Economics 2200: Intermediate Macroeconomics
Spring 2023: *Preliminary* Syllabus

Instructor: Harold Cole
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Office Hours: Monday 1:00-3:00pm
Course Delivery: 2 lectures, Tuesdays and Thursdays 1:45 - 3:15pm in LLAB 10
Recitations: 1 recitation, various sections and times

Dohan Kim: T 10:15am-11:14am in LRSM 112B and T 8:30am-9:29am in PCPE 202.
Siqi Li: T 12pm-12:59pm in WILL 421 and F 8:30am-9:29am in WILL 216.
Xiaoliang Wang: F 10:15am-11:14am in PCPE 100 and F 12pm-12:59pm in WILL 215.

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

Course Outline and Overview

Economics 2200 is the basic course in macroeconomic theory for undergraduate economics majors. It is centered around the idea that in order to understand the complex macro economy in the real world around us, we need to construct a simple laboratory (which we will call a model). This laboratory will help us to understand the data from the past, make predictions about the future, and analyze how the past and future is shaped by actual and hypothetical fiscal and monetary policies.

There are two basic *methodological principles* we will stress when constructing our model. First, the actors in the economy act purposefully (households maximize lifetime utility, firms maximize the present discounted value of profits, and the government, to the extent that it has an objective, maximizes welfare in society or the benefits of politicians running the government. Second, the interaction of households, firms, the government and possibly the rest of the world determines prices, wages and interest rates in general equilibrium.

We will use our model to discuss long-run economic growth, short-run business cycle fluctuations and economic policy. 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 business cycle theories analyze the short-run movements of economic aggregates. In this part of the course we will also discuss the macroeconomic consequences of the recent COVID-19 crisis. Once we have understood how the macro economy 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 to inflation and the real economy (e.g., the unemployment rate) if the Federal Reserve increases or lowers interest rates, and more specifically, the Federal Funds Rate). The goal is that, by the end of this course, you can critique articles on economic issues (in publications such as *The Economist,* the *Financial Times,* or the *New York Times*) using good model-based economic intuition and knowledge.

Prerequisites

Strict prerequisites for the class are Econ 2100 and Math 1400 and 1410 (or 1510). Since 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, and other material covered in Math 1400 and Math 1410/1510. If you do not meet these requirements, you cannot take this class as you would not be able to handle its mathematical content. The department's course requirements can be found here:

https://economics.sas.upenn.edu/undergraduate/majors-and-minors/economics-major/course-requirements

Whenever possible I will stress the economic intuition, but sometimes it is necessary in economics to use mathematical tools to make a point more concisely. Initially the primary focus of the recitations will be to go through the material in the math slides. This will largely cover everything you need to know math-wise to be successful in the course.

Readings

The most important material for this class is the set of slides, lecture notes and home works that I will post regularly on the Canvas web page for the class. You should know how to use Canvas to access this 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. These notes will hopefully and eventually become a book that my colleagues Dirk Krueger and Jesus Fernandez-Villaverde are scheduled to publish with Princeton University Press.

Even though there are no *required* textbooks for this class, I match most covered topics with selected chapters of Stephen Williamson's *Macroeconomics,* 6th ed. Therefore I list this book as a recommended text. Although the Williamson textbook is not required reading (meaning tests will *not* include concepts that were not introduced in class and were not covered in the slides or home works) I encourage you to consult the book, in order to understand the material from a broader perspective. This is especially true if you find the slides unclear (and if neither I nor the TAs can fully clear up your confusion).

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 in my lectures, and discussing them is much more productive if you have heard about the news beforehand.

Course Requirements and Grades

Your grade will be determined exclusively based upon your performance in 3 home works, 2 midterms and the final. The home works together make up 30% of your grade, and each midterm makes up 20% of your grade, with remaining 30% coming from the final. 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.

Exams Table

Midterm I Feb 14
Midterm II Mar 28
Final exam week

Homework

The following rules regarding home works apply

1. Home works will be available on the course web page. I will indicate via email when I have posted a new homework. The due date of the homework will be stated on the homework.

2. Homework is to be submitted on Canvas, and is due on the specified date and time. Because we want to provide the answer key in a timely fashion, timing with be strictly enforced. You will not get any credit for late homework. Since Canvas records the submission time of a file, it is unambiguous when your homework was submitted. You are responsible for insuring that you have reliable internet access so you can submit your homework on time.

3. If you have complaints about the grading of a problem set, do the following: **Within 1 week** after the problem set was graded, send me your graded homework and a **written** statement explaining your complaint (i.e. stating which question you think was graded wrongly and why you think it was graded wrongly). I will then regrade the whole assignment. Note that there is no guarantee that, after the homework has been regraded, your score will be higher than before, and it may be lower. A week after a problem set has been returned the scores cannot be changed any more and no further complaints will be accepted. The same policy applies to complaints about the midterm grading as well.

4. I encourage you to work in groups on the home works (but not the exams, of course). However, everybody has to submit his/her own, uniquely typed or written assignment. Two students that hand in identical assignments will receive half of the score each. Note that my exams will be similar to my problem sets, so you would hurt yourself by not working out the problems by yourself.

Contents of the Course

Below you can find a rough outline of the topics that I intend to cover, the associated readings in the order that I plan to cover them. The list of topics may be revised during the course as I may not be able to cover all the material. Note that this course will be fairly intense and it is absolutely crucial that you do not fall behind with your lecture attendance, readings and assignments. In the table (W) stands for Williamson's textbook and (N) stands for my notes. Numbers stand for the corresponding chapter, so for example, W.3 represents chapter 3 in Williamson, and N.7.3-5 stands for sections 7.3 to 7.5 in the notes.

Topics Covered with Readings/Assignments

1. Introduction   N.1, W.1

2. Math Review   N.2.6, W.1

3. NIPA I   N.2, W.2

4. NIPA II   N.2, W.3

5. Model: Households   N.3.1-2, W.4,W.9

6. Model: Firms   N.3.3, W.4

7. Model: Equilibrium   N.3.4-6, W.5