

SYLLABUS
MACROECONOMICS ECO394L
Fall 2021

Anastasia Zervou

August 26, 2021

Lectures

Mondays and Wednesdays, 11:00am-12:30pm, BRB 2.136 & zoom online live streaming & recorded, after lecture 1.

Instructor and TA

Instructor: Anastasia Zervou

The best way to contact me is via email, from your UT email address to my

UT email address: azervou@utexas.edu

Office Hours in zoom: Mondays, 2:30-4:00 pm

Teaching Assistant: Zhenning Zhao znzha@utexas.edu

Office Hours in zoom: Thursdays noon-13:30 pm CT

Help sessions in zoom: Fridays 3:00-4:30 pm CT

Course Description, Textbook and Prerequisites

Course Description: Modern macroeconomics builds on microfoundations.

This is the approach that we will take in the course. We construct step-by-step a micro-founded macroeconomic model where consumers and firms optimize and interact, yielding macroeconomic outcomes. Dynamic decisions are key. We will use the model we built in order to study business cycles, macro finance, fiscal and monetary policy issues. We will modify our

model appropriately in order to understand the basic ideas behind the two main schools of thought: New Keynesian and Real Business Cycle Theory. We will see the differences between these two schools through their conclusions for optimal monetary policy and business cycles.

Textbook: Our main textbook is Modern Macroeconomics by S. Chugh, MIT press. We will also use the appendix of S. Williamson's, Macroeconomics. Additional readings and notes will be provided through Canvas.

Prerequisites: You are expected to be familiar with the basics of consumer and firm theory, and solving optimization problems with functions of several variables.

Grading

All material will be posted in Canvas (including possible changes to the syllabus).

Homework assignments: There will be 6 homework assignments all having the same weight towards your grade. The lowest graded homework will not count towards your grade; that is, only the 5 homework assignments with the highest score will count. Homework counts for 25 points. Students are allowed/encouraged to discuss the assignments with their working group assigned to them by the instructor at the beginning of the semester (but no other students). However, students must submit their own write-up of solutions.

Tentative homework deadlines:

Sep 10, Sep 24, Oct 8, Oct 29, Nov 12, Dec 10

There will be three exams, two in class and one take-home. The in-class exams count for 26 points each and are scheduled for October 11 & November 22. The take-home exam counts for 23 points and is scheduled for December 14 (the date of the scheduled final); students will have it available from December 13 midnight to December 14 midnight CT (24 hours) for completing the take-home exam. The take-home exam will require access to computer and internet, and running dynare.

There is no make-up exam for reasons outside the university excused absences: Dean of Students info.

There is no attendance grade but students are expected to follow up with the material on a timely manner.

Course policies

Homework Assignments

I will use plus/minus grade categories when assigning final grades (i.e. A, A-, B+, B,...D-, F). Grades will be curved, meaning that your letter grade will be assigned based on your weighted average course score and your performance relative to the rest of the class. Please do not ask me about extra credit or extra work to improve your grade, as these are not available.

Important: Re-grading requests refer to the whole exam/assignment and not to specific questions/parts. All requests should be made in writing (email is fine) within three working days of receiving tests and assignments back. Later requests will not be accepted.

Late homework will not be accepted neither other type of accommodation could be given. The lowest graded homework assignment will not be taken into account to provide some flexibility. The dates of the assignments are announced at the beginning of the semester, and please allow time to be able to complete the assignment on time, taking into account that there might be arising personal circumstances that disrupt your schedule, but also in order to avoid internet interruptions and other technical problems, which I will not be able to accommodate.

All instructions, assignments, readings and essential information and communication will be on the Canvas website at Canvas site.

Use of Class Materials

No materials used in this class, including, but not limited to, lecture hand-outs, videos, assessments (quizzes, exams, papers, projects, homework assignments), in-class materials, review sheets, and additional problem sets, may be shared online or with anyone outside of the class unless you have my explicit, written permission. Unauthorized sharing of materials promotes cheating. It is a violation of the University's Student Honor Code and an act of academic dishonesty. I am well aware of the sites used for sharing materials, and any materials found online that are associated with you, or any suspected unauthorized sharing of materials, will be reported to Student Conduct and Academic Integrity in the Office of the Dean of Students. These reports can result in sanctions, including failure in the course. Additionally, all these materials are copyright protected works. Any unauthorized copying of the class materials is a violation of federal law and may result in disciplinary actions being taken against the student.

