

Department of Economics
University of Texas at Austin
ECO 394L: Macroeconomics (Fall 2026)

Instructor: Dr. Sahil Ravgotra
Email: sahil.ravgotra@austin.utexas.edu
Office Hours: BRB 3.128 MW 12:30 - 1:30 p.m. or by appointment

Teaching Assistant: Rikuto Onishi
Email: rikuto.onishi@austin.utexas.edu
Office Hours: BRB 4.126 Friday 3:30 - 4:30 p.m. or by appointment

Lectures: MW 2:00–3:30 p.m. in BRB 1.118
TA Sessions: Fridays 2:00–3:30 p.m. in BRB 1.118
Course Website: [Canvas](#)

Course Description

This course provides an introduction to modern macroeconomic modeling, with a focus on model construction, simulation, and policy analysis. Over the past forty years, there has been a remarkable transformation in macro-models used by central banks, policymakers, and forecasting bodies. In this course, we will explore how various elements of modern macroeconomic models can be seamlessly integrated in a framework that encompasses all stages of model building, estimation, forecasting, and policy analysis. We will examine the development of the building blocks of such models, showing that the main features of New Keynesian (NK) Dynamic Stochastic General Equilibrium (DSGE) models consist of a Real Business Cycle (RBC) core, with an outer shell that includes nominal rigidities and other frictions.

The course emphasizes setting up, calibrating, and simulating DSGE models using Dynare in Matlab. DSGE models have exactly these ingredients: they are micro-founded, modelling forward-looking economic agents (households, firms, banks, governments) making individually rational decisions over a time horizon, so they are dynamic; the economy features uncertainty in the form of exogenous random shocks, so they are stochastic; they are equilibrium models in the Nash sense that all agents are maximizing some measure of their inter-temporal welfare over time, given their environment of other maximizing agent.

The course begins with a simple Neoclassical model. A section on Dynare basics will include the coding for this model that will enable you to carry out simulation exercises. The course then proceeds from the RBC closed-economy model with flexible prices and wages, transitioning to a NK model with sticky prices. Finally, we will address optimal policy, providing valuable insights into policy questions and offering a practical framework for monetary policy implementation. While the primary focus is on monetary policy, we will also discuss fiscal policy and policy rules. You will be guided through a seamless methodology for the construction, solution, calibration, and policy analysis of micro-founded macroeconomic models.

Prerequisites

Graduate standing. The knowledge of consumer and firm theory, econometrics, linear algebra and calculus is expected.

Readings

It is not possible to rely on a single textbook for this course. However, most lectures will draw on Galí (2015) and Romer (2012). Additional material from various books and research papers will be cited in the lecture slides.

The slides and notes I provide are designed to be largely self-contained. For further reading, a comprehensive list of references is below, with topic-specific readings indicated in the lecture schedule.

Essential:

- Chugh, S. K. (2015). Modern macroeconomics. MIT press. (Chapter 3 & 4)
- Galí, J. (2015). Monetary policy, inflation, and the business cycle: an introduction to the new Keynesian framework and its applications. Princeton University Press. (Chapter 2-5)
- Romer, D. (2012). Advanced macroeconomics. New York: McGraw-Hill/Irwin. (Chapter 2-5 & 8)

- McCandless, G. (2009). The ABCs of RBCs: An introduction to dynamic macroeconomic models. Harvard University Press. (Chapter 6 & 8)
- Williamson, S. D. (2018). Macroeconomics. Pearson, sixth edition. (Chapter 9)

Additional:

- De Grauwe, P. (2012). Lectures on behavioral macroeconomics. Princeton University Press.
- Dejong, D. and Dave, C. (2007). Structural Macroeconometrics. Princeton University Press.
- Herbst, E. P., & Schorfheide, F. (2016). Bayesian estimation of DSGE models. Princeton University Press.
- Lim, G. C., & McNelis, P. D. (2008). Computational macroeconomics for the open economy. MIT Press Books.
- Miao, J. (2014). Economic Dynamics in Discrete Time. MIT Press.
- Sargent, T. J., & Ljungqvist, L. (2000). Recursive macroeconomic theory. MIT.
- Uribe, M., & Schmitt-Grohé, S. (2017). Open economy macroeconomics. Princeton University Press.
- Wickens, M. (2012). Macroeconomic Theory. Princeton University Press, second edition.
- Woodford, M. (2003). Interest and Prices. Foundations of a Theory of Monetary Policy. Princeton University Press.

