

## 6E:204 - Macroeconomics I

**Time and Place:** Time & Location: 9:30A - 10:45A TTh [S181 PBB](#)

**Instructor:**

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### Course Description:

This is the first course in the core graduate macroeconomic sequence. The objective of this course is to develop positive models that can help us understand the dynamics of key macroeconomics variables (output, prices, employment) and use such models to make judgments about what policies the government should (or should not) follow. Methods and tools will be presented throughout the course; in particular we will focus on dynamic equilibrium theory and dynamic optimization. Several economic issues will be discussed, but these topics only provide a partial survey of the state of modern macroeconomics.

### Grading:

Final grade = 25% Midterm + 35% Final + 40% Homeworks.

The homeworks will be posted in the course web page (login to the ICON system via the department's webpage). Late homeworks are not accepted (unless you have a verifiable medical problem).

### Readings:

No textbook will be followed closely. However, the book by Ljungqvist and Sargent is a useful reference for many of the topics discussed in class. Some of the chapters in Stokey and Lucas overlap with the course material (you will study this book in detail in the second semester though). We will also use the class notes from Per Krusell and Steve Williamson.

1. Ljungqvist, L. and Sargent, T. (2004; henceforth LS) *Recursive macroeconomic theory*. Second Edition.
2. Stokey, N and Lucas, R. with Prescott(1989; henceforth SLP) *Recursive methods in economic dynamics*.

We will also use the class notes from:

1. Krusell, P. (2003, henceforth Krusell) *Lecture notes for Macro 475*. Available on the course web page.
2. Williamson, S. (2001, henceforth Williamson) *Notes on Macroeconomics*. Available on the course web page.

I will also be occasionally posting my own class notes on the course webpage.

## **Attendance Policy:**

Attendance of classes is not mandatory. You do not have to inform me if you miss a class for any reason. However, if you miss an examination and want to take a make up exam, I will need to see a formal proof of the reason of your absence.

The University requires that students be permitted to make up examinations missed because of illness, mandatory religious obligations, or other unavoidable circumstances including certain University activities. The college has adopted a set of guidelines for absences that fall outside of the University requirements. The policy can be found at:

<http://www.biz.uiowa.edu/upo/advising/policies.html#attendance>.

## **Accommodating Disabilities:**

If you have a disability that may require some modification of seating, testing, or any other class requirement, please let me know as soon as possible so that appropriate arrangements can be made. Similarly if you have any emergency medical information about which I should know, or if you need special arrangements in the event the building must be evacuated, please let me know. Please see me after class hours or during my scheduled office hours or schedule an appointment. I would also remind you that the Office of Student Disability Services is available to assist you.

## **Academic Misconduct:**

It is my sincere hope that no student in this class does work which is not his or her own. However, it seems prudent to clarify in advance the policy on cheating. If I determine that any assignment was not written solely by the student whose identification number appears on the project, the student will receive a zero (0) for the project and may receive an "F" for the class.

All incidents of cheating will be reported to the appropriate Deans and the student may be placed on disciplinary probation for the remainder of his or her study at the University of Iowa.

In general, the decision of the Professor may be appealed to the College of Business' Judicial Board, Associate Dean for the Undergraduate Program, the Collegiate Dean, the Dean of Students, and so on in accordance with University Policy. The Honor Code for the Tippie College of Business will determine the appropriate appeal process. The Honor Code may be found at <http://www.biz.uiowa.edu/upo/advising/honorcode.html>

## **Complaint policy:**

If you feel that I have treated you unfairly or acted unprofessionally or otherwise failed to meet my responsibilities as an instructor, please bring the matter to my attention so that we can work together to resolve the problem. If you remain unsatisfied you may contact (choose one) the chair of my department. If your concerns have still not been resolved at that point, you may submit a written complaint to the Associate Dean for Academic Programs, 120 Schaefer Hall (335-2633) (for undergraduates), the Graduate College, 205 Gilmore Hall, 335-2137 (for graduate students).

## Course Outline:

### 1. The neoclassical growth model (no uncertainty)

- Introduction
- The Solow/Swan growth model
- Dynamic optimization. Finite and infinite horizon problems. Necessary and sufficient conditions. Sequential formulation
- Dynamic programming: recursive formulation
- Steady states and dynamics. Linearization and local dynamics
- Competitive equilibrium: sequential and recursive
- Welfare properties of competitive equilibrium
- Heterogeneity and aggregation

#### *Suggested readings:*

- LS, chapters 1, 2 and 7.
- SLP, chapters 2 and 6.
- Krusell notes, chapters 1-5.
- Williamson, chapter 3.

### 2. Complete markets

- Uncertainty
- Markov processes
- Sequential formulation. Arrow-Debreu economy
- Recursive formulation with Arrow-Debreu securities
- Equivalence of sequential and recursive equilibria

#### *Suggested readings:*

- LS, chapters 2 and 8
- Krusell notes, chapter 6

### 3. The neoclassical growth model with aggregate uncertainty (Real business cycles)

- Business cycle facts
- Real business cycle theory

#### *Suggested readings:*

- Krusell notes, chapter 6.
- Prescott, E. (1986) Theory Ahead of Business Cycle Measurement *Federal Reserve Bank of Minneapolis Quarterly Review*, 10.
- Cooley, T. and Prescott, E. (1995) 'Economic growth and business cycles' in Thomas Cooley editor, *Frontiers of business cycle research*, Princeton University Press.

### 4. Asset pricing

- The Lucas tree model
- The equity premium puzzle

#### *Suggested readings:*

- LS, chapter 10.
- Krusell notes, chapter 6.
- Williamson, chapter 6.
- Lucas, R. (1978) Asset prices in an exchange economy, *Econometrica*, 46, pp 1429-1445
- Mehra, E. and Prescott, E. (1985) The equity premium: a puzzle, *Journal of Monetary Economics*, 15,2, pp 335-359.

- Kocherlakota, N. (1996) The equity premium, it's still a puzzle, *Journal of Economic Literature*, 34, pp 42-71

## 5. The OLG model

- Endowment economies. Competitive equilibrium and its welfare properties.
- Production economy (the neoclassical growth model). Welfare properties.

### *Suggested readings:*

- LS, chapter 8 (pp 173-182).
- Krusell notes, chapter 7.
- Williamson, chapter 2 (pp 25-34).
- Balasko and Shell (1980) The optimality criterion for an endowment economy.
- Cass (1972) On capital overaccumulation

## 6. Endogenous growth models

- Stylized facts.
- Endogenous growth models (AK, human capital, endogenous technological change).

### *Suggested readings:*

- LS, chapter 11.
- Krusell Notes III. Williamson, chapter 2 (pp 25-34).
- Barro, R. and Sala-i-Martin (1995) *Economic growth*. Read the introduction.
- Romer, P. (1990) Endogenous technological change. *Journal of political economy*, October 1990, 98, 5, part 2, 71-102.

## 7. Macroeconomic models in continuous time

- Optimal growth model in continuous time
- Endogenous growth models in continuous time

### *Suggested readings:*

- David Romer, *Advanced Macroeconomics*, Second Edition (New York: McGraw Hill, 2001), chapters 1-4
- Slobodyan class notes (will be available online)