

UNIVERSITY OF COLORADO
Department of Economics

ECON7020: MACROECONOMIC THEORY I
FALL 2025

Instructor: Martin Boileau
Class: ECON 5 MW 11:15 – 12:30
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COURSE DESCRIPTION

This course is an introduction to modern macroeconomic theory. We will focus our attention on dynamic optimization and general equilibrium models.

The course has two objectives. The first is the presentation of the tools required to study dynamic, stochastic, and general equilibrium models. The second is the application of these tools to topics in macroeconomics.

DELIVERY

The course has two integral components:

1. Courses: Hopefully, in person.
2. Recitations: The recitations will use the main material to go deeper into topics in macroeconomics.

EVALUATION

The assessment for this class consists of two (2) term tests and a final examination. Tests and final exam are closed notes and closed books. No make-up tests will be given. The tentative schedule and the grade distribution are displayed in the table below.

Evaluation	Date	%
Test 1	1 October	25
Test 2	12 November	25
Final	TBD	50

Tests will be administered during class time. The details for the Finals remain to be determined. Students needing academic accommodations should discuss options with the professor by September 8, 2024.

REQUIRED TEXTS

Ljungqvist, Lars and Thomas J. Sargent, *Recursive Macroeconomic Theory*, Cambridge: MIT Press.

BACKGROUND TEXTS

Azzimonti, Marina, Per Krusell, Alisdair McKay, and Toshihiko Mukoyama, *Macroeconomics*, <https://phdmacrobook.org/>

Barro, Robert J. and Xavier Sala-i-Martin, *Economic Growth*, New York: McGraw Hill.

Blanchard, Olivier J. and Stanley Fischer, *Lectures on Macroeconomics*, Cambridge: MIT Press.

Dixit, Avinash K., *Optimization in Economic Theory*, Second Edition, Oxford: Oxford University Press.

Farmer, Roger E., *The Macroeconomics of Self-Fulfilling Prophecies*, Cambridge: MIT Press.

Intriligator, Michael D, *Mathematical Optimization and Economic Theory*, Englewood Cliffs: Prentice Hall.

Romer, David, *Advanced Macroeconomics*, New York: McGraw-Hill.

Sargent, Thomas J., *Dynamic Macroeconomic Theory*, Cambridge: Harvard University Press.

COURSE OUTLINE

I. INTRODUCTION

1. Background Issues
Blanchard and Fischer: Chapter 1
Romer: Introduction
2. Tools and Models
Dixit: Chapters 1 through 8
3. National Income Accounting for Closed Economies

II. THE SOLOW-SWAN GROWTH MODEL: A REVIEW

1. Background Issues
2. The Solow Growth Model
Azzimonti et al.: Chapter 3
Barro and Sala-i-Martin: Chapter 1
Romer: Chapter 1
Solow, Robert M., 1956, A Contribution to the Theory of Economic Growth, *Quarterly Journal of Economics* 70, 65--94.

III. TWO-PERIOD ECONOMIES

1. Consumption
Boileau, Lecture Notes Sections 1 through 3
2. A Pure Exchange Economy
Boileau, Lecture Notes Section 4
Farmer: Chapter 4
3. A Production Economy
Boileau, Lecture Notes Sections 5 and 6

IV. INFINITE HORIZON ECONOMIES: DISCRETE TIME

1. Dynamic Programming
Azzimonti et al.: Chapter 4
Dixit: Chapters 10 and 11
Ljungqvist and Sargent: Chapters 2 to 5

2. The Neoclassical Growth Model
Boileau, Lecture Notes.
Azzimonti et al.: Chapters 4 and 5
Ljungqvist and Sargent: Chapter 15
3. Overlapping Generations
Boileau, Lecture Notes.
Azzimonti et al.: Chapter 5
Romer: Chapter 2 part B

V. INFINITE HORIZON ECONOMIES: CONTINUOUS TIME

1. Hamiltonian
Boileau, Lecture Notes.
Dixit: Chapters 10 and 11
Intriligator: Chapters 11 to 15
2. The Neoclassical Growth Model
Barro and Sala-i-Martin: Chapter 2
Blanchard and Fischer: Chapter 2
Intriligator: Chapter 16
Romer: Chapter 2 part A
3. Perpetual Youth
Boileau, Lecture Notes.
Blanchard and Fisher: Chapter 3.3
Banerjee, O., 1985. Debt, Deficits, and Finite Horizon. *Journal of Political Economy* 93.

VI. DYNAMIC STOCHASTIC GENERAL EQUILIBRIUM MODELS

1. Dynamic Programming
Ljungqvist and Sargent: 2.1, 2.2, 2.4, 3.2
2. Equilibrium with Complete Markets
Azzimonti et al.: Chapter 7
Ljungqvist and Sargent: 8.1 -- 8.5, 8.8
3. Incomplete Markets and Self Insurance
Ljungqvist and Sargent: Chapters 17 and 18
4. Asset Pricing Theory
Ljungqvist and Sargent: 8.7, 13.1--13.8

V. BUSINESS CYCLES: BASIC RBC TO DSGE MODELS

1. A Real Business Cycle Model

Azzimonti et al.: Chapter 12

Farmer: Chapters 2 and 3

Ljungqvist and Sargent: Chapter 12

Romer: Chapter 4

King, Robert G., Charles I. Plosser, and Sergio T. Rebelo, 1988. *Production, Growth, and Business Cycles: I. The Basic Neoclassical Model*, Journal of Monetary Economics 7.

