

September 20, 2008

ECO 503: Macroeconomic Theory I (first half)

Department of Economics
Princeton University
Fall 2009

Instructor: Sam Schulhofer-Wohl, sschulho@princeton.edu
AI: Edouard Schaal, eschaal@princeton.edu

All course materials will be posted on the class Web page at blackboard.princeton.edu.

1 Class times and office hours

Lectures: 10:40 a.m. to 12:10 p.m. Mondays and Wednesdays in Fisher B06. There will be no class Sept. 28 because of Yom Kippur. There will be a makeup class from 10 to 11:30 a.m. Oct. 2 in Fisher B06.

Precepts: Day and time TBA.

Sam's office hours: By appointment using WASS, wass.princeton.edu. My office is 363 Wallace.

Edouard's office hours: TBA.

2 Course description

This course begins the first-year Ph.D. sequence in macroeconomics. We will learn some basic tools of dynamic general equilibrium macroeconomics – ways of defining equilibria, and numerical and analytic techniques for characterizing solutions – and apply these tools to workhorse models of economic growth, consumption and asset pricing. The focus will be on using these tools rather than on developing formal mathematical justifications for them; more of the formal math will be developed in ECO S500.

3 Grading and policies

The requirements for this half of the course are an in-class exam on Oct. 28 (80%) and approximately five problem sets (20%). You may work on the problem sets with classmates but must write up your own answers and acknowledge those you worked with.

I will not accept late work except in cases of medical or family emergency. If you require accommodations for a disability, please see me as soon as possible.

4 Textbooks

The following books will be useful in this course and probably throughout the year:

- Ljungqvist, Lars, and Thomas J. Sargent, 2004, *Recursive Macroeconomic Theory*, second edition, MIT Press.
- Stokey, Nancy L., and Robert E. Lucas Jr., with Edward C. Prescott, 1989, *Recursive Methods in Economic Dynamics*, Harvard University Press. A solutions manual by Claudio Irigoyen, Esteban Rossi-Hansberg and Mark L.J. Wright is also available.

Professor Dirk Krueger of the University of Pennsylvania has also posted useful lecture notes at <http://www.econ.upenn.edu/~dkrueger/teaching.php>. (See especially the notes on “Macroeconomic Theory for Graduate Students” and “Consumption and Saving for Graduate Students.”) Exams will cover material in the various books and notes only if we also cover it in class or on a problem set. I may assign additional readings from time to time.

5 Course outline

1. Overview of general equilibrium theory.
 - a. Specifying an economy and an equilibrium.
 - b. The welfare theorems. The relationship between planner’s problems and competitive equilibria.
2. Dynamic programming under certainty: the neoclassical growth model.
 - a. The sequence problem. The Euler equation and the transversality condition.
 - b. The recursive problem in discrete time. The Bellman equation.
 - c. Competitive equilibrium growth. Recursive competitive equilibrium.
3. Dynamic programming under uncertainty: risk sharing, asset pricing and consumption.
 - a. Complete-markets competitive equilibrium. Time-zero and sequential trading. Risk sharing and asset pricing.
 - b. Deterministic income fluctuation problems.
 - c. Stochastic income fluctuation problems. Precautionary saving.
 - d. Equilibrium with incomplete markets and idiosyncratic shocks. Bewley-Huggett-Aiyagari models.