Class Recordings

Class recordings are reserved only for students in this class for educational purposes and are protected under FERPA. The recordings should not be shared outside the class in any form. Violation of this restriction by a student could lead to Student Misconduct proceedings.

Other

Please do not use in class phones/laptop/tablets, as it is destructing to me and to your classmates. If you need to use technology inside the classroom for a specific reason, please let me know before class. During exams, students are not allowed to have phones with them (e.g., in pocket, desk etc) and should be left, together with other students' belongings, away from the desk.

University Policies & Resources

Statement on Academic Integrity

The University of Texas Honor Code states:

The core values of The University of Texas at Austin are learning, discovery, freedom, leadership, individual opportunity, and responsibility. Each member of the university is expected to uphold these values through integrity, honesty, trust, fairness, and respect toward peers and community.

Each student in this course is expected to abide by the UT Honor Code and uphold academic integrity. What this means for this course: You are encouraged to study together and to discuss information and concepts covered in lecture and the recitation sections with other students in your assigned group. However, this cooperation should never involve one student having possession of or copying directly from another students' work that is to be graded. Should such copying occur, all students involved will receive zeros for the assignment. In addition, directly copying from websites/books etc., for the homework will also return zero for the assignment. In addition, any collaborative behavior or use of unauthorized material for graded work, will lead to University disciplinary action.

ADA Notice

Students with disabilities may request appropriate academic accommodations from the Division of Diversity and Community Engagement, Services for Students with Disabilities at 471-6259 (voice) or 232-2937 (video phone) or diversity website.

Behavior Concerns Advice Line (BCAL)

If you are worried about someone who is acting differently, you may use the Behavior Concerns Advice Line to discuss by phone your concerns about another individual's behavior. This service is provided through a partnership among the Office of the Dean of Students, the Counseling and Mental Health Center (CMHC), the Employee Assistance Program (EAP), and The University of Texas Police Department (UTPD). Call 512-232-5050 or visit behavior concerns website

Emergency Evacuation Policy

Occupants of buildings on the UT Austin campus are required to evacuate and assemble outside when a fire alarm is activated, or an announcement is made. Please be aware of the following policies regarding evacuation: -Familiarize yourself with all exit doors of the classroom and the building. Remember that the nearest exit door may not be the one you used when you entered the building. -If you require assistance to evacuate, inform me in writing during the first week of class. -In the event of an evacuation, follow my instructions or those of class instructors. Do not re-enter a building unless you're given instructions by the Austin Fire Department, the UT Austin Police Department, or the Fire Prevention Services office. For more information regarding emergency evacuation, please contact the Office of Campus Safety and Security, 512-471-5767, safety website

Title IX Reporting

Title IX is a federal law that protects against sex and gender-based discrimination, sexual harassment, sexual assault, sexual misconduct, dating/domestic violence and stalking at federally funded educational institutions. UT Austin is committed to fostering a learning and working environment free from discrimination in all its forms. When sexual misconduct occurs in our community, the university can:

1. Intervene to prevent harmful behavior from continuing or escalating.

2. Provide support and remedies to students and employees who have experienced harm or have become involved in a Title IX investigation.
3. Investigate and discipline violations of the university's relevant policies (title IX relevant policies website).

Beginning January 1, 2020, Texas Senate Bill 212 requires all employees of Texas universities, including faculty, report any information to the Title IX Office regarding sexual harassment, sexual assault, dating violence and stalking that is disclosed to them. Texas law requires that all employees who witness or receive any information of this type (including, but not limited to, writing assignments, class discussions, or one-on-one conversations) must be reported. I am a Responsible Employee and must report any Title IX related incidents that are disclosed in writing, discussion, or one-on-one. Before talking with me, or with any faculty or staff member about a Title IX related incident, be sure to ask whether they are a responsible employee. If you would like to speak with someone who can provide support or remedies without making an official report to the university, please email advocate email. For more information about reporting options and resources, visit title IX website, contact the Title IX Office via email at titleix@austin.utexas.edu, or call 512-471-0419.

Land Acknowledgment

(I) We would like to acknowledge that we are meeting on Indigenous land. Moreover, (II) We would like to acknowledge and pay our respects to the Carrizo & Comecrudo, Coahuiltecan, Caddo, Tonkawa, Comanche, Lipan Apache, Alabama-Coushatta, Kickapoo, Tigua Pueblo, and all the American Indian and Indigenous Peoples and communities who have been or have become a part of these lands and territories in Texas, here on Turtle Island.

