

**UNIVERSITY OF TEXAS AT EL PASO  
DEPARTMENT OF ECONOMICS AND FINANCE  
FIN 4315 PORTFOLIO ANALYSIS (CRN 22244)  
SPRING 2015 SYLLABUS, 9:00 – 10:20 AM TUESDAY, THURSDAY, BUSN 312**



**INSTRUCTOR AND RELATED INFORMATION**

Oscar Varela, *Ph.D., CFA*  
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*Administration, Kauffman*  
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Direct Office Phone: 915-747-7771  
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Student Office Hours:  
10:20-11:20am Tuesday and Thursday  
1:20-2:20pm Tuesday and Thursday  
and by appointment

**TEXTBOOKS/MATERIALS:**

**Require:**

Edwin J. Elton, Martin J. Gruber, Stephen J. Brown and William N. Goetzmann, *Modern Portfolio Theory and Investment Analysis*, 9<sup>th</sup> edition, Wiley, 2014

CFA Institute, *Standards of Practice Handbook*, 10<sup>th</sup> edition, 2010 – available as a free download at <http://www.cfapubs.org/toc/ccb/2014/2014/4>.

**Provided:**

Access to the Wharton Research Database Services WRDS databases at [wrds.wharton.upenn.edu/](http://wrds.wharton.upenn.edu/). WRDS provides access to financial statements using the Standard and Poor's *Compustat* database and to stock prices and returns using the University of Chicago's Center for Research in Security Prices *CRSP* database. Other financial data are also provided. On-line financial statements can also be obtained through the UTEP library website's access to the *Mergents* database. The WRDS access for students in this course is active until May 20, 2015.

**For access:**

Username - poan4315 (use lower case without skipping spaces).  
Password announced in class.

## OBJECTIVE

This course provides an advanced undergraduate level study of portfolio analysis. Described well in its catalog description, it examines how to utilize mean-variance analysis to determine efficient portfolios. In so doing, it illustrates calculations of portfolio means and variances, and the role of correlations and covariances among the securities in the portfolio in the risk of the portfolio.

It also presents techniques for calculating efficient frontiers, and the usefulness of index models, whether single and multi-index, to simplify the measurement of the correlation structure of security returns to thereby simplify the portfolio selection process.

Given an efficient market portfolio, this course will also examine models of equilibrium in capital markets, and their role in asset pricing, including the derivation of the capital asset pricing model, and the arbitrage pricing model.

It extends its analysis into international diversification, and other portfolio selection models, such as safety-first, and ends with discussion of portfolio management, including use of derivatives in managing portfolios.

Throughout, the course will discuss ethical issues in investment management, using the highly regarded *Standards of Practice* from the CFA Institute. The course will also examine the 1990 Nobel Prize winning lectures of pioneers in portfolio analysis, Harry Markowitz and William F. Sharpe, as we examine the ideas that they helped produce.

The instructor's objective is to present these topics in as interesting and pleasurable a way as possible with the aim of achieving an outcome where the student intensely learns this body of literature in the quest to become a true finance professional.

Students will demonstrate an understanding of the techniques, practices and literature in portfolio analysis in all these areas, with the added value of this course derived from the instructor's objective of transferring this knowledge of portfolio analysis efficiently and completely, and in as enjoyable a manner as feasible.

## OUTCOMES AND MEASUREMENT:

- Outcome 1. Students will demonstrate knowledge of mean-variance portfolio optimization in the classic sense.
- Outcome 2. Students will demonstrate knowledge of the uses of single- and multi- index models that simplify the classic portfolio optimization problem.

- Outcome 3. Students will integrate knowledge of portfolio optimization with capital market equilibrium, and understand the derivation of the capital asset pricing model.
- Outcome 4. Students will understand safety-first objectives in portfolio optimization, the use of derivatives in managing portfolio risks, and the role of international diversification in portfolio optimization.
- Outcome 5. Students will understand ethical issues in investment and portfolio management, using the highly regarded *Standards of Practice Handbook* from the CFA Institute.

