Econ 511b (Part I) Yale University Spring 2004 Prof. Tony Smith

#### Syllabus for GENERAL ECONOMIC THEORY: MACROECONOMICS ECON 511b (Part I)

**Course Objectives**: The purpose of the first part of Econ 511b is to introduce students to modern macroeconomic theory with special emphasis on dynamic general equilibrium models of the macroeconomy. The course will teach students the key tools of dynamic macroeconomics and will apply them to a variety of substantive topics, including growth, business cycles, asset pricing, money, and fiscal policy.

#### **Contact Information**

Office: 28 Hillhouse, Room 306 Office phone: (203) 432-3583 Email address: tony.smith@yale.edu Course web site: http://fasttone.gsia.cmu.edu/econ511b Office hours: Thursdays from 10AM-noon, or by appointment

**Class Meetings**: Lectures take place on Mondays and Wednesdays from 1PM to 2:20PM in Room B8 (28 Hillhouse). The teaching assistant Jinhui Bai will hold weekly sessions on Fridays to review the course material and to go over the answers to the homework assignments. The last lecture of the first part of the course takes place on February 23. The exam for the first part of the course takes place in class on February 25. (The second part of the course, taught by Professor George Hall, begins on March 1.)

**Grading**: Weekly homework assignments will constitute 20% of your grade and each of the exams (one for each part of the course) will constitute 40% of your grade.

**Readings**: The primary textbook for the course is *Recursive Macroeconomic Theory* by Lars Ljungqvist and Thomas Sargent (denoted LS hereafter). Although the first edition of this book is available at the Yale bookstore, we will be using a preliminary draft of the second edition. This draft is available as an Adobe Acrobat (pdf) file on the course web site. The secondary textbook for this course is *Frontiers of Business Cycle Research*, edited by Thomas Cooley. This book is available at the Yale bookstore. In addition to these textbooks,

lecture notes will be made available occasionally on the course web site. Finally, the course outline lists several journal articles that provide useful supplements to the readings in the textbooks and the lecture notes.

Several other sources provide useful complements to the course material, including: *Recursive Methods in Economic Dynamics* by Nancy Stokey and Robert Lucas with Edward Prescott; *Macroeconomic Theory* (Second Edition) and *Dynamic Macroeconomic Theory*, both by Thomas Sargent; *Lectures on Macroeconomics* by Olivier Blanchard and Stanley Fischer; *Advanced Macroeconomics* by David Romer; and *Notes on Macroeconomic Theory* by Stephen Williamson (available on the course web site).

# COURSE OUTLINE

The course will be built around methods, and the different macroeconomic topics will play the role of applications of the methods. There will be relatively little emphasis on macroeconomic data. The lecture enumeration below is approximate.

### 1 The neoclassical growth model

This section will introduce the basic modern macroeconomic framework with infinitely-lived consumers. It will study dynamic optimization and dynamic equilibrium analysis of two kinds (sequential and recursive equilibria), discuss market structures, look at steady states and dynamics of the basic one-sector growth model, and study the welfare properties of equilibria.

- Lecture 1: Steady states and dynamics in the neoclassical growth model. Linearization techniques for characterizing local dynamics.
- Lecture 2: Competitive equilibrium: the sequential formulation.
- Lecture 3: Recursive competitive equilibrium.
- Lecture 4: Uncertainty and market structures.
- Lecture 5: Welfare properties of equilibria.

**Readings:** Chapters 2, 7, 8, and 12 in LS; Chapters 2 and 6 in Stokey and Lucas with Prescott.

## 2 Asset pricing

• Lecture 6: The Lucas tree model and the equity premium puzzle with some suggested solutions.

**Readings:** Chapter 13 in LS; Mehra and Prescott (1985) on the equity premium puzzle (in *Journal of Monetary Economics*); Kocherlakota (1996), a survey of the literature on the equity premium puzzle in the *Journal of Economic Literature*.

### 3 Business cycle theory

• Lectures 7 and 8: Business cycle facts and real business cycle analysis.

**Readings:** Chapters 1, 2, and 5 in Cooley; the 1986 exchange between Prescott and Summers in *Federal Reserve Bank of Minneapolis Quarterly Review*; Hansen (1985) on the indivisible labor model (in *Journal of Monetary Economics*); "Understanding Business Cycles" and "Methods and Problems in Business-Cycle Theory" by Robert E. Lucas, Jr. (reprinted in *Studies in Business-Cycle Theory*, MIT Press, 1981).

#### 4 Money

• Lecture 9: Cash-in-advance models.

**Readings:** Chapter 7 in Cooley; Cooley and Hansen (1989) in *American Economic Review*; Cole and Kocherlakota (1998) in *Federal Reserve Bank of Minneapolis Quarterly Review*.

### 5 Fiscal policy

- Lecture 10: Effects of taxes in the neoclassical growth model; Ricardian equivalence.
- Lecture 11: Optimal taxation of capital and labor under commitment.

**Readings:** Chapters 10, 11, and 15 in LS; Atkeson, Chari, and Kehoe (1999) in *Federal Reserve Bank of Minneapolis Quarterly Review*; Chapters 3 and 12 in Cooley.

# 6 Growth Theory

• Lecture 12: Growth facts and theories. The neoclassical growth model with exogenous technological change. Endogenous growth models (the Ak model and human capital accumulation).

**Readings:** Chapter 14 in LS; Chapter 1 of *Economic Growth* by Robert Barro and Xavier Sala-i-Martín (MIT Press, 1995); *Introduction to Economic Growth* by Charles Jones (Norton, 1998); Lucas (1988) on human capital accumulation (in *Journal of Monetary Economics*).

- Lecture 13: Review for exam
- Lecture 14: EXAM!