

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

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

**Instructor:** Hui He

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**Office Hours:** TBA

**Objective of the course:**

This course is intended to introduce some 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, and its application to neoclassical growth model. Once we lay out this theoretical foundation, we can tackle some advanced topics such as growth and development, financial economics, international macroeconomics, and so on. I will address these topics 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 (2000): *Recursive Macroeconomic Theory*, 2<sup>nd</sup> 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)

**Grading:**

Homework	30%
Midterm	30%
Final Exam	40%

**Contents (Tentative)**

## 1. Introduction to Dynamic Programming

LS: chapter 3,4

SLP: chapter 3,4

## 2. Linear Quadratic Dynamic Programming

LS: chapter 5

## 3. Equilibrium Concepts and Welfare Theorems

SLP: chapter 2, chapter 15

LS: chapter 7, 8

## 4. Economic Growth Model: from Solow to Ramsey

Romer: chapter 1, 2 (part A)

Barro &amp; Sala-i-Martin: chapter 1, 2

## 5. Overlapping-Generations Model

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

## 6. Using Neoclassical Growth Model to Study Business Cycle (RBC model)

Romer: chapter 4

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

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

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.

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

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

## 7. New Growth Model

Barro & Sala-i-Martin: chapter 4, 5

Romer: 3

\*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.

If time allows

## 8. Incomplete Market Model with Heterogeneous Agents

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 Heterogenous 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.

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

Note: \* indicates the required reading.