Outcomes measurements: Student achievement in course objectives will be assessed based on performance on exams, a class project, and through in class participation/attendance.

### CATALOG DESCRIPTION/PREREQUISITES

FIN 4315 - Portfolio Analysis (3-0) This course is based on modern portfolio analysis techniques. It utilizes mean-variance analysis to determine efficient portfolios and presents techniques for calculating efficient frontiers. It also utilizes single and multi index models to calculate the correlation structure of security returns and simplify the portfolio selection process. It further examines models of equilibrium in capital markets, international diversification and other portfolio selection models, such as safety-first. The course will utilize the computer to demonstrate and explore the various implications of portfolio analysis. Prerequisite: FIN 3315 or departmental approval.

**STUDENT ACCOMODATIONS:** If you have or suspect a disability and need accommodations you should contact Disabled Student Services Office (DSSO) at 747-5148 or at [dss@utep.edu](mailto:dss@utep.edu) or go to Room 106 Union East Building.

**REQUIREMENTS:** Preparation and Attendance are requirements and are assumed and expected. Students missing more than 3 classes should seriously reflect on their commitment to this course, as missing classes is highly and directly correlated with poor performance. Students may be asked to produce evidence of their note taking and problem working efforts when seeking the instructor's advice on improving their performance, as key ingredients in improving performance are good note taking (which requires class attendance) and good problem working efforts.

Your course grade will be determined by your weighted performance in the following categories, with the final course grade based on the 10 point scale, i.e. 90 percent is an A, 80 percent is a B, etc.

| EXAM       | AVERAGE WEIGHT** | DATE                       | TIME               |
|------------|------------------|----------------------------|--------------------|
| Exam I     | 20 percent       | Tuesday, February 17, 2015 | 9:00-10:20am       |
| Exam II    | 20 percent       | Tuesday, March 24, 2015    | 9:00-10:20am       |
| EXAM III   | 20 percent       | Tuesday, April 21, 2015    | 9:00-10:20am       |
| Final Exam | 20 percent       | Tuesday, May 12, 2015      | 10:00am-12:45pm    |
| Project    | 20 percent       | Thursday, April 23, 2015   | beginning of class |

\*\* While on average the weight per exam is 20 percent, the lowest exam grade will be weighed 15% and the highest exam grade will be weighed 25% in the calculation of the final course average. The remaining exams will weigh 20% each.

**EXAMS:** Situational problem, mini-cases, essay and definitional type questions, and multiple-choice and true-false questions, will appear in the examinations. The final exam will be comprehensive, whereas all other exams will include on a non-cumulative basis only the material shown in the course outline. All exams will be administered on the scheduled date in BUSN 312.

#### **MISSED EXAMS:**

##### **Credit for a missed exam may be made-up ONLY IF:**

- (1) the reason for missing the exam is beyond the student's control, e.g. such as a medical excuse, jury duty, death in the family or automobile accident, or
- (2) prior consent is obtained from the instructor for missing the exam based on a non-frivolous excuse, e.g. such as a job interview or out-of-town job related travel.

In either case, **the student must submit a written and signed statement concerning the reasons for missing the exam, with appropriate documentation, and petition for a makeup.**

**A missed exam will carry a zero grade if these conditions are not met.**

Otherwise, the first missed exam will be made-up in the comprehensive final exam, and will cause the final exam to weigh 40 percent rather than 20 percent in the final course grade. [If the final exam grade is the lowest (highest) exam grade and the final exam also makes up credit for a missed exam, then only the missed exam component of the final exam grade will be weighed 15 (25) percent as a lowest (highest) exam grade, whereas the final exam component will weigh 20 percent.] A student that misses more than one exam, presuming that the conditions for an approved make-up are met, will need to take an actual make-up of the missed exam at a time convenient to both the student and instructor.

