1 Course Objectives

This course is set up to provide advanced master students and PhD students with a set of working tools for applied, quantitative economic analysis and research. The course teaches basic tools of modern macroeconomics, which has direct applications to a broad set of fields in economics (labor economics, political economy, development). The ultimate goal of this course is to learn to use a variety of models that can be used to give quantitative answers to economic questions.

The emphasis will be on economic rigor, i.e. the target is to learn tools that will be useful later in a variety of contexts. The course, hence, is not a survey of topics. When some specific topic is addressed, say, credible government policy, the objective is less that of giving a review of known results but rather to give an example of how an issue is addressed and what tools might be used.

2 Administrative

2.1 Lectures – time and place

Lectures: Fridays 10:15-12:00
Seminars: Fridays 14:15-16:00

First lecture: Friday January 26th 10:15-12:00
First seminar: Friday January 19th 12:30-13:30

2.2 Prerequisites / grading

Students in this class are expected to have taken ECON 4310 or other macro courses at the same level. Grade will be given based on final exams. In order for you to prepare the final exam, there will be four homework assignments and the suggested solutions will be posted.
Students are encouraged to work cooperatively and endeavor to solve the problems before the solutions are posted.

We hope students will present a paper at least once during the Friday seminars/reading group meetings.

2.3 Office hours

By appointment.

3 Syllabus

Our main text will be *Recursive Macroeconomic Theory* by Lars Ljungqvist and Thomas Sargent and several outstanding sets of lecture notes written by Dirk Krueger and Per Krusell. These will be supported by a few articles.

Please note that the set of required readings might be modified during the semester, in which case we will update this document on the course web-page.

3.1 Readings

3.1.1 Required books and lecture notes

- Hanno Lustig: Lecture Notes (ref: Lustig)
  [http://www.sscnet.ucla.edu/05F/econ221a-1/notes.pdf](http://www.sscnet.ucla.edu/05F/econ221a-1/notes.pdf)
- Dirk Krueger: *Consumption and Savings: Theory and Evidence* (ref: Krueger-CS)
  [http://www.wiwi.uni-frankfurt.de/professoren/krueger/teaching/ws0506/macrofield/consbookdirk.pdf](http://www.wiwi.uni-frankfurt.de/professoren/krueger/teaching/ws0506/macrofield/consbookdirk.pdf)
- Dirk Krueger: *Macroeconomic Theory* (ref: Krueger-MT)
  [http://www.wiwi.uni-frankfurt.de/professoren/krueger/teaching/ws0506/macromh/PhdLecture.pdf](http://www.wiwi.uni-frankfurt.de/professoren/krueger/teaching/ws0506/macromh/PhdLecture.pdf)
- Per Krusell: Lecture Notes for Macroeconomics.

3.1.2 Suggested books

• Angus Deaton: *Understanding Consumption* (Oxford University Press, 1992)


### 3.1.3 Articles

t.b.a.

## 4 Lecture Plan

### 4.1 Overview

The four topics of the course are:

a. Introduction: practical recursive programming (Lectures 1-2)

b. Asset pricing in complete markets (Lectures 3-7)

c. Incomplete markets and heterogeneous agents (Lectures 8-10)

d. Dynamic contracts (Lectures 11-13)

### 4.2 The lectures

1. **Friday, January 26, 2007 - Henriksen**

   The (Deterministic) Neoclassical Growth Model and Dynamic Programming

   Required readings:

   - Krusell, Chapters 1, 2 and 3

   Supporting materials:

   - Krueger, Chapters 1, 3 and 5
   - Ljungqvist and Sargent, Chapter 3-5.
   - Stokey and Lucas, Chapters 1 and 2

2. **Friday, February 2, 2007 - Henriksen**

   The Stochastic Neoclassical Growth Model and Dynamic Programming

   Required readings:
3. Friday, February 9, 2007 - Henriksen
Math preliminaries

Required readings:

- Krueger Chapters 4 and 5

Supporting material:

- Ljungqvist and Sargent, Chapter 7 and 8
- Stokey and Lucas, Chapter 7

4. Friday, February 16, 2007 - Chen
Equilibrium with Complete Markets and Negishi method

Required readings:

- Krueger Chapter 2 and 6
- Ljungqvist and Sargent, Chapter 8

Additional material:

- Krusell, Chapters 5
- Krueger-MT, Chapter 2 and 7
  The Economics of Missing Markets, Information and Games, Claredon Press
  petitive Economy,” Metroeconomica, 12, 92-97.

5. Friday, February 23, 2007 - Chen
The two welfare theorems

Required readings:

- Krueger Chapter 7

Additional material:

• Ljungqvist and Sargent, Chapter 8.

6. Friday, March 2, 2007 - Chen
Complete markets and asset pricing

Required readings:

• Krueger-CS, Chapter 3.1
• Ljungqvist-Sargent Chapter 8 and 13

7. Friday, March 9, 2007 - Chen
Complete markets and asset pricing

Required readings:

• Krueger-CS, Chapter 3.1
• Ljungqvist-Sargent Chapter 8 and 13

Additional material:

• Krusell, Chapters 6
• Deaton (1992), Chapter 1.3

8. Friday, March 16 - Henriksen
Heterogeneous agents and incomplete markets (Aiyagari-Huggett-İmrohoroğlu Model)

Required readings:

• Sargent and Ljungqvist, Chapter 16-17.

Supporting material:

• Stokey and Lucas, Chapters 7-14.

   – same as above

10. Friday, March 30, 2007 - Henriksen
    – same as above

Break - Take-home mid-term exam

11. Friday, April 20, 2007 - Chen
    Equilibrium with Limited Enforcement

    Required readings:

    • Lustig, Part II
    • Ljungqvist and Sargent, Chapter 20

    Additional material:


12. Friday, April 27, 2007 - Chen
Equilibrium with Asymmetric Information

Required readings:

• Lustig, Part III
• Ljungqvist and Sargent, Chapter 19

Additional material:


• Thomas, J. and T. Worrall, (1990): “Income Fluctuation and Asymmetric Information: An example of a repeated Principal-Agent Problem”, Journal of Economic Theory, 51 (2), 367-390

13. Friday, May 4, 2007 - Chen
Equilibrium with Moral Hazard

Required reading:

• Lustig, Part III
• Ljungqvist and Sargent, Chapter 19

Additional material:


