

Department of Economics  
Rutgers University  
Fall 2016

Roberto Chang  
426 NJ Hall  
(848) 932 7269  
Office Hours: Tue 11:15-  
12:15 or By Appointment

## ECONOMICS 504 MACROECONOMIC THEORY

### Learning Goals and Assessment

This course is the first part of an integrated two semester sequence in macroeconomics. The sequence aims at introducing you to a broad range of issues in macroeconomics at an advanced level, and at building the necessary tools for doing research.

In this course you will become acquainted with the dynamic models that dominate research in the field. We will emphasize methods and basic approaches to modeling growth and business cycle phenomena. Through problem solving and computer projects, you will acquire hands on experience and the ability to start formulating and solving models of your own. We will also, if time allows, discuss some applied issues, including fiscal and monetary policy.

The grade for the course will be determined by a midterm exam (30%), a computer project (25%), and a final exam (45%).

### References, Prerequisites, Activities

The following are excellent references:

1. D. Romer, *Advanced Macroeconomics*, 4th edition, Mc Graw Hill, 2012 (henceforth R). More accessible than the others, great as first reading for many topics.
2. D. Acemoglu. *Introduction to Modern Economic Growth*. Princeton University Press. 2009 (A). A recent and comprehensive introduction to the literature on economic growth.
3. D. DeJong and C. Dave, *Structural Macroeconometrics*, Princeton University Press, Second Edition, 2011 (DD). A useful exposition of current empirical approaches to dynamic macro models.
4. J. Gali, *Monetary Policy, Inflation and the Business Cycle*, Princeton University Press, Second Edition, 2015 (G). A masterful summary of the dominant monetary policy paradigm.

We will assign parts of the above books and some journal articles. The reading list below is preliminary and may change during the semester, depending on how we make progress. An asterisk (\*) indicates strongly recommended material.

We will cover some analytical tools as they are needed. However, and as announced earlier, we assume some working knowledge of calculus, constrained optimization, statistics, and of difference and differential equations. Also, working knowledge of a computer programming language such as GAUSS or MATLAB will be necessary.

To complement our class discussions, there will be recitations devoted to solving problems or reviewing complementary material. The recitations will be conducted by the TAs for this course.

### **Outline and Reading List**

#### **1. Introduction to Neoclassical Growth. The Solow Model. Exogenous and Endogenous Growth. Empirical Implications. Extensions.**

\* R., ch. 1

\* A, chapters 1-4

Solow, R., 1956, "A Contribution to the Theory of Economic Growth," *Quarterly Journal of Economics* 70, 65-94

#### **2. The Optimal Growth Model. Dynamic Optimization Under Certainty.**

\* R, ch. 2A, 3, 4

\* A, ch. 5-8

Lucas, R. 1988. "On the Mechanics of Economic Development." *Journal of Monetary Economics*, 22, 3-42

#### **3. Stochastic Models of Business Cycles.**

\* R, ch. 5

\* DD, chs. 1-3.

\* A, chs. 16, 17

LS, chs. 2-5, 7

Uhlig, H. "A toolkit for analyzing nonlinear dynamic stochastic models easily," in *Computational Methods for the Study of Dynamic Economies*, R. Marimon and A. Scott eds., Oxford, 1999.

\* Campbell, J, 1994. "Inspecting the mechanism: an analytical approach to the stochastic growth model." *Journal of Monetary Economics* 33, 463-506

\* Cooley, T. and E. Prescott, 1995. "Economic Growth and Business Cycles." In *Frontiers of Business Cycle Research*, T. Cooley editor, Princeton University Press.

Gali, J., 1999. "Technology, Employment and business cycles: Do technology shocks explain aggregate fluctuations?" *American Economic Review* 89, 249-71

King, R., C. Plosser, and S. Rebelo, 1988, "Production, Growth and Business Cycles: I. The Basic Neoclassical Model," *Journal of Monetary Economics* 21, 195-232.

Gali, J. and P. Rabanal. 2005. "Technology Shocks and Aggregate Fluctuations: How Well Does the RBC Model Fit Postwar U.S. Data?" In *NBER Macroeconomics Annual 2004*, M. Gertler and K. Rogoff editors, MIT Press.

Justiniano, A., G. Primiceri and A. Tambalotti, 2010, "Investment Shocks and Business Cycles", *Journal of Monetary Economics* 57, 132-145

#### **4. Assorted Tools for Numerical Simulation and Estimation**

\* DD, chs. 4, 6-8, 11-12

\* Adjemian, S., H. Bastani, M. Juillard, F. Mihoubi, G. Perendia, M. Ratto, and S. Villemot (2014). "DYNARE Reference Manual, Version 4".

Christiano, L. and M. Eichenbaum, 1992, "Current Real-Business-Cycle Theories and Aggregate Labor-Market Fluctuations," *American Economic Review* 82, 430-450.

Mancini, T. 2007. "DYNARE User Guide."

V. Martin, S. Hurn, and D. Harris, *Econometric Modelling with Time Series*, Cambridge University Press, 2014

#### **5. Nominal Rigidities and Monetary Policy. The New Keynesian Model.**

\* R, ch. 6, 7

\* G, ch. 2-5

#### **6. Heterogeneity and Incomplete Markets: Bewley Models and Overlapping Generations. Implications for Inequality and Policy.**

\* R, ch. 2B, 12.1-12.4

\* L. Ljungqvist and T. Sargent, *Recursive Macroeconomic Theory*, Third Edition, MIT Press, 2012, chapters 8, 9, 10, 11

A, ch. 9

Sargent, T., and N. Wallace, 1981, "Some Unpleasant Monetarist Arithmetic," Federal Reserve Bank of Minneapolis *Quarterly Review* 5, 3, 1-17.