SIMON FRASER UNIVERSITY
Department of Economics

Econ 808 – MACROECONOMIC THEORY
Syllabus – Fall 2013

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Office Hours: Wed. 9:15 – 10:15
Fri. 2:00 – 3:00
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COURSE OBJECTIVES AND PREREQUISITES

This course provides an overview of most of the core topics in macroeconomics. The goal is to learn how to apply the workhorse models of modern macro: the Cass-Koopmans and Diamond optimal growth models, recent models of endogenous growth and technological progress, the Lucas asset pricing model, the Permanent Income Hypothesis and its extensions, the Mortensen-Pissarides search model of unemployment, and models of dynamic optimal taxation. The focus will be on theory, but students should be able to understand and interpret empirical work as well.

There is an important unifying methodological theme running throughout the course; namely, the use of recursive methods (eg, dynamic programming) to formulate and analyze complex dynamic stochastic general equilibrium models. One of the goals of the course will be to learn how to think in terms of state variables and Bellman equations. Another goal will be to learn how to solve Bellman equations, both analytically and numerically.

There are five major omissions from the course: (1) Business cycle theory is not covered. Presumably, that was covered in Econ 807, (2) Monetary theory is not covered. Money is either exogenous or abstracted from entirely. (3) Open-economy macro issues are given only slight attention, (4) Recent developments in New Keynesian macro are not discussed, and (5) Models with incomplete markets and heterogeneous agents are not covered explicitly, although we touch on these issues throughout the course. Hopefully, some of these topics will be covered in 809.

COURSE STRUCTURE

The first few weeks of the course will be devoted to learning some of the tools of modern macroeconomics. These include: Markov chains, stochastic difference equations and lag operators, Fourier transforms and spectral densities, and Bellman equations. Students will be asked to write simple MATLAB and DYNARE programs that implement the ideas discussed in class. The remainder of the course will put these tools to use in a variety of economic settings.

COURSE EVALUATION

		Weight in Grade
Problem Sets	–	30%
Midterm exam **(Wednesday, October 30)**	–	30%
Final exam **(date to be arranged)**	–	40%

The only way to learn macro is to do macro. Therefore, a key part of the course is a sequence of (approximately) bi-weekly problem sets. Students are encouraged to work in groups, but everyone must turn in their own copy. The problem sets are available as PDF files on the class webpage (at www.sfu.ca/$\tilde{}$kkasa/).

COURSE MATERIALS

There is one required book for this course: *Recursive Macroeconomic Theory*, by Lars Ljungqvist and Thomas Sargent (3rd Edition, 2012) published by MIT Press. There are also a number of journal articles, working papers, and supplementary notes that are available for download on the course webpage. Students desiring a more comprehensive and rigorous treatment of recursive methods should consult Stokey and Lucas' treatise *Recursive Methods in Economic Dynamics*, published in 1989, but still in print. Throughout the course, I will assume students have a background at roughly the level of David Romer's text *Advanced Macroeconomics*. Hence, students who do not already have a copy may want to acquire one. Both the Ljungqvist/Sargent book and the Romer text are on reserve at the library.

COURSE OUTLINE AND READINGS

Readings marked with a (*) are downloadable from the course webpage.

I. RECURSIVE METHODS (5 lectures)

Sept. 11 – **Introduction and Overview**
Ljungqvist & Sargent, Chpt. 1
* Minneapolis Fed (2010), "Tom Sargent Interview"
* Lucas (1976), "Econometric Policy Evaluation: A Critique"
* Sargent (1984), "Autoregressions, Expectations, and Advice"
* Prescott (2006), "The Transformation of Macroeconomic Policy and Research"
* Sargent (2008), "Evolution and Intelligent Design"
* Nobel website (2011), "Empirical Macroeconomics" (a summary of Sargent and Sims)

Sept. 13 – **Time Series: Markov Chains and Stochastic Difference Equations**
Ljungqvist & Sargent, Chpt. 2 (pgs. 29-70)

Sept. 18 – **Dynamic Optimization: Euler Equations and Bellman Equations**
Ljungqvist & Sargent, Chpt. 3 and Appendix A
* Stokey (2003), "Introduction to Optimal Control"

Sept. 20 – **Practical Dynamic Programming**
Ljungqvist & Sargent, Chpt. 4 (pgs. 113-122)
* Hall (2010), "Basic Analysis of Forward-Looking Decision-Making"

Sept. 25 – **Linear-Quadratic Dynamic Programming**
Ljungqvist & Sargent, Chpt. 5 and Appendix B
* Uhlig (1999), "A Toolkit for Analyzing Nonlinear Dynamic Stochastic Models Easily"
* Sargent et al. (2010), "Practicing Dynare"