Religious Holy Days

A student who misses classes or other required activities, including examinations, for the observance of a religious holy day should inform the instructor as far in advance of the absence as possible so that arrangements can be made to complete an assignment within a reasonable period after the absence. A reasonable accommodation does not include substantial modification to academic standards, or adjustments of requirements essential to any program of instruction.

COVID-19 Updates: Fall 2021 Semester

For all updates, please follow: University Health Services website.

Masking: University policy is to follow CDC guidance. So, until the CDC guidance suggests differently, wearing a mask is strongly encouraged in this course. You will not be penalized in any way for not doing so. Please bear in mind, however, that the interests protected by masking are not just your own. Masking to prevent transmission is very important for the health of our greater community. It may be important for others in the room in ways that you do not know or appreciate. For all of these reasons, I urge you to do so.

Testing before coming to campus: The university has determined that all students coming to campus for the fall semester must receive a viral test (antigen test or a nucleic acid amplification test such as PCR) within 72 hours of coming to Austin. We are asking that students take a COVID-19 test to help keep themselves and their fellow Longhorns and the community safe, to enable us to learn and be together as we did before COVID-19. Failure to test may contribute to the further spread of COVID-19 and overload our already strained healthcare system, and could usher in a semester with sick students, some of whom could require hospitalization. Additionally, all students complying will help minimize the introduction of new cases to our campus community, reducing the likelihood of disruption from missing class due to illness or exposure or the implementation of further restrictions.

Lectures

Course Introduction/preparation

- a. Syllabus
- b. Review basic consumer problem, Chugh Chapter 1

1. Class 1 (Wed 08/25)

- Consumer's static decision problem - Chugh Chapter 2
 - Consumption-leisure choice
 - Derive goods demand and labor supply

- Substitution and Income effects
- Graphical representation and Lagrange solution

2. Class 2 (Mon 08/30)

- Consumer's dynamic decision problem - Chugh Chapter 3 & Consumer's dynamic decision problem, inflation and interest rates - Chugh Chapter 4

- Dynamic consumption choice with given income
- Consumption smoothing
- Derive and graph the budget constraint
- Graphical representation and Lagrange solution
- Borrowers and lenders and endowment point
- Changes in income
- Dynamic consumption choice with given income
- Saving/borrowing behavior
- The effect of interest rates on consumers' choice
- Construct the private savings curve

3. Class 3 (Wed 09/01)

- Consumer's dynamic decision problem, inflation and interest rates - Chugh Chapter 4 & Dynamic Consumption-Labor decision: Chugh Chapter 5

- Dynamic consumption choice with given income
- Saving/borrowing behavior
- The effect of interest rates on consumers' choice
- Construct the private savings curve
- Dynamic consumption-labor choice
- Combine decisions of Ch 2 and Ch3-4
- Consumer decides c_1, n_1, c_2, n_2
- Full consumers' problem, Lagrange representation

4. Class 4 (Wed 09/08)

- Dynamic Problem of firm: Chugh Chapter 6

- Dynamic Problem of Firms
- Labor demand and Investment decisions
- Lagrange representation
- Interest rate and investment demand
- Complete labor market

5. Class 5 (Mon 09/13)

- Dynamic Problem of government and Ricardian equivalence: Chugh Chapter 7
 - Dynamic Problem of government
 - Gov't budget constraint
 - Economy wide PPF
 - Economy wide resource constraint
 - Endowment points
 - Ricardian Equivalence
 - National Savings

6. Class 6 (Wed 09/15)

- Dynamic Problem of government and Ricardian equivalence: Chugh Chapter 7, continue & why RE fails, notes and slides (not in the book)
 - Ricardian Equivalence and National Savings
 - Ricardian Equivalence and why it might fail
 - * proportional taxes
 - * borrowing constraints/different borrowing-lending rates

7. Class 7 (Mon 09/20)

- Regularities of business cycles, static model and graphical equilibrium, notes and slides (not in the book)
 - Graphical representation
 - Consumers' problem, firms' problem, gov't budget, all in one graph
 - Graphical representation: Government expenditure shocks

- Graphical representation: TFP shocks

8. Class 8 (Wed 09/22)

- Algebraic representation of optimization and equilibrium, notes and slides (not in the book)
 - Consumers' problem, firms' problem, gov't budget, algebraic representation
 - Equilibrium in the static problem
 - Changes in TFP

