Econ 6130: Graduate Macroeconomics I

Lectures: MW 8:40 - 9:55AM, Uris Hall 202
Office hours: MW 3:30 - 5:00PM, Uris Hall 452

Teaching assistant: John Owsley, Uris Hall 4XX

This class is an introduction to Macroeconomics at the graduate level. Here you will learn 1) what are the issues that the macroeconomics is dealing with and 2) what models macroeconomists use to interpret macroeconomic phenomena. As most models in macroeconomics are dynamic, the main goal of the class is to introduce you to dynamic programming and, in particular, recursive approach.

You are required to work on a homework assignment each week. You are encouraged to work in groups on your assignments but each of you has to hand in a separate homework. Your grade is a weighted average of your performance on homework assignments (25%), 2 midterm exams (25% + 25%, September 28th and November 2nd) and a final exam (25%). Class participation will be also taken into account. Even though it is not counted directly as part of your grade, I reserve the right to change grades based on your class participation.

The required text-book for this class is:
L. Ljungqvist and T. Sargent, *"Recursive Macroeconomic Theory,"* 2nd ed. MIT Press, 2004. (RMT)

We will also use:
Nancy L. Stokey, Robert E., Jr. Lucas, and Edward C. Prescott, *"Recursive Methods in Economic Dynamics,"* Harvard University Press, 1989. (SLP)

Mathematics:
You will need to know the following subjects: differentiation, integration, sequences of real numbers, constrained and unconstrained optimization. All of these topics are covered, for example, in "Mathematics for Economists" by Simon and Blume or in "Mathematics for Economists" by Chiang and Wainwright.

Software:
We will occasionally use Matlab (version 5.0 or higher). You may also use

Octave, which is an open-source version of Matlab. You can obtain a free copy of Octave at `http://www.gnu.org/software/octave`.

1. Saving Problem (Notes)

   Risk-aversion and intertemporal substitution

   Non-stochastic savings problem

   Aggregation and permanent income hypothesis

   Recursive formulation

2. Bewley Model (Notes)

   Empirical evidence

   Stochastic savings problem

   (Log-) Linear solution

   Numeric solution

   Huggett's model

3. Dynamic Programming (Notes + SLP)

   Cauchy sequences

   Contraction maps

   Relation between sequential and recursive formulations

   Transversality condition

4. Search Model (RMT 6)

   McCall's model of job search

   Quits, waiting times and firing

   A lake model of unemployment

   A simple version of Jovanovic's matching model

   Recursive formulation and solution

   Wage distributions

5. Competitive Equilibrium With Complete Markets (RMT 8)

    Trading arrangements: Date-0 trading

    Pareto problem and competitive equilibrium

    Trading arrangements: Sequential trading

    Pareto problem and competitive equilibrium

6. Asset Prices With Complete Markets (RMT 13)

    Empirical evidence on asset prices

    Recursive competitive equilibrium

    Bonds, Lucas trees and annuities

    Equity premium

    Hansen-Joganathan bounds

7. Overlapping Generations (RMT 9)

    Time-0 trading

    Welfare Theorems

    Sequential trading and money

    Monetary equilibria

    Non-stationary equilibria

    Inflationary tax

    Social security

If time permits we will also cover:

8. Ricardian Equivalence and Modigliani-Miller Theorem (RMT 10)