Economics 102: Macroeconomic Theory
Summer 2022: Syllabus

Instructor: Jordan Peeples
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Office Hours: MWF 2:30 pm - 3:30 pm and by appointment
OH Room: TBD
Time of class: MWF 12:00 pm - 2:30 pm
Classroom: TBD
Recommended Text: Stephen D. Williamson: Macroeconomics, 6th edition
Web page on Canvas: TBD

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 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: 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 understand 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:

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. **Strict prerequisites** for the class are Econ 2 (Intro Economics: Macro), Econ 101 (Intermediate Microeconomics) and Math 104 and 114 (or 115) (one year of calculus). If you do not meet these requirements, you cannot take this class. 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. 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. I will briefly review mathematical concepts in class to refresh your knowledge, but if you are still struggling with mathematical concepts or any other concepts in the course, please come to my office hours for help.

3   Instructor:

About me: I am a third year Ph.D. student in Economics, and I earned my Bachelor's and Master's degrees in Economics from the University of Georgia (Go Dawgs!). My current research focus is in Macroeconomics, particularly automation, wages, and family. If you are interested in research, I would love to talk with you about your interests in office hours or by e-mail. Your performance in this course and interest in Macro is important to me. I have scheduled office hours, but you can also e-mail me to schedule office hours by appointment.

4   Readings:

The most important material for this class is the set of **slides, lecture notes and problem sets** 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 using 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 eventually become a book by Professor Dirk Krueger and Jesus Fernandez-Villaverde.

Although there are no required textbooks for this class, I match most covered topics with 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 problem sets), 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 (or me) unclear.

Finally, please try to remain informed about current events 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.

5   Course Requirements and Grades

Your grade will be determined exclusively based upon your performance in 3 problem sets, one midterm, and one final. The problem sets will be worth 15% of your grade each (for a total of 45%), the midterm will be worth 25% of your grade, and the final exam will be worth 30% of your grade. See the table below:

Requirement	Value (% of final grade)
Problem Sets	45%
Midterm	25%
Final Exam	30%
Total	100%

5.1   Problem Sets

There are three problem sets. The following rules regarding these problem sets apply and will be strictly enforced without exceptions.

1. Problem sets will be available on the course webpage. I will announce in class and via email when I post a new problem set. The due date of the problem set will be stated on the problem set itself, and I will give reminders in class.

2. Problem sets are due at the beginning of class on the specified date of class. Late submission (no later than Friday) will be punished by 50% of the total grade. Any later submission will get zero credit. Reasonable excuses (such as a family emergency) 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 three days after the problem set is returned. 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; it may be lower. The scores cannot be changed three days after an assignment has been returned to you, and no further complaints will be accepted. The same policy applies for complaints related to the midterm.

4. Working in groups for the problem sets is encouraged. However, every one is required to hand in his/her own uniquely-written assignment. Two students who hand in identical assignments will receive a 50% each. Note that the exams will be similar to the problem sets, so you would hurt yourself by not working out the problems by yourself first.

5.2   Midterm and Final Exam

There will be one midterm and one final examination for this class on the dates specified below. The midterm and final are in-class exams and will count as 25% and 30% of your grade respectively. The midterm will cover all material from the first half of the course, and the final exam will cover all material from the entire course. However, the final exam will be more heavily weighted toward material from the second half of the course. The midterm and final exam are mandatory, and I will offer make-up exams only for students that miss an exam with a valid excuse. The department policies specify the valid excuses for missing an exam. These department course policies can be found here: https://economics.sas.upenn.edu/undergraduate/course-information/course-policies

5.3   Grades

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. Note that poor performance is not a valid reason for an incomplete (I). The departmental course policies (see the link above) provide the exact conditions under which an incomplete can be given. Grades will be assigned based on the cumulative score of points attained in problem sets and exams.

5.4 Attendance

Penn is considered one of the top universities in the world. Since we need to live up to our reputation (your future wages depend on it!), we will cover a substantial amount of material in 5 weeks with lots of information. I will try to make it as interesting as possible, but your participation in class is key to achieve that goal. Your feedback is also key.

You will not be graded on attendance, but I expect you to be responsible and participate in person. There is no good substitute for in-person learning. Providing your perspective by asking questions not only helps yourself but also the class as a whole better understand the material, and you will gain more from hearing questions from other students as well. While you are not officially graded on attendance, **if you miss more than 3 classes (without a reasonable excuse), your final grade will drop by 2 letters.** This is not a high expectation for a summer course with 15 in-class sessions, as I expect and strongly encourage the self-responsibility to attend every single class if possible since they are 2.5 hours long (with a small break in between).

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 Krueger 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
July 1	Introduction, NIPA I	N.1, N.2.6, N.2 W.1-2
July 4	No class	
July 6	NIPA II, Model: Households	N.2, N.4.1-2, W.3, W.4, W.9
July 8	Model: Firm, Equilibrium	N.4.3-6, W.4, W.5
July 11	Social Planner Solution	N.5.1-3, W.5
July 13	Steady State and Dynamics, PS 1 Review	N.5.4, **PS 1 due**
July 15	Growth Facts, Neoclassical Growth Model I	N.6, N.7.1-2, W.7
July 18	Neoclassical Growth Model II, Solow Growth Model	N.7.3-5, W.7
July 20	Neoclassical Growth Model: Confronting the Facts, PS 2 Review	N.8.1-3, W.8, **PS 2 Due**
July 22	**Midterm**	
July 25	Business Cycle Facts, Real Business Cycles I	N.12.1-2, W.3, W.13
July 27	Real Business Cycles II	N.12.3-9, W.13
July 29	Fiscal Policy	N.15.1-4, W. 9-10
Aug 1	Money, Monetary Policy	N.16.1-4, W.12
Aug 3	Summary and Review, PS 3 Review	**PS 3 Due**
Aug 5	**Final Exam**	