MACROECONOMICS

Department of Economics, National Chi Nan University
Syllabus (Fall 2020)

Instructor: Yo-Long Lin
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Time and Location: Tuesday 9:10apm–12pm in College of Management Building 210R
Office Hours: Tuesday 12–2pm or by appointment
Class code: 115000

Course Objective: The objective of this course is to acquaint you with some fundamental topics in dynamics macroeconomics. In this class you will learn basic mathematical techniques that can be applied to your own original research. A primary emphasis will be on theoretical underpinnings.

Prerequisite: Students are expected to be have a good foundation in mathematics at a beginning master's level. For instance, the ability to solve basic problems of linear algebra and differential equation is required. If students have simply forgotten them, the class "Mathematical Economics" or "Mathematics for Economics" is helpful.

Textbooks: The format of the class will be primarily lectures. I won't follow a particular book, but the textbooks below are useful to you.

- Chiang, A.C., 1992, *Elements of Dynamic Optimization*, McGraw-Hill.

- Walsh, C.E., 2017, *Monetary Theory and Policy*, The MIT Press.

- Chen, B.-L., 2012, *Economics Growth*, Hwa Tai Publishing.

Grading: There will be several problem sets (15%), one midterm (40%, scheduled on Tuesday, November 10, 2020), and a final exam (45%, scheduled on Tuesday, January 12, 2021).

Course Outlines:

0. Review: Economic Fluctuations

    (a) Traditional Macro Models
    (b) Policy Effectiveness: Classical versus Keynesian

1. Basic Monetary Model

    (a) Money-in-the-utility Function
        i. Dynamics in a MIU Model
        ii. Nonsuperneutrality
    (b) Credit and Currency
        i. The Pareto Problem
        ii. The Friedman Rule

    (c) Monetary Theories of Inflation

        i. Zero Inflation Policy

        ii. Exchange Rate Indeterminacy

2. Dynamic Optimization in Continuous Time

    (a) Optimal Control Theory Introduction

    (b) Stability in the Keynesian Model

    (c) Neoclassical Investment Model

        i. User Cost of Capital

        ii. Dynamics of Tobin's q

    (d) Consumption Model

    (e) Neoclassical Growth Model

        i. The Solow-Swan Model

        ii. The Ramsey-Cass-Koopmans Model

        iii. AK Model

        iv. Lucas (1988) Model

3. The New Keynesian Model

    (a) The Monopolistically Competitive Market Model

    (b) An Expectations-augmented Phillips Curve

    (c) Commitment versus Discretionary Policy

Reading List:

1. Blanchard, O.J. and J. Galì, 2007, Real wage rigidities and the new Keynesian model, *Journal of Money, Credit and Banking*, 39:1, 35-65.

2. Calvo, G.A., 1983, Staggered prices in a utility-maximizing framework, *Journal of Monetary Economics*, 12, 383-398.

3. Chang, W.W. and D.J. Smyth, 1972, Stability and instability of IS-LM equilibrium, *Oxford Economic Papers*, 24:3, 372-384.

4. Clarida, R., J. Galì and M. Gertler, 1999, The science of monetary policy: A new Keynesian perspective, *Journal of Economic Literature*, 1661-1709.

5. Cochrane, J.H., 1994, Shocks, *Carnegie-Rochester Conference Series on Public Policy*, 41, 295-364.

6. Cogley, T. and A.M. Sbordone, 2008, Trend inflation, indexation, and inflation persistence in the new Keynesian Phillips curve, *American Economic Review*, 98:5, 2101-2126.

7. Dorfman, R., 1969, An economic interpretation of optimal control theory, *American Economic Review*, 59:9, 817-831.

8. Lucas, R.E., 1988, On the mechanics of economic development, *Journal of Monetary Economics*, 22, 3-42.

9. Mankiw, N.G., 2006, The macroeconomist as scientist and engineer, *Journal of Economic Perspectives*, 20:4, 29-46.

10. Nordhaus, W.D., 1975, The political business cycle, *Review of Economic Studies*, 42:2, 169-190.

11. Quah, D.T., 1996, Empirics for economic growth and convergence, *European Economic Review*, 4:3, 1353-1375.

12. Ramsey, F.P., 1928, A mathematical theory of saving, *Economic Journal*, 38:152, 543-559.

13. Solow, R.M., 1956, A contribution to the theory of economic growth, *Quarterly Journal of Economics*, 70:1, 65-94.

14. Tobin, J., and W. Brainard, 1977, Asset markets and the cost of capital, in B. Balassa and R. Nelson (eds.), *Economic Progress, Private Values, and Public Policy: Essays in Honor of William Fellner*. New York: North Holland, 235-262.