I. Introduction

This course is the first one (of two) in our first-year macroeconomics Ph.D. sequence required for all doctoral students. The course will introduce you to the main topics in growth (about half of the course), as well as traditional issues in short-term economic fluctuations (the other half of the course). In the process you are expected to (and hopefully will) develop basic analytical skills (see mathematical preliminaries handout) necessary to understand and solve macroeconomic models.

For obvious reasons, the course is designed for Ph.D. students in economics. Prerequisites include macroeconomics at the undergraduate level, as well as a good understanding of calculus and basic differential equations. Students are expected to be thoroughly familiar with the material in any of the following intermediate macroeconomics texts:

(c) Macroeconomics (N.G. Mankiw) 9th edition. This is the best selling undergraduate macroeconomics textbook.
(d) Macroeconomics (A. Abel, B. Bernanke, and D. Croushore) 8th edition.

The second course in this series, Macroeconomic Theory II, is taught by Professor Larry White. There is also an advanced macroeconomic dynamics course taught by Professor David Eil. Professor Eil's course does not form part of the required macro sequence, but is nonetheless highly recommended for students who wish to specialize in macroeconomics, or students considering doing Experimental Economics as one of their fields.

II. Class Requirements:

This class requires a great amount of commitment and dedication. There will be a midterm (October 19, 2015) and a final (December 14, 2015). The midterm will count for 40% of your grade. The comprehensive final examination will determine 55% of the final grade. The remaining 5% will come from doing problem sets.
There will be 10 problem sets throughout the semester to help you keep up with the work. Each problem set is worth a maximum of 1 point (if you make an honest effort to complete it you will most likely receive the full point). Thus, all problem sets combined are worth 10 points. (The last problem set, on unemployment, is optional. Everyone gets 1 point only for that one.) While 10 points may not seem like a lot, it is high enough to make a difference at the margin—say, from a B+ to an A-. Getting together in small groups to solve homework problems IS allowed. Students in the past have found this to be very helpful and instructive. Solutions to the problem sets will be distributed one week after the problem set is announced (typically after the conclusion of the relevant lecture). The homework due dates are printed in this syllabus further below.

III. Books:

While there are many macroeconomic textbooks at the undergraduate level, there are only a few at the graduate level. David Romer’s macroeconomics textbook has now become a standard textbook in most graduate programs. We will, of course, use this book in this course. Nonetheless, there are a few other books that specialize in different subfields within macroeconomics. Some of these books are listed below.

A. Required:


2. Diamond, Jared. Guns, Germs, and Steel. Norton 1997. A very good and readable account of growth and development from an evolutionary perspective. Available in general bookstores like Barnes and Noble (or BarnesandNoble.com), Borders, or online.

3. Landes, David. The Wealth and Poverty of Nations: Why Some are So Rich and Some So Poor. Norton 1998. Also a very good and readable account of growth and development from an economic historian perspective. Available in general bookstores like Barnes and Noble (or BarnesandNoble.com), Borders, or online.

B. Recommended:


There are other excellent textbooks on economic growth, which you may consider purchasing if you wish to gain a more detailed understanding on this topic: Daron Acemoglu Introduction to Modern Economic Growth (Princeton University Press) and Charles I. Jones Introduction to Economic Growth (W.W. Norton & Co.).
3. Dynamic Macroeconomic Theory, by Thomas Sargent. Harvard University Press. Although none of the lectures will come directly from this book, we will briefly talk about some of the dynamic models discussed in it. I recommend this book for those of you who would like to continue advanced macroeconomic modeling.

IV. GMU Honor Code:

It is understood that students who sign up for this course entirely agree and accept GMU’s Honor Code: “Student members of the George Mason University community pledge not to cheat, plagiarize, steal, or lie in matters related to academic work.” Source: http://www.gmu.edu/catalog/apolicies/#Anchor13 Students in violation of this code will be referred to the Honor Committee.

V. Important dates for this semester:

- Last Day to Add (Full-Semester Course) September 8, 2015
- Last Day to Drop (Full-Semester Course) October 2, 2015

VI. Students with disabilities

If you are a student with a disability and you need academic accommodations, please see me and contact the Office of Disability Resources at 703.993.2474. All academic accommodations must be arranged through that office.

