Department of Economics
Hong Kong University of Science and Technology

Econ 5250 - Macroeconomic Theory I - Fall 2025

Syllabus

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Instructor:	Marc Dordal i Carreras	**Class Time:**	Tue & Thu 12:00 – 13:50
Email:	marcdordal@ust.hk	**Class Place:**	LSK1014
Phone:	(852) 2358-7964		
		OH Time:	Thu 15:30 – 17:30
		OH Place:	LSK6078
TA:	Hongwei ZOU	**TA OH Time:**	Tue 14:00 - 15:00
TA Email:	hongwei.zou@connect.ust.hk	**TA OH Place:**	LSK4063 Desk 12

Course Pages:

- https://canvas.ust.hk/courses/65046

Office Hours (OH): After class, at the scheduled OH time, through the course forum provided for this purpose on Canvas, or by appointment. You can also join the Professor OH via Zoom: https://hkust.zoom.us/my/marcdordal.

Course Description and Objectives: This course is primarily designed for first-year Ph.D. students. The objectives are twofold. By the end of the course, you are expected to have learned the basic foundations of Macroeconomic Theory, which we will roughly divide between long-term growth and business cycle theories. The second objective of the course is to build your technical skills in solving a variety of dynamic programming problems commonly found in the macro literature.

Prerequisites: This course is for Ph.D. students in Economics and is also available to other students as permitted by the regulations. Students are also expected to have completed intermediate/advanced undergraduate-level and basic undergraduate mathematical and (more specifically) linear algebra knowledge is assumed.

Learning Outcomes – Program Intended Learning Outcomes ("ILOs"):
Upon successful completion of this course, you should be able to:

Index for Mapping:

- **Teaching (T):** Students are taught this.
- **Practice (P):** Students practice this.
- **Measurement (M):** Students are measured to foresee better achievement of learning goal & objective.

1. Students will have up-to-date and in-depth knowledge of their areas of specialization, leading to independent substantive scholarly research.
   (a) Demonstrate a sound grasp of the literature in their specialization. **(T), (P), (M)**
   (b) Apply their specialized knowledge to solve related business problems in an innovative fashion. **(T), (P), (M)**
2. Students will have an in-depth understanding of contemporary business and organizational issues, within their area of specialization.
   (a) Demonstrate a broad-based knowledge of core business functions. **(T), (P), (M)**
   (b) Integrate functional knowledge to solve business problems within their area of specialization. **(T), (P), (M)**
3. Students will be equipped to perform all aspects of the role of faculty in academia, including pedagogical skills.
   (a) Present their discipline knowledge clearly to a layman. **(T)**
   (b) Communicate the research ideas effectively to research scholars. **(T)**

Grading Policy: Homework (20%), Midterm (40%), Final (40%).

Important Dates:

Homework	Submission dates in Canvas
Midterm	Oct 13 (Mon), Time & Place TBA
Final Exam	TBA

Tutorial sessions: This course will not feature any regularly scheduled tutorial sessions with the TA (that is, in addition to the Professor regular lectures). Problem set solutions will be made available online after the submission deadline. I reserve the right to schedule (optional attendance) TA Tutorials on topics or problem sets if I perceive that the class is having difficulties comprehending the concepts.

Course Policy:

- Please sign up for Canvas. I will confirm your enrollment for the course, then you will be able to see the course page.
- Voluntary response to my questions is highly welcomed, but be prepared to be randomly cold called as well (corollary: read the mandatory book chapters/readings for the corresponding lecture).

Class Policy:

- Regular attendance is essential and expected, but not mandatory (i.e. you can miss class if you have an important obligation, etc).
- Please turn off/silence your electronics (phones, computers, etc) before entering class. Using a laptop to take notes is allowed, as long as it does not disrupt the flow of the class.

Late Submissions: Late problem set submissions will not be accepted and assigned a grade of zero. Exceptions include Special Education Needs (SEN) approved accommodations and reasonable and verifiable excuses (e.g. medical emergency).

Academic Honesty: Any cheating will result in a grade of zero and the student being reported to the competent academic authority for disciplinary action. See Regulations for Student Conduct and Academic Integrity. Written work might be checked for originality using Turnitin. You can work/discuss problem sets in groups, but you are expected to submit original individual solutions. Use of AI software like chatGPT and Claude is allowed.

