

UNIVERSITY OF COLORADO  
Department of Economics

**ECON7040: MACROECONOMIC THEORY II**  
Spring 2018

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Instructor:	Martin Boileau
Class:	ECON 5; MW 11:00 to 12:15
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**COURSE DESCRIPTION**

This course is the second part of the core macroeconomic theory doctoral sequence. 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, 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 tests 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: 21 February	25
Term Test 2	Week 13: 11 April	25
Final Exam	8 May: 13:30–16:00pm	50

## REQUIRED TEXT

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

## BACKGROUND TEXTS

Adda, Jerome and Russell W. Cooper, *Dynamic Economics*, Cambridge: MIT Press.

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.

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

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

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

Stokey, Nancy L. and Robert E. Lucas, *Recursive Methods in Economic Dynamics* Cambridge: Harvard University Press.

# COURSE OUTLINE

## I. Introduction: The One-Sector Growth Model

1. Dynamic Programming and Hamiltonian
  - *Boileau*: A Child's Guide to Dynamic Programming
  - *Boileau*: A Child's Guide to Optimal Control Theory
  - *Ljungqvist and Sargent*: 2.A.1, 3.1
2. The One-Sector Neoclassical Growth Model
  - *Romer*: Chapter 2
  - *Blanchard and Fisher*: Chapter 2
  - *Ljungqvist and Sargent*: Chapter 15

## II. Public Policy Issues in Representative Agents Growth Models

1. Taxation
  - *Ljungqvist and Sargent*: Chapters 10 and 11
2. Endogenous Growth
  - *Barro and Sala-i-Martin*: Chapters 4 and 5

## III. Overlapping Generations Models

1. Discrete Time: OLG
  - *Romer*: Chapter 2 part B
2. Continuous Time: Perpetual Youth
  - *Banchar, O.*, 1985. Debt, Deficits, and Finite Horizon. *Journal of Political Economy* **93**.
  - *Blanchard and Fisher*: Chapter 3.3

## IV. 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 Cycles

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.

## VI. Advances in DSGE Models

1. Monopolistic Competition and Sticky Prices
2. Monetary Economies: CIA, MIU, and Cashless Economies
3. Preferences: Non-Homotheticity, Habit, GHH, Endogenous Discount, Epstein-Zin
4. Shocks: Investment-specific, News, and Noise

## VII. Search and Matching

1. Search, Matching and Bargaining
  - Ljungqvist and Sargent: Chapters 6 and 28
2. Monopsony
  - Burdett, Kenneth, Dale Mortensen, 1998. Wage Differentials, Employer Size, and Unemployment. *International Economic Review* **39**.
3. Directed Search

## **V. International Macroeconomics**

1. National Income Accounting
2. Intertemporal Trade
3. International Risk Sharing
4. The Transmission of Business Cycles

## University Policies

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

### **ACCOMMODATION FOR DISABILITIES**

All faculty assume responsibility for ensuring that their individual courses and content are accessible to all students. Please utilize principles of Universal Design when creating new courses; otherwise, make appropriate alterations to existing material to accommodate students who require assistance. You may contact our Universal Instructional Design Consultant on the Academic Technology Design Team in the Office of Information Technology for more information by calling 303-735-4357 (5-HELP).

Faculty consultations with an Access Coordinator in Disability Services serve as an opportunity to provide clarity and guidance regarding the implementation of accommodations and working with students with disabilities. To request an appointment with an Access Coordinator, contact Disability Services at [dsinfo@colorado.edu](mailto:dsinfo@colorado.edu) or 303-492-8671

### **THE BOULDER PROVOST'S DISABILITY TASK FORCE:**

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:

[www.colorado.edu/disabilityservices/students](http://www.colorado.edu/disabilityservices/students).

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 and discuss your needs with your professor.

### **RELIGIOUS HOLIDAYS**

It is the responsibility of every instructor to explain clearly her or his procedures about absences due to religious observances in the course syllabus so that all students are fully informed, in writing, near the beginning of each semester's classes. Campus policy regarding religious observances states that faculty must make reasonable accommodations for students and in so doing, be careful not to inhibit or penalize those students who are exercising their rights to religious observance. Faculty should be aware that a given religious holiday may be observed with very different levels of attentiveness by different members of the same religious group and thus may require careful consideration to the particulars of each individual case. For more information on the religious holidays most commonly observed by CU Boulder students consult the online interfaith calendar.

### **RELIGIOUS OBSERVANCES:**

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.

### **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.

### **THE OFFICE OF INSTITUTIONAL EQUITY AND COMPLIANCE:**

The University of Colorado Boulder (CU Boulder) is committed to maintaining a positive learning, working, and living environment. CU Boulder will not tolerate acts of sexual misconduct, discrimination, harassment or related retaliation against or by any employee or student. CU's Sexual Misconduct Policy prohibits sexual assault, sexual exploitation, sexual harassment, intimate partner abuse (dating or domestic violence), stalking or related retaliation. CU Boulder's Discrimination and Harassment Policy prohibits discrimination, harassment or related retaliation based on race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, political affiliation or political philosophy. Individuals who believe they have been subject to misconduct under either policy should contact the Office of Institutional Equity and Compliance (OIEC) at 303-492-2127. Information about the OIEC, the above referenced policies, and the campus resources available to assist individuals regarding sexual misconduct, discrimination, harassment or related retaliation can be found at the OIEC website.

### **HONOR CODE:**

All students enrolled in a University of Colorado Boulder course are responsible for knowing and adhering to the academic integrity policy. Violations of the policy may include: plagiarism, cheating, fabrication, lying, bribery, threat, unauthorized access to academic materials, clicker fraud, resubmission, and aiding academic dishonesty. All incidents of academic misconduct will be reported to the Honor Code Council ([honor@colorado.edu](mailto:honor@colorado.edu); 303-735-2273). Students who are found responsible for violating the academic integrity policy will be subject to nonacademic sanctions from the Honor Code Council as well as academic sanctions from the faculty member. Additional information regarding the academic integrity policy can be found at the Honor Code Office website.