use of a Bloomberg Terminal and a portfolio simulation.*

Learning Goal 2: Communication Skills

Learning Outcome 2.1 Students will demonstrate effective communication through evidence based on cogent and concise written and oral arguments and solutions.

Learning Outcome 2.2 Students will be able to explain basic concepts of financial theory and portfolio investment strategies in writing.

Learning Goal 3: Information Skills

Learning Outcome 3.1 Students will know important sources that can be used to obtain relevant data for solving financial problems and how to collect data from them such as a Bloomberg Terminal.

Learning Goal 4: Team Participation Skills

Learning Outcome 4.1 Students will learn to work in teams to address and solve portfolio investment problems and test their investment ideas using a simulation.

Learning Goal 5: Management of Technology

Learning Outcome 5.1 Students will learn to analyze the impact of technology in the micro- and macro-economic environments with respect to firm and portfolio performance.

Learning Goal 6: Globalization of Business

Learning Outcome 6.1 Students will understand the impact of globalization on the complexities of the global investment environment and related financial institutions

Learning Goal 7: Ethical Reasoning

Learning Outcome 6.1 Students will be able to recognize ethical and legal dilemmas that can occur in a financial management context and determine the correct responses to these situations.

Course Policies: Absent a medical excuse verified by the Dean of Students assignments are expected to be turned in on-time according the Syllabus below and students are responsible for the material covered in the class website or the on-line lectures.

Course Deliverables:

Projects & assignments (Team and Individual) includes EXAMS (individual) and a Paper (individual)
Developing Thoughtful Solutions to Investment Selection and Portfolio Management Problems
Problem Solution Presentations
Responses to class discussions & participation
Explanatory Paper On Potential Investment Impact AI, Exchange Traded Funds, Smart Beta (individual)
Using Bloomberg Terminal and Investing In A Simulated Stock Portfolio
Peer evaluations

SYLLABUS
FIN 650-851
Fall 2019
(Bill Rapp)

INVESTMENT ANALYSIS AND PORTFOLIO THEORY

This course is for master's students in management with an interest in Finance and Investment Analysis. It thus assumes students understand basic economic, accounting and corporate finance principles and are prepared to study hard in an intensive learning context.

The course will combine history and theory with concrete policies using institutional, market and modeling examples to provide an integrated perspective on issues relating to the financial and investment environment within which the economy functions, businesses operate and markets fluctuate. Its focus is on the enormous and continuing changes in financial institutions, global markets, and investment management strategies and their impact on companies, markets and even countries. Current economic events highlight the effect of such changes.

Therefore, in addition to the text readings on investment analysis and portfolio theory the course will assess the influence on these topics of technological change, foreign exchange and macroeconomics, money markets, and government policies. The class will also examine in detail the origins and consequences of specific financial bubbles and economic crises on portfolio management strategies as well as the sometimes influence of those strategies on investments and financial markets. In this regard time will be spent as well on assessing the interaction and consequences of various events on financial markets and the physical economy whether those are an increase in interest rates, a larger budget deficit or a rapid increase or decrease in oil prices. A portfolio management simulation will help to make these ideas more operational.

Topics covered:

1. Beginning with the observable facts of savings, investments, financial markets, investment managers and related government regulations the class will examine how and why such changes have specific consequences depending on the other variables.
2. Over time this model will be extended and made more complicated and global in order to consider international trade and wealth effects.
3. This analysis leads naturally to an examination of how changes in various policies or business behavior can occur and the relationship between such shifts and their impact on specific country, industry or firm policies and strategies.

Discussion is important in that students are expected to have done the readings and to have prepared comments and questions for the on-line discussion based on the various course materials.

