

ECONOMICS 102: MACROECONOMIC THEORY

UNIVERSITY OF PENNSYLVANIA

DEPARTMENT OF ECONOMICS

FALL 2018

Instructor: Alessandro Dovis

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Time of Class: Tuesdays and Thursdays, 1:30pm-3:00pm

Room: BENN 419

Office Hours: Wednesday 9:30am-10:30am, and by appointment.

Teaching Assistants and Recitations:

- Qi Pan
 - Email: panqi@sas.upenn.edu
 - Recitations: sec 201, Monday 9am-10am MCNB 167-8; sec 203, Monday 2pm-3pm PCPE 203;
 - Office hour: Monday 10am-11am PCPE 208 and Monday 11am-12pm PCPE 500

- Zhemín Yuan
 - Email: yzhemin@sas.upenn.edu
 - Recitations: sec 202, Friday 10am-11am MCNB 285; sec 204, Friday 9am-10am WILL 218;
 - Office hour: Friday 8:00am-9:00am and 11:00am-12:00pm in room PCPE 208

Recommended Text: Stephen D. Williamson: *Macroeconomics*, 6th edition.

Course Outline

Economics 102 is the basic course in macroeconomic theory for undergraduate economics majors. In contrast to the focus of Economics 2 on policy, Economics 102 is a **mathematical** class and is centered on constructing and understanding macroeconomic models.

This course will be taught from an equilibrium perspective. This means we will work with economic agents that optimize and with aggregate consistency conditions. Understanding the concept of equilibrium will then be the single most important task of the course.

We will apply equilibrium theory to discuss the theory of **long-run economic growth** and **short-run economic fluctuations**. Growth theory describes and explains how the main economic aggregates (such as output, employment, inflation, interest rates) evolve *on average* over long periods of time, whereas theories of short-run fluctuations (business cycle theories) analyze the short-run movements of economic aggregates. Once we have understood how the macroeconomy works, we can start analyzing macroeconomic policy, in particular fiscal policy (what are the macroeconomic effects of taxation, government spending, budget deficits, or surpluses) and monetary policy (what happens if the Federal Reserve Bank increases or lowers the Federal Funds Rate). The goal is that, by the end of the course, you can criticize articles on economic issues (in publications such as *The Economist*, the *Financial Times*, or the *New York Times*) using good economic intuition and knowledge.

Prerequisites

We will cover models at an abstract and advanced level. You **must** have the degree of mathematical maturity associated with the concepts of sets, functions, derivatives, integrals, Taylor series, optimization, ordinary differential equations, and other material covered in Math 104 and Math 114/115. **Strict prerequisites** for the class is **Economics 1, 2, 101, and one year of calculus**. If you do not meet these requirements, you cannot take this class.

Readings

The most important material for this class is the set of **slides, homeworks, and practice exercises** I will post regularly on the Canvas web page for the class. You should know how to use Canvas to access all that material. The Library provides tutorials and help in case you are not familiar with this website.

Since I will present a unified framework and notation to discuss all the topics in the class, I suggest to use my slides as the main study element. I will also upload a set of **notes**, with consistent notation, as a reference for further reading and, even though there are no required **textbooks** for this class, I match most covered topics with chapters of Stephen Williamson's *Macroeconomics*, 6th ed. While the notes and the textbook are not

required (meaning midterms will not include concepts that were not introduced in class and were not covered in homeworks and practice exercises) I strongly recommend their reading to complement lectures and slides, and to understand the material from a broader perspective.

Finally, please try to keep informed about what is going on in the economic world by reading articles published in publications such as *The Economist*, the *Financial Times*, or the *New York Times*. I will try to address current economic events from time to time, and discussing them is much more productive if you have heard about the news beforehand.

Course Requirements and Grades

Students learn more if they keep a constant attention to the material, then **you will have three midterms during the course**, one approximately every four weeks of class. The tests will take place during regular lecture hours, they will cover the whole lecture time and they will include short questions and exercises.

