ECON7020: MACROECONOMIC THEORY I
FALL 2021

Instructor:	Martin Boileau
Class:	HLMS 104; MW 16:10-17:25 and
Office :	M 11:30-12:00; W 15:00 to 15:30; 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: 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	%
Term Test 1	Week 6: 29 September	25
Term Test 2	Week 12: 1 November	25
Final Exam	15 December 13:30-16:00	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. Bacground 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
    - Ljungvqist and Sargent: Chapters 2 to 5

2. The Neoclassical Growth Model
    - Boileau, Lecture Notes.
    - Ljungvqist 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

- *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. REAL BUSINESS CYCLE MODELS

1. A Real Business Cycle Model
   - 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.

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 Conduct and Conflict Resolution policies.

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 all public health orders in place to reduce the risk of spreading infectious disease. 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 policy on classroom behavior and the Student Code of Conduct. If you require accommodation because a disability prevents you from fulfilling these safety measures, please follow the steps in the Accommodation for Disabilities statement on this syllabus.

As of Aug. 13, 2021, CU Boulder has returned to requiring masks in classrooms and laboratories regardless of vaccination status. This requirement is a temporary precaution during the delta surge to supplement CU Boulder COVID-19 vaccine requirement. Exemptions include individuals who cannot medically tolerate a face covering, as well as those who are hearing-impaired or otherwise disabled or who are communicating with someone who is hearing-impaired or otherwise disabled and where the ability to see the mouth is essential to communication. If you qualify for a mask-related accommodation, please follow the steps in th Accommodation for Disabilities statement on this syllabus. In addition, vaccinated instructional faculty who are engaged in an indoor instructional activity and are separated by at least 6 feet from the nearest person are exempt from wearing masks if they so choose.

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. In this class, if you are sick or quarantined, alert me and we will work together to provide appropriate accommodations.

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 academic integrity policy. Violations of the Honor Code may include, but are not limited to: 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 on the Honor Code 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 or against 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 email cureport@colorado.edu. Information about OIEC, university policies, reporting options, and the campus resources can be found on the OIEC website.

Please know that faculty and graduate 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 their rights, support resources, and reporting options.

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.