Further though the simulation, the student problem presentations and the text's case studies will cover some of the same material, they will do so from different perspectives to convey alternative analyses and investment interpretations. To promote class interaction on these

situations, the class will be divided into teams and each team will be asked to comment, ask questions and prepare certain problems on the material for particular weeks during the semester and to participate in the portfolio management simulation. These assignments will in addition to being noted in this Syllabus also be posted in the class calendar found on the class Moodle website. You can thus check the class calendar on the class Moodle website as well as this Syllabus for the schedule for performing these assignments.

If a student wishes to meet with the instructor, please come during regular office hours, Wednesdays 3:45-5:45PM (2002 CAB) or e-mail for an appointment.

Since doing the readings and listening to the on-line lectures are critical to effective class interaction, it is important that everyone is prepared to participate. Also, to insure students are keeping up, there will be periodic team problems taken from the BKN text, a take-home mid-term, and a short 6-page paper related to the potential impact of three recent asset management innovations [Artificial Intelligence, Exchange Traded Funds and Smart Beta]. There will also be a team or individual portfolio management simulation exercise using data from the Bloomberg terminal and a take-home final exam. Please read this Syllabus carefully and note the times and specifics for these assignments!

In addition, students should try to gain some knowledge of the major financial institutions and political issues impacting financial markets along with the related financial risks that will be discussed in class by reading major business magazines such as Fortune or The Economist or business related articles that appear in major newspapers. Such articles can also be accessed using a Bloomberg terminal. The instructor will also post materials on the class Moodle website from these and other sources as seems appropriate.

During the week students are encouraged as well to post on-line comments in the “Discussion Forum” section of the class Moodle website. You can contact me by e-mail if you have problems posting.

The class will be divided into four teams and there will be assigned team problems taken from the Bodie, Kane and Marcus text [see **Schedule below**]. The solutions to these problems should be posted in the “Problem Set Forum” section of the Moodle website so other members of the class can see them and ask questions. If students need to arrange a team meeting, they can do this by e-mail or by using the Chat section of the Moodle website.

You will also need a financial calculator that can also be downloaded as an app to your smartphone and you should have access to a computer on which you can use Microsoft Excel for spreadsheet analysis.

Grades are composed of the team problems (15%), midterm exam (25%), the financial innovation paper (15%), the portfolio simulation and Bloomberg course (15%) and final exam (30%). A D is 59.5-69.4; C is 69.5-77.4; C+ is 77.5-79.4; B is 79.5-87.4, B+ is 87.5-89.4; A is 89.5 or over.

With respect to answers on midterm, financial innovation paper and final exam, these are individual assignments and no common or group answers will be accepted for any part. Further, material from texts should *not* be quoted but paraphrased in your own words!

Academic Integrity: Students are expected to observe the NJIT Academic Integrity Code. Cheating and plagiarism will not be tolerated and may result in failing the course. See the **Academic Integrity web site for details: <http://www.njit.edu/academics/integrity.php>**.

The texts for the course are *Investments*, Bodie, Kane & Marcus (BKN), 11th ed. (ISBN 978-0-13-306163-5); *Manias, Panics and Crashes*, C. Kindleberger & R. Aliber (K&A) 7th ed., 2015; *Reminiscences Of A Stock Operator*, E. LeFevre (EL).

All the texts are available through Amazon including inexpensive Kindle versions that can be downloaded. Therefore, there is no excuse for any student to not have access to the text materials from the beginning of the course.

The simulation is from Investopedia and can be accessed via an on-line login at investopedia.com. Pick the one with no fixed duration. Each individual can select at the beginning of the course whether to manage his or her own portfolio during the course. If a student does not want to manage an individual portfolio, they can opt do one with their remaining team. Once the decision is made it cannot then be changed. Each team or student will have an opportunity to manage their portfolio within the simulation using data from the Bloomberg terminals. Grades will be assigned based on a team or individual's performance with A+ going to the best performance though no team or individual can get less than a B+ if they do the simulation and report on the results weekly. A manual on how to create an account and use the Bloomberg terminals located in the Martin Tuchman School Of Management is posted on the class Moodle website. The Bloomberg Market Concepts [BMC] include four course Modules each student should really try to complete it to get the full benefit of the simulation assignment. Your certification will indicate completion, something you can put on your resume but will not affect your grade.