Any student missing the Final Exam, presuming that the conditions for an approved make-up are satisfied, will need to take an actual make-up of the Final Exam at a time convenient to both the student and instructor. Students missing the Final Exam under approved conditions will receive (unless precluded by university rules) a grade of "I" (incomplete) for the course (unless the make-up can be conveniently scheduled before the university deadline for submission of grades). Students receiving a grade of "I" for missing the Final Exam will be responsible for making up the Final Exam at a time convenient to both the student and instructor. A make-up of the Final Exam because of an Incomplete grade is subject to university rules.

**ACADEMIC HONESTY:** Academic honesty is paramount to the existence of academic integrity in a course. During the taking of exams, no student in this course is to receive or give assistance to any other student in this course, nor should assistance through the use of unauthorized materials be used by anyone. In fulfilling other course requirements, work submitted by any student, or any assigned group of students in the case of group projects, must be the original work of that student or group, with appropriate credit given when other sources are used.

Section 1.3.1 of UTEPs *Handbook of Operating Procedures* provides the basis for the academic administration of charges of scholastic dishonesty. The *Handbook* states: "Any student who commits an act of scholastic dishonesty is subject to discipline. Scholastic dishonesty includes, but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts. Disciplinary proceedings may be initiated against any student for any of the following acts or omissions:

**1.3.1.1** "cheating" includes:

- a.** copying from the test paper of another student, engaging in written, oral, or any other means of communication with another student during a test, or giving aid to or seeking aid from another student during a test;
- b.** possession and/or use during a test of materials which are not authorized by the person giving the test, such as class notes, books, or specifically designed "crib notes";
- c.** using, obtaining, or attempting to obtain by any means the whole or any part of non-administered test, test key, homework solution, or computer program, or using a test that has been administered in prior classes or semesters, but which will be used again either in whole or in part without permission of the instructor; or accessing a test bank without instructor permission;
- d.** substituting for another person, or permitting another person to substitute for one's self, to take a test; and
- e.** falsifying research data, laboratory reports, and/or other records or academic work offered for credit;

**1.3.1.2** "plagiarism" means the appropriation, buying, receiving as a gift, or obtaining by any means another's work and the unacknowledged submission or incorporation of it in one's own academic work offered for credit, or using work in a paper or assignment for which the student had received credit in another course without direct permission of all involved instructors.

**1.3.1.3** "collusion" means the unauthorized collaboration with another person in preparing academic assignments offered for credit or collaboration with another person to commit a violation of any provision of the rules on scholastic dishonesty."

**PROJECT:** The project will require an in-depth analysis of an eight stock portfolio, and is due Tuesday, April 23, 2015 at the beginning of class. The results of your portfolio analysis are to be written up in a professional manner with statistical support provided on Excel.

The exact requirements for the project will be announced in class via a series of assignments regarding your portfolio that will be made in class. These assignments will be patterned after our classroom discussions of portfolio analysis, enabling you to practice in a practical sense what is discussed in class through this project.

A preview of the series of assignments to be made for the project is shown below:

1. Choose 8 stocks of your choice that publicly traded from January 1, 2013 to December 31, 2013.
2. Use CRSP database using WRDS access (to be shown a few times in the course) to download to an excel file the daily holding period returns for each of your stocks and the SP Composite Index from January 1, 2013 to December 31, 2013 (this procedure will be demonstrated in class).
3. For each stock and the market (SP Composite Index) returns, get the mean average daily return, the standard deviation and/or variance of the return distributions (using Excel functions).
4. Get the covariances and correlations between the returns for all combinations of your 8 stocks (again using Excel functions).
5. Get the covariances and correlations between the returns for each of your stocks against the returns to the market (SP Composite Index) (using Excel functions).
6. All of the above will be shown on the Excel file I will place on Blackboard to illustrate these calculations for a selected group of eight stocks.
7. Use the procedures described in class and in which you will already have been tested on to get, based on the information developed thus far, the Beta for each stock, and the variance of its characteristic line's error term, i.e. its firm specific risk or the variance of the error terms.