II. SEARCH AND MATCHING (5 lectures)

Sept. 27 – **McCall's Job Search Model**
Ljungqvist & Sargent, Chpt. 6 (pgs. 159-189)

Oct. 2 – **The Mortensen-Pissarides Matching Model**
Ljungqvist & Sargent, Chpt. 28 (pgs. 1135-47)
Mortensen (2011), "Markets with Search Frictions and the DMP Model"
Problem Set 1 due

Oct. 4 – **Empirical Evaluation of the Mortensen-Pissarides Model**
* Rogerson & Shimer (2010), "Search in Macroeconomic Models of the Labor Market"
* Shimer (2005), "The Cyclical Behavior of Equilibrium Unemployment and Vacancies"
* Hornstein, Krusell & Violante (2005), "Unemployment and Vacancy Fluctations in . . . "

Oct. 9 – **Competitive Search Equilibria**
Ljungqvist & Sargent, Chpt. 28 (pgs. 1130-34, 1148-49)
* Moen (1997), "Competitive Search Equilibrium"
* Rogerson, Shimer & Wright (2005), "Search-Theoretic Models of the Labor Market"

Oct. 11 – **Comparing Alternative Theories of Unemployment**
* Ljungqvist & Sargent (2003), "European Unemployment: From a Worker's Perspective"
* Ljungqvist & Sargent (2005), "Jobs and Unemployment in Macroeconomic Theory"
* Ljungqvist & Sargent (2008), "Two Questions About European Employment"

III. COMPLETE MARKETS GENERAL EQUILIBRIUM (2 lectures)

Oct. 16 – **The Arrow-Debreu Model**
Ljungqvist & Sargent, Chpt. 8 (pgs. 251-268)
Problem Set 2 due

Oct. 18 – **Recursive Implementation of Arrow-Debreu Equilibria: Arrow Securities**
Ljungqvist & Sargent, Chpt. 8 (pgs. 268-288)

IV. GROWTH THEORY (4 lectures)

Oct. 23 – **The Cass-Koopmans Model**
Ljungqvist & Sargent, Chpt. 15 (pgs. 583-588)
Romer, Chpt. 2 (pgs. 56-76)
* Lucas (2003), "Macroeconomic Priorities"

Oct. 25 – **The Diamond Model**
Romer, Chpt. 2 (pgs. 76-92)

Oct. 30 **Midterm Exam**

Nov. 1 – **Endogenous Growth I**
Ljungqvist & Sargent, Chpt. 15 (pgs. 589-606)
Romer, Chpt. 3 (pgs. 100-125)
* Romer (1994), "The Origins of Endogenous Growth"
* Lucas (1988), "On the Mechanics of Economic Development"
* Lucas (1990), "Why Doesn't Capital Flow from Rich to Poor Countries?"

Nov. 6 – **Endogenous Growth II**
Romer, Chpt. 3 (pgs. 144-165)
* Prescott (1998), "Needed: A Theory of Total Factor Productivity"
* Parente & Prescott (1999), "Monopoly Rights: A Barrier to Riches"
Problem Set 3 due

V. ASSET PRICING (2 lectures)

Nov. 8 – **Euler Equations and Martingale Measures**
Ljungqvist & Sargent, Chpt. 13 (pgs. 481-502)
* Lucas (1978), "Asset Prices in an Exchange Economy"

Nov. 13 **Hansen-Jagannathan Bounds and the Equity Premium Puzzle**
Ljungqvist & Sargent, Chpt. 14 (pgs. 515-555)
* Kocherlakota (1996), "The Equity Premium: It's Still a Puzzle"
* Constantinides & Duffie (1996), "Asset Pricing with Heterogeneous Consumers"
* Backus, Routledge & Zin (2004), "Exotic Preferences for Macroeconomists"

VI. DYNAMIC OPTIMAL TAXATION (4 lectures)

Nov. 15 – **Ricardian Equivalence**
Ljungqvist & Sargent, Chpt. 10

Nov. 20 – **Fiscal Policies in the Growth Model**
Ljungqvist & Sargent, Chpt. 11
Problem Set 4 due

Nov. 22 – **Ramsey Taxation in DSGE Models**
Ljungqvist & Sargent, Chpt. 16 (pgs. 613-625)
* Atkeson, Chari & Kehoe (1999), "Taxing Capital Income: A Bad Idea"
* Conesa et. al. (2009), "Taxing Capital? Not a Bad Idea After All!"

Nov. 27 – **The Mirrlees Approach to Dynamic Optimal Taxation**
* Kocherlakota (2006), "Advances in Dynamic Optimal Taxation"
* Golosov, Tsyvinski, & Werning (2006), "New Dynamic Public Finance: A User's Guide"

Nov. 29 – **Review/Buffer**

Dec. 2-6 – **FINAL EXAM (exact date not yet decided)**
Problem Set 5 due