Economics 102: Macroeconomic Theory

Still preliminary and subject to change

Time of Class: Tuesdays and Thursdays, 1:30 pm-2:50 pm.
Room: TBD.
Instructor: Guillermo Ordoñez.
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Email: ordonez@econ.upenn.edu.
Office Hours: Tuesdays 5:00-6:00 pm, and by appointment.
Teaching Assistants and Recitations:
Recommended Text: Stephen D. Williamson: *Macroeconomics,* 5th edition.

1 Course Outline and Overview

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.

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.

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.

2 Readings

The most important material for this class is the set of **slides, homeworks, practice exercises and announcements** 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,* 5th 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.

3 Level of the Class

Penn is considered one of the top universities in the country. Since we need to live up to our reputation (your future wages depend on it), we will cover a substantial amount of material in 14 weeks, but I will try to make it as interesting as possible. Your **participation** in class is key to achieve that goal. Your **feedback** is also key. If there is something about the course that you think can be improved, please let me know. We are in this together and the higher the quality of the class, the better for all of us.

Since your success in the class is very important to me I want to be available for address your questions as much as possible. You can always ask questions in or after class, I will hold regular office hours in my office 428, McNeil Economics Building and I will be available for office hours by appointment. Additionally, you can always reach me via phone at (215) 898-1875 or, preferably, via email at ordonez@econ.upenn.edu.

4 Course Requirements and Grades

Students learn more if they keep a constant attention to the material, then **you will have three tests 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 your worst test grade and replace it with the average of the other two tests.** If you are absent from one of the midterms, I can drop those points from consideration. Take into account that I will drop you absolute worst grade, not your worst grade relative to the rest of the class. The rationale is that I want to give you an individual insurance for unpredictable shocks, not a strategic motive to skip exams.

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 McNeill or slide them under the door of my office, and do not give them to any secretaries; 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 15. 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.

5 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. Any incomplete must be arranged **before** December 1.

DO NOT panic if your numerical score is low. The overall grading for the course will, **roughly**, be on a curve. About 30%-35% of the students will be in the A's; about 50% in the B's, and the rest in C's and under. These fractions, however, are not written in stone and if the class is doing well in general you should expect a larger fraction of A's.

6 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, however, are written in stone and will NOT change.

In the following Table **(W)** refers to Williamson's book (with corresponding chapters and pages), **(N)** refers to own notes to be posted in Canvas, and " refers to the same suggested reading as in the previous lecture.

Lecture	Topic	Suggested Reading
1 - Aug. 28	Introduction.	(W-Ch.1)
2 - Sept. 2	Brief History of Macroeconomics.	
3 - Sept. 4	National Income Accounting.	(W-Ch. 2)
4 - Sept. 9	Households.	(N), (W - Ch. 4, pp: 96-116)
5 - Sept. 14	Firms.	(N), (W - Ch. 4, pp: 116-131)
6 - Sept. 16	Competitive Equilibrium.	(N), (W - Ch. 5, pp: 137-144)
7 - Sept. 18	Social Planner I.	(N), (W - Ch. 5, pp: 144-150)
8 - Sept. 23	Social Planner II.	"
9 - Sept. 25	Growth Facts I. **Homework 1 due**.	(N), (W - Ch. 7, pp: 220-226)
10 - Sept. 30	Growth Facts II.	"
11 - Oct. 2	**Test 1**.	
12 - Oct. 7	Growth Accounting I.	(N), (W - Ch. 7, pp: 254-262)
13 - Oct. 14	Growth Accounting II.	"
14 - Oct. 16	Solow Growth Model I.	(N), (W - Ch. 7, pp: 237-251)
15 - Oct. 21	Solow Growth Model II.	"
16 - Oct. 23	Endogenous Growth Models I.	(N), (W - Ch. 8)
17 - Oct. 28	Endogenous Growth Models II.	"
18 - Oct. 30	Political Economy and Growth. **Homework 2 due**.	
19 - Nov. 4	Population and Growth.	
20 - Nov. 6	**Test 2**.	
21 - Nov. 11	Real Business Cycle I.	(N), (W - Ch. 3)
22 - Nov. 13	Real Business Cycle II.	"
23 - Nov. 18	Fiscal Policy I.	(N), (W - Ch. 9, pp: 319-331)
24 - Nov. 20	Fiscal Policy II.	"
25 - Nov. 25	Money. **Homework 3 due**.	
26 - Dec. 2	Monetary Policy I.	
27 - Dec. 4	Monetary Policy II.	
28 - Dec. 9	**Test 3**.	