Before each test, I will post in the class web page a “representative test” with an answer key so you will have a better idea of what to expect. **Each test will be worth 20 points. There will be no final. I will drop half of your worst test grade and replace it with the average of the other two tests.** (The rationale is that I want to give you an individual insurance for unpredictable shocks but not a strategic motive to skip exams.) If a student misses a class during which a midterm takes place, and the student has a valid excuse, the missed event may be made up in one of two ways that are to be decided by the instructor:

- the student will take a make-up version for the missed evaluative event; or
- the student will be excused from the missed event, and the weight of that event in the overall course grade will be reassigned to the average of the other midterms.

In addition there will be 3 homeworks, each of which will be worth 10 points. You have one week to complete each homework, which is due at the end of the assigned lecture. No excuses will be allowed for late homeworks except by the proviso below regarding personal issues. A box will be available in the classroom, where you can put them before class finishes (alternatively you can submit your problem set to the TA during her office hours before the due date). Do not put your homework in my mailbox in PCPSE or slide them under the door of my office, and do not give them to any administrative assistant; I will not be responsible for any such submissions. Electronic or Fax submissions will not be accepted.

If you have a problem with any of the dates homeworks are due and with more than one of the dates for the exams, please let me know before September 6. After that day

I will not accommodate personal issues. Travel plans are not an acceptable reason for rescheduling. In past years, a high percentage of conflicts with test dates were related with religious holidays. The Office of the Chaplain at Penn has a calendar of religious holidays at <http://www.upenn.edu/chaplain/>. You may want to check that calendar ASAP to solve now possible conflicts.

We will make every effort to grade and hand back exams and homeworks in a week. If you have complaints about the grading, do the following. **Within 1 week** after the test was returned hand back to me your graded test and a **written** statement explaining your complaint (i.e., which question you think was graded wrongly and why you think it was graded wrongly). I will then regrade the whole assignment. Needless to say, I cannot guarantee that, after the test has been regraded, your score will be higher than before and it may indeed be lower. One week after the test has been returned the scores cannot be changed anymore and no further complaints will be accepted.

Otherwise stated, all Policy procedures of the Department of Economics may be found in the Undergrad Drop Down menu under Departmental Policies.

Grading Standards

Students taking the course for a letter grade will receive grades from A through D or an F. Students that take the class on a Pass/Fail basis need at least a D+ to pass the class. Poor performance is not a valid reason for an incomplete (I). An incomplete is given only under exceptional circumstances and requires satisfactory completion of a substantial part of the course.

Do not panic if your numerical score is low. The overall grading for the course will, **roughly**, be on a curve. About 30% of the students will be in the A's; about 40-50% in the B's, and the rest in C's and under.

Contents of the Course

This is an outline of the topics that I intend to cover and the dates where I intend to do so. The list of topics may be revised during the course as I may not be able to cover all the material. **Test and homework dates will not change.**

Part 1: Basic model

Lecture	Topic
1 - Aug. 28	Introduction
2 - Aug. 30	National Income Accounting
3 - Sept. 4	Households
4 - Sept. 6	Households II
5 - Sep. 11	Firms
	Homework 1 due
6 - Sep. 13	Competitive Equilibrium
7 - Sep. 18	Social Planner I
8 - Sep. 20	Social Planner II
9 - Sep. 25	Midterm 1

Part 2: Growth, theory and facts

Lecture	Topic
10 - Sep. 27	Growth Facts
11 - Oct. 2	Growth Accounting I
12 - Oct. 9	Growth Accounting II
13 - Oct. 11	Solow Growth Model I
14 - Oct. 16	Solow Growth Model II
15 - Oct. 18	Endogenous Growth Models I
	Homework 2 due
16 - Oct. 23	Endogenous Growth Models II
17 - Oct. 25	Midterm 2

Part 3: Business cycle, theory and facts

Lecture	Topic
18 - Oct. 30	Real Business Cycle I
19 - Nov. 1	Real Business Cycle II
20 - Nov. 6	Real Business Cycle III
21 - Nov. 8	Fiscal Policy I
22 - Nov 13	Fiscal Policy II
	Homework 3 due
23 - Nov. 15	Money
24 - Nov. 20	Sticky Prices I
25 - Nov. 27	Sticky Prices II
26 - Nov. 29	Monetary Policy I
27 - Dec. 4	Monetary Policy II
28 - Dec. 6	Midterm 3