

14.05: Intermediate Macroeconomics

Fall 2022

Lectures: M, W 1pm-2:30pm (E51-085)

Recitations: F 10:00am-11:00am (E51-395)

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Course Overview

This course introduces you to modern macroeconomics, building upon the material you learned in 14.02. The course will meet for lectures on Mondays and Wednesday at 1-2:30pm and for recitations on Fridays at 10-11am.

The TAs for the course are Shinnosuke Kikuchi (skikuchi@mit.edu) and Alex Carrasco (alexcm@mit.edu). Their office hours are on Friday 4pm-5:30pm (Shin) and on Monday 4pm-5:30pm (Alex), both in E52-448.

All materials for the course will be posted on the course website.

The course is a communications intensive (CI-M) subject, and there is a 20-page paper required (30% of the grade). Other requirements for the course are 4 problem sets (25% of the grade), two in-class midterms (40%), and in-class participation (5%).

Course Objectives

The objectives of the course are three-fold. The first objective is to introduce a set of issues and questions that are central to modern macroeconomics. The questions we will address are genuinely interesting and very important for conducting economic policy, such as:

- What drives economic growth?
- What explains income differences across or within countries?
- Why do economies undergo business cycles, or financial crises?
- What is the role of central banks and government in promoting growth or fighting recessions?

The second, and the more methodological, objective is to familiarize you with a set of tools that macroeconomists have developed over time to think about these and other issues. We will analyze a number of theoretical macroeconomic models in detail, and we will also confