Economics EC 205: Macroeconomic Theory I

Fall Semester 2012
Mondays, Wednesdays: 4:30–5:45pm
(K+) Call No. 01255 Room: Braker 226

Office hours: Mondays, 1:30–3:30pm; Wednesdays, 5:45–6:45pm.
Other times by appointment. You may also contact me by email in order to set up an appointment to see me.

Administrative Aspects

There will be two midterms and a final.

Please note the following dates: Monday, October 8, Monday November 12, and Wednesday, November 21, are holidays. Monday, December 10, is our last class. We will meet on Tuesday, October 9 to make up for Monday, October 8.

Midterm # 1 will take place on Wednesday, October 3; midterm # 2 will take place on Wednesday, November 14. The final will take place at the time scheduled by the Registrar for the class: Tuesday, December 18, at 3:30 – 5:30 pm.

Occasional homework will be necessary for digesting the material. It will help you focus and stay abreast of the tools. You may work on the homework in teams of maximum three students.

The final exam will be cumulative. The course grade will be based on your performance on all exams and the homework according to the following weights:

Midterm # 1: 20% ; Midterm # 2: 25 % ; Final: 45 %; Homework: 10%.

BOOKS

The course will draw heavily from an excellent textbook by David Romer and additional material from other textbooks, journals, and unpublished sources. My lectures are designed
to be self-sufficient; you will have access to my handwritten notes on Trunk. I also provide typed notes to help you digest my lectures. The principal text for the course is:


Even though this is our text, I find that its reliance on continuous time methods, that is differential equations and integrals, may complicate the mathematics unnecessarily. Therefore, my lectures will generally be using discrete time tools, that is difference equations and summations and so will the typed notes that I will be making available regularly.

Teaching macro at your level is tricky. It has a lot of math, but it is not math. It is about modelling phenomena that are intrinsically macro. Therefore, I have placed a number of intermediate macroeconomics books on three-hour reserve. I strongly recommend that you read one of them, anyone, from cover to cover if your background in macroeconomics is not very strong. That will give you sufficiently familiarity with the subject matter. Still, I will not assume that you have done that and will try to provide important background. There are many good books: Blanchard, Olivier. *Macroeconomics*, 5th edition. Barro, Robert. *Macroeconomics*, various editions. Auerbach, Allan, and Laurence Kotlikoff. *Macroeconomics*, 2nd edition. Williamson, Stephen. *Macroeconomics*, 2010. Fourth Ed. Pearson. I also have a bunch of old editions and will be happy to lend them to you.

Readings marked as downloadable from [www.nber.org](http://www.nber.org) may be obtained free of charge only if you are accessing them from a Tufts IP address or, off campus, via the Tisch library site. Generally, 95% of economics papers that are already published may be found on the web somewhere, perhaps in their penultimate versions. Sometimes, the authors themselves make them available in pdf on their web pages. Go on Google with the full title in “”, and you will find a lot of things.

A major resource for all subjects of macroeconomics is: *The New Palgrave Dictionary of Economics Online*. Make it a habit to peruse it, look up things, terms, concepts, etc. It is very educational, the articles are written so as to be accessible to people like you, and there are often different approaches by different authors.

The class aims at a dual objective, that is, first to provide the analytical background for an introduction to modern macroeconomics at an advanced level. This requires that you strengthen further your math skills. And, second, to demonstrate the use of these tools in contemporary macroeconomic situations. I consider these indispensable both to those of you who plan to go on studying economics and related disciplines and to those of you who wish to be able to read and to apply macroeconomic tools for the years to come.

To serve these two objectives, it is important that some of the class time be spent on a bit of technical material. The course assumes some familiarity with the fundamental concepts
of macroeconomics at the undergraduate intermediate level. If you feel you are missing basic
concepts, it is not too late to beef up on a good undergraduate intermediate text. Please
talk to me if you feel you are in that situation. We should then be able to find the right
intermediate text for you. There are a lot of good texts. You will benefit enormously by
reading a good such text cover-to-cover!

The course deals with choice-theoretic models of macroeconomic phenomena and em-
phasizes mathematical modelling and applications. The standard of rigor maintained in the
classroom will define the level of the course. I will assign a set of homework problems. I
have also planned for some applications of the material to contemporary economic issues.

This class has a very precise role in the MA in economics curriculum. However, the
2007–2009 crisis (with lingering after-effects) is giving us, unfortunately, an extraordinary
opportunity to observe a macroeconomic pathology in action and use current observations
to demonstrate important points.