Let me note that all of this I expect that you do as the semester progresses, because this work will parallel our classroom discussions and test questions on exams, such that doing this

project during the semester will help in your exam and course performances.

8. Now, as will be demonstrated in class, get the 4 week coupon equivalent Treasury bill rates from January 1, 2013 to December 31, 2013 at

<http://www.treasury.gov/resource-center/data-chart-center/interest-rates/Pages/TextView.aspx?data=billRatesYear&year=2014>

9. Get the average T-bill rate during this period, and because these rates are annualized, divide the average rate by 360. You now have the average daily non-annualized T-bill rate for this period.

10. Using the average daily non-annualized T-bill rate from (9) and the earlier data, obtain your excess return to beta ratio for each of your eight stocks.

11. At least 2 of your stocks must have positive excess returns to beta for you to continue being able to work with your own data. (If not, see point 13 below)

12. If (11) is satisfied, then follow the methodology shown in the Blackboard posted handout "SimpleTechniquesForDeterminingEfficientFrontier101209" to find your optimum portfolio for your stocks.

13. If (11) is not satisfied, then solve the problem shown in Blackboard posted in handout "Class Project New Problem for Blackboard using Elton Gruber 7 ed Ch 9 Prob 1 Techniques 110509" and turn it in with your class project.

Missing the deadlines for the project will be penalized by one letter grade. Missing subsequent deadlines will be penalized by another letter grade, i.e. the maximum grade when missing two or more deadlines will be a C.

The formal written work for this project should be neat and utilize proper grammar. Work performed and presented on Excel should be neat, with headings and statistical results appropriately labeled. Excessive lack of neatness or improper grammar will be penalized by one letter grade.

**FIN 4315 COURSE OUTLINE<sup>1</sup>**  
**Attendance is assumed and expected**  
**and absences are penalized**

**Tues Jan 20**

The Course of the Course

CFA Institute – and the Chartered Financial Analyst designation:  
<http://www.cfainstitute.org>

**CFA Institute**

Members of CFA Institute (including Chartered Financial Analyst® [CFA®] charterholders) and candidates for the CFA designation (“Members and Candidates”) must:

- Act with integrity, competence, diligence, respect, and in an ethical manner with the public, clients, prospective clients, employers, employees, colleagues in the investment profession, and other participants in the global capital markets.
- Place the integrity of the investment profession and the interests of clients above their own personal interests.
- Use reasonable care and exercise independent professional judgment when conducting investment analysis, making investment recommendations, taking investment actions, and engaging in other professional activities.
- Practice and encourage others to practice in a professional and ethical manner that will reflect credit on themselves and the profession.
- Promote the integrity of, and uphold the rules governing, capital markets.
- Maintain and improve their professional competence and strive to maintain and improve the competence of other investment professionals.

CFA Institute, Standards of Practice Handbook, 11<sup>th</sup> edition, 2014

Standard I: Professionalism  
Standard II: Integrity of Capital Markets  
Standard III: Duties to Clients

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<sup>1</sup> The instructor reserves the right to revise the course outline.

Standard IV: Duties to Employers  
Standard V: Investment Analysis, Recommendations, and Actions  
Standard VI: Conflicts of Interest  
Standard VII: Responsibilities as a CFA Institute Member or CFA Candidate

## **Thurs Jan 22**

Le Tour de Finance: A review of Investment Analysis – drawn from generic investment analysis prerequisite material to this course:

- Organization and Functioning of Securities Markets
- Security-Market Indicator Series
- Efficient Capital Markets
- Introduction to Security Valuation
- Bond Fundamentals and the Valuation of Bonds
- Bond Portfolio Management Strategies
- Stock Fundamentals and the Valuation of Stocks
- Stock Portfolio Management Strategies
- Derivative Instruments – Options, Futures and Swaps
- Investments in a Global Market
- Introduction to Portfolio Management
- Introduction to Asset Pricing Models
- Evaluation of Portfolio Performance Measurement Material
- Technical Analysis

How much risk is right for you and what is your financial health? Examples of how to answer these questions are in the following web sites.

