



Course: Dynamic Programming and Business Cycles
Faculty: Luis E. Rojas
Term: Jan-Feb 2017
E-mail: lrojasdu@gmail.com
Web page: sites.google.com/site/luiserojasweb/
Office Hours: Upon request by email.

Description:

This course provides an introduction to the tools and techniques used in modern macroeconomics. The focus is primarily on recursive analysis and on its applications to Business Cycles theory.

Objectives:

This course has four major aims:

- 1) study basic elements of life-cycle permanent-income framework,
- 2) introduce uncertainty into Arrow-Debreu market structure and study its implications for asset pricing,
- 3) get you acquainted with non-stochastic and stochastic versions of neoclassical growth model, one of the main workhorses of modern macroeconomics,
- 4) get you acquainted with Dynamic Programming, a powerful tool for solving dynamic maximization problems.

Preliminary Outline:

1. Life-Cycle Permanent-Income Framework.
2. Competitive general equilibrium under uncertainty and the valuation of contingent claims.
3. Dynamic Programming under Certainty.

4. Numerical Methods for Dynamic Programming problems.
5. Dynamic Programming under Uncertainty.

References:

We will cover the first six chapters of Recursive Methods in Economic Dynamics by Stokey, Lucas, with Prescott (SLP), Harvard University Press (1989). These six chapters covers non-stochastic dynamic programming problems. We will also use chapters from Recursive Macroeconomic Theory by Lars Ljungqvist and Thomas Sargent (LS), MIT Press (2004).

Grading:

Assignments (20%), one midterm (30%), final (50%).