Software

The following software should be set up on your own laptop:

1. Dynare latest version: [Dynare Access](#)
2. Matlab using University Licence: [MATLAB Access](#)
 - Please download a version of Matlab that is compatible with the latest version of Dynare. Once you have Dynare working, avoid updating Matlab during the duration of this course.

Don't worry if you don't have any background in Matlab or Dynare; many students begin without prior coding experience. We'll start from the basics, and you'll pick up the necessary skills as we work through the material together.

Lecture Format

Lectures will be held in person on Mondays and Wednesdays from 2:00–3:30 p.m. in BRB 1.118. Regular attendance is strongly encouraged, as there will be no class recordings. The first day of class is August 24, and the last class day is December 7. No classes will be held on September 7 or during Fall break/Thanksgiving, November 23–28.

From past experience, students who attend regularly tend to do very well, while those who miss lectures often find it hard to keep up with the fast pace of the course. If you do need to miss a class, please make sure to review the material on your own so you don't fall behind.

TA Help Sessions. Weekly TA sessions are an integral part of the course and **not optional**. They will be held every Friday from 2:00–3:30 p.m. in BRB 1.118. These sessions will review lecture material, go over homework and solutions, and provide hands-on assistance with Matlab and Dynare. Regular attendance is both expected and highly beneficial for keeping up with the course.

Assessment and Grading

The course grade will be based on the following components:

1. **Homework Assignments (32% of total grade):** There will be **five homework assignments** aligned with the course content. Assignments will be posted on Canvas one week before the due date and must be submitted as a single PDF file (with relevant code) at the beginning of class on the due date. Tentative deadlines are: *Sept 16, Sept 30, Oct 14, Nov 4, and Nov 11*. You are allowed to skip one assignment. If all five are submitted, the lowest grade will be dropped. Each counted assignment is worth **8%** of your total grade.
2. **Midterm Exams (32% of total grade):** There will be two midterm exams:

- **In-Class Midterm (20%):** Scheduled for **Wednesday, October 21** during class time (2:00–3:30 p.m.). This closed-book exam covers **Lectures 1–16** and emphasizes analytical and conceptual understanding (no Matlab/Dynare).
 - **Take-Home Midterm (12%):** Distributed on **Wednesday, November 18 at 3:30 PM** and due by **Thursday, November 19 at 3:30 PM** (24-hour window). This exam focuses on practical applications using *Matlab/Dynare*, covering material up to and including **Lecture 24**.
3. **Pop Quizzes (8%):** There will be **10 short pop quizzes** throughout the semester, and your best **8 quiz scores** will count toward your final grade. This allows you to miss up to two quizzes for any reason. No make-up quizzes will be offered. If you miss more than two quizzes, each additional missed quiz will receive a grade of zero.
- Students are required to bring a laptop or tablet to class for completing quizzes. These devices must be used **only for the quiz** and not for any other purpose during class.
 - Pop quizzes will appear unannounced in Canvas and will require a password to access. Students who are not present in class will not receive the password, and therefore cannot take the quiz.
4. **Final Exam (28% of total grade):** The final is a cumulative, in-class exam scheduled for **3:30–5:30 p.m. Friday, December 11** (tentative).

Important Notes:.

