

ECON 712: Macroeconomic Theory

Professor: Noah Williams

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Course Schedule:

Lectures: Monday and Wednesday from 1:00-2:15, Social Science 6104

All course materials will be on the class web page: <http://www.ssc.wisc.edu/~nwilliam/Econ712>

Requirements for this portion of the class include attendance at the lectures, four problem sets (20% of grade), two midterms (20% each) and a final (40%). No late homework will be accepted. The midterms will be in class on October 1 and November 19, and the final will be in class on December 10.

Schedule of topics:

1. The role of expectations
2. Search models of unemployment
3. Search equilibrium
4. Consumption-savings problem under certainty
5. Deterministic dynamic programming
6. Consumption-savings problem under uncertainty
7. The neoclassical growth model (Prof. Fukushima)
8. Continuous time optimization and applications
9. Stochastic dynamic programming
10. Recursive competitive equilibrium
11. Asset pricing
12. The real business cycle model
13. Incomplete markets
14. Continuous time stochastic processes and optimization
15. Monetary models: currency in the utility function and cash-in-advance
16. Monetary models: search
17. The New Keynesian model

There are no required textbooks for the course, but we'll use some of the following books:

- Ljungqvist, Lars and Thomas J. Sargent. (2004) *Recursive Macroeconomic Theory*. MIT Press, Cambridge. 2nd Edition. (LS)
- Stokey, Nancy and Robert E. Lucas, Jr. with Edward C. Prescott. (1989) *Recursive Methods in Economic Dynamics*, Harvard University Press, Cambridge. (SLP)
- Walsh, Carl E. (2003) *Monetary Theory and Policy*. MIT Press, Cambridge. 2nd Edition

Reading List

Subject to change, check the class web page for updates. More crucial readings are marked *. Most of the journal articles can be found on-line through various sources.

The role of expectations:

*Blanchard, Olivier and Stanley Fischer (1989) *Lectures on Macroeconomics*, MIT Press, Cambridge. Pages 214-224, 234-238, 261-266.

Muth, John (1961) "Rational Expectations and the Theory of Price Movements," *Econometrica*, 29: 315-335

Sargent, Thomas J. and Neil Wallace (1973) "Rational Expectations and the Dynamics of Hyperinflation," *International Economic Review*, 14: 328-350.

Unemployment search models:

*LS, Chapter 6

*Pissarides, Christopher A. (2000) *Equilibrium Unemployment Theory*, 2nd edition. MIT Press, Cambridge. Chapters 1-2.

Consumption-savings problems:

*LS, Chapter 16

*Sargent, Thomas J. (1987) *Dynamic Macroeconomic Theory*. Harvard University Press, Cambridge. Chapters 1.1-1.7 and 3.1-3.2.

*Hall, Robert E. (1978) "Stochastic Implications of the Life-Cycle Permanent-Income Hypothesis: Theory and Evidence," *Journal of Political Economy*, 86: 971-987.

Dynamic programming and the savings problem.

*SLP, Chapter 4.

LS, Chapters 3-4.

Continuous time optimization and applications

*Acemoglu, Daron (2009) *Introduction to Modern Economic Growth*, Princeton University Press, Chapters 7-8.

*De la Fuente, Angel (2000) *Mathematical Methods and Models for Economists*, Cambridge University Press, Chapters 12.2, 13.3-13.4

Stochastic dynamic programming and the savings problem.

*SLP, Chapter 9.

*LS, Chapter 16.

Schechtman, J. and V. L. S. Escudero (1977) "Some Results on 'An Income Fluctuation Problem,'" *Journal of Economic Theory*, 16: 151-166.

Chamberlain, Gary and Charles A. Wilson (2000) "Optimal Intertemporal Consumption under Uncertainty," *Review of Economic Dynamics*, 3: 365-395.

Endowment economies and asset pricing:

*LS, Chapters 8, 13.

*Cochrane, John H. (2001) *Asset Pricing*, Ch. 1, 2.

*Lucas, Robert E., Jr. (1978) "Asset Prices in an Exchange Economy," *Econometrica*, 46: 1426-1445.

Mehra, Rajnish and Edward C. Prescott (1985) "The Equity Premium: A Puzzle," *Journal of Monetary Economics*, 15: 145-162.

Neoclassical growth model:

*LS, Chapter 11.1-11.4, 11.9. 14.1-14.3, 14.5.

*SLP, Chapter 2, 5.1. 6.1.

Cass, David (1965) "Optimum Growth in an Aggregative Model of Capital Accumulation," *Review of Economic Studies*, 32: 233-240.

The real business cycle model:

*King and Rebelo (1999) "Resuscitating Real Business Cycles", Ch. 14 of *Handbook of Macroeconomics* (J. Taylor and M. Woodford, eds.), especially Sec. 3 and Appendix A.

*LS, Ch. 12.

Brock, William A. and Leonard J. Mirman (1972) "Optimal Economic Growth and Uncertainty: The Discounted Case," *Journal of Economic Theory* 4: 479-513.

Kydland, Finn and Edward C. Prescott (1982) "Time to Build and Aggregate Fluctuations," *Econometrica* 50: 1345-1370.

Incomplete markets models

*LS, Chapter 17.

*Ayagari, Rao (1994) "Uninsured Idiosyncratic Risk and Aggregate Saving," *Quarterly Journal of Economics*, 109: 659-84.

Krusell, Per and Anthony A. Smith (1998) "Income and Wealth Heterogeneity in the Macroeconomy," *Journal of Political Economy*, 106: 867-896.

Continuous time stochastic processes and stochastic control

*Yong, X. Y. and J. Zhou (1999) *Stochastic Controls*, Springer. Chapters 1, 3-4.

*Fleming and Rishel (1975) *Deterministic and Stochastic Optimal Control*, Springer. Chapter V-VI.

Monetary models:

Currency in the utility function:

*Walsh, Chapter 2

Shopping time and cash-in-advance models:

*Walsh, Chapter 3,

LS, Chapter 24

Search models:

*Walsh, Chapter 3.4.2

*LS, Chapter 26.8

*Wright, R. (2008) "Search-and-Matching Models of Monetary Exchange," *The New Palgrave*, 2nd Edition.

The New Keynesian model

*Walsh, Chapter 5.4, 11

Woodford, *Interest and Prices*, Chapter 3.1-3.2, 4.1

*Clarida, R., J. Gali, and M. Gertler (1999) "The Science of Monetary Policy: A New Keynesian Perspective," *Journal of Economic Literature*, 38: 1661-1707.