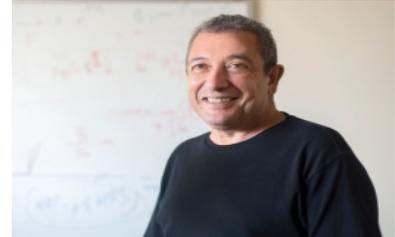


ECON 244

Macro Modelling

M-W, 2:00-3:30, Stitler B21

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Office Hours: Mon 3:30-4:30 and by appointment  
TA: Wu Zhu, 392 McNeil  
Office Hours: Fri, 1:00pm-3:00pm



Syllabus (the content of the course is provisional)

**Course Description:** Economics 244 is an advanced course in macroeconomics, geared towards economics majors that are interested in macroeconomic modelling. The course has two main parts.

First, it analyzes the role of the government in influencing individual behavior and the macro economy through fiscal policy, that is, government spending, taxation, and social insurance programs (such as Social Security, Unemployment Insurance, Medicare and Medicaid). The goal of this course is to develop and use a dynamic theoretical model of individual decisions and study how government tax and transfer policies, government debt and deficits affect these decisions. I will attempt to relate the predictions of the theory to real data. Therefore we will start with documenting what the US government does, by looking at data on government spending, taxes and transfers, as well as the government deficit and the government debt. Then we will construct our basic model of intertemporal consumption decisions and analyze optimal household decisions in the absence of the government.

After this introduction we then turn to a positive analysis of fiscal policy. Positive means that in this part of the course we take government policy as given (that is, do not ask why the government does what it does) and analyze the impact of this policy on individual decisions and the macro economy. As examples we will look at the impact of tax cuts, the introduction of an unfunded social security system (as well as its reform) and unemployment insurance and welfare programs. Our analysis will be model-based, but we will relate the results from the theory to the political debate, e.g. that surrounding the recent economic stimulus programs, potential (and past realized) tax reforms, health care reform (ObamaCare) etc.

We will also study briefly optimal fiscal policy, that is, we ask how the government should conduct fiscal policy. The answer to this question does depend on the goals of the government as well as on its ability to commit itself to future policy. For example, under some fairly general conditions we will derive some strong results about the optimal mix of labor and capital income taxes.

Second, it studies the aggregate economics of climate change. We will start by looking at how economics looks at the problem of solving an externality, what is called Pigou taxation. We will then look at the modern way in which economic activity affects global change and viceversa. We will finish by discussing how to use Pigou taxation to address the problems of climate change.

**Prerequisite(s):** Econ 101, and 102 and math background required to pass these classes (i.e. Math 114, 115 or equivalent). We use calculus very extensively. 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 advanced class such as Econ 244 we will not compromise on rigor of an economic argument just to avoid using the appropriate mathematics.

**Class Web Page:**

<http://www.sas.upenn.edu/~vr0j/244-18/>

**Lecture notes:** Available at:

<http://www.sas.upenn.edu/~vr0j/244-18/PennFiscalNew.pdf>

**Grade Distribution:**

Homework 1	8.33%	25 points
Homework 2	8.33%	25 points
Homework 3	8.33%	25 points
Midterm 1	25%	75 points
Midterm 2	25%	75 points
Midterm 3	25%	75 points
Total	100%	300 points

**Homework:** Homework will be available on the course web page. I will indicate in class when I have posted a new homework. The due date of the homework will be stated on the homework. In order to receive a passing grade in the course, all three homeworkers have to be handed in. Due date stated on homework. Due in class or in my mailbox by the end of class (3:20pm) of the specified date. Late homework is **not** accepted. If you cannot make it to class, please make prior arrangements for your homework to be delivered on time. Work in groups on homework's permitted, but everybody needs to hand in **own** assignment. Please state whom you worked with. Two students that hand in identical assignments will receive half of the score each.

**Exams:** There are two midterms each one making up 25% of the total grade. Not cumulative. Dates: February 19, March 28. There is also another exam on the date of the final in the final exam week. This exam will also count for 25% of the grade. The department policies specify the (few) valid excuses for missing an exam.

**Letter Grade Distribution: No curve**

Points Achieved	Grade	Points Achieved	Grade
285 - 300	A +	195 - 209.5	C +
270 - 284.5	A	180 - 194.5	C
255 - 269.5	A -	165 - 179.5	C -
240 - 245.5	B +	150 - 164.5	D +
225 - 239.5	B	135 - 149.5	D
210 - 224.5	B -	less than 135	F

**Grading complaints: within one week of return** of homework or midterm written statement explaining your complaint (i.e. stating which question you think was graded wrongly and why you think it was graded wrongly). The entire assignment or midterm will be regraded. No guarantee that revised score higher than original score (and may be lower).

