Class Meeting: Tuesdays, 1:30 – 4:20 pm  
Office Hours: By appointments  
Office: Room # 253; zwei@utep.edu

COURSE OVERVIEW AND OBJECTIVE  
This is the last seminar in the Ph.D. Seminar in Finance series, and is built on everything you have learned since entering the program. Though our program is oriented toward empirical research, basic theoretical asset pricing will be covered in this course. The objective of the theoretical part of the course is to provide you with a solid foundation for conducting and interpreting empirical research. As such, theories are treated at a level similar to *Asset Pricing* (Cochrane, 2001 or 2005 revised edition), which focuses on economic intuition rather than rigorous mathematical proofs. 

Topics include state prices and stochastic discount factors, CAPM, APT, consumption asset pricing models, optimal consumption and portfolio choice, Markowitz efficient frontier, option pricing, term structure of interest rates, EMH, time-series predictability and cross-section of stock returns, volatility, institutional investors, and mutual funds.

The objective of this course is to help students gain solid theoretical and empirical foundation for a successful research career in finance. To achieve that objective, students are to immerse in past and recent finance literature related to the aforementioned topics.

PREREQUISITES  
1. “I presume some exposure to undergraduate economics and statistics. A reader should have seen a utility function, a random variable, a standard error, and a time series, should have some basic linear algebra and calculus, and should have solved a maximization problem by setting derivatives to zero. The hurdles in asset pricing are really conceptual rather than mathematical.” (Preface, Cochrane (2001))

2. **Proficient** in STATA, or SAS; WRDS, and standard finance databases such as CRSP, COMPUSTAT and SDC. 

REQUIRED COURSE MATERIALS
1. The papers listed in this syllabus. 

REFERENCE BOOKS

**COURSE COMPONENTS**

**Effort**
This is a seminar, not a lecture. Therefore, students are required to prepare for each class by reading before hand the assigned material and studying any necessary “background” materials in order to discuss the papers in depth. Self-starter and a high degree of effort are crucial and expected.

**Problem Sets**
There will be several problem sets throughout the semester. These problem sets will be theoretical and empirical. You may talk to or work with other students concerning these problem sets, but each student must turn in his/her version of the answers. The theoretical problem sets are intellectual exercises that help develop good intuitions, while the empirical problem sets help understand through *replications* what is going on in the papers we discuss. By the end of the semester, you should have learned or repeated many of the useful techniques in modern empirical financial research. Through these seminars, you will build up a library of research techniques and make them routine so that when you need them in your future research, you can just simply look them up.

**Paper Summary, Presentation and Discussion**
Students are required to read and understand the assigned papers for that week before coming to class. On average, four papers will be assigned each week, but only two will be presented. The two or more non-presented papers will be discussed. Everyone is required to submit a 2-page max, 12-point font, single-spaced summary for each assigned paper for that week. *The summary should include motivations, data, methodology, main findings and contributions, and future research ideas. A mere rewrite of the abstract and conclusions is unacceptable.* Non-presenters are expected and encouraged to ask questions during the presentation. All presentations must be in PowerPoint and the length of the presentation is 30-40 minutes per paper.

**Term Paper**
Each student is required to complete and present an *original* research paper for this class. The topics must be related to investments or materials and be approved by the professor. A complete, finished term paper is expected at the end of the semester, including literature review, motivations, hypotheses, sample and data, methodology, empirical results, and interpretations and discussions of the results. The expected quality of the term papers is such that after revisions, they are ready for submission to FMA or other regional finance conferences.

Each student is required to develop multiple research ideas through the first half of the semester and present them to the class. The class (the professor and the students) will critique those ideas and provide feedback. With feedback from the class, the student will settle on one idea to write the term paper. The due date of the term paper is the last day of class.

