

ECON 5020 Macroeconomic Theory I

The Chinese University of Hong Kong

Fall 2024

Course Information

Instructor: Guangyu PEI (guangyu.pei@cuhk.edu.hk), ELB 904

Office Hours: By appointment

Lectures: Mon 2:30 p.m. - 5:15 p.m., Hui Yeung Shing Bldg 501, Sep 2 - Nov 25, 2024.

Course Description

This course covers state-of-art core materials in dynamic macroeconomics at the entry graduate level. In the first part of the course, mathematical tools necessary for solving dynamic systems are introduced, including dynamic programming - for discrete time problems - and optimal control theory - for continuous time system. In the second part of the course, work-horse macro models are covered including (but not limited to) neoclassical growth model, overlapping-generations model (OLG), and asset pricing under complete markets.

Learning Outcomes

After taking the course, graduate students (MPhil/PhD) should be familiar with tools, modeling techniques as well as economic intuitions in understanding and conducting modern macroeconomic research.

Grading

Grade will be determined by assignments (20%), MATLAB assignment (10%), midterm exam (30%) and final exam (40%).

Exam Schedule

Midterm exam	TBD
Final exam	TBD

No reschedule of the midterm exam will be given. Please be noted that if you cannot attend either the midterm or the final exam, you need to send an email to the instructor BEFORE the exam, and you are required to provide proofs for your absence. Only medical or family emergencies are accepted as reasons for absence from examination. If you miss the midterm exam, your performance will be evaluated based on assignments (20%), MATLAB assignment (10%), and final exam (70%). Please be noted that late-drop of the course is not permitted unless you can provide very strong justification.

Course Materials

(DA) Acemoglu Daron. *“Introduction to Modern Economic Growth”*, Princeton University Press, February 2009.

(LS) Ljungqvist Lars, and Thomas Sargent. *“Recursive Macroeconomic Theory”*, 2nd edition, MIT Press, 2004

Lecture notes.

Topics (Subject to Potential Changes)

1. General Equilibrium Foundations of Growth Theory (DA Ch. 5)
2. “Math Camp”: Dynamic Programming and Optimal Control (DA Ch. 6 & 7)
3. Neoclassical and Endogenous (AK) Growth Model (DA Ch. 8 & 11)
4. Overlapping Generations (OLG) Model (DA Ch. 9)
5. Stochastic Dynamic Programming and Stochastic Growth (DA Ch. 6 & 16 & 17)
6. Equilibrium with Complete Markets and Asset Pricing (LS Ch. 8 & 12 & 13)
7. (Option I) Incomplete Market Models (LS Ch. 16 & 17)
7. (Option II) Real business cycles (RBC)
 - Lecture notes
 - Key Reference: Robert G. King, Sergio T. Rebelo (1999): *“Resuscitating Real Business Cycles”*, In: John B. Taylor and Michael Woodford, Editor(s), *Handbook of Macroeconomics*, Chapter 14

Academic Honesty

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