

UNIVERSITY OF COLORADO

Department of Economics

ECON7020: MACROECONOMIC THEORY I

FALL 2020

Instructor:	Martin Boileau
Class:	Econ 5; MW 12:20 to 13:35
Office :	Monday and Wednesday 13:45 to 14:45 or by appointment
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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. Most of the typical topics in macroeconomics are covered. These topics includes growth, consumption, production, investment, fiscal policy, and monetary policy.

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

DELIVERY

The course has two integral components:

1. Courses: The main material will be delivered synchronously online using zoom. Details on how to access the meetings will be forwarded by email.
2. Recitations: The recitations will use the main material to go deeper into topics in macroeconomics. The recitation material will be delivered in person by both the graduate teaching assistant and me. Details on the recitations will be forwarded by email.

EVALUATION

The assessment for this class consists of a two (2) term test and a final exam. 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	%
Term Test 1	Week 6: 30 September	25
Term Test 2	Week 12: 11 November	25
Final Exam	TBD	50

REQUIRED TEXTS

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

BACKGROUND TEXTS

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
 - 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
 - Dixit: Chapters 10 and 11
 - Ljungqvist and Sargent: Chapters 2 to 5
2. The Neoclassical Growth Model
 - Boileau, Lecture Notes.
 - Ljungqvist and Sargent: Chapter 15
3. Overlapping Generations
 - Boileau, Lecture Notes.
 - 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.
 - Banchard, O., 1985. Debt, Deficits, and Finite Horizon. *Journal of Political Economy* **93**.
 - *Blanchard and Fisher*: Chapter 3.3

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

- *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. REAL BUSINESS CYCLE MODELS

1. A Real Business Cycle Model
 - 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.

University Policies

CLASSROOM BEHAVIOR

Both students and faculty are responsible for maintaining an appropriate learning environment in all instructional settings, whether in person, remote or online. Those who fail 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, political affiliation or political philosophy.

For more information, see the policies on classroom behavior and the Student Code of Conduct.

REQUIREMENTS FOR COVID-19

As a matter of public health and safety due to the pandemic, all members of the CU Boulder community and all visitors to campus must follow university, department and building requirements, and public health orders in place to reduce the risk of spreading infectious disease. Required safety measures at CU Boulder relevant to the classroom setting include:

- Maintain 6-foot distancing when possible,
- wear a face covering in public indoor spaces and outdoors while on campus consistent with state and county health orders,
- clean local work area,
- practice hand hygiene,
- follow public health orders, and
- if sick and you live off campus, do not come onto campus (unless instructed by a CU Health-care professional), or if you live on-campus, please alert CU Boulder Medical Services.

Students who fail to adhere to these requirements will be asked to leave class, and students who do not leave class when asked or who refuse to comply with these requirements will be referred to Student Conduct and Conflict Resolution. For more information, see the policies on COVID-19 Health and Safety and classroom behavior and the Student Code of Conduct. If you require accommodation because a disability prevents you from fulfilling these safety measures, please see the "Accommodation for Disabilities" statement on this syllabus.

Before returning to campus, all students must complete the COVID-19 Student Health and Expectations Course. Before coming on to campus each day, all students are required to complete a Daily Health Form.

Students who have tested positive for COVID-19, have symptoms of COVID-19, or have had close contact with someone who has tested positive for or had symptoms of COVID-19 must stay home and complete the Health Questionnaire and Illness Reporting Form remotely. In this class, if you are sick or quarantined, please email me directly so that we can ensure that you can access the material and complete the course when appropriate.

ACCOMMODATION FOR DISABILITIES

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.

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 policy may include: plagiarism, 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. All incidents of academic misconduct will be reported to the Honor Code (honor@colorado.edu); 303-492-5550). Students found responsible for violating the academic integrity policy will be subject to nonacademic sanctions from the Honor Code as well as academic sanctions from the faculty member. Additional information regarding the Honor Code academic integrity policy can be found at the Honor Code Office website.

SEXUAL MISCONDUCT, DISCRIMINATION, HARASSMENT AND/OR RELATED RETALIATION

The University of Colorado Boulder (CU Boulder) is committed to fostering an inclusive and welcoming learning, working, and living environment. CU Boulder will not tolerate acts of sexual misconduct (harassment, exploitation, and assault), intimate partner violence (dating or domestic violence), stalking, or protected-class discrimination or harassment by members of our community. Individuals who believe they have been subject to misconduct or retaliatory actions for reporting a concern should contact the Office of Institutional Equity and Compliance (OIEC) at 303-492-2127 or cureport@colorado.edu. Information about the OIEC, university policies, anonymous reporting, and the campus resources can be found on the OIEC website.

Please know that faculty and instructors have a responsibility to inform OIEC when made aware of incidents of sexual misconduct, dating and domestic violence, stalking, discrimination, harassment and/or related retaliation, to ensure that individuals impacted receive information about options for reporting and support resources.

RELIGIOUS HOLIDAYS

Campus policy regarding religious observances requires that faculty make every effort to deal reasonably and fairly with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance.

See the campus policy regarding religious observances for full details.