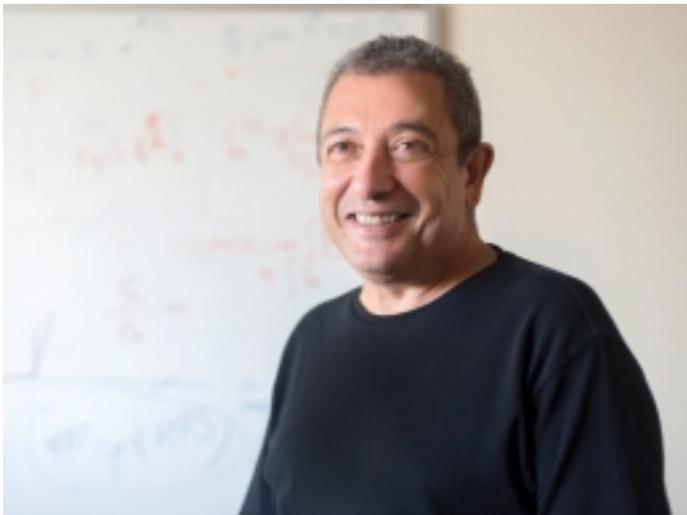# Syllabus Econ 4230, Spring 2024

Macro Modeling

José Víctor Ríos Rull (using Zhitao Gong's org.css)

Times, People and Location

- Instructor~: José Víctor Ríos Rull
- Lectures MW 1:45-3:15PM
- Office Hours: Mon 3:30-4:30 and by appointment. vr0j@upenn.edu

Course Outline and Overview

- Advanced undergraduate class

- Prerequisites: Econ 101 and 102 and math background required to pass these classes (i.e. Math 114, 115 or equivalent, we use calculus).

- Study the impact of fiscal policy (taxation, government spending, government deficit and debt, social security) on individual household decisions and the macro economy as a whole.

- Economics and Climate Change. We will look at the classic problem of an externality and study it in the context of climate change.

- Class consists of model-based analysis, motivated by real world data and policy reforms

Topics Covered

I—— Some Basic Empirical Facts about the Size of the Government
II—— A Simple Model of Intertemporal Choice
III—- The Full Life Cycle Model
IV—— Positive Analysis of Fiscal Policy
V—— Fiscal Policy and the Pandemic
VI—— Pigou Taxation
VII—- Climate Change and the Economy
VIII— Optimal Policy

Textbooks & Required materials

- No textbooks required. Readings will be recommended as the semester goes on. Posted on home page of course.
- You are responsible for all materials discussed in lecture and posted on the class repository, including announcements, deadlines, policies, etc.

Course Requirements and Grades

- 3 Homeworks and 3 midterms.

	Fraction	Points	Date
Homework 1	8.33%	25	Due February 15
Midterm 1	25%	75	February 20
Homework 2	8.33%	25	Due March 26
Midterm 2	25%	75	March 28
Homework 3	8.33%	25	Due April 25
Midterm 3	25%	75	April 30
Total	100%	300	

Homeworks

- Due in CANVAS the date stated on homework. Late homework is not accepted.
- Homework will be available on the Canvas course web page. I will indicate in class and in the course web page http://www.sas.upenn.edu/~vr0j/4230-24/ when they are posted. 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.
- The homework is due in Canvas by the end of class (3:15pm) 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 is permitted, but everybody needs to hand in his/her **own** assignment. Please state whom you worked with. Two students that hand in identical assignments will receive half of the score each.

- Grading complaints: within one week of return of homework written statement specifying complaint in detail. I will regrade entire assignment. No guarantee that revised score higher than original score (and may be lower).

Exams

- Three midterms each make up 25% of total grade.

- Not cumulative.

- Dates: Dates: February 20, March 26, April 30.
- Department policies specify the (few) valid excuses for missing an exam. In case of such one such valid excuse I will either compute the final grade based on the two other exams and the homeworks (which will now have on third weight each) or design a make- up exam to be taken at a suitable date.

Grades

Points Achieved	Letter
285 - 300	A+
270 - 284.5	A
255 - 269.5	A-
240 - 254.5	B+
225 - 239.5	B
210 - 224.5	B-
195 - 209.5	C+
180 - 194.5	C
165 - 179.5	C-
150 - 164.5	D+
135 - 149.5	D
less than 135	F

Course Description

1. Economics 4230 is an advanced course in macroeconomics, geared towards economics majors that are interested in macroeconomic modeling. The course has two main parts.
   First, it analyzes the role of the government in influencing individual behavior and the macroeconomy through fiscal policy, that is, government spending, taxation, and social insurance programs (such as Social Security, Unemployment Insurance, Medicare and Medicaid). We will 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 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, we 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. those surrounding
   - The economic stimulus programs that came after the Great Recession,
   - Health care reform (ObamaCare),
   - The Tax Cuts and Jobs Act of 2017 (TCJA, Public Law No. 115-97).
   - Fiscal Responses to the COVID-19 Pandemic.

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, this course 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.

Penn Rules

1. Penn's Code of Academic Integrity
2. Penn's Students Disability Services