

**UNIVERSITY OF ILLINOIS
COLLEGE OF BUSINESS**

Finance 591
Asset Pricing Theory

Spring 2009
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Office Hours: Mondays 4:00 – 5:00 p.m., Thursdays 12:00 – 1:00 p.m. or by appointment.

Course Syllabus

Required:

Pennacchi, G., 2008, *Theory of Asset Pricing*, Pearson Education, Boston, MA.
(copy on reserve at Business and Economics Library)

Course website for problem and exam solutions: www.business.illinois.edu/gpennacc/fin591.html.

Useful References:

Ingersoll, J., 1987, *Theory of Financial Decision Making*, Rowman & Littlefield, Totowa, NJ.
(copy on reserve at Business and Economics Library)

Cochrane, J., 2005, *Asset Pricing*, Princeton University Press, Princeton, NJ.
(copy of 2001 edition on reserve at Business and Economics Library)

Duffie, D., 2001, *Dynamic Asset Pricing Theory*, Princeton University Press.

Huang, C. and R. Litzenberger, 1988, *Foundations for Financial Economics*, Elsevier Science Publishers (North-Holland), New York.

LeRoy, Stephen F. and Jan Werner, 2001, *Principles of Financial Economics*, Cambridge University Press, Cambridge, UK

Merton, R.C., 1993, *Continuous-Time Finance*, Blackwell Publishers, Cambridge, MA

Gollier, Christian, 2001, *The Economics of Risk and Time*, MIT Press, Cambridge, MA

Hull, J.C., 2000, *Options, Futures, and Other Derivatives*, Prentice Hall, Upper Saddle River, NJ.

Campbell, J., A. Lo, and C. MacKinlay, 1997, *The Econometrics of Financial Markets*, Princeton University Press, Princeton, NJ.

Review Articles:

Campbell, J., 2000, "Asset Pricing at the Millennium," *Journal of Finance* 55, 1515-1567.

Sundaresan, S., 2000, "Continuous-Time Methods in Finance: A Review and an Assessment," *Journal of Finance* 55, 1569-1622.

I. Single-Period Portfolio Choice and Asset Pricing

1. Expected Utility and Risk Aversion
 - “Preferences When Returns are Uncertain”
Machina, M., 1987, “Choice Under Uncertainty: Problems Solved and Unsolved,”
Journal of Economic Perspectives 1, 121-154.
 - “Risk Aversion and Risk Premia”
Rabin, M. and R. Thaler, 2001, “Risk Aversion,” *Journal of Economic Perspectives* 15,
219-232.
 - Ingersoll, Chapter 1
“Risk Aversion and Portfolio Choice”
Ingersoll, Chapter 3
2. Mean-Variance Analysis
 - “Assumptions on Preferences and Asset Returns”
“The Efficient Frontier without and with a Riskless Asset”
Ingersoll, Chapter 4
Cochrane, Chapter 5
 - “An Application of Mean Variance Analysis: Cross-Hedging”
Anderson, R. and J-P. Danthine, 1981, “Cross Hedging,” *Journal of Political Economy*
89, 1182-1196.
3. The CAPM, Arbitrage, and Linear Factor Models
 - “The Capital Asset Pricing Model”
Cochrane, Chapter 9.1
 - “Arbitrage and Linear Factor Models”
Ingersoll, Chapter 7
Cochrane, Chapter 9.4
4. Consumption-Savings Decisions and State Pricing
 - Ingersoll, Chapters 2 and 8
 - Cochrane, Chapters 1.1-1.4, 2, 3, and 4.1-4.2

II. Multiperiod Consumption, Portfolio Choice, and Asset Pricing

5. A Multiperiod Discrete Time Model of Consumption and Portfolio Choice
 - “Intertemporal Consumption and Portfolio Choice: The Dynamic Programming
Approach”
Ingersoll Chapter 11
Cochrane, Chapter 9.1
6. Multiperiod Market Equilibrium
 - “Asset Pricing in the Multi-Period Model and the Lucas Model”
The Lucas Model in O. Blanchard and S. Fischer, 1989, *Lectures on Macroeconomics*,
MIT Press, p.506-12. **R**
 - “Rational Speculative Asset Price Bubbles”
Asset price bubbles in O. Blanchard and S. Fischer, 1989, *Lectures on Macroeconomics*,
MIT Press, p.211-26. **R**
 - Cochrane, Chapters 20.1 and 21.1

III. Contingent Claims Pricing

7. Basics of Derivative Pricing

“Forward and Option Contracts”

Ingersoll Chapter 14

Cochrane, Chapter 17.1

“Binominal Option Pricing”

Cox, J., S. Ross, and M. Rubinstein, 1979, “Option Pricing: A Simplified Approach,” *Journal of Financial Economics* 7, 229-63.