The page assignments below are the minimum necessary to follow the material. You will
benefit by reading more. Lecture notes of varying quality will be placed in the web page on
trunk.tufts.edu. Still, it will be important for you to take good notes. And above all,
come and talk to me, ask me questions,

*I am working for You!*

* denotes more advanced optional material.

**OUTLINE**

1 **Introduction: The Solow (or descriptive) growth model**
   and the Cass–Koopmans Optimal Growth problem

1. A simple static macro model.
   Ioannides notes.
   \( R, \) Ch. 1, 10–13.

2. Acemoglu. 2009. *Introduction to modern economic growth.* Chapter 2. (on reserve,
   and prepublication version online at trunk course site).

3. \( R, \) Ch. 1, 1–29. (Note, this is a continuous time treatment: we will do it in discrete
time.)

   \( R, \) Ch. 1, 37–45.
   Ioannides notes.
5. Growth Accounting and the Solow residual
   \textbf{R}, Ch. 1, 30–32.

6. Human capital investment and growth
   \textbf{R}, Ch. 1, 151–154.
   Barro, Robert. 1992. Kansas City Federal Reserve Bank Symposium:
   \url{http://www.kc.frb.org/publicat/sympos/1992/s92barro.pdf}
   Social infrastructure and beyond

   Ioannides notes
   \textbf{R}, 49–75. Note, this is a continuous time treatment. We will adapt it to discrete time.

2 Introduction to dynamic systems

This material is very important for understanding the tools of modern macroeconomics. It is motivated by the Ramsey–Cass–Koopmans problem above. It would be very helpful if you were to tackle the text by


which is unfortunately too advanced for this class. On reserve at Tisch.

A somewhat accessible self-contained treatment of the entire material is:

Galor, Oded, \textit{Discrete Dynamical Systems}, 2007, \textbf{G}

On reserve at Tisch; manuscript at the course site at \texttt{trunk.tufts.edu}. Also available as e-resource at Tisch (also, can download it but not print it).

1. Scalar linear equations.

   An application to the dynamics of fiscal policy.

3 Consumption, investment and economic growth

Descriptive vs. optimal growth. Finite and infinite horizon models. Competitive growth processes.

1. Infinite horizon model.

   Ioannides notes


4 The overlapping generations model and neoclassical growth: The Diamond Model


4.1 National Debt and Fiscal Policy, Ricardian Equivalence

1. Ioannides notes.

2. R, Chapter 11, 584–598. Note, this is a continuous time treatment.

3. * The Debt Limit Debate


5 Topics in Endogenous Growth Theory

   \textbf{R}, Chapter 3, 101–134.

6 Life Cycle Optimization and Optimal Consumption and Investment Behavior: Applications


2. Investment theory: \textbf{R}, Ch. 8, 405–428;


   Or: www.nber.org/papers/w8606.

And

http://cowles.econ.yale.edu/P/cd/d17b/d1784.pdf

7 Models of monetary economies


   The \textit{Wall Street Journal} on this academic research:
   http://www.princeton.edu/~markus/misc/MediaMention/20080516WSJ_Bernanke%27s%20Bubble%20Laborator.pdf
* See also Krugman’s critique:

8 Keynesian macroeconomic theory: fixed-price equilibrium theory vs. price-setting

Class lectures will be self-contained.

1. Ioannides notes.

2. R, Ch. 5, p. 238–244, 244–253.


4. The Liquidity Trap:

8.1 Imperfect Competition and Price Setting


1. R, Ch. 6, 259–261, 268–300.

2. The Canonical New Keynesian Model,
   * R, Ch. 7, 352–361.

3. Inflation and monetary policy:

4. Monetary and fiscal policy: sum up

5. Monetary policy and the challenge of the Great Recession of 2007:
   Bernanke, Ben (2012) “Monetary Policy since the Onset of the Crisis.” KC Fed Symposium, August 31,

9 Business Cycle Facts and Real Business Cycle Theory

1. R, Chapter 4, 189–195.
   A simplified RBC model: R, Chapter 4, 201–207.


4. R, Chapter 5, 218, 228.

10 Labor Market Frictions and Unemployment: The DMP Model

1. Ioannides notes.


   Sections

5. Natural rate of unemployment
http://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.26.3.3

* Daly, Mary, Bart Hobijn, and Rob Valletta (2011) “The Recent Evolution of the Natural Rate of Unemployment” IZA Discussion Paper No. 5832.

The Beveridge Curve, from the Job Openings and Labor Turnover Survey:
http://www.bls.gov/jlt/news.htm

6. *Swedish Academy Citation, full scientific version: