UNIVERSITY OF COLORADO
Department of Economics

ECON7020: MACROECONOMIC THEORY I
FALL 2024

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	2 October	25
Test 2	13 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 9, 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
    Ljungvqist and Sargent: Chapters 2 to 5

2. The Neoclassical Growth Model
   Boileau, Lecture Notes.
   Azzimonti et al.: Chapters 4 and 5
   Ljungvqist 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
   Banchard, 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
   Ljungvqist and Sargent: 8.1 -- 8.5, 8.8

3. Incomplete Markets and Self Insurance
   Ljungvqist and Sargent: Chapters 17 and 18

4. Asset Pricing Theory
   Ljungvqist 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
    Lungvqist 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
    Ljungvqist 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

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.

For more information, see the classroom behavior policy, the Student Code of Conduct, and the Office of Institutional Equity and Compliance.

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,

PREFERRED STUDENT NAMES AND PRONOUNS

CU Boulder recognizes that students' legal information doesn't always align with how they identify. Students may update their preferred names and pronouns via the student portal; those preferred names and pronouns are listed on instructors' class rosters. In the absence of such updates, the name that appears on the class roster is the student's legal name.

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 in 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 the Student Conduct & Conflict Resolution as well as be subject to

academic sanctions from the faculty member. Visit [Honor Code](#) for more information on the academic integrity policy.

SEXUAL MISCONDUCT, DISCRIMINATION, HARASSMENT AND/OR 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 [cureport@colorado.edu](#). Information about university policies, [reporting options](#), and [support resources](#) including confidential services can be found on the [OIEC website](#).

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

RELIGIOUS ACCOMMODATIONS

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.

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 [Academic Live Care](#). The [Academic Live Care](#) site also provides information about additional wellness services on campus that are available to students.