If you have questions, please ask them in the on-line “Discussion Forum” or come during my office hours on the 2d floor of the School of Management (Room 2002). You can also contact me by e-mail for an appointment at rappw@njit.edu.

Students should skim EL and read BKN Chapters 1 & 2 before the 2d week!

PART I - INTRODUCTION

Week 9/2/19 Introduction, Course overview with review Syllabus. Globalization Financial and Investment Environment, Asset Classes & Financial Instruments, Money, Real vs Financial Assets, Financial Markets, Participants, 2008-9 Crisis, Securities

Teams assigned by Friday September 6, 2019. If you want to work with a particular person, students must email requests to rappw@njit.edu by Thursday the 5th.

Skim EL, Read BKN Chapters 1 & 2 – class on-line

Week 9/9 Trading Securities, Issuance, Trading Strategies, Role Government (Regulations, and Regulators), Margin and Shorts, Investment Companies, Taxation

Reading: BKN Chapters 3 & 4; *Investopedia Simulation begins*

PART II – Portfolio Theory And Portfolio Management Practice

Week 9/16 Risk and Return, Using Historical Data, Risk-free Rate, Time Value Money

Reading: BKN Chapters 5 & 6

Team 1 does Problems 7 & 9 Chapter 1; **Team 2** does Problems 10 & 11 Chapter 2; **Team 3** does Problems 8 & 9 Chapter 3; **Team 4** does Problems 8 & 9 Chapter 4

Week 9/23 Portfolio Risk, Diversification, Optimization Models, Asset Allocation, Pooling, Index Models.

Reading: BKN Chapters 7 & 8

Team 1 does Problems 8 & 9 Chapter 5; **Team 2** does Problems 5 & 6 Chapter 6; **Team 3** does Problems 8 & 9 Chapter 7; **Team 4** does Problems 6 & 7 Chapter 8

PART III – Capital Markets Equilibrium

Week 9/30 The Capital Asset Pricing Model [CAPM], Arbitrage Pricing, Multifactor Models, Risk & Return, Fama-French

Readings: BKN Chapters 9 & 10

Team 1 does Problems 9 & 10 Chapter 8, **Team 2** does Problems 8 & 9 Chapter 9 and **Team 3** does Problems 8 & 9 Chapter 10.

Week 10/7 Efficient Market Hypothesis, Event Studies, Fund/Analyst Performance, Behavioral Finance, Technical Analysis.

Reading: BKN Chapters 11 & 12;

Team 4 does Problems 19 & 21 Chapter 11 and **Team 1** does Problems 14 & 16 Chapter 12.

Week 10/14 Security Returns, Testing Models, Liquidity Asset Pricing, Equity Premium Puzzle.

Mid-term Exam - Test posted on Moodle class website.

Test must be returned by e-mail by following Monday October 21th. No common or group answers accepted. Text material should be paraphrased in own words!

Readings: BKN Chapter 13; **Team 2** does Problems 2 & 3 Chapter 13.

PART IV – Fixed Income Securities

Week 10/21 **Bond Prices/Yields, Bond Pricing Trends, Default Risk, Yield Curve, Future Interest Rates & Interest Forwards, Term Structures.**

Midterm Exam Due Monday October 21!

Reading: BKN Chapters 14 & 15, posted article on SIVs

PART V – Security Analysis

Week 10/28 **Managing Bond & Fixed Income Portfolios, Convexity, Passive Approaches, Active Management, Macro-economic Factors, Government Policies, Industry Analysis, Competitive Dynamics, Demand/Supply Shocks, Business Cycles.**

Reading: BKN Chapters 16 & 17; posted article on Managed Earnings, posted article Oil Prices and High Yield Debt; posted material on growth, market share, and cost competitiveness

Team 3 does Problems 10 & 11 Chapter 14, **Team 4** does Problems 9 & 10 Chapter 15 and **Team 1** does Problems 8 & 9 Chapter 16.