2. Numerical Issues

Ljungqvist and Sargent: Chapters 4 and 5

King, Robert G., Charles I. Plosser, and Sergio T. Rebelo, 2002. *Production, Growth, and Business Cycles: Technical Appendix*, Computational Economics 20.

Uhlig, Harald, 1997. *A Toolkit for Analyzing Nonlinear Dynamic Stochastic Models Easily*.

Griffoli, Tommaso M., 2013. *Dynare: User Guide*.

3. A Simple DSGE Model with Monopolistic Competition and Sticky Prices

University Policies

HONOR CODE

All students enrolled in a University of Colorado Boulder course are responsible for knowing and adhering to the [Honor Code](#). Violations of the Honor Code may include but are not limited to: plagiarism (including use of paper writing services or technology [such as essay bots]), cheating, fabrication, lying, bribery, threat, unauthorized access to academic materials, clicker fraud, submitting the same or similar work in more than one course without permission from all course instructors involved, and aiding academic dishonesty. Understanding the course's syllabus is a vital part of adhering to the Honor Code.

All incidents of academic misconduct will be reported to Student Conduct & Conflict Resolution: StudentConduct@colorado.edu. Students found responsible for violating the Honor Code will be assigned resolution outcomes from Student Conduct & Conflict Resolution and will be subject to academic sanctions from the faculty member. Visit [Honor Code](#) for more information on the academic integrity policy.

ACCOMMODATION FOR DISABILITIES, TEMPORARY MEDICAL CONDITIONS, AND MEDICAL ISOLATION

If you qualify for accommodations because of a disability, please submit your accommodation letter from Disability Services to your faculty member in a timely manner so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities in the academic environment. Information on requesting accommodations is located on the [Disability Services website](#). Contact Disability Services at 303-492-8671 or DSinfo@colorado.edu for further assistance. If you have a temporary medical condition, see [Temporary Medical Conditions](#) on the Disability Services website.

If you have a temporary illness, injury or required medical isolation for which you require adjustment,

Accommodation for Religious Obligations

Campus policy requires faculty to provide reasonable accommodations for students who, because of religious obligations, have conflicts with scheduled exams, assignments, or required attendance. Please communicate the need for a religious accommodation in a timely manner. See the [campus policy regarding religious observances](#) for full details.

PREFERRED STUDENT NAMES AND PRONOUNS

CU Boulder recognizes that students' legal information does not always align with how they identify. If you wish to have your preferred name (rather than your legal name) and/or your preferred pronouns appear on your instructors' class rosters and in Canvas, visit the [Registrar's website](#) for instructions on how to change your personal information in university systems.

CLASSROOM BEHAVIOR

Students and faculty are responsible for maintaining an appropriate learning environment in all instructional settings, whether in person, remote, or online. Failure to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, marital status, political affiliation, or political philosophy.

Additional classroom behavior information

- [Student Classroom and Course-Related Behavior Policy](#).
- [Student Code of Conduct](#).
- [Office of Institutional Equity and Compliance](#).
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SEXUAL MISCONDUCT, DISCRIMINATION, HARASSMENT AND RELATED RETALIATION

CU Boulder is committed to fostering an inclusive and welcoming learning, working, and living environment. University policy prohibits [protected-class](#) discrimination and harassment, sexual misconduct (harassment, exploitation, and assault), intimate partner abuse (dating or domestic violence), stalking, and related retaliation by or against members of our community on- and off-campus. The Office of Institutional Equity and Compliance (OIEC) addresses these concerns, and individuals who have been subjected to misconduct can contact OIEC at 303-492-2127 or email OIEC@colorado.edu. Information about university policies, [reporting options](#), and [OIEC support resources](#) including confidential services can be found on the [OIEC website](#).

Please know that faculty and graduate instructors are required to inform OIEC when they are made aware of incidents related to these concerns regardless of when or where something occurred. This is to ensure the person impacted receives outreach from OIEC about resolution options and support resources. To learn more about reporting and support a variety of concerns, visit the [Don't Ignore It page](#).

MENTAL HEALTH AND WELLNESS

The University of Colorado Boulder is committed to the well-being of all students. If you are struggling with personal stressors, mental health or substance use concerns that are impacting academic or daily life, please contact [Counseling and Psychiatric Services \(CAPS\)](#), located in C4C, or call (303) 492-2277, 24/7.

Free and unlimited telehealth is also available through [AcademicLiveCare](#). The [AcademicLiveCare](#) site also provides information about additional wellness services on campus that are available to students.