

# Syllabus for Economics 721: Graduate Macroeconomics

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- Lectures: Wednesdays & Fridays, 10:30am-11:45am Gardner 007 (Jan 7 - Apr 24)
- Recitation: Mondays, 10:30am-11:45am Gardner 007
- Office hours:
  - Professor Phan: Wed 11:45-12:45pm, and by appointment
  - TA Soques: Thu 1pm (tentative), Phillips Annex 102
- Class website: Sakai page

## Description

This course continues to study the theoretical foundations of modern macroeconomics. In particular, we study the theories of *real business cycles* and *monetary economics*. The course has three modules: real business cycles (without finance), real business cycles with finance (or macro-finance), and monetary economics. Even though this course focuses on theory, I will motivate each module with empirical facts and historical background. Throughout the course, I encourage the practice of three important values in scientific research: curiosity (asking why), creativity (finding your own answers), and critical thinking (being skeptical of existing theories, including your own: e.g., do the assumptions make sense? do the models match the data?).

## Reading material

Please check Sakai for reading materials for each class. Many reading materials will be posted online.

- Real business cycles: Dirk Krueger, *Quantitative Macroeconomics: An Introduction*, 2007 (available online).  
Additional texts:
  - Romer, *Advanced Macroeconomics*, 2012
  - Uribe and Schmitt-Grohe, *Open Economy Macroeconomics*, 2014
  - Ljungqvist, L. and T. Sargent. *Recursive Macroeconomic Theory*, 2000

- Macro-finance: lecture notes by Lawrence Christiano, Mark Gertler and others
- Monetary economics: Gali, *Monetary Policy, Inflation and the Business Cycle*, 2008
- Various published research papers and working papers

## Grades

- Homework assignments: 10%
- Midterm exam 1: 30%
- Midterm exam 2: 30%
- Final exam: 30%

## Administrative rules

*Academic integrity:* I highly value academic integrity. I expect each of you to follow the UNC Honor System.

*Homework:* I highly encourage working in groups on homework. Each group only needs to turn in one homework write-up.

*Not handing in work on time:* If you miss a deadline, then your score will be halved for each late day. (So your late score = actual score \*  $0.5^{\text{numbers of late days}}$ ). In other words, please do not miss a deadline.

*Missing a midterm:* If you miss a midterm, the distribution of grades will be shifted towards the final (for example, if you miss midterm 1, then your final exam will worth 60% of your grades. You cannot miss the final exam.

*Appeals* regarding the grading of a test must be submitted to me or to an Economics Department secretary in writing within one week of your receipt of the graded work. The original test must accompany the appeal. The TA or I will re-grade the entire test. Note that this may lead to a lower overall grade. Your complaint has to be in writing and in detail.

*Email policy:* I will do my best to respond to e-mail within 24 hours on a weekday, 48 hours on a weekend, according to the following policy:

- I only respond to e-mails posing questions that can be answered in a sentence or two. For detailed questions, please see me after class or in office hours.
- I do not reply to e-mails that request information that can be found on the web or the syllabus, so you should check those places first.
- I do not reply to e-mails regarding the results of graded material – for that, please see me after class or in office hours.

## Tentative outline of topics

Note: the outline below is only tentative and is subject to change. Please see Sakai regularly for the latest updates.

Overview: 1 lecture. Reading: see Sakai

Real business cycles (11 lectures)

1. Motivation and data. Reading: Krueger chapter 2; optional: Romer chapter 5.1
2. Basic RBC model. Reading: Krueger chapter 3
3. Social planner problem. Reading: Krueger chapter 4
4. Steady state analysis. Reading: Krueger chapter 5
5. Dynamic analysis. Reading: Krueger chapter 6
6. Calibration. Reading: Krueger chapter 8, Krussel 10.3
7. Full RBC model with stochastic technology shocks. Reading: Krueger chapter 10
8. Evaluating the model. Reading: Krueger chapter III
9. Small open economy model.
  - (a) Endowment model. Reading: Uribe Schmitt-Grohe chapter 2.
  - (b) RBC model. Reading: Uribe Schmitt-Grohe chapter 3.

Midterm 1: Wed Feb 18

**Macro-finance** (6 lectures)

1. Motivation and data.
2. Bernanke Gertler Gilchrist (BGG, 1999) in two period. Reading: Christiano lecture note.
3. BGG in infinite horizon. Reading: Christiano lecture note.
4. Gertler Kiyotaki model. Reading: Gertler Kiyotaki handbook of monetary economics chapter.
5. Rational bubbles and sun-spot equilibrium analysis. Reading: Christiano handout.

Midterm 2: Wed Mar 25

**Monetary economics** (11 lectures)

1. Motivation and data. Reading: Gali chapter 1
2. New Keynesian model in two period. Reading: Benigno, *New-Keynesian economics: an AS-AD view*, NBER working paper 2009.
3. Classical monetary model. Reading: Gali chapter 2
4. Basic New Keynesian model. Reading: Gali chapter 3
5. Monetary policy design in New Keynesian model. Reading: Gali chapter 4
6. Model with sticky wages and sticky prices. Reading: Gali chapter 6
7. Discretion vs. commitment. Reading: Gali chapter 5

Final exam: tentatively Fri May 1