Academic Calendar and General Holidays: The course will follow the Fall 2025 HKUST Academic Calendar and observe the General Holidays, Study Breaks, etc. Link: https://registry.hkust.edu.hk/resource-library/calendar-dates-2025-26.

Preferred name: You can address me with the degree of formality you feel comfortable, but simply calling me Marc without the "Professor" title is acceptable and encouraged. My preferred pronouns are he/him. I will address you with the name provided in the course roster, if you would like me to use a different name and/or pronouns, please let me know at the beginning of the course.

Special Accommodation: If you require special accommodation, you should speak with me and/or the TA at the beginning of the semester. Please contact as well and provide required documentation to the Special Education Needs (SEN) Support Program. Please remind me with sufficient time if you require special accommodation for future midterm/exam.

Sexual Harasment and Discrimination: The Hong Kong University of Science and Technology is committed to ensuring a safe, positive and pleasant environment for students and staff alike. We thus do not in any way condone, nor tolerate, any form of sexual harassment or discrimination. The University has a sound protocol for the complaint procedures, and urges individuals to fully utilize such. You can find more information at https://gdc.hkust.edu.hk/policy-1.html and at Hong Kong's Equal Opportunities Commission https://www.eoc.org.hk/en/.

Resources: These are difficult and challenging times. Forgive yourself if you are struggling. There are resources available to you to help.

- HKUST Counseling and Wellness Center. (852) 2358 6696. 24/7 helpline: (852) 2358 6696. https://counsel.ust.hk/index.php.
- Suicide Prevention Service. Hotline: (852) 2382 0000. https://www.sps.org.hk/
- HKUST Security Office (On campus - report of top emergencies) (852) 2358 8999.
  Hong Kong Police Force (Off campus) (852) 999

Main References: This is a restricted list of various interesting and useful books that will be touched during the course. You might need to consult them occasionally, but for now the only one you might truly consider buying is Acemoglu's (most readings of the first half of the course will be from this book). The second part of the course covers different topics. Optimally, I would like to use only one book for the topics of the second half, and Romer covers most of them, but sometimes not with the depth that I would like. If I can supplement it well enough with my own materials, we will stick with it. Otherwise, we might use Adda & Cooper and Deaton books for punctual topics as well.

- Daron Acemoglu, *Introduction to modern economic growth*, Princeton University Press, 2009. HKUST library link. – Main textbook first half (growth).
- David Romer, *Advanced Macroeconomics*, McGraw-Hill, 2018. HKUST library link. – (Optional) Alternative textbook, covers same/similar topics. You might check it as a study complement.
- Jerome Adda and Russell Cooper, *Dynamic economics: quantitative methods and applications*, MIT press, 2003. - Punctual topics on the second half of the course.
- Angus Deaton, *Understanding consumption*, Oxford University Press, 1992. - Punctual topics on the second half of the course.
- Lars Ljungqvist, Thomas J. Sargent, *Recursive Macroeconomic Theory*, MIT Press, 2018. HKUST library link. – (Very optional)

Course Outline:

Part 1. Introduction to Macroeconomics (0.5 weeks)

1. Macroeconomic Facts
2. The Revolution of Macroeconomic Theory
3. Introduction to Dynamic Programming

References:

a. Mandatory readings: Acemoglu (2009) book Ch. 1; Lecture notes.

b. Optional readings: Romer (2018) book "Introduction" (quite useful); Jones (2016), Aguiar and Gopinath (2007), Blanchard (2000), Woodford (1999),Mankiw (2006), Chari and Kehoe (2006).

Part 2. Growth Theory (4.5 weeks)

1. Solow Model and the Neoclassical Aggregate Production function (0.5 week)
   References:
   a. Mandatory readings: Acemoglu (2009) book Ch. 2-3; Lecture notes.
   b. Optional readings: Romer (2018) book Ch. 1; Hall and Jones (1999), Mankiw et al. (1992), Prescott (1988), Houthakker (1955), Hsieh and Klenow (2009), Lagos (2006).
2. Foundations of Neoclassical Growth (0.5 week)
   References:
   a. Mandatory readings: Acemoglu (2009) book Ch. 5; Lecture notes.