- **Late assignments and make-up exams:** Late submissions and requests for make-up exams will **not be accepted** except in cases of university-approved absences. Any request for accommodation must be submitted in writing **before the exam**. Please note that the TA is not responsible for handling excused absences or accommodations.
- **Academic Dishonesty:** Academic integrity is taken very seriously in this course. While you are encouraged to discuss homework problems with your assigned working group, you must submit your own individual write-up. **Collaboration is strictly prohibited on the take-home exam**. Similarly, the use of AI tools (e.g., ChatGPT or similar platforms) for assignments, exams, or any other graded component is **not permitted**. Any suspected violation will be treated as **academic misconduct**. All such cases must be referred to the **Office of Student Conduct and Academic Integrity** for formal review; informal resolution between instructor and student is no longer an option.
- **Regrade requests:** Requests for regrading must be submitted in writing within 24 hours of receiving your graded work. The entire submission will be re-evaluated, not just selected questions. Requests submitted after the deadline will not be considered.
- **Grading scale:** Final grades will follow the university’s plus/minus grading scale (A, A-, B+, ...). Grades will be curved based on your weighted average and overall performance in the class.

Lecture Schedule (Tentative)

Table 1 provides a tentative outline of the topics the course will cover; some adjustments should be expected. The schedule on Canvas will be updated throughout the semester with specific readings, handouts, and dates.

For your convenience, you will also receive a “[Course Notebook](#)” file, which will be updated regularly to reflect the specific topics covered in each lecture. This file will serve as a central hub and will include links to:

- Lecture slides and notes,
- Homework assignments and solutions,
- Dynare and Matlab codes,
- Exams and solutions, and
- Any other course materials.

In short, this file will be your **one-stop resource** for everything you need in this course.

Table 1: Tentative Lecture Schedule

Lecture	Date	Topics	Readings	Assignments
1	Mon Aug 24	Introduction to the course; DSGE models	Slides	
2	Wed Aug 26	Dynare basics; stylized facts	Dynare Manual ; Slides	
3	Mon Aug 31	Consumption-saving model	Chugh Ch-3 & 4, Romer Ch-8, Williamson Ch-9	
4	Wed Sep 2	Consumption-saving model	Chugh Ch-3 & 4, Romer Ch-8, Williamson Ch-9	
5	Wed Sep 9	Neoclassical Growth Model	Romer Ch-2	HW1 posted
6	Mon Sep 14	Neoclassical Growth Model	Romer Ch-2	
7	Wed Sep 16	Linearization techniques	McCandless Ch-6; Slides	HW1 due
8	Mon Sep 21	The Real Business Cycle Model	Romer Ch-5	
9	Wed Sep 23	The Real Business Cycle Model	Romer Ch-5	HW2 posted
10	Mon Sep 28	RBC: calibration and fiscal policy	Romer Ch-5	
11	Wed Sep 30	RBC: extensions	Gali Ch-2, McCandless Ch-8 & 9	HW2 due
12	Mon Oct 5	RBC: model fit and critique	Romer Ch-5; Slides	
13	Wed Oct 7	The New Keynesian Model	Gali Ch-3	HW3 posted
14	Mon Oct 12	NK: household's problem	Gali Ch-3	
15	Wed Oct 14	NK: firm's problem	Gali Ch-3	HW3 due
16	Mon Oct 19	Review session		
17	Wed Oct 21	In-Person Midterm Exam		
18	Mon Oct 26	NK: optimal price setting	Gali Ch-3	
19	Wed Oct 28	NK: equilibrium and the Phillips curve	Gali Ch-3	HW4 posted
20	Mon Nov 2	The three-equation NK model	Gali Ch-3	
21	Wed Nov 4	Stability and indeterminacy	Gali Ch-4	HW4 due; HW5 posted
22	Mon Nov 9	Stability and indeterminacy	Gali Ch-4	
23	Wed Nov 11	Optimal policy: objectives and loss function	Gali Ch-4	HW5 due
24	Mon Nov 16	Inflation targeting	Gali Ch-5	
25	Wed Nov 18	Take-Home Midterm Exam		
26	Mon Nov 30	Optimal policy under commitment	Gali Ch-5	
27	Wed Dec 2	Optimal policy under discretion	Gali Ch-5	
28	Mon Dec 7	Review Session		
	Fri Dec 11	Final Exam: 3:30–5:30 p.m.		

