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**Economics 487**  
**Applied Financial Modeling**  
TTh: 4:00-5:30, Seigle Hall 103  
Class Website <http://artsci.wustl.edu/~morley/Courses/Econ487.html>

**Syllabus**

**Course Description**

This course covers major topics in financial economics, including portfolio theory, the capital asset pricing model, the efficient markets hypothesis, and models of time-varying market volatility, with an emphasis on empirical applications of theoretical concepts using Microsoft Excel. Cultivation of practical programming skills is designed to complement application of economic theory to financial markets.

**Prerequisites**

The formal prerequisites are Econ 401 (Price Theory) and Econ 413 (Introduction to Econometrics). It is important to have some familiarity with introductory statistics, calculus, and matrix algebra. Familiarity with computers and spreadsheets (such as Microsoft Excel) is also helpful.

**Requirements**

There will be a number of short homework assignments (posted on the class website listed above), two exams, and a project (proposal and final project). The weights in determining the course grade are given as follows:

Homework Assignments	25%
Exams	40%
Project Proposal	5%
Final Project	30%

Late homework will be accepted with a penalty of 20% per 24 hour time period (from the start of the class when the assignment was due). Also, there will be no make-up exams. If you do not show up for an exam, you will receive a score of zero. The only exception will be for a documented medical illness or family emergency. If this should happen, contact me prior to the exam by phone (935-4437) or by email. Note that booking a flight to leave St. Louis before an exam does not constitute a serious emergency.

I will try to be prompt in returning homework and exams. I will also be as careful as possible in assigning grades. However, if you believe a grading mistake has been made, you may submit a *written request* for a re-grade, carefully explaining why you believe a mistake has been made. Be forewarned, however, that your grade may go up or down as a result of a re-grade.

The letter grade for the course will be determined by converting your percentage score according to the following letter grade distribution:

A+	96-100%	B+	81-85%	C+	67-70%	D+	57-59%	F	0-49%
A	91-95%	B	76-80%	C	63-66%	D	53-56%		
A-	86-90%	B-	71-75%	C-	60-62%	D-	50-52%		

## Readings

There is a required readings package available for purchase from the main office of the Economics Department (Seigle Hall 307). The package includes materials from a manuscript by Professor Eric Zivot, which will serve as the main text for the course.

Also required is A Random Walk Down Wall Street, by Burton G. Malkiel, Norton, 1999, which is available for purchase in the campus bookstore. This book is a highly readable introduction to financial economics. The purpose of this book is to provide a big picture perspective of the material covered in the course. You will be asked to discuss this text in the homework and on the exams.

## Topics

1. Asset Return Calculations
  - Zivot, Chapter 1.
2. Probability Review
  - Zivot, Chapter 2.
3. The Constant Expected Return Model
  - Zivot, Chapter 3.
4. Introduction to Portfolio Theory and the Markowitz Algorithm
  - Zivot, Chapters 4, Matrix Algebra Review, and 5.
5. The Market Model
  - Zivot, Chapters 6 and 7.
6. The Capital Asset Pricing Model
  - Zivot, Chapter 8.
  - Perold, A.F., 2004, "The Capital Asset Pricing Model," *Journal of Economic Perspectives* 18, 3-24.
7. Time Series Properties of Returns
  - Engle, R., 2004, "Risk and Volatility: Econometric Models and Financial Practice," *American Economic Review* 94, 405-420.
  - Kim, C.-J., J.C. Morley, and C.R. Nelson, 2004, "Is There Positive Relationship between Stock Market Volatility and the Equity Premium," *Journal of Money, Credit, and Banking* 36, 339-360.
  - Campbell, J.Y., M. Lettau, B.G. Malkiel, Y. Xu, 2001, "Have Individual Stocks Become More Volatile? An Empirical Exploration of Idiosyncratic Risk," *Journal of Finance* 56, 1-43.
  - Gravelle, T., M. Kichian, and J. Morley, 2006, "Detecting Shift-Contagion in Currency and Bond Markets," *Journal of International Economics* 68, 409-423.