3. Dynamic Programming and Optimal Control Theory (1 weeks)
   References:
   a. Mandatory readings: Acemoglu (2009) book Ch. 6 and 7; Lecture notes.
4. The Ramsey-Cass-Koopmans Model (2 weeks)
   References:
   a. Mandatory readings: Acemoglu (2009) book Ch. 8; Lecture notes.
   b. Optional readings: Romer (2018) book Ch. 2; Strotz (1955), Laibson (1997).
5. Overlapping Generation Model (0.5 weeks)
   References:
   a. Mandatory readings: Acemoglu (2009) book Ch. 9; Lecture notes.
   b. Optional readings: Diamond (1965); Blanchard (1985); Weil (1989); Tirole (1985)
6. Human Capital and Economic Growth (0.5 weeks)
   References:
   a. Mandatory readings: ; Acemoglu (2009) book Ch. 10; Lecture notes.
   b. Optional readings: Romer (2018) Ch. 4.
7. Endogenous Growth Theory (1 weeks)
   References:
   a. Mandatory readings: Acemoglu (2009) book Ch. 13; Lecture notes.
   b. Optional readings: Romer (2018) Ch. 3.

Part 3. Investment and Consumption Theory (3.5 weeks)

1. Stochastic Dynamic Programming (1 week)
   References:
   a. Mandatory readings: Lecture notes.
   b. Optional readings: Adda and Cooper (2003) book Ch. 2.
2. Investment (1 week)
   References:
   a. Mandatory readings: Acemoglu (2009) book Ch. 7.8; Lecture notes.
   b. Optional readings: Romer (2018) book Ch. 9; Hall and Jorgenson (1967); Hayashi (1982); Caballero (1999); Abel and Blanchard (1983); Fazzari et al. (1987); Gilchrist and Himmelberg (1995); Doms and Dunne (1998); Cummins et al. (2006); Philippon (2009).
3. Consumption: the intertemporal savings decision under uncertainty (1 weeks)
   1. The Canonical Consumption Model
      References:
      a. Mandatory readings: Deaton et al. (1992) book Ch. 2 and 3; Lecture notes.
      b. Optional readings: Adda and Cooper (2003) book sections 6.1 - 6.2.2 and 6.3 - 6.3.2; Romer (2018) book sections 8.1, 8.2 & 8.4; Deaton et al. (1992) book Ch. 1.

2. Empirical Life Cycle / Permanent Income Hypothesis
   References:
   a. Mandatory readings: ; Deaton et al. (1992) Ch. 4; Lecture notes.
   b. Optional readings: Romer (2018) book sections 8.1 - 8.3, Hall (1978), Flavin (1981), Campbell and Mankiw (1989), Shea (1995), Parker (1999), Souleles (1999), Hsieh (2003), Browning and Collado (2001).
3. Precautionary Savings
   References:
   a. Mandatory readings: Deaton et al. (1992) Ch. 6; Lecture notes.
   b. Optional readings: Adda and Cooper (2003) book section 2.5, Ch. 3, sections 6.2.4, 6.3.5 and 6.3.6; Romer (2018) section 8.6, Kimball (1990), Gourinchas and Parker (2002).
4. Asset pricing, consumption CAPM and the equity premium puzzle (0.5 weeks)
   References:
   a. Mandatory readings: Adda and Cooper (2003) book sections 6.2.3 and 6.3.3; Lecture notes.
   b. Optional readings: Romer (2018) book section 8.5; Epstein and Zin (1991); Jermann (1998).

Part 4. Business Cycle and Unemployment Theory (1.5 weeks)

1. The canonical Real Business cycle model (1 weeks)
   - The model and its components
   - Log-linearization
   - Solution (Time permitting)

   References:

   a. Mandatory readings: Romer (2018) Ch. 5; King and Rebelo (1999); Lecture notes.
   b. Optional readings: Blanchard and Kahn (1980); Ljungqvist and Sargent (2018) Ch. 4; Lucas Jr (2003); Baxter and King (1999); Dupraz et al. (2019); Kydland and Prescott (1982); Cogley and Nason (1995); Christiano and Eichenbaum (1992); Blanchard and Kahn (1980); Long Jr and Plosser (1983); King and Rebelo (1999); Hansen et al. (1992).
2. Unemployment (Time permitting)
   References:

   a. Mandatory readings: Rogerson et al. (2005); Lecture notes.
   b. Optional readings: Pissarides (2000)

References

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