Investment Risk Tolerance Quiz: <http://njaes.rutgers.edu/money/riskquiz/>

Financial Fitness Quiz: <http://njaes.rutgers.edu/money/ffquiz/>

CFA Institute, Standards of Practice Handbook, 11<sup>th</sup> edition, 2014

Standard I: Professionalism

- A. Knowledge of the Law
- B. Independence and Objectivity
- C. Misrepresentation
- D. Misconduct

CHAPTER 3 Financial Markets

## **Tues Jan 27**

CHAPTER 4 The Characteristics of the Opportunity Set Under Risk

**Thurs Jan 29**

Chapter 4 continued

Harry Markowitz, "Foundations of Portfolio Theory," Nobel Prize Lecture, 1990

CHAPTER 5 Delineating Efficient Portfolios

**Tues Feb 3**

Chapter 5 continued

CFA Institute, Standards of Practice Handbook, 11<sup>th</sup> edition, 2014  
Standard II: Integrity of Capital Markets  
A. Material Nonpublic Information  
B. Market Manipulation

**Thurs Feb 5**

CHAPTER 6 Techniques for Calculating the Efficient Frontier

**Tues Feb 10**

Chapter 6 continued

**Thurs Feb 12**

CFA Institute, Standards of Practice Handbook, 11<sup>th</sup> edition, 2014  
Standard III: Duties to Clients  
A. Loyalty, Prudence, and Care  
B. Fair Dealing  
C. Suitability  
D. Performance Presentation  
E. Preservation of Confidentiality

CHAPTER 7 The Correlation Structure of Security Returns: The Single-Index Model

**Tues Feb 17**

\*\*\*EXAM I\*\*\* (will not include material from Chapter 7 on Feb 12)

**Thurs Feb 19**

Chapter 7 continued

**Tues Feb 24**

Return Exam I

**Thurs Feb 26**

CHAPTER 8 The Correlation Structure of Security Returns: Multi-Index Models and Grouping Techniques

CFA Institute, Standards of Practice Handbook, 11<sup>th</sup> edition, 2014

Standard IV: Duties to Employers

A. Loyalty

B. Additional Compensation Arrangements

C. Responsibilities of Supervisors

**Tues Mar 3**

Chapter 8 continued

**Thurs Mar 5 (Mar 9-13 is Spring break)**

CHAPTER 9 Simple Techniques for Determining the Efficient Frontier

**Tues Mar 17**

Chapter 9 continued

CHAPTER 10 Estimating Expected Returns

**Thurs Mar 19**

SPECIAL LECTURE

Can the Market be Timed?

Varela, Oscar, 2002, "The Efficiency of Net Asset Values for Asian-Country Mutual Funds in the US," *Journal of Business Finance and Accounting* 29 (2002), 761-786.

Varela, Oscar and Duc Anh Ngo, "Timing Using the Chinese Stock Market", *Working Paper*.

Mazumder, M. Imtiaz, Miller, Edward M. and Oscar Varela, "Market Timing the Trading of International Mutual Funds: Weekend, Weekday and Serial Correlation Strategies." *Journal of Business Finance and Accounting*, Vol. 37, Issue 7-8 (Sept-Oct 2010), pp. 979-1007.

**Tues Mar 24**

\*\*\***EXAM II**\*\*\*

**Thurs Mar 26 (no class on Tues Mar 31 Cesar Chavez day)**

CHAPTER 11 How to Select Among the Portfolios in the Opportunity Set

CFA Institute, Standards of Practice Handbook, 11<sup>th</sup> edition, 2014  
Standard V: Investment Analysis, Recommendations, and Actions  
A. Diligence and Reasonable Basis  
B. Communication with Clients and Prospective Clients  
C. Record Retention

Haque, Mahfuzul, Oscar Varela, and M. Kabir Hassan. "Safety-first and Extreme Value Bilateral U.S.- Mexican Portfolio Optimization around the Peso Crisis and NAFTA in 1994." *Quarterly Review of Economics and Finance*, Vol 47, No. 3 (July 2007), pp. 449-469.

