

HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY



Department of Economics
ECON 6110S

BUSINESS CYCLES & MONETARY POLICY
(Spring I, 2023-24)

Instructor

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Class Schedule

Lecture time is Wednesday 9:00 am–12:30 pm, unless stated otherwise and is held in LSK 1007. The teaching mode is “face to face”.

Course Description

This course provides an introduction to business cycles with applications in monetary policy, providing a natural progression from ECON 5140. It includes Real Business Cycle (RBC) models, monetary models, Dynamic Stochastic General Equilibrium Models (DSGE) and models with New Keynesian frictions, including nominal rigidities and financial frictions. In this course, students will learn how to solve various models analytically using dynamic programming and sequential methods. Key topics in monetary policy (or monetary economics) such as money

neutrality, super money neutrality, the Fisher equation, Friedman rule, equilibrium determinacy, time inconsistency, and reputation in monetary policy are also explored in this course. Numerical solution techniques are emphasized with calibration and simulation methods taught using Matlab, Octave and Dynare, to compute the quantitative impact of economic shocks and policy events. Bonus computing workshops will be provided. Applications to policy and real-world phenomena are emphasized throughout. Assumed knowledge is ECON 5140.

Learning Outcomes

After completing this course, students should be able to understand, explain and identify:

1. Modern business cycle models using sequential and dynamic programming techniques. **(PILO 1)**
2. Solution, calibration, and simulation methods in RBC, monetary models, New Keynesian DSGE to make predictions and inferences about economic shocks and policy events. **(PILO 2, 5)**
3. Key concepts in monetary economics such as money neutrality, super money neutrality, the Fisher equation, Friedman rule, equilibrium determinacy, time inconsistency and reputation to establish a deeper understanding of monetary policy and business cycles. **(PILO 1,2, 5, 13)**

Prerequisite

No formal prerequisite but ECON 5140 is assumed knowledge for this course.

Recommended Learning Resources

There is no required textbook. A detailed and comprehensive list of references is provided at the end of this document. Some useful reference books may include: Campante, F., Sturzenegger, F., and Velasco, A. (2021). *Advanced Macroeconomics: An Easy Guide*. LSE Press. This is a slightly lower technical level than this course. McCandless, G. (2008). *The ABCs of RBCs: An introduction to dynamic macroeconomic models*. Harvard University Press and Walsh, C. E. (2017). *Monetary theory and policy*. MIT press, around the level used in the course or slightly more advanced.

Homework

Students will be required to submit 3 short individual assignments for grading. Each assignment is worth 10% for a total of 30% of the total assessment. These will help prepare you for the exam. Students will be required to make a statement about the use of ChatGPT in assignments. See the policy on ChatGPT in this course outline. No ChatGPT is permitted in individual assignments. "Turnitin" is a requirement for submission of assignments. **No late homework will be accepted!**

Assessment Scheme

	Description	Weight
Final Exam	Examines all topics covered during the term	60%
3 Individual Assignments	Three short assignments to be submitted for assessment	30%
Class Participation	Constructive contribution to class discussion	10%

Final Examination

The final exam (closed book) will be held during class on March 27, starting around 9:00am. There will NOT be make-up exams. Only serious medical or personal emergencies may be accepted as legitimate excuses for a missed exam. If you fail to attend an exam for medical reasons, you must present a doctor's note. If you miss an exam without a valid reason, then you will receive a zero. You will be permitted to have a 1-page A4 cheat sheet but otherwise, this exam is closed book. The final exam will be worth 60% of the total assessment in this course.

Course Syllabus

Please note this is a tentative schedule. Topic order may be changed and some topics may be removed or modified, based on time constraints, student progression, and continuous improvement.

Lecture time is Wednesday 9:00 am – 12:30 pm, held in LSK 1007, unless stated otherwise.

Week	Date	Topics*
1	Jan 31	Lecture 1 - Motivation, Data and Evolution of Macro Theory
2	Feb 7	Lecture 2 - Introduction to Discrete-time Dynamic Optimization
3	Feb 21	Lecture 3 - Real Business Cycle Models
4	Feb 28	Lecture 4 - Money in Utility Model
5	Mar 6	Lecture 5 - New Classical and New Keynesian Ideas in Monetary Policy
6	Mar 13	Lecture 6 - Monetary Policy in the New Keynesian DSGE Model
7	Mar 20	Lecture 7 - Time Consistency and Optimal Monetary Policy
8	Mar 27	Final Exam

*Additional references may be provided for certain topics on Canvas or in class.

Attendance Policy & Class Participation

Class attendance will be recorded each week. Attendance may be used as an input for the class participation grade and in some circumstances may be a contributing factor in borderline grading decisions. Class participation is NOT a 1-1 mapping with attendance. While attendance may be a contributing factor, the constructive contribution to class discussion will be very influential in your class participation grade. Conversely, disruptive behavior will lead to a lower participation grade. Class participation is worth 10% of your total grade.

ChatGPT Policy

ChatGPT is not permitted in this course. In your assignments students are required to make a statement as to whether they used ChatGPT and if they did to declare how they did so. Violation of this policy will be considered an academic integrity breach with potentially serious consequences.

Academic Integrity Policy

Honesty and integrity is a central value in HKUST. Please be aware of the importance of maintaining a high standard of honesty in assignments and examinations in this course. Please familiarize yourself with the university rules and the HKUST academic honor code by visiting the following website: <http://www.ust.hk/vpaa0/integrity/>