VII. Cell Phones/Smart phones/iPhones/ etc.

All of these telecommunication devices should be OFF during class, and especially during examinations. They are extremely disturbing and distracting to your fellow classmates.
### VIII. Readings and Class Schedule:

<table>
<thead>
<tr>
<th>Lecture Number</th>
<th>Lecture Topics</th>
<th>Readings</th>
<th>Homework</th>
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</table>
| #0             | • Introduction  
                • Mathematical Preliminaries | • Handout on Basic Mathematical Methods | To be distributed in class. Due: 9/14/15 |
| #1             | • Economic Growth I:  
                Solow; Convergence | • Chapter 1, AM | AM: 1.1, 1.2, 1.3, 1.4, 1.5, 1.8  
                And * below Due: 9/21/15 |
| #2             | • Economic Growth II:  
                Ramsey-Cass-Koopmans | • Chap. 2, Part A, AM  
                • Chap. 2, LOM | AM: 2.1, 2.3, 2.4, 2.6, 2.7, 2.11 Due: 9/28/15 |
| #3             | • Economic Growth III:  
                OLG models | • Chap. 2, Part B, AM  
                • Chap. 3, LOM | AM: 2.14, 2.16, 2.17 Due: 10/5/15 |
| #4             | • Economic Growth IV:  
                Human Capital and Endogenous Growth | • Chap. 3, AM; articles from reading list | AM: 3.1, 3.2, 3.4, 3.5, 3.14 Due: 10/13/15 |
| #5             | • Economic Growth V:  
                Empirical Evidence and Convergence Again | • Chap. 4, AM; (EG); articles from reading list | AM: 4.12 Due: Optional, but helpful for the Midterm |
| OCTOBER 19th, 2015 MIDTERM EXAM | | | |
| #6             | • Intro to SR Macro, Microfoundations, New Keynesian economics. | • Chap. 6, AM  
                • Chap. 8, LOM | AM: 6.10, 6.14, 6.15 Due: 10/27/15 |
| #7             | • Intro to DSGE Models—simulating an RBC | • Chap. 5, AM  
                • Chap. 10, LOM | In class exercise (time permitting). Please bring a laptop with Excel. |
| #8             | • Consumption: Theory and Evidence | • Chap. 8, AM | AM: 8.1, 8.2, 8.3, 8.7 Due: 11/16/15 |
| #9             | • Investment: Keynesian; Neoclassical and q-theory | • Chap. 9, AM | AM: 9.1, 9.3, 9.6, 9.7, 9.8 Due: 11/23/15 |
| #10            | • Financial Markets I:  
                Asymmetric Info./Liquidity | | |
| #11            | • Keynesian Economics: Traditional Models; Open Economy Issues; Recessions RCK with Hamiltonians (time permitting) | | AM: 6.3, 6.6 Due:12/7/15 |
| #12            | • Unemployment | • Chap. 10, AM | AM: 10.1, 10.2, 10.3, 10.11 Due: Optional, but helpful for the Final Exam. |

*Addendum to Homework Due on 9/15/2015. Visit [http://www.bls.gov/lpc/home.htm#overview](http://www.bls.gov/lpc/home.htm#overview) and answer the following questions: 1. How does the Bureau of Labor Statistics measures labor productivity? 2. What is the latest productivity figure? 3. What has happened to productivity over time in the US since the 1980s? 4. What are some of the explanations that people offer to explain changes in productivity trends? 5. Why is the productivity slowdown debate important?*

### V. Readings

**Supplement for class lectures**

("*" readings are more important. All readings are available on line through GMU library’s electronic journals link, or are otherwise available on reserve.)

**Lecture 1:**


Lecture 2:

Lei, Vivian and Charles N. Noussair "An Experimental Test of an Optimal Growth Model," American Economic Review, June 2002, 92(3) pp. 549 - 70. (This paper tests the RCK model using experimental economics.)

Lecture 3:


Lecture 4:


Lecture 5:


Gurus in Economic Growth

If you are interested in finding out more about issues in growth, you should visit the following websites:

3. Charles I. Jones (http://www.stanford.edu/~chadj/)

Lecture 6:

http://en.wikipedia.org/wiki/New_Keynesian_economics -- Offers an introduction to what New Keynesian economics are all about.


**Lecture 7:**

Introduction to DSGE modeling. Simulation of an RBC model.


More complete models are discussed in David Romer’s AM Chapter 7.
Lecture 8:


Lecture 9:


Lecture 10:


Lecture 11:

*For a good introduction to the Mundell-Fleming model, visit the following website: http://en.wikipedia.org/wiki/Mundell-Fleming_model
Friedman, Benjamin (1988) "Lessons on Monetary Policy from the 1980s," *Journal of Economic Perspectives* 2 (Summer) pp. 51-72


**Lecture 12:**


**Putting it all together:**

*Read the following article. In the final exam you may be asked to do both: defend it (Are there any good points? Which ones? Why?) and criticize it (What’s wrong with it?)*