Week 11/4 **Valuation [Comparables, Intrinsic Value, Discounting Dividends, Discounted Cash Flow, Price Earnings Ratio], Stock Market Aggregation, Financial Statements, Measuring Firm Performance, Profitability, Ratio Analysis, Value Investing**

Reading: BKN Chapter 18 & 19; plus posted K&A Chapters 1-2 [Financial Intermediaries and their Role in Financial Asset Bubbles.

It would be a good idea to have done Bloomberg Modules by this point.

Team 2 does Problems 12 & 17 Chapter 17; **Team 3** does Problems 11 & 12 Chapter 18 and **Team 4** does Problems 9 & 15 Chapter 19.

PART VI – Options, Futures, Derivatives

Week 11/11 **Expectations, Option Contract, Options Markets, Volatility, Option Strategies, Put-Call Parity, Warrants & Other Option-like Securities, Financial Engineering, Valuing Options, Black-Scholes, Option Pricing**

Reading: BKN Chapters 20 & 21 plus K&A Chapters 1-2 [Manias, Panics and Crashes], Posted article on Risk Management and Contractual Obligations, Posted article KAM Paradigm and Housing Bubble; FX Crib Sheet, FX Problem Set, and Hints

Team 1 does Problems 6 & 10 Chapter 20; **Team 2** does Problems 11 & 13 Chapter 21

Week 11/18 Managing Risk With Futures [Foreign Exchange, Stock Index, Interest Rate, Commodities, Bonds] & Swaps [Interest, Foreign Exchange]

Reading: BKN Chapters 22 & 23 plus K&A Chapters 3-4, Posted FX Solutions

Team 3 does Problems 14 & 16 Chapter 22 and **Team 4** does Problems 6 & 7 Chapter 23.

Take home final posted on Moodle. IT IS DUE by e-mail attachment to (rappw@njit.edu) Monday December 16th or by fax (914-923-1416)

Week 11/25 *Thanksgiving Break*

PART VII – Applied Portfolio Management

Week 12/2 Valuing Portfolio Performance, Hedge Funds, Market Timing, International Diversification, Global Equities, Emerging Markets, Foreign Investment Risks.

Reading: BKN Chapters 24 & 25 plus K&A Chapters 5-6 [skip 7 & 8]; posted article Bank Of America and Hedge Funds; posted article on Why Seniors Need To Work

Team 1 does Problems 7 & 8 Chapter 24 and **Team 2** does Problems 5 & 6 Chapter 25.

Week 12/9 Active Portfolio Management, Treynor-Black Model, Black-Litterman Model, Investment Policies, CFA, Asset Allocation, Individual Portfolios, Pension Funds, Target Investing

Reading: BKN Chapters 27 & 28 [skip 26] plus K&A Chapter 9; posted presentation What is an Emerging Market

Team 3 does Problems 1 & 3 Chapter 27, **Team 4** does Problem CFA 1 Chapter 28.

Week 12/16 *Performance Simulation ends 12/14; Team or Student rankings announced;*

Financial innovation paper due 12/16 on market and asset management impact of AI, ETFs and Smart Beta: format should explain these innovations, then identify their impact on markets and investment strategies and finally assess benefits and potential risks as innovations. That is the six-page Financial Innovation paper falls into three parts. The first part that should be approximately 2 pages should summarize the innovation along with its goals and evolution. The second part should explain how they have affected markets and investment strategies. Finally, the third part should try to assess each innovation's benefits and risks both qualitatively and quantitatively.

Final Exams and Financial Innovation Paper ARE DUE by e-mail attachment to (rappw@njit.edu) or by fax (914-923-1416) Monday December 16th, 2019.