

THE UNIVERSITY OF HONG KONG
HKU Business School

ECON6012 Macroeconomics Theory

GENERAL INFORMATION

Instructor: Prof. Yulei Luo, and Dr. Lei Zhang

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Class: **Part I:** Aug 30, Sept 6, 13, 20, 27, Oct 11, 18, 25, Nov 1, 8, 15, 22, 2022

Tuesday, 2:00pm – 5:00pm

Pre-requisites: NA

Co-requisites: NA

Mutually exclusive: NA

Course Website: HKU Moodle

Teaching Assistant: Yibo SUN

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COURSE DESCRIPTION

This is the first course in macroeconomics for PhD students in economics and finance of HKU. It is largely based on dynamic optimization and general equilibrium theory. Students are expected to learn the key tools (e.g., optimal control and dynamic programming) and canonical models of modern dynamic macroeconomics, and use them to study economic growth, business cycles, consumption, savings, investment, asset pricing, and government policies.

COURSE OBJECTIVES

1. We will try to bring you as close as possible to frontier research in macroeconomics and finance, around two different topics: macro-finance models of financial frictions, and models of heterogeneous agents/firms in macroeconomics.
2. Students are expected to learn and use tools that we cover in the class to a wide range of research topics. We will review some of stochastic differential equations, and recursive methods.

FACULTY GOALS

PLO1. Understanding of fundamental theories and new development in economics

PLO2. Mastering of skills in analyzing economic data

PLO3. Demonstration of ability to apply economic knowledge and analytical skills to address policy and business problems

PLO4. Awareness of ethical concerns in economic issues

PLO5. Mastering of communication skills

| COURSE LEARNING OUTCOMES | | | |
|--|---|------------------------------|---|
| Course Learning Outcomes | | Aligned Faculty Goals | |
| CLO1 Understand the techniques (e.g., dynamic programming, optimal control, time series analysis, log-linearization) used to solve the canonical macroeconomic models. | | PLO 1-3 | |
| CLO2 Learn and apply different tools in macroeconomics to various problems | | PLO 3-5 | |
| CLO3 Read and replicate important literature | | PLO 4-5 | |
| COURSE TEACHING AND LEARNING ACTIVITIES | | | |
| Course Teaching and Learning Activities | | Expected contact hour | Study Load (% of study) |
| T&L1. Lectures | | 36 hours | 30% |
| T&L2. Assignments | | 48 hours | 40% |
| T&L3. Self-study | | 36 hours | 30% |
| Total | | 144 hours | 100% |
| Assessment Methods | Brief Description (Optional) | Weight | Aligned Course Learning Outcomes |
| A1. Problem Sets | | 10% | CLO 1, 2 |
| A1. Midterm | | 35% | CLO 1, 2, 3 |
| A2. Final Exam | | 55% | CLO 1, 2, 3 |
| Total | | 100% | |
| STANDARDS FOR ASSESSMENT | | | |
| Course Grade Descriptors | | | |
| A+, A, A- | Candidate has consistently demonstrated a thorough grasp of the subject as evidenced by original or exceptionally astute analysis and synthesis, critical interpretation and presentation of principles, concepts and arguments presented within this course. | | |
| B+, B, B- | Candidate frequently demonstrated a substantial grasp of the subject as evidenced by an astute analysis and synthesis, critical interpretation and presentation of principles, concepts and arguments presented within this course | | |
| C+, C, C- | Candidate has occasionally demonstrated a general grasp of the subject as evidenced by some analysis and synthesis, critical interpretation and presentation of principles, concepts and arguments presented within this course. | | |
| D+, D | Candidate has demonstrated a partial grasp of the subject as evidenced by little analysis and synthesis, critical interpretation and presentation of principles, concepts and arguments presented within this course. | | |
| F | Candidate has demonstrated a poor grasp of the subject with evidence of largely inaccurate understandings of principles, concepts and arguments presented within this course. | | |
| Assessment Rubrics for Each Assessment (Same as in the Course Grade Descriptors) | | | |

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|------------|---|
| Midterm | Open books, open notes |
| Final Exam | Closed-book and closed notes, but students are allowed to bring one A-4 sheet with written stuff on both sides. |

COURSE CONTENT AND TENTATIVE TEACHING SCHEDULE

We shall try to cover as many of the following topics (not necessarily in the same order) as time permits.

- Intertemporal Optimization
- Optimal Economic Growth and Competitive Equilibrium
- Consumption and Saving: Theory and Evidence
- Stochastic Growth and Business Cycle Theory
- Heterogeneous Agents in Complete and Incomplete Markets
- Asset Pricing Models
- Heterogeneous Firms

REQUIRED/RECOMMENDED READINGS & ONLINE MATERIALS (e.g. journals, textbooks, website addresses etc.)

There is no required text. Lectures will be based on my own notes and some papers and book chapters (to be posted on Moodle). The following books are for general reference.

