

Macroeconomía Dinámica I
Instituto Tecnológico Autónomo de México
Maestría en Teoría Económica

Term: Fall 2018

Time of class: Tuesdays and Thursdays, 10:30 am to noon

Room: ST 103

Instructor: David Zarruk Valencia

Office: TBD

Email: david.zarruk@itam.mx

Office hours: Wednesdays 10:00 to 11:30 am

1 Contents of the Course

This is a masters level course in macroeconomic theory. The main goal of this course is to prepare students to engage in macroeconomic research, through the study of general equilibrium macroeconomic theory and computational tools. Throughout the course, we will study the neoclassical growth model, many of its extensions, and different computational techniques that will allow students to bring these models to data. By the end of the course, students will be able to understand recursive macroeconomic theory and to compute these models using a basic programming language, such as **MATLAB**.

Although the broad contents of the course are outlined below, some specific topics and models may change over the course of the semester:

1. Growth

- (a) Neoclassical Growth Model: competitive equilibrium and efficiency
- (b) Dynamic representation and recursive competitive equilibrium
- (c) Computational methods
- (d) Growth accounting
- (e) Endogenous growth models

2. Business Cycles:

- (a) Neoclassical Growth Model with uncertainty

- (b) Markov processes and recursive representation
- (c) Real Business Cycles

3. Distribution of Income and Wealth

- (a) Neoclassical Growth Model with heterogeneous agents
- (b) Life-cycle models and overlapping generations

Although the following list of books and papers are good to read, the course will follow the class notes that will be posted every week on my website.

- Urrutia, Carlos (1996). Notas sobre crecimiento y ciclos económicos. Documento de Docencia D-5. *Ilades-Georgetown University*.
- Urrutia, Carlos (1996). Métodos numéricos para resolver modelos macroeconómicos dinámicos. Documento de docencia D-7. *Ilades-Georgetown University*.
- Ljungqvist, Lars y Thomas Sargent (2004). Recursive Macroeconomic Theory (2nd Edition). *Cambridge: The MIT Press*.
- Stokey, Nancy y Robert Lucas (1989). Recursive Methods in Economic Dynamics. *Cambridge: Harvard University Press*.
- King, R. G. and Rebelo, S. (1993). Transitional Dynamics and Economic Growth in the Neoclassical Model. *American Economic Review*.
- Judd, Kenneth (1998). Numerical Methods in Economics. *Cambridge: The MIT Press*.

2 Grading

There will be two problem sets and two exams. The problem sets will have a strong computational component and you will have **~ three weeks** to solve them. The weights and due dates of each homework and exam are outlined below. The dates below are subject to change, depending on the evolution of the course.

	Weight	Date
First problem set:	20%	September 21st
Second problem set:	20%	December 7th
Partial exam:	20%	September 27th
Final Exam:	40%	TBD

Additionally, before every exam I will hand out a set of exercises for you to study for the exam. These exercises will not be graded.