Syllabus for EC 702 (Part A)  
Simon Gilchrist

Course Description:

• Overview: This is the first half of the first semester PhD course in macroeconomics. The course develops basic tools of dynamic optimization in both discrete and continuous time with emphasis on neoclassical growth models. The course begins with the Solow growth model. It then considers dynamic optimization problems for household savings and firm investment in both discrete and continuous time. The course ends with an analysis of the long-run implications and transition dynamics of a continuous time version of the Ramsey growth model.

• Course requirements: there will be four to five homework problems and one midterm exam. Homeworks will count 20% of your grade for this six weeks. The exam will count for the remaining 80%. You may collaborate on homeworks but must turn them in individually. Please list the people that you collaborated with on the first page.

• The midterm exam will be held on Wednesday Oct 21st.

• Course material including notes and problem sets will be available on the course website on Blackboard.

• Recommended Text Books:
  
  – Acemoglu, Daron, “Introduction to Modern Economic Growth”.
  – Romer, David, “Advanced Macroeconomics”.
  – Sargent and Ljungquist: “Recursive Macroeconomic Theory”.

• Office hours: Tues 3:30-5:00, Wed 2:00-3:30 or by appointment. Room 404, 270 Bay State Road.

• I can be reached by email: sgilchri@bu.edu or phone: 617-353-6824.
Course Outline

The Solow Growth Model in Discrete and Continuous Time
- Romer: Chapter 1
- Acemoglu: Chapter 2

Infinite Horizon Optimization and Dynamic Programming
- Acemoglu: Chapter 6.1-6.3, 6.8
- Sargent and Ljungquist: Chapter 2, pp 29-36.

An Introduction to the Theory of Optimal Control
- Acemoglu: Chapter 7.5, 7.7

The q-theory of investment and saddle-path stability
- Romer: Chapter 9.1-9.4
- Acemoglu: Chapter 7.8

The Neoclassical Growth Model in Continuous Time
- Romer: Chapter 2.1-2.7
- Acemoglu: Chapter 8