**A few words about myself:** My name is José Víctor Ríos Rull. I am Spanish and studied undergraduate economics and sociology in Universidad Complutense de Madrid and received a Ph.D. in economics at the University of Minnesota in 1990. I have held appointments at Carnegie Mellon University, Penn, the University of Minnesota, University College London, and then back to Penn where I hold the Lawrence R. Klein chair. I work in macroeconomics, demography, inequality and public policy. Thus what I am attempting to do in this class is to give you an overview on the newest research in this area in a way that is accessible for advanced undergraduates. Your success in this class is important to me. Therefore I want to be available for your questions as much as possible. You can always ask questions

in or after class. In addition I will hold regular office hours at the times listed above in my office 507, McNeil Economics Building. I am also available for office hours by appointment. You can also reach me via email at vr0j@upenn.edu. Please use econ 244 as the subject. I usually answer questions via email by the end of the following day, but typically not earlier than that. Furthermore you will have access to an excellent TA, Wu Zhu, who holds office hours in 392 McNeil, 1:00-3:00 Fridays.

**Readings:** There is no recommended textbook for this class. A useful book, however is William A. Lord: Household Dynamics, Economic Growth and Policy, Oxford University Press, Oxford, 2002. It is only a recommended textbook because it covers many more topics than we have time to study, and it covers some of our main topics either only very sparsely, or not at all. But it is the closest text to this course, and you may find it helpful for a deeper understanding of the class. Note that I do not require you to buy the book! Since there is no appropriate text for the entire class I will provide fairly detailed lecture notes by Dirk Krueger, available on my home page and/or on the Canvas course web site. Other class material will appear there as well. In addition to lecture notes, home-works and solutions to home-works I may provide links to other economics-related articles and resources on this page. Finally, please try to keep informed about what is going on in the economic world by reading publications such as The Economist, the Wall Street Journal, the New York Times or the Financial Times. I will address current economic events and policy discussions on a regular basis, and doing is much more fun if you have heard about these issues beforehand.

**General Course Rules** The department of Economics Departmental Course Policies can be found in <https://economics.sas.upenn.edu/undergraduate-program/course-information/guidelines/policies>

**Rough Outline of the Course** Here is a rough outline of the topics that I intend to cover, the associated readings (from the lecture notes unless specifically stated) and the dates when I intend 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 readings and assignments.

Date	Topic	Readings/Assignments
Jan. 10	Introduction	Syllabus and Chapter 1
Jan. 17	Data on Government Activity	Chapter 1
Jan. 22	A Simple Model	Chapter 2.1-2
Jan. 24	Comparative Statics and borrowing Constraints	Chapter 2.3-4
Jan. 29	Changes in the Environment	Chapter 2.4
Jan. 31	The General Life Cycle Model	Chapter 3.1
Feb. 5	Income Risk I	Chapter 3.3
Feb. 7	Income Risk II	Chapter 3.3
Feb. 12	Empirical Evidence on Life Cycle Consumption	Chapter 3.3-4 [HW 1 DUE]
Feb. 14	Government Budget Constraint	Chapter 4.1
Feb. 19	Midterm 1	Closed Book
Feb. 21	Ricardian Equivalence	Chapter 4.2.1-3
Feb. 26	Fiscal Imbalance and Generational Accounting	Gokhale paper
Feb. 28	Income Taxation: The U.S. Tax Code and Progressivity	Chapter 4.4.1
Mar. 12	Consumption, Labor and Capital Taxation: Theory	Chapter 4.4.2
Mar. 14	Consumption, Labor and Capital Taxation: Application	Chapter 4.4.2
Mar. 19	Social Security: History and Current Systems	Chapter 5.1.1-2, 5.3
Mar. 21	Social Security: Theoretical Analysis	Chapter 5.4
Mar. 26	Social Security: Comparative Data	Chapter 6.1 [HW 2 DUE]
Mar. 28	Midterm 2	Closed Book
Apr. 2	Social Insurance Theory and Choice	Chapter 6
Apr. 4	Pigou Taxation	Class Slides & New Notes
Apr. 9	Climate Change an Intro	
Apr. 11	Climate Change	Class slides & Notes
Apr. 16	Climate Change	Class slides & Notes
Apr. 18	Climate Change and Economic Activity	Class slides
Apr. 23	Climate Change and Economic Policy	Class slides
Apr. 25	Climate Change and Economic Policy	Class slides [HW 3 DUE]
Exam Week	Midterm 3	Closed Book

The last midterm is on May 8/ from 9 to 11