Note: Dates/topics/readings may change. No class: Sept 7 and Nov 23–28.

Use of Class Materials: No materials used in this class, including, but not limited to, lecture handouts, videos, homework assignments and their quiz components, exams, in-class materials, review sheets, and additional practice problems, 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. 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 action.

Class Recordings: If class recordings are available, they are reserved only for students in this class for educational purposes and are protected under FERPA. Recordings should not be shared outside the class in any form. Violation of this restriction may lead to Student Misconduct proceedings.

Diversity, Equity, and Inclusion: It is my intent that students from all diverse backgrounds and perspectives be well served by this course, that students' learning needs be addressed, and that the diversity students bring to this class can be comfortably expressed and viewed as a resource, strength, and benefit to all students. Please come to me at any time with any concerns.

Statement on Academic Integrity: The UT Honor Code calls on members of the University community to do their work honestly, respectfully, and through the intentional pursuit of learning and scholarship. Each student in this course is expected to uphold that commitment. Suspected academic misconduct will be addressed under University procedures and, when pursued, referred to Student Conduct and Academic Integrity in the Office of the Dean of Students. Sanctions may include failure on an assignment or in the course. For more information, visit the [Student Conduct and Academic Integrity website](#).

What this means for this course: You are allowed and encouraged to study together and discuss information and concepts covered in lecture and review sessions. However, this cooperation should never involve one student possessing or copying directly from another student's work that is to be graded. Direct copying from websites, books, AI tools, or other sources for submitted work is not permitted. Using books, notes, phones, electronic devices, or other unauthorized materials during exams, or copying from other students, violates university and course policies.

Disability and Access: The University is committed to creating an accessible and inclusive learning environment consistent with University policy and federal and state law. If you experience a barrier to learning, please contact me so that we can discuss ways to support your participation in the course. Students with disabilities, or students who think they may have a disability, should contact [Disability and Access \(D&A\)](#) for information about accommodations. If you are registered with D&A, please provide your Accommodation Letter as early as possible so that we can discuss your approved accommodations and needs in this course.

Counseling and Mental Health Center: The Counseling and Mental Health Center serves UT's diverse campus community by providing high quality, innovative and culturally informed mental health programs and services that enhance and support students' well-being, academic and life goals. To learn more about your counseling and mental health options, call CMHC at (512) 471-3515. If you are experiencing a mental health crisis, call the CMHC Crisis Line 24/7 at (512) 471-2255.

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 your concerns by phone. 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](#).

BeVocal: BeVocal is a university-wide initiative to promote the idea that individual Longhorns have the power to prevent high-risk behavior and harm. At UT Austin, all Longhorns have the power to intervene and reduce harm. To learn more about BeVocal and how you can help build a culture of care on campus, go to: [BeVocal 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 are 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 visit the safety Safety & Security Resources website [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 website](#)).

Beginning January 1, 2020, Texas Senate Bill 212 requires all employees of Texas universities, including faculty, to 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 report it. I am a Responsible Employee and must report any Title IX-related incidents 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@austin.utexas.edu. 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.

Personal Pronouns:. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, culture, religion, politics, sexual orientation, gender, gender variance, and nationalities. Class rosters are provided to the instructor with the student's legal name unless they have added a preferred name with the Gender and Sexuality Center.

Land Acknowledgment:. We would like to acknowledge that we are meeting on Indigenous land. Moreover, 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.

Other:. Please do not use phones, laptops, or tablets in class for purposes unrelated to course activities, as it is distracting to me and your classmates. If you need to use technology inside the classroom for a specific reason, please talk to me before class.