Part I (taught by Prof. Yulei Luo):

- Deaton, Angus (AD), "Understanding Consumption," Oxford University Press, 1992
- Ljungqvist, Lars, and Thomas J. Sargent (LS), "Recursive Macroeconomic Theory," MIT Press, 3rd edition, 2012.
- Krusell, Per (PK), "Real Macroeconomic Theory," 2014, available at: <https://www.sas.upenn.edu/~vr0j/oldteaching/704-18/newmanu.pdf>
- Klaus Wälde (KW), "Intertemporal Optimization", available at: <http://waelde.com/pdf/AIO.pdf>

Some other useful references that you might want to look at include:

- Acemoglu, Daron (DA), "Introduction to Economic Growth," Princeton University Press, 2008.
- Alogoskoufis, George (GA), "Dynamic Macroeconomics," The MIT Press, 2019.
- Blanchard, Olivier and Stanley Fischer (BF), "Lectures on Macroeconomics," 1989.
- Romer, David (DR), "Advanced Macroeconomics," McGraw-Hill Press, 4th edition, 2011.

Topic 1: Intertemporal Optimization (Optimal Control and Dynamic Programming)

1. LS, Chapters 1, 3*.
2. PK, Chapter 4*.
3. KW, Chapters 2-3.

Topic 2: Optimal Economic Growth and Competitive Equilibrium

LS, Chapters 15*.

PK, Chapter 5*, 9*.

- Lucas, Robert (1988), "On the Mechanics of Economic Development," *Journal of Monetary Economics* 22, 3-42.
- Rebelo, Sergio T. (1991), "Long-run Policy Analysis and Long-run Growth," *Journal of Political Economy*, 99: 500-521.
- Romer, Paul (1986), "Increasing Returns and Long-run Growth," *Journal of Political Economy*, 94: 1002-1037.
- Romer, Paul (1990), "Endogenous Technological Change," *Journal of Political Economy* 98: S71-S102.

Topic 3: Uncertainty, Rational Expectations, and Economic Dynamics

1. LS, Chapters 2*, 4, and 5.
2. PK, Chapter 6*.
3. KW, Chapters 7-9.
4. Blanchard, Olivier and Charles Kahn (1980), "The Solution of Linear Difference Models under Rational Expectations," *Econometrica*, 48-5, 1305-1313.
5. Collard, Fabrice*, "Expectations and Economic Dynamics," available at: <http://fabcol.free.fr/pdf/lectnotes1.pdf>
6. Hansen, Lars Peter and Thomas J. Sargent (1980), "Formulating and Estimating Dynamic Linear Rational Expectations Models," *Journal of Economic Dynamics and Control* 2(1), 7-46.
7. Muth, John (1961), "Rational Expectations and the Theory of Price Movements," *Econometrica*, 29, 315-335.
8. Sims, Christopher (2001), "Solving Linear Rational Expectations Models," *Computational Economics*, 20(1-2), 1-20.

Topic 4: Intertemporal Consumption

1. AD, Chapters 2, 3*, and 4.
2. PK, Chapter 8*.
3. Attanasio, O. P. (1999), "Consumption," *Handbook of Macroeconomics*, edited by J.B. Taylor and M. Woodford, North Holland, 813-862."
4. Burnside, Craig (2009), "Consumption and the Permanent Income Hypothesis," available at: <http://people.duke.edu/~acb8/consumption.pdf>
5. Caballero, Ricardo (1990)*, "Consumption Puzzles and Precautionary Savings," *Journal of Monetary Economics* 25(1), 113-136.

6. Carroll, Christopher D. (1997), "Buffer Stock Saving and the Life Cycle/Permanent Income Hypothesis," Quarterly Journal of Economics CXII(1):1-56.
7. Deaton (1991), "Saving and Liquidity Constraints," Econometrica 59, 1221-48.
8. Flavin, Marjorie A. (1981), "The Adjustment of Consumption to Changing Expectations About Future Income," Journal of Political Economy, 89(5): 974-1009.
9. Hall, Robert (1978)*, "Stochastic Implications of the Life Cycle-Permanent Income Hypothesis: Theory and Evidence," Journal of Political Economy 86(6), 971-987.
10. Wang, Neng (2003), "Caballero Meets Bewley: The Permanent-Income Hypothesis in General Equilibrium," American Economic Review 93(3), 927-936.

Part II (taught by Dr. Lei Zhang):

- Ljungqvist, Lars, and Thomas J. Sargent (LS), "Recursive Macroeconomic Theory," MIT Press, 3rd edition, 2012.
- Stokey, Nancy and Robert Lucas with Edward Prescott (SLP), "Recursive Methods in Economic Dynamics," 1989.

MEANS/PROCESSES FOR STUDENT FEEDBACK ON COURSE

- conducting mid-term survey in addition to SETL around the end of the semester
- Online response via Moodle site

COURSE POLICY (e.g. plagiarism, academic honesty, attendance, etc.)

- The use of mobile phones and any devices that may cause disturbance to anyone is strictly prohibited. Those found violating this rule would be invited to leave the lecture room immediately.
- Cheating in exams is a "crime" under University Regulations. Students found cheating would be subject to severe punishment.
- Plagiarism and copying of copyright materials are serious offences and may lead to disciplinary actions. You should read the chapters on "Plagiarism" and "Copyright" in the Undergraduate/Postgraduate Handbook for details. You are strongly advised to read the booklet entitled, What is Plagiarism?, distributed to you upon your admission into the University, a copy of which can be found at www.hku.hk/plagiarism. A booklet entitled, Plagiarism and How to Avoid it, is also available from the Main Library.

ADDITIONAL COURSE INFORMATION (e.g. e-learning platforms & materials, penalty for late assignments, etc.)