

THE UNIVERSITY OF THE BASQUE COUNTRY  
*Master in Economics EAP*  
Macroeconomics  
Fall 2016

**Instructor**

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**Course description:** In this course students acquire the theoretical skills and computational tools needed to understand the behavior of aggregate economic variables. Taking into account that this may be the first approximation of the students to economics, emphasis is placed on a rigorous understanding of basic concepts. The course covers basic macro models common to introductory macroeconomics in most graduate programs. The course includes an introduction to Matlab programming, an essential analytical tool for economic research that will also be needed in the Monetary Markets course.

**Grading:** The grade will be based on homework assignments and a final exam:

- Homework assignments: there will be assignments that students will have to hand in to get a passing grade. These assignments will worth 25% of the final grade. Students are required to work in teams. The number of students per team will depend on the class size, and the team composition will differ for each assignment. Only one assignment answer per team will be handed in, but bear in mind that the instructor might ask you to carefully explain the answer that your team hands in. Assignments ARE required within specific due dates.
- Final exam: the final examination will count for the remainder of the grade (*i.e.* 75%). The final exam is scheduled on Monday, December 12. *A minimum of 3.5/10 will be required*

**CONTENTS:**

1. Matlab programming

- (a) Basic Operations
- (b) Programming
- (c) Non-linear equations

- (d) Plots
- (e) Calibration

**References:**

Echevarria (2016), “*Matlab: A Short Introduction*”.

**2. Overlapping generations model**

- (a) Introduction.
- (b) The overlapping generations model.
- (c) An application. Social security: fully funded system vs. pay-as-you-go.

**References:**

Blanchard and Fischer (1989), *Lectures on Macroeconomics*, The MIT Press

De la Croix and Michel (2002), *A Theory of Economic Growth*, Cambridge U. Press.

Diamond, P. (1965), “National Debt in a Neoclassical Growth Model”, *American Economic Review*, 55, no. 5, pp. 1126-1150.

**3. Growth**

- (a) Part I: Introduction and motivation
- (b) Part II: Neoclassical growth. Solow-Swan
- (c) Part III: Neoclassical growth. Ramsey-Cass-Koopmans

**References:**

Barro, R. J. and X. Sala-i-Martin (2004), “Economic growth”, Cambridge, Massachusetts: MIT Press.

Krueger (2007b): “Macroeconomic Theory”, mimeo.

Novales, A. *et al.* (2009), *Economic Growth. Theory and Numerical Solutions*. Springer

Romer, D. (2006), *Advanced Macroeconomics*, 3rd edition. McGraw-Hill Irwin.

Sims (2011), “Notes on Log-Linearization”, mimeo, University of Notre Dame

Sala-i-Martin, X. (1990a), “Lecture Notes on Economic Growth (I): Introduction to the Literature and Neoclassical Models”, *NBER working paper series*, w3563.

Sala-i-Martin, X. (1990b), “Lecture Notes on Economic Growth (II): Five Prototype Models of Endogenous Growth”, *NBER working paper series*, w3564.

Sala-i-Martin, X. (1997), “I Just Ran Two Million Regressions”, *The American Economic Review*, 87(2), May.

Weil, D. (2008), “Economic growth” Second Edition Pearson Education, Addison-Wesley.

Sorensen and Whitta-Jacobsen (2010), *Introducing Advanced Macroeconomics: Growth and Business Cycles*. McGraw-Hill

#### 4. Real Business Cycles

- (a) Why understanding business cycles is important?
- (b) Defining business cycles?
- (c) Dating business cycles?
- (d) Stylized Business cycles facts: What happens during business cycles?
- (e) Theories of fluctuations: How to explain business cycles?
- (f) The Basic Real Business Cycle (RBC) model: McCallum (1988)
- (g) Measuring business cycles

#### References:

- Cooley, T. and E. Prescott (1996): “Economic Growth and Business Cycles”, in *Frontiers of Business Cycle Research*, Ch. 1, Ed. by T. Cooley and E. Prescott. Princeton University Press: Princeton. New Jersey.
- Hodrick, R. and E. P. Prescott (1977), “Post-war Business Cycles: An Empirical Investigation,” *Journal of Money, Credit, and Banking*, 29, pp. 1–16
- King R. and S. Rebelo (1999) “Resuscitating Real Business Cycles,” in *Handbook of Macroeconomics*, Vol. 1B, Ed. by J. B. Taylor
- Krueger (2007c), Ch. 2 and 10 “Quantitative Macroeconomics: An Introduction”, mimeo.
- MacCallum (1988) “Real Business Cycle Models,” in R. Barro, ed., *Modern Business Cycle Theory* (Cambridge, Mass.: Harvard University Press, 1989)
- Romer, D. (2006), *Advanced Macroeconomics*, 3rd edition. McGraw-Hill Irwin.
- Sorensen and Whitta-Jacobsen (2010), *Introducing Advanced Macroeconomics: Growth and Business Cycles*. McGraw-Hill