

# An Introduction to Macroeconomics with Household Heterogeneity (Econ 8200, Section 2): Syllabus

Dirk Krueger

Fall Semester 2023

## 1 Organization

### 1.1 Organizational Details

- **Class Title:** An Introduction to Macroeconomics with Household Heterogeneity
- **Times and Locations:** Mondays and Wednesdays 8:30-10:00pm in PCPE TBD. First class is August 30, 2022 and last class is December 11, 2023.
- **Canvas Course Web Page:** <https://canvas.upenn.edu>
- **Readings:** I will mainly rely on my lecture notes and original articles. Please refer to the table of contents for the articles we plan to cover in detail, and to the bibliography of the lecture notes for further references. I will post these papers on Canvas.

### 1.2 Suggested Background Readings

1. D. Krueger (2023), “An Introduction to Macroeconomics with Household Heterogeneity,” *Manuscript*
2. T. Jappelli and L. Pistaferri “The Economics of Consumption: Theory and Evidence” Oxford University Press, 2017
3. D. Krueger, K. Mitman and F. Perri (2016) “Macroeconomics and Household Heterogeneity, ” in Handbook of Macroeconomics, Vol. 2A, North Holland, 2016.
4. F. Guvenen (2012), “Macroeconomics with Heterogeneity: A Practical Guide,” *Federal Reserve Bank of Richmond Economic Quarterly*.

5. J. Heathcote, K. Storesletten and G. Violante (2009), “Quantitative Macroeconomics with Heterogeneous Households,” *Annual Review of Economics*, 1, 319-354.
6. Orazio Attanasio “Consumption, ” in Handbook of Macroeconomics, Vol. 3B, Elsevier, 1999.
7. Angus Deaton “Understanding Consumption” Oxford University Press, 1992

### 1.3 Instructor

- **Name:** Dirk Krueger
- **Email:** dkrueger@econ.upenn.edu
- **Office:** 520 PCPE
- **Office Hours:** Monday, 3:30-4:30 and Tues. 10:45-11:45 and by appointment

### 1.4 Course Outline and Overview

This is a course in quantitative macroeconomics with heterogeneous households. It first covers basic models of a single household’s intertemporal consumption (and labor supply) allocation decision under various assumptions about the life horizon and labor income process of the household as well as the capital market structure. This year I will mainly focus on general equilibrium versions of these models as well as their applications to health economics, public finance and household finance. I also want to talk about models with risk sharing, limited commitment and private information, as well as their applications to public finance and social insurance. Lately, I have been interested in the continuous time formulation of these classes of models, and I will give an introduction to these continuous time methods, both the theory but also the computation. For details see the table of contents for the course at the end of this syllabus.

### 1.5 Goal of the Course

I want to prepare you to write your first research paper and, eventually, a dissertation in this area, which overlaps the fields of macroeconomics, health economics, labor economics and applied microeconomics. After having taken this course you will know how to write down dynamic consumption models, solve them (numerically, if required) in general equilibrium, map these models to the data and use them for applied policy questions. I also hope expose you to open research questions in this area so that you, if you wish, can apply the techniques acquired and the substance studied in this course to start your own research agenda. **Most importantly, we want to have fun with this course!!!**

## 1.6 Course Requirements

There are two course requirements. First, you will have to complete one fairly involved research project. This project will entail the estimation of (parts of) theoretical models using cross-section micro data and/or the numerical computation and simulation of a sequence of models (or variants thereof) described in class. I will guide you through this project with reasonably precise instructions of what to do for most of the project. At the end of the project I will ask more open ended questions that might hopefully lead to the start of a 3rd year paper. You will work on this project during the course; a written summary of the results from the project is due on December 11, 2023 by noon in my mailbox (physical or electronic). The project will account for 2/3 of the grade for the course.

The remaining 1/3 of the grade will be determined by a 20-30min presentation of a paper in conjunction with a 2 page referee report of the presented paper. The selected paper has to satisfy two criteria: a) it has to fit the general theme of the course, and b) it either was published in the last 5 years or is still a working paper. The report is due at the time of the presentation of the paper.

At the end of this course I want you to be at the research frontier, which means that you can do research yourself and critique the work of others in this area.

## 2 Tentative Outline of the Course

Date	Topic	Notes
8/30, 9/6	Introduction and Data Background Literature above	1-3
9/11	Complete Markets (SCM) Background Literature above	4
9/13, 9/18	Standard Incomplete Markets Model (SIM) in Partial Equilibrium Hall (1978), Kimball (1990), Deaton (1991), Carroll (1992), Blundell et al. (2007)	5
9/20	Stochastic Earnings Processes Guvenen (2007), DeNardi, Fella, Paz-Pardo (2020)	6
9/25, 9/27	SIM in GE: Steady States Aiyagari ('94), Huggett ('93), Conesa & Krueger ('06)	7.1
10/2, 10/4	SIM in GE: Transitions Conesa & Krueger ('99), Kindermann & Krueger ('22), Boppart, Krusell, Mitman ('18)	7.3
10/9, 10/11	The Aiyagari Model in Continuous Time Achdou, Han, Lasry, Lions, Moll ('22)	N/A
10/16, 10/18	Applications of SIM to Personal Bankruptcy/Foreclosure Chatterjee et al. (2007), Jeske et al. ('13), Mitman ('14), Corbae and Quintin ('15)	7.2
10/23, 10/25	GE with Aggregate Risk: Theory and Computation Krusell and Smith (1998), Reiter (2009), Levintal (2018), Winberry (2018)	7.4
10/30, 11/1	GE with Aggregate Risk: Crises Applications Glover et al. ('20, 21), Krueger, Mitman & Perri ('16, '17)	N/A
11/6, 11/8	Models with Limited Commitment Kocherlakota (1996), Alvarez & Jermann (2000), Krueger & Perri (2006) Cole, Krueger, Mailath & Park (2022)	8.1
11/13, 11/15	Models with Limited Commitment in Continuous Time Krueger & Uhlig (2022, 2023)	N/A
11/20	Applications of Limited Commitment Models to Development Ligon, Thomas and Worrall (2002), Attanasio and Rios-Rull (2000)	N/A
11/27, 11/29	Dynamic Models wit Private Information Green (1987), Atkeson and Lucas (1992, 1995), Cole and Kocherlakota (2001)	8.2
12/4, 12/6	Introduction to Optimal Taxation: Ramsey, Mirrlees, NDPF Chari and Kehoe (1999), Kocherlakota (2010), Golosov, Tsyvinski, Kocherlakota (2003)	N/A
12/11	Presentations You choose (within reason)	N/A