ECON 702A: Macroeconomic Theory, Fall 2019.
Pascual Restrepo, pascual@bu.edu. Office hours: Fridays 11:00am to 12:30pm. Room 404.
T.A.: Stefano Pica, stpica@bu.edu.

OUTLINE: This half semester class provides an introduction to tools and topics in macroeconomics, centered in particular around economic growth. We will focus on models of dynamic economies with no uncertainty and introduce the tools required to analyze such models. We will pay special attention to the macroeconomic questions and key issues in economic growth that motivate these models. Some of the topics covered include the Solow growth model, growth accounting and development accounting, general equilibrium theory for dynamic economies, dynamic programming and continuous time optimization, and the neoclassical growth model.

I will use Blackboard to post announcements, solutions, complementary readings, and grades. Make sure you can access the site and familiarize with it.

TEXTBOOK AND READINGS: The required textbook for this course is Introduction to Modern Economic Growth (2009), by Daron Acemoglu (or “Acemoglu, MEG”). In addition, each topic lists complementary lectures. These are not mandatory and I do not expect you to read them. But please do at least skim through them if you are interested in a particular topic. Some of these complementary lectures are also useful for solving the problem sets.

GRADING: There will be no midterm exam. Your grade will depend only on problem sets and your participation in class. You will have 8 problem sets—one per week. Problem sets will become available on Blackboard at Wednesdays night, and they are due the next Wednesday at 9pm. Email the solutions to pascual@bu.edu (copied to stpica@bu.edu). You can work in groups, but write your solutions individually. I highly encourage you to typeset your solutions; this will force you to improve your writing and the way you present your work.

MISCELLANEOUS: Unless needed for medical reasons, lets keep the class free of phones, laptops, and tablets.

Topic 1: Macro questions, macro models, and growth facts. Acemoglu MEG, Chapter 1.1-1.4, and 4.

– Macroeconomic questions and macroeconomic models.
– The facts of economic growth.


– The Solow growth model.
– Modeling technology, balanced growth and Uzawa’s theorem.

Topic 3: CONVERGENCE, GROWTH ACCOUNTING, AND DEVELOPMENT ACCOUNTING. Acemoglu MEG, Chapter 3.1-3.6

– Convergence in the Solow model and in the data.
– Growth accounting: the role of technology in explaining growth within countries.

Topic 4: FOUNDATIONS OF NEOCLASSICAL GROWTH. Acemoglu MEG, Chapter 5

– The Two Welfare Theorems for economies with infinite commodities.
– Sequential trading formulation.
– Preferences over consumption and the representative household.

Topic 5: DYNAMIC PROGRAMMING. Acemoglu MEG, Chapter 6

– The recursive principle.
– Value functions.
– Existence and properties of value functions.
– Savings problems in discrete time.

Topic 6: THE GROWTH MODEL IN DISCRETE TIME. Acemoglu MEG, Chapter 8.6 and 9.1-9.5

– Optimal growth in discrete time.
- Competitive equilibrium in discrete time.
- Taxes and distortions in discrete time.
- Overlapping generations.

**Topic 7: Optimal Control. Acemoglu, MEG, Chapter 7**

- The maximum principle and saddle path stability.
- Transversality conditions.
- $q$-theory of investment.
- Savings problems in continuous time.

**Topic 8: The Growth Model in Continuous Time. Acemoglu, MEG, 7.7, 8.1-8.5 and 8.10**

- Optimal growth in continuous time and stability.
- Competitive equilibrium formulation.
- Taxes and distortions in discrete time.
- The supply of labor.
- Perpetual youth models