

UNIVERSITY OF COLORADO

Department of Economics

**ECON7020: MACROECONOMIC THEORY I**

**FALL 2019**

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Instructor:	Martin Boileau
Class:	Econ 5; MW 12:00 to 13:15
Office:	Economics 215; M 15:30 to 16:45 and W 13:30 to 14:45
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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.

**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.

<b>Evaluation</b>	<b>Date</b>	<b>%</b>
Term Test 1	Week 6: 2 October	25
Term Test 2	Week 12: 13 November	25
Final Exam	14 December from 16:30 to 19:00	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. 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

You should familiarize yourself with the following University of Colorado policies:

### **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](mailto:dsinfo@colorado.edu) for further assistance. If you have a temporary medical condition or injury, see Temporary Medical Conditions under the Students tab on the Disability Services website.

### **CLASSROOM BEHAVIOR**

Students and faculty each have responsibility for maintaining an appropriate learning environment. 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. Class rosters are provided to the instructor with the student's legal name. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records. For more information, see the policies on classroom behavior and the Student Code of Conduct.

### **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](mailto:honor@colorado.edu)); 303-492-5550). Students who are 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 a positive and welcoming learning, working, and living environment. CU Boulder will not tolerate acts of sexual misconduct (including sexual assault, exploitation, harassment, dating or domestic violence, and stalking), discrimination, and 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](mailto: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, 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.