



**Department of Economics  
Hong Kong University of Science and Technology**

**Economics 5140 L1  
Macroeconomic Analysis  
Fall 2025**

**Lecture: Jenny Xu**  
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**Phone: 2358-7604**  
**Time and Venue: Monday/Thursday 9:00-10:50 am,**  
**Rm 2, 31/F, Tower 1,Millennity**  
**Please go to Canvas to find course related material.**

**Office Hours:**  
**Tuesdays, 3:00-4:00 pm**  
**or by appointment**

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***Course Description:***

This course gives an examination of macroeconomic theory, which provides the foundations for the analysis and the design of macroeconomic policies. The course aims to make students familiar with formal analytical tools in macroeconomics, including overlapping-generation models, infinite-horizon models with representative agents, dynamic general equilibrium approach. During the coursework, we apply these frameworks to explore quantitatively and empirically a broad set of economic questions regarding economic growth/development and business cycles.

The course starts with the introduction of some tools, including the general equilibrium and simple dynamic models. Then it proceeds with the theory of economic growth, with a particular emphasis on the Solow growth model, Ramsey model and models with endogenous technical

progress. Macroeconomic fluctuations, especially the real-business-cycles theory, are taken up next. A treatment of the microeconomic foundations of nominal rigidities, consumption and investment prepares the ground for a detailed analysis of macroeconomic policies. Then we will focus on the monetary theory and policy, its short-run and long-run effects, the transmission mechanism and the case for policy rules. The main focus in the final part of the course is on open economy macroeconomics, including the determination of exchange rate, the current account adjustment and the discussion of exchange rate regimes.

***Related Program Intended Learning Outcomes (PILOs) for M.Sc***

1. Solve advanced economic models using mathematical methods related to real analysis, static optimization, and dynamic optimization;
2. Assess the underlying insights of these economic models;
3. Construct simple economic models using the above methods;
5. Explain the effects of economic policies on monetary and business cycle stability, trade and economic growth using an understanding of theories and knowledge from macroeconomics;
6. Evaluate the implications of empirical data analysis using an understanding of theories and tools from empirical data analysis;
8. Decide how to collect and deal with raw data;
11. Explain economic models and intuition to academic people using professional language in economics;
13. Use various approaches including graphs, diagrams, figures, etc. to enrich their communication.

**Course Intended Learning Outcomes (CILOs) and Mapped PILOs:**

**Upon successful completion of this course, you should be able to:**

1. Have a general knowledge of macroeconomics. Describe the main questions in macroeconomics and the main components of standard Macroeconomic theories. Explain the impact of each key component and the consequence of including them; and critique the applicability of models; (PILO #1, #11)
2. Use theories and knowledge from macroeconomics to understand and explain economic and monetary policies, trade, and economic growth. (PILO #2, #5)
3. Grasp mathematical methods related to static optimization, and dynamic optimization. (SILO #1, #3)

4. Locate, gather, organize and use appropriate information for macroeconomic studies. (PILO #6, #8, #13)

### ***Teaching Approach***

**This course is primarily delivered through lectures and class discussion.**

| <b>Teaching and Learning Activities</b> | <b>Roles in the Course</b>   | <b>Course Learning Outcome addressed</b> |
|---|--|--|
| Lectures and within class discussions   | Explain key concepts and models to students  | 1, 2, 3, 4                               |
| Homework assignments                    | Practice problem solving, apply models, and locate and analyze data to solve economic issues | 2,3, 4                                   |

### ***Required Textbook:***

Our **required textbook** is David Romer, *Advanced Macroeconomics* 4<sup>th</sup> Edition. McGraw-Hill, 2012.

**Lecture Notes:** I will post power point slides for each chapter. However, during the lecture I will give a more detailed explanation. Each student is responsible for lectures missed due to absences. **Use the lecture notes as your main reference for assignments and preparation of exams.**

### ***Course Outline:***

Part I: Outline of the course and Review of basic tools:

1. Issues, Models and Techniques (Lecture Notes)
2. Simple Dynamic Stochastic General Equilibrium Models (Lecture Notes)

Part II: Growth

1. Solow Growth Model (Lecture Notes, Romer, Chapter 1)
2. Ramsey Model (Romer, Chapter 2)
3. Endogenous Growth (Romer, Chapter 3)

Part III: Fluctuations

1. Real business cycle models (Romer, Chapter 4)
2. Money, Nominal Rigidity and New Keynesian models of Fluctuations (Lecture Notes)

## Part V: Monetary Policies

1. Goals of Monetary Policy and Zero Lower Bound (Lecture Notes)
2. Yield Curve and Monetary Policy (Lecture Notes)

## Part V: Open Economy Macroeconomics

1. Mundell-Fleming Model (Lecture Notes)

*Remark: The above outline is highly ambitious; it is very likely not all topics will be covered.*

