

**University of Hawaii at Manoa
Department of Economics**

**ECON 607
Macroeconomic Theory I
Saunders 541, TR 3:00-4:15pm**

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Objective of the course:

This course is intended to introduce a set of basic analytical tools and frontier research topics in modern dynamic macroeconomics (also known as *rational expectation macroeconomics* or *recursive macroeconomics*). First half of the lecture time will be devoted to give a brief introduction to the dynamic method used widely in recursive macroeconomics: theoretical and practical Dynamic Programming, Second half of the lecture time will be focused on its applications: economic growth, asset pricing, real business cycle theory, and incomplete market model. These topics will be addressed both qualitatively and quantitatively. Through the study, hopefully students can get familiar with formulating a theoretical question into dynamic general equilibrium framework and get some feeling about what is the frontier of macroeconomic research.

Textbooks:

Ljungqvist, L. and T. J. Sargent (2004): *Recursive Macroeconomic Theory*, 2nd edition, MIT Press. (Hereafter LS) (Required)

Stokey, N. L. and R. E. Lucas (with the collaboration of E. C. Prescott) (1989): *Recursive Methods in Economic Dynamics*, Harvard University Press. (Hereafter SLP) (Required)

David Romer (2005): *Advanced Macroeconomics*, 3rd Edition, McGraw Hill. (Optional)

Barro, R. and X. Sala-i-Martin (1995): *Economic Growth*, McGraw Hill. (Optional)

T. F. Cooley ed. (1995): *Frontiers of Business Cycle Research*, Princeton University Press. (Optional)

Marimon, R. and A. Scott ed. (1998): *Computational Methods for the Study of Dynamic Economies*, Oxford University Press. (Optional)

Lecture Notes

The lecture notes can be downloaded from my website. I recommend you read the lecture notes before you go to the class. I will follow closely the topics on the lecture notes.

Requirements and Grading

There will be a midterm (TBA in class) and a final exam (Tuesday, December 15, 2:15pm-4:15pm). The final exam only covers material discussed after the midterm. Midterm exam counts 30% toward the final grade. Final exam counts 40%. I will also assign 5-6 homework problem sets during the semester that count 30% towards the final grade. No late homework is accepted, and no make-up exam is offered, unless strong evidence of medical emergency is provided. Finally, no +/- will be used in grading.

Homework	30%
Midterm	30%
Final Exam	40%

Contents

1. Overview: Introduction to Dynamic Programming, Equilibrium Concepts and Welfare Theorems
Lecture Notes: Chapter 1
SLP: Chapter 2
2. Mathematical Preliminaries for Dynamic Programming
Lecture Notes: Chapter 2
SLP: Chapter 3
3. Dynamic Programming
Lecture Notes: Chapter 3
SLP: Chapter 4
LS: Chapter 3
4. Computing Dynamic Programming
Lecture Notes: Chapter 3
LS: Chapter 4
5. Linear Quadratic Dynamic Programming
Lecture Notes: Chapter 5
LS: Chapter 5
6. Economic Growth Model
Lecture Notes: Chapter 6
LS: Chapter 14
Barro & Sala-i-Martin: Chapter 1, 2, 4, 5
*Romer, Paul (1986): "Increasing Returns and Long-Run Growth," *Journal of Political Economy*, Vol. 94, No. 5, 1002-1037.

*Lucas, R. E., Jr. (1988): "On the Mechanics of Economic Development," *Journal of Monetary Economics*, Vol. 22, No. 1, 3-42.

7. Asset Pricing

Lecture Notes: Chapter 7

LS: Chapter 13

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

Kocherlakota, N. R. (1996): "The Equity Premium: It's Still a Puzzle," *Journal of Economic Literature*, Vol. 34, 42-71.

8. Real Business Cycle Model and Calibration Exercise

Lecture Notes: Chapter 8

*Cooley, T. F. and E. C. Prescott (1995): "Economic Growth and Business Cycle," Chapter 1 in Cooley ed. (1995).

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

King, R. G. and C. I. Plosser (1988): "Production, Growth and Business Cycles: I. The Basic Neoclassical Model," *Journal of Monetary Economics*, Vol. 21, 195-232.

Prescott, E. C. (1986): "Theory Ahead of Business Cycle Measurement," Federal Reserve Bank at Minneapolis Quarterly Review Vol. 10, No. 4.

Prescott, E. C. (1998): "Business Cycle Research: Methods and Problems," Federal Reserve Bank at Minneapolis Working Paper No. 590.

9. Overlapping-Generations Model (if time allows)

Lecture Notes: Chapter 9

LS: Chapter 9

Romer: Chapter 2 (part B)

*Samuelson, P. (1958): "An Exact Consumption-Loan Model of Interest with or without the Social Contrivance of Money," *Journal of Political Economy*, Vol. 66, No. 6, 467-482.

*Diamond, P. A. (1965): "National Debt in a Neoclassical Growth Model," *American Economic Review*, Vol. 55, 1126-1150.

Blanchard, O. (1985): "Debt, Deficits, and Finite Horizons," *Journal of Political Economy*, Vol. 93, No. 2, 223-247.

10. Incomplete Market Model with Heterogeneous Agents

Lecture Notes: Chapter 10

LS: Chapter 16, 17

*Aiyagari, S. R. (1994): "Uninsured Idiosyncratic Risk and Aggregate Saving," *Quarterly Journal of Economics*, Vol. 109, No. 3, pp. 659-684.

*Huggett, M. (1993): "The Risk Free Rate in Heterogeneous Agent, Incomplete-Insurance Economies," *Journal of Economic Dynamic and Control*, Vol. 17, 953-969.

İmrohoroğlu, A., S. İmrohoroğlu and D. H. Joines (1995): "A Life Cycle Analysis of Social Security," *Economic Theory*, Vol. 6, 83-114.

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

Rios-Rull, J. (1995): "Models with Heterogeneous Agents," Chapter 4 in Cooley ed. (1995)

Note: * indicates the required reading.