Macroeconomics 1 Syllabus

INSPER
PhD in Business Economics

Course Overview	
Course:	Macroeconomics 1
Professor:	Tomás R. Martinez
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Course website:	https://tomasrm.github.io/teaching/macro1grad/
Lectures:	Tuesday and Wednesday at 10h00-11h30
TA	Frederico Gomes (fredericompg@al.insper.edu.br)

1 Objective and Course Description

This is the first of the two-course core sequence in macroeconomics. Its focus is on the basic models and methods to provide the foundation for the following courses. It covers dynamic programming, the neoclassical growth model, fiscal policy and Ricardian equivalence, real business cycles, the overlapping generations model, and labor market frictions.

2 Grading

1. Problem sets (30%)

2. Midterm exam (20%)

3. Final exam (50%)

3 Textbooks

My lecture notes are a convex combination of the following books and notes.

- Azzimonti, M., P. Krusell, A. McKay, and T. Mukoyama (and many others). 2024. *The PhD Macro Book*. [PhDMacro]

- Acemoglu, Daron. 2009. *Introduction to Modern Economic Growth.* Princeton University Press; Princeton, New Jersey. [A]

- Krueger, Dirk. 2022. *Macroeconomic Theory.* Lecture notes. [DK]

- Ljungqvist, Lars and Thomas J. Sargent. 2004. *Recursive Macroeconomic Theory.* MIT Press.; 2nd Revised edition. [LS]

- Stokey, Nancy L., Robert E. Lucas, with Edward C. Prescott. 1989. *Recursive methods in economic dynamics.* Cambridge, Mass: Harvard University Press. [SLP]

- McCandless, George. *The ABCs of RBCs.* Harvard Press. [GM]

- Pissarides, Christopher. (2000), Equilibrium Unemployment Theory. Second Edition. [CP]

4   Course Content

1. **Solow Model.**

   (a) The Kaldor Facts.

   (b) The Aggregate Production function

   (c) The Solow Model.

   Main References: PhDMacro: Ch. 2, 3. A: Ch. 1, 2.

2. **Foundations of Dynamic General Equilibrium Models: Equilibrium, Welfare, & Uncertainty.**

   (a) Dynamic Optimization in Exchange Economies.

   (b) The Competitive Equilibrium: Arrow-Debreu vs Sequential Markets.

   (c) The Welfare Theorems and The Social Planner Problem.

   (d) Uncertainty in General Equilibrium.

   Main References: DK: Ch. 2, 6. PhDMacro: Ch. 5, 6, 7. A: Ch. 5; LS: Ch. 8

3. **Neoclassical Growth Model.**

   (a) The Representative Agent. The Transversality Condition

   (b) Optimal Control Theory and the Neoclassical Growth Model in Continuous Time

   (c) Steady State, Transition Dynamics and Balanced Growth Path.

   Main References: PhDMacro: Ch 4; A: Ch. 7, 8; DK: Ch. 3, 9.

4. **Dynamic Programming.**

   (a) Banach Fixed-point Theorem, Theorem of Maximum.

   (b) Deterministic Dynamic Programming.

   (c) Markov Chains.

   (d) Stochastic Dynamic Programming.

   (e) Continuous Time Dynamic Programming (not covered).

   Main References: DK: 3-5. SLP: Ch. 3-5, 8-10; A: Ch. 6, 16; LS: Ch. 3, 4, 12. PhDMacro: Ch 4.

5. **Overlapping Generations Model.**

   (a) Competitive Equilibrium and Dynamic Inefficiency.

   (b) Social Security.

   Main References: A: Ch. 8; PhDMacro: Ch 5, 6. DK: Ch. 8;

6. **Fiscal Policy.**

   (a) The Government Budget Constraint.

   (b) Ricardian Equivalence.

   (c) Distortionary Taxation.

(d) Fiscal Policy in the OLG Model.

Main References: LS: Ch. 10, 11; PhDMacro: Ch 11. DK: Ch. 8.

7. **Real Business Cycles.**

(a) Labor-leisure Trade-off.

(b) Log-linearization.

(c) Extensions.

Main References: King and Rebelo (1999); GM: Ch. 6; Cooley and Prescott (1995);

8. **Search and Matching**

(a) Matching Function.

(b) Nash Bargaining.

(c) Shimer Puzzle.

(d) Hosios Condition.

Main References: PhDMacro: Ch 11; Rogerson et al. (2005); LS: Ch. 18; CP: Ch. 1 & 2;

References

Cooley, T. and E. Prescott (1995). Economic Growth and Business Cyles. In *Frontiers of Business Cycle Research*, pp. 1–38.

King, R. G. and S. T. Rebelo (1999). Resuscitating real business cycles. In *Handbook of Macroeconomics*, Volume 1, Part B, pp. 927–1007. Elsevier.

Rogerson, R., R. Shimer, and R. Wright (2005). Search-theoretic models of the labor market: A survey. *Journal of Economic Literature 43*(4), 959–988.