9. Class 9 (Mon 09/27)

- Two-period dynamic model, notes and slides (not in the book)
 - Algebraic representation
 - Consumers' problem, firms' problem, gov't budget

10. Class 10 (Wed 09/29)

- Dynamic problem changes in TFP, notes and slides (not in the book)
 - Comparative statics
 - Government expenditure and TFP shocks

Encouraged further work:

- try to sign yourself, the derivatives of A_1, A_2, g in the dynamic model.
- derive savings in the dynamic model

11. Class 11 (Mon 10/4)

- infinite-lived agent model and asset pricing, Chugh Chapter 8
 - Infinite-lived agent model
 - Impatience
 - Asset pricing
 - Steady state

12. Class 12 (Wed 10/6)

- Review

13. Class 13 (Mon 10/11)

- Exam

14. Class 14 (Wed 10/13)

- infinite-lived agent model for consumers and firms, linearization, steady state notes and slides (not in the book)
Slides Pdf : Infinite Eqbm Slides
 - Infinite-lived agent model
 - Equilibrium
 - Steady State
 - Linearization

15. Class 15 (Mon 10/18)

16. Class 16 (Wed 10/20)

- Class 15-16: infinite-lived agent model RBC dynare version, notes and slides (not in the book)
 - RBC model explained: model block of dynare code
 - Tricks and details (utility specification, expectations)
 - Persistent TFP shocks
 - Dynare code run
 - IRFs and intuition

Encouraged further reading:

- Read classic RBC model papers, e.g., Kydland Prescott or King Rebelo

17. Class 17 (Mon 10/25)

18. Class 18 (Wed 10/27)

- Class 17-18: Cash-in-advance model and monetary policy, optimal monetary policy, notes and slides (different from the book)
 - Introducing money to the model: special asset
 - Policy as wedge on efficient first order conditions
 - Money growth managed by monetary authority
 - Model steady state
 - Optimal monetary policy: optimal decision on money growth

Encouraged further work:

- Read Cooley-Hansen paper Classic CIA paper

19. Class 19 (Mon 11/01)

- Book Chugh Chapter 22, monopolistic competitive pricing
 - Starting the NK model
 - Frictions on firms
 - Price stickiness and market power

20. Class 20 (Wed 11/03)

- Book Chugh Chapter 23, sticky price model
 - Menu cost and price stickiness
 - Price stickiness and market power
 - Phillips curve

21. Class 21 (Mon 11/08)

- Book Chugh Chapter 24, optimal monetary policy in the sticky price model
 - NKPC
 - Consumer's problem
 - Gov't budget constraint
 - NK model equilibrium
 - Steady state equilibrium

Encouraged further work:

- * Understand the mechanics of the NKPC
- * How does the price stickiness parameter and the monopolistic competition parameter affect the NKPC
- * What if those parameters are set to baseline? Explore the model for each of them separately.
- * How would you put the model in dynare to study the effects of inflation changes?
- * Optimal monetary policy in the NK model
- * Comparison Classical vs NK model in optimal monetary policy predictions

22. Class 22 (Wed 11/10)

23. Class 23 (Mon 11/15)

- Class 22-23: The dynare version of NK model, slides and notes (not in the book)
 - NKPC
 - Dynamic demand equation
 - Taylor rule
 - Hit monetary policy shocks in the NK model
 - reference: Gali, Chapter 3

Encouraged further work:

- How would you put the model in dynare to study the effects of monetary policy shocks?
- Explore the model in dynare, hit bigger or smaller shocks (how do you do that?), change parameter values at the Taylor rule.
- Read Gali's notes on his third Chapter of his book (the main reference for the NK model)

24. Class 24 (Mon 11/15)

- Review

25. Class 25 (Wed 11/17)

- Exam

26. Class 26 (Mon 11/29)

- Labor search models and unemployment. Book Ch 27
 - Unemployment as an equilibrium outcome
 - labor search
 - consumers with choice of search
 - firms with choice of vacancies
 - surplus of matching and wage determination

27. Class 27 (Wed 12/1)

- Labor search models and unemployment, Book Chugh Chapter 28
 - Labor demand and labor supply in the search and matching framework
 - Matching functions
 - Labor market tightness
 - Equilibrium employment determination

28. Class 28 (Mon 12/06)

- Labor search models and unemployment, long lasting jobs. Book Chugh Chapter 29
 - Long lasting jobs: dynamics in the matching model
 - Jobs as an asset for employers and employees
 - Intangible capital
 - Wage determination (or not)