

Macroeconomics I

University of Alicante
Master in Economics, 1st year
Fall 2011
Instructor: Lilia Maliar
Credits: 6 ECTS

I.-OBJECTIVES

This course is aimed at acquainting students with growth theory. First, we make a brief overview of topics on differential equations and dynamic optimization in continuous time. We then present the major theoretical growth models and discuss their empirical relevance. We finally discuss several stylized models of economic growth.

II.-LIST OF TOPICS

0 Introduction to the course.

1 Dynamic mathematical tools in continuous time.

- (a) Barro, R. and X. Sala-i-Martin, (2004). Economic Growth. McGraw Hill. Appendix.
- (b) de la Fuente, A., (2008). Mathematical methods and models for economists. Cambridge University Press.
- (c) Sydsæter, K., P. Hammond, A. Sierstad and A. Strøm, (2008). Further Mathematics For Economic Analysis. Prentice Hall.

2 Dynamic models of investment.

- (a) Bagliano, F.-C. and G. Bertola, (2004). Models for Dynamic Macroeconomics. Oxford University Press. Chapter 2.
- (b) Barro, R. and X. Sala-i-Martin, (2004). Economic Growth. McGraw Hill. Chapter 3.2.
- (c) Romer, D., (2006). Advanced Macroeconomics. McGraw Hill. Chapter 8.

3 Introduction to growth.

- (a) Barro, R. and X. Sala-i-Martin, (2004). Economic Growth. McGraw Hill. Introduction.
- (b) Weil, D., (2005). Economic Growth. Pearson. Addison Wesley. Chapter 1.

4 The Solow-Swan model.

- (a) Barro R., N. Mankiw, and X. Sala-i-Martin, (1995). Capital mobility in neoclassical models of economic growth. American Economic Review 85 (1), 103-115.
- (b) Barro, R. and X. Sala-i-Martin, (2004). Economic Growth. McGraw Hill. Chapters 1, 10-12.
- (c) Mankiw, N., D. Romer and D. Weil, (1992). A contribution to the empirics of economic growth, Quarterly Journal of Economics 107, 1072-1085.
- (d) Romer, D., (2006). Advanced Macroeconomics. McGraw Hill. Chapter 1.
- (e) Sala-i-Martin, X., (1997). I just ran two million regressions. American Economic Review 87 (2), 178-183.
- (f) Solow, R., (1956). A contribution to the theory of economic growth", Quarterly Journal of Economics 70:, 65-94.

- (g) Swan, T. W., (1956). Economic growth and capital accumulation. *Economic Record* 32, 334-361.

5 The Ramsey model.

- (a) Barro, R. and X. Sala-i-Martin, (2004). *Economic Growth*. McGraw Hill. Chapter 2.
- (b) Cass, D., (1965). Optimum growth in an aggregative model of capital accumulation. *Review of Economic Studies* 32, 233-240.
- (c) Koopmans, T. C., (1965). On the concept of optimal growth. In *The Econometric Approach to Development Planning*, North Holland.
- (d) Ramsey, F., (1928). A mathematical theory of saving. *Economic Journal* 38, 543-559.
- (e) Romer, D., (2006). *Advanced Macroeconomics*. McGraw Hill. Chapter 2.

6 Government and growth: spending, taxes and transfers.

- (a) Barro, R. and X. Sala-i-Martin, (2004). *Economic Growth*. McGraw Hill. Chapter 3.
- (b) Romer, D., (2006). *Advanced Macroeconomics*. McGraw Hill. Chapter 2.

7 One-sector models of endogenous growth: AK, Human Capital, Learning-by-doing.

- (a) Barro, R. and X. Sala-i-Martin, (2004). *Economic Growth*. McGraw Hill. Chapter 4.
- (b) Romer, P., (1986). Increasing returns and long run growth. *Journal of Political Economy*, 1003-1037.

- (c) Rebelo, S. (1991), Long-run policy analysis and long-run growth. *Journal of Political Economy*, 99 (3), 500-521.
- (d) Romer, D., (2006). *Advanced Macroeconomics*. McGraw Hill. Chapter 3.
- (e) Turnovsky, S., (2000). *Methods of Macroeconomic Dynamics*. MIT Press. Chapter 13.

8 Two-sector models of endogenous growth with special attention to the role of human capital.

- (a) Barro, R. and X. Sala-i-Martin, (2004). *Economic Growth*. McGraw Hill. Chapter 5.
- (b) Turnovsky, S., (2000). *Methods of Macroeconomic Dynamics*. MIT Press. Chapter 14.
- (c) Uzawa, H., (1965). "Optimal technical change in an aggregative model of economic growth." *International Economic Review* 6, 18-31.

9 Models with an expanding variety of products and with improvements in the quality of products.

- (a) Aghion, P. and P. Howitt, (1992). A model of growth through creative destruction. *Econometrica*, LX 323-51.
- (b) Aghion, P. and P. Howitt, (1998). *Endogenous Growth Theory*. Cambridge, MA: MIT Press.
- (c) Barro, R. and X. Sala-i-Martin, (2004). *Economic Growth*. McGraw Hill. Chapters 6 and 7.
- (d) Romer, P., (1990). Endogenous technological change. *Journal of Political Economy*, 98 Part II: S71-S102.

10 Continuous-time stochastic optimization.

- (a) Turnovsky, S., (2000). Methods of Macroeconomic Dynamics. MIT Press. Chapter 15.

III.-METHODOLOGY

Lectures. The material of the course will be delivered on lectures. Students will also receive handouts, notes and reading materials.

Problem sets. Students will be given problem sets and will have to hand them in on established dates. The problem sets will be graded, and the solutions to the problem sets will be discussed in class.

IV.-ASSESSMENT

The course grade will consist of

- the problem-set grade (20%)
- the midterm exam (30%)
- and the final exam (50%).

V.-CONTACT INFORMATION

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