**Thurs April 2**

Return Exam II

**Tues April 7**

SPECIAL LECTURE  
Portfolio Analysis and Stock Market Crashes, Lessons from 1929 and 1987

Chapter 11 (continued)

Haque, Mahfuzul and Oscar Varela, "Safety-first Portfolio Optimization after September 11, 2001." *Journal of Risk Finance*, Vol. 11, No 1 (2010), pp. 20-61.

## **Thurs April 9**

### CHAPTER 12 International Diversification

Abdou, Khaled and Oscar Varela, "When US Venture Capital Ventures Abroad", *Accounting and Finance*, Vol. 54, No. 1 (2014), pp. 1-23.

### CHAPTER 13 The Standard Capital Asset Pricing Model

William F. Sharpe, "Capital Asset Prices with and without Negative Holdings," Nobel Prize Lecture, 1990

## **Tues April 14**

Chapter 13 continued

CFA Institute, Standards of Practice Handbook, 11<sup>th</sup> edition, 2014

Standard VI: Conflicts of Interest

- A. Disclosure of Conflicts
- B. Priority of Transactions
- C. Referral Fees

## **Thurs April 16**

CHAPTER 16 The Arbitrage Pricing Model APT-A Multifactor Approach to Explaining Asset Prices.

Teker, Suat and Oscar Varela. "A Comparative Analysis of Security Pricing Using Factor, Macrovariable and Arbitrage Pricing Models." *Journal of Economics and Finance*, Vol. 22, No. 2-3 (Summer/Fall 1998), pp. 21-41

## **Tues April 21**

**\*\*\*EXAM III\*\*\***

## **Thurs April 23**

Project Due (at the start of the class period today)

CFA Institute, Standards of Practice Handbook, 11<sup>th</sup> edition, 2014

Standard VII: Responsibilities as a CFA Institute Member or CFA Candidate

- A. Conduct as Members and Candidates in the CFA Program
- B. Reference to CFA Institute, the CFA Designation, and the CFA Program CFA Institute Standards of Practice Exam

SPECIAL LECTURE  
Financial Futures and Portfolio Management

Chapter 24 The Valuation and Uses of Financial Futures

**Tues April 28**

Return Exam III

**Thurs April 30**

SPECIAL LECTURE  
Bond Duration

CHAPTER 22 The Management of Bond Portfolios

**Tues May 5**

SPECIAL LECTURE  
Index Options and Portfolio Management

Chapter 23 Option Pricing Theory

**Thurs May 7**

Course Review

**FINAL EXAM – Tuesday May 12, 2015, 10:00am-12:45pm, BUSN 312**

## Portfolio Analysis - 22244 - FIN 4315 - 001

**Associated Term:** Spring 2015

**Registration Dates:** Oct 06, 2014 to May 07, 2015

**Levels:** Undergraduate

**Attributes:** Busn Bachelor's Course (AACSB)

**Public Access to Course Information:** [Oscar Varela](#) (P)

**Course Fee(s):** None.

[View my Books](#)

Main Campus Campus

Lecture (LECT) Schedule Type

3.000 Credits

[View Catalog Entry](#)

| <b>Scheduled Meeting Times</b> |                       |      |                                  |                     |               |             |
|--------------------------------|-----------------------|------|----------------------------------|---------------------|---------------|-------------|
| Type                           | Time                  | Days | Where                            | Date Range          | Schedule Type | Instructors |
| Class                          | 9:00 am -<br>10:20 am | TR   | College of Business<br>Admin 312 | Jan 20,<br>2015 - M |               |             |
| ADA Accessible                 |                       |      |                                  |                     |               |             |