Economics 102: Macroeconomic Theory

Time of Class: Tuesdays and Thursdays, 1:30 pm-2:50 pm.
Room: STIT B26.
Instructor: Guillermo Ordoñez.
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Office Hours: Thursdays 3:30-4:30 pm, and by appointment.
Teaching Assistants and Recitations:
     Pau-Manuel Pereira-Batlle: M 9-10am (MCNB 110) and W 10-11am (STIT B30).
     Mauricio Calani: M 2-3pm (WILL 304) and F 9-10am (BENN140).
Recommended Text: Charles I. Jones: *Introduction to Economic Growth,* 2nd 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, notes, homeworks 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.

Even though there are no required **textbooks** for this class I recommend that you use Charles Jones's *Introduction to Economic Growth,* 2nd ed. as a reference, in particular for the part of the course related to economic growth.

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 of 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.

Since your success in the class is very important to me I want to be available for 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.

Your **feedback** along the course is **key**. If there is something about the course you think it 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.

4   Course Requirements and Grades

Students learn more if they keep a constant attention to the material in the course, 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 the first 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.

In addition there will be 3 homeworks, each of which will be worth 10 points. The homeworks are due at the end of the 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 (alternatively you can submit your problem set to the TA during her office hours before the due date). Do not put them 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 these dates for the homework's and for more than one of these dates for the exams, please let me know before September 15. After that date 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.

The tests and homeworks will be graded and hand it back during the next lecture or the one after that. 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. A 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. However, 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 will NOT change.

Lecture	Topic
Lecture 1, August 29:	Introduction.
Lecture 2, September 3:	Brief History of Macroeconomics.
Lecture 3, September 5:	National Income Accounting.
Lecture 4, September 10:	Households.
Lecture 5, September 12:	Firms.
Lecture 6, September 17:	Competitive Equilibrium.
Lecture 7, September 19:	Social Planner I.
Lecture 8, September 24:	Social Planner II.
Lecture 9, September 26:	Growth Facts I. **Homework 1 due**.
Lecture 10, October 1:	Growth Facts II.
Lecture 11, October 3:	**Test 1**.
Lecture 12, October 8:	Growth Accounting.
Lecture 13, October 15:	Solow Growth Model I.
Lecture 14, October 17:	Solow Growth Model II.
Lecture 15, October 22:	Convergence/World Income Distribution.
Lecture 16, October 24:	Endogenous Growth Models I.
Lecture 17, October 29:	Endogenous Growth Models II.
Lecture 18, October 31:	Population and Economic Growth. **Homework 2 due**.
Lecture 19, November 5:	Patents and Innovation.
Lecture 20, November 7:	**Test 2**.
Lecture 21, November 12:	Business Cycle Facts/Real Business Cycle I.
Lecture 22, November 14:	Real Business Cycle II.
Lecture 23, November 19:	Fiscal Policy I.
Lecture 24, November 21:	Fiscal Policy II.
Lecture 25, November 26:	Money. **Homework 3 due**.
Lecture 26, December 3:	Monetary Policy I.
Lecture 27, December 5:	Monetary Policy II.
Lecture 28, December 10:	**Test 3**.