8. Essentials of Diffusion Processes and Itô’s Lemma

Ingersoll Chapters 12 and 16

Cochrane, Appendix

9. Dynamic Hedging and PDE Valuation

“Black-Scholes Option Pricing”

Cochrane, Chapter 17.2

“An Equilibrium Term Structure Model”

Ingersoll, Chapter 18

Cochrane, Chapter 19

“Option Pricing with Random Interest Rates”

Merton, R.C., 1973, “Theory of Rational Option Pricing,” *Bell Journal of Economics* 4 141-143.

10. Arbitrage, Martingales, and Pricing Kernels

Cox, J., and C. Huang, 1989, “Option Pricing Theory and Its Applications,” in S. Battacharya and G. Constantinides, eds., *Theory of Valuation: Frontiers of Modern Financial Theory*, Rowman & Littlefield, Totowa, NJ. **R**

Cochrane, Chapter 1.5 and 4.3

11. Mixing Diffusion and Jump Processes

“Valuing Contingent Claims When Asset Prices Can Jump”

IV. Asset Pricing in Continuous Time

12. Continuous-Time Consumption and Portfolio Choice

“The Dynamic Programming Approach”

Ingersoll Chapter 13

“The Martingale Approach”

Wachter, J.A., 2002, “Portfolio and Consumption Decisions under Mean-Reverting Returns: An Exact Solution for Complete Markets,” *Journal of Financial and Quantitative Analysis* 37, 63-91.

13. Equilibrium Asset Returns

“An Intertemporal Capital Asset Pricing Model”

Cochrane, Chapter 9.2-9.3, 9.5

Ingersoll Chapter 15

“Breedén’s Consumption CAPM”

“A Cox-Intersoll, and Ross Production Economy”

- Cox, J., J. Ingersoll, and S. Ross 1985 “An Intertemporal General Equilibrium Model of Asset Prices,” *Econometrica* 53, 363-384.
- Cox, J., J. Ingersoll, and S. Ross 1985 “A Theory of the Term Structure of Interest Rates,” *Econometrica* 53, 385-408.

14. Time-Inseparable Utility

- Constantinides, G., 1990, “Habit Formation: A Resolution of the Equity Premium Puzzle,” *Journal of Political Economy* 98, 519-543.
- Campbell, J. and J. Cochrane, 1999, “By Force of Habit: A Consumption-Based Explanation of Aggregate Stock Market Behavior,” *Journal of Political Economy* 107, 205-251.
- Cochrane, Chapter 21.2
“Recursive Utility”
- Obstfeld, M., 1994, “Risk-Taking, Global Diversification, and Growth,” *American Economic Review* 84, 1310-1329.

V. Additional Topics in Asset Pricing

15. Behavioral Finance and Asset Pricing

- Barberis, N., M. Huang and T. Santos, 2001, “Prospect Theory and Asset Prices,” *Quarterly Journal of Economics* 116(1), 1-53.
- Kogan, L., S. Ross, J. Wang, and M. Westerfield, 2002, “The Price Impact and Survival of Irrational Traders,” *Journal of Finance* 61, 195-229.

16. Asset Pricing with Differential Information

- “Equilibrium with Private Information”
- Grossman, S., 1976, “On the Efficiency of Competitive Stock Markets Where Traders Have Diverse Information,” *Journal of Finance* 31, 573-585.
- “A Noisy Rational Expectations Equilibrium”
- “Asymmetric Information”
- Kyle, A., 1985, “Continuous Auctions and Insider Trading,” *Econometrica* 53, 1315-35.

Articles marked **R** are on reserve at the Business and Economics Library. All other articles may be downloaded from the University of Illinois Library Online Research Resources.

There will be an in-class mid-term examination on **Monday, March 16**. The final examination will be as scheduled during the final examination week. Homework problems will be assigned weekly and students will be randomly selected to present their answers during class. The course grade will be computed as follows: final exam 50%, mid-term exam 40%, homework problems 10%. Plus and minus grades will be used.