

University of Florida
Warrington College of Business Administration

FIN 7446
Financial Theory 1

Fall 2016

Lecture times: T R, periods 5-6
Lecture room: GER 229

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Course Overview and Objectives

This is an introductory Ph.D.--level course in theoretical financial economics. The main purpose is to introduce mathematical approaches to modern portfolio theory and asset pricing. These include: the theory of choice, von Neumann – Morgenstern expected utility, Arrow-Debreu state pricing, implications of no arbitrage, multi-period exchange economies with complete and incomplete markets, continuous-time mathematics, stochastic discount factors, Hansen-Jagannathan bounds, the consumption-based asset pricing model, the capital asset pricing model, arbitrage pricing theory, dynamic programming, Merton's inter-temporal CAPM, the mathematics of the efficient frontier, and option pricing (binomial, partial differential equation, and risk-neutral valuation approaches). In this course, the primary emphasis is on the practical use of mathematical tools, combined with an intuitive interpretation of assumptions and results. By the end of the semester, students are expected to be able to read effectively a high-quality research paper on asset pricing.

Prerequisites

This course presumes ideally an MBA level understanding of finance and business and a math background that includes upper-level undergraduate (multivariate) calculus, statistics, and matrix algebra. Stochastic calculus will be introduced in an intuitive manner but students are expected to be comfortable with basic concepts of differential equations. However, a mathematically prepared student who lacks a formal economics or finance background can still manage this course as the economic concepts can be quickly assimilated.

Textbooks and Materials

I will mostly follow Pennacchi (2008) and will occasionally draw from Cochrane (2005) for empirical applications, and Hull when discussing derivatives pricing. Towards the end of the semester, students will be asked to study and discuss journal articles to get a firmer account of research applications of concepts learned in this course. Slides based on Pennacchi (2008) will be provided.

Pennacchi, G. *Theory of Asset Pricing*, Pearson Education (2008)

Cochrane, J. H., *Asset Pricing*, Princeton University Press (2005).

Hull, J. *Options, Futures, and other Derivatives* (7th or later ed.) Prentice-Hall (2008+).

The following reference may also help students gain additional perspectives:

Duffie, J. D. *Dynamic Asset Pricing Theory* (3rd ed.), Princeton University Press (2001).

Campbell, John Y., Andrew W. Lo, and A. Craig MacKinlay, *The Econometrics of Financial Markets*, Princeton University Press, 1997.

Huang, Chi-fu, and Robert H. Litzenberger, *Foundations for Financial Economics*, North-Holland, 1988.

Luenberger, D. *Investment Science*, Oxford University Press, 1997.

Skiadas, C. *Asset Pricing Theory*, Princeton University Press (2009).

Grading

The grading components will be as follows:

Problem sets: 20%

Midterm: 40%

Final: 40%

The final will consist of a critical review of a fundamental paper on asset pricing theory. Students should be able to identify: (i) the importance of the topic, (ii) critical elements of the methodology followed, particularly the applicability of any theoretical assumptions, (iii) limitations of the methodology or the results, (iv) possible extensions of the approach presented, with a description of its main steps together with a discussion of possible roadblocks.