**PERFORMANCE EVALUATION**

1. (20%) Problem sets
2. (20%) Paper summaries, presentations and discussions
3. (30%) Research paper and presentation
4. (30%) Final exam
Course Schedule (tentative)

<table>
<thead>
<tr>
<th>Topics</th>
<th>Reading Assignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overview of Theoretical Asset Pricing</td>
<td>- Preface &amp; Ch 1, Cochrane</td>
</tr>
<tr>
<td></td>
<td>- Appendix – “Continuous Time,” Cochrane</td>
</tr>
<tr>
<td>State Prices &amp; Stochastic Discount Factors</td>
<td>- Ch 1-3, Cochrane</td>
</tr>
<tr>
<td>Static and Dynamic Asset Pricing Models</td>
<td>- Ch 1, 2, 9, 21, Cochrane</td>
</tr>
<tr>
<td></td>
<td>- Selected papers</td>
</tr>
<tr>
<td>Optimal Consumption and Portfolio Choice</td>
<td>- Ch 11,13, Ingersoll ; Ch 9, Duffie</td>
</tr>
<tr>
<td></td>
<td>- Selected papers</td>
</tr>
<tr>
<td>Option Pricing - Binomial model – Black-Scholes</td>
<td>- Ch. 9-13, Hull</td>
</tr>
<tr>
<td></td>
<td>- Selected papers</td>
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<tr>
<td>Term Structure of Interest Rates</td>
<td>- Ch. 7, Duffie</td>
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<tr>
<td></td>
<td>- Selected papers</td>
</tr>
<tr>
<td>Empirical Asset Pricing: Tests of Asset Pricing Models</td>
<td>- Ch 1, CML; Ch 21, Hamilton</td>
</tr>
<tr>
<td></td>
<td>- Selected papers</td>
</tr>
<tr>
<td>EMH and Anomalies</td>
<td>- Selected papers</td>
</tr>
<tr>
<td>Time-Series Predictability of Stock Returns</td>
<td>- Ch 20, Cochrane</td>
</tr>
<tr>
<td></td>
<td>- Selected papers</td>
</tr>
<tr>
<td>Cross Section of Stock Returns</td>
<td>- Ch 20, Cochrane</td>
</tr>
<tr>
<td></td>
<td>- Selected papers</td>
</tr>
<tr>
<td>Institutional Investors and Mutual Funds</td>
<td>- Selected papers</td>
</tr>
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TOPICS AND PAPERS
(The list of papers was from the 2012 class. I will add/delete papers on the list as the semester progresses, but the classic papers remains)

A. Theoretical Asset Pricing

A.1. Overview
- Finance and Asset Pricing
- Three Basic Approaches to Asset Pricing
- Utility Functions - Stochastic Calculus

Preface and Ch.1, Cochrane
Appendix – “Continuous Time,” Cochrane
Ch. 10, Hull, “Model of the Behavior of Stock Prices”


A.2. State Prices and Stochastic Discount Factors
- No Arbitrage and State Prices
- Equivalent Martingale Measure and Risk Neutral Valuation
- Stochastic Discount Factors

Ch.1-3, Cochrane; Ch.1, 2, 6, Duffie

A.3. Static and Dynamic Asset Pricing Models
- CAPM
- CCAPM
- Equity Premium Puzzle
- ICAPM

Ch. 1, 2, 9, 21, Cochrane; Ch. 8, CLM


A.4. Optimal Consumption and Portfolio Choice
Ch. 11,13, Ingersoll; Ch. 9, Duffie

Harry m. Markowitz, “Foundations of Portfolio Theory
Nobel Lecture, December 7, 1990. Baruch College, CUNY.


A.5. Option Pricing - Binomial model - Black-Scholes
Ch. 9-13, Hull


Ch. 7, Duffie


B. Empirical Asset Pricing

Ch. 1, CLM; Ch. 21, Hamilton

B.2. Tests of Asset Pricing Models
Ch. 12, Cochrane


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C. Efficient Market Hypotheses, and Anomalies


D. Time-Series Predictability of Stock Returns DCh. 20, Cochrane


E. Cross Section of Stock Returns

Ch. 20, Cochrane


F. Institutional Investors and Mutual Funds


### G. Time Varying Volatility