## **Assessment**

|                           |                      |
|---------------------------|----------------------|
| Assignments -----         | Each 7.5%, total 30% |
| Class Participation ----- | 5%                   |
| Midterm Exam -----        | 25%                  |
| Final Exam -----          | 40%                  |

1. **Under the new universal departmental policy, attendance is going to be checked; missing more than 20% of the lectures will negatively impact your grade. Details of the penalty will be announced later.**
2. There will be four Problem Sets, each worth 7.5% of your final grade. They will be posted on the Canvas course website. The problem sets evaluate your ability to understand the theoretical knowledge discussed in the lecture and apply them to analyze economic questions (CILOs 1, 2, & 3), as well the empirical methodology and analysis (CILOs 2 & 4). Problem sets should be handed in on or before the due date. To ensure the timely posting of the answer keys, **no late problem sets will be accepted.**
3. Class participation mark will depend on attendance (IPRS questions answering) and discussion performance. It will assess your ability to comprehend and recall the knowledge discussed in the lecture (CILOs 1, 2, & 3). Misconduct in class, such as late arrival, early leaving, chatting, surfing, and using mobile phones will result in losing part or all of class participation marks.

You can download the HKUST iLearn from the app store, see the following guide for details.

[Microsoft Word - HKUST iPRS - Student Guide.docx](#)

4. **Midterm is scheduled from 7-9:00 pm on Friday, Oct. 24, 2025.** There will be no make-up midterm exams. If for any reason you cannot take the exam, please let me know in advance and the weight for the midterm will be shifted to the final.

The midterm and final exams assess your ability to use the knowledge covered in the course to analyze economic questions and address economic problems (CILOs 1, 2, & 3).

5. Exams are closed book and closed notes. You can request a review of the grade within two weeks after the exam is returned to you. After that period grades can NOT be revised.

### ***Rubrics for Final Grade***

| Grade | Short Description        | Elaboration   |
|-------|--------------------------|---|
| A     | Excellent Performance    | Students demonstrate a strong grasp of course materials, effectively utilize tools discussed, excel in problem sets, and perform exceptionally on exams. They exhibit exceptional analytical skills, critical thinking, and effective participation in class discussions. |
| B     | Good Performance         | Students exhibit a solid understanding of course materials, proficient use of tools, and competent completion of problem sets. They show commendable analytical skills, effective critical thinking, and participation in class discussions.                              |
| C     | Satisfactory Performance | Students demonstrate an adequate understanding of course materials, satisfactory use of tools, and completion of problem sets. They display acceptable analytical skills and participation in class discussions.  |
| D     | Marginal Pass            | Students show limited understanding of course materials, inconsistent use of tools, and incomplete performance in problem sets. Their participation in class discussions is minimal.  |

|   |      |  |
|---|------|--|
| F | Fail | Students display a lack of understanding of course materials, inadequate use of tools, and unsuccessful completion of problem sets. They show little to no participation in class discussions. |
|---|------|--|

### ***General Policies:***

**Lecture Notes:** I will post power point slides for each chapter. However, during the lecture I will give more detailed explanation. Each student is responsible for lectures missed due to absences.

**Academic Policy:** Dishonesty or plagiarism will not be tolerated. Any student violating **HKUST Academic Integrity and Honor Code** (<http://www.ust.hk/vpaao/integrity>) will be subjected to disciplinary procedure. Any student observed cheating on exams, or plagiarizing material, will receive an "X" for the course, to show that the grade resulted from cheating. This X grade stays with your record until graduation. If you cheat again and "earn" another X grade, you will be dismissed from the University.

**Classroom Courtesy:** Class discussions will be conducted in an orderly fashion. Late arrival and early leave will not be tolerated. You should ask for my permission first if you have any emergent situation to attend. If a student must enter the classroom after class has begun, please do so as quickly and quietly as possible. You are welcome to bring your laptop to class in order to take notes. However, since we use a lot of graphs for illustration, it is recommended that you write notes down. **Chatting or using mobile phones in class is not allowed either.** Violators will lose part or all class participation marks. I will also reserve the rights to ask violators to leave the classroom or not allowing violators to write the exams.

Please read the following files for good learning environment.  
[https://drive.google.com/file/d/1Dx8\\_zdqBkeBGyRjo1AUoJtUtMnOSmFPV/view?usp=sharing](https://drive.google.com/file/d/1Dx8_zdqBkeBGyRjo1AUoJtUtMnOSmFPV/view?usp=sharing)

Please read the following link for regulations of student conduct.  
[https://acadreg.ust.hk/A\\_Regulations\\_for\\_Student\\_Conduct\\_20190219.pdf](https://acadreg.ust.hk/A_Regulations_for_Student_Conduct_20190219.pdf)

**GPT and other generative AI:** You can use them for homework for this course, including homework., subject to change depending on the university's general policies. None of such tools are allowed in the exam

-You can access a bunch of AI tools, including GPT-4o, Gemini and llama, via  
<https://chatgpt.ust.hk>.

-These tools, at this moment, are not very reliable when solving math problems. Don't always trust them.