

ECON-102-920: Intermediate Macroeconomics

Instructor: Le Xu

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Office Hours: Wednesdays 10:00 am-12:00 pm, and by appointment.

Time of Class: Mondays & Wednesdays , 1:15 pm-5:05 pm.

Room: McNeil 167-8

Recommended Text: Stephen D. Williamson: *Macroeconomics*, 5th edition.

Web Page on Canvas: <http://www.library.upenn.edu/courseware/canvas/canvaslogin.html>

1 Course Outline and Overview

Economics 102 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 for the future, and analyze how the past and future is shaped by fiscal and monetary policy.

The two basic *methodological assumptions* we rely on when constructing our model are that a) the agents in our economy act purposefully/rationally (households maximize lifetime utility, firms maximize the present discounted value of profits, and the government maximizes welfare in society -or the benefits of politicians) and b) the interaction between households, firms, the government and the rest of the world determines prices (including wages and interest rates) and allocations in a general equilibrium.

We will use our model 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, and 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 Prerequisites

Strict prerequisites for the class are Econ 2, Econ 101 and one year of calculus. 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, ordinary differential equations, and other material covered in Math 104 and Math 114/115. If you do not meet these requirements, you cannot take this class.

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. In an intermediate economics class in one of the premier universities in the world (i.e. Penn) we will not compromise on the rigor of an economic argument just to avoid using the appropriate mathematics.

3 Instructor

About me: I am a third year Ph.D. candidate in Economics. My current research focus is on Macroeconomics, specially Chinese economy and business cycles. If you are interested in research or need information about the application to the graduate school, I would be happy to talk.

Econ 102 is an intermediate level course, and I expect you to have some questions about the materials and exercises. Your understanding of the knowledge and your performance value a lot to me. Therefore, I hold regular office hours on Wednesdays 10:00 am-12:00 pm in my office 442, McNeil Building. I am also available for office hours by appointment. In addition, you can always reach me at lexu1@sas.upenn.edu. I usually reply to emails as soon as I receive, mostly within 1 hour.

4 Readings

The most important material for this class is the set of **slides and homework** 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 present a unified framework and notation for all the topics in the class, you are suggested to use my slides as the main study element. I will also upload a set of (unfortunately incomplete) **notes**, with consistent notation, as a reference for further reading. These notes will eventually become a book by Professor Drik Kruger and Jesus Fernandez-Villaverde .

Even though there are no *required textbooks* for this class, I match most covered topics with chapters of Stephen Williamson's *Macroeconomics*, 5th ed. Therefore I list this book as a recommended text. Although both notes and the Williamson textbook are not required readings (meaning midterms will not include concepts that were not introduced in class and were not covered in the slides or homeworks) I strongly recommend their reading to complement the lectures and slides, in order 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 newspapers or journals *The Economist*, the *Financial Times*, or the *New York Times*. (Their articles are often well written but always remember to be skeptical and critical about whatever you read.) 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.

5 Course Requirements and Grades

You will have three homeworks (+1 optional) and one final exam. Final exam counts for 40% of your grade and each homework will be worth 20%. If you submit four, I will drop the lowest grade.

I do not check attendance but may have you take quizzes in some classes. These quizzes are **NOT** graded and thus **NOT** counted in your final grade, but simply intended to get you familiar with questions which may appear in your exams.

5.1 Homeworks

There are three homework (+1 optional). The following rules regarding homework apply and will be strictly enforced without exceptions.

1. Homeworks will be available on the course webpage. I will announce in class and via email when I post a new homework. The due date of the homework will be stated on the homework.
2. Homeworks are due at the specified date *in class* (i.e. I will collect them at the start of class). Late submission (**no later than Friday**) will be punished by 50% of the total grade. Any later submission will get zero. Reasonable excuses for late submission are accepted free of punishment only via email before the collecting time.
3. If you have a disagreement about the grading of a problem set, please hand back to me your graded homework and a **written** statement of explanation **within one week** after the problem set is returned. Regrading requests are not accepted beyond one week after you receive your problem set.

4. Working in groups on the homeworks (but not the exam, of course) is encouraged. However, every one is required to hand in his/her own, uniquely-written assignment. Two students that hand in identical assignments will receive half of the scores each.
5. I will assign one optional home work in the last week, for those who wish to improve their grades. The summer course is compressed; there will not be extra accommodation if you miss more than one homework. Make sure you can participate in all of the lectures and hand in your homework on time.

6 Contents of the Course

In the table below you can find a rough outline of the topics that I intend to cover, the associated readings, and the dates of the corresponding lectures. The list of topics may be revised during the course as I may be able to cover more topics. Note that this course will be fairly intense and it is absolutely crucial that you do not fall behind with your readings and assignments. In the table (W) stands for Williamson's textbook and (N) stands for Prof Kruger and Fernandez's 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.

Date	Topic	Readings/Assignments
Jul 3rd	Introduction NIPA I, II	N.1, N.2.6, W.1 W.2-3
Jul 5th	Model: Households, Firm Model: Equilibrium	N.4.1-3, W.4,W.9 N.4.4-6, W.5
Jul 10th	Social Planner Solution Steady State and Dynamics	N.5.1-4, W.5, HW 1 due N.5.3-4, W.5
Jul 12th	Growth Facts Growth Accounting	N.6, W.7 N.8.1-3, W.8
Jul 17th	Neoclassical Growth Model I Neoclassical Growth Model II *	N.7.1-2, W.7, HW 2 due N.7.3-5, W.7
Jul 19th	Business Cycle Facts Real Business Cycles	W.3 N.12.1-9, W.13
Jul 24th	Fiscal Policy I Fiscal Policy II	N.14.1-2, W. 9, HW 3 due N.14.3-4, W. 9-10
Jul 26th	Money Monetary Policy	W.12 W.12
Jul 31st	Summary and Review	HW 4 due
Aug 3rd	Final	

* I will add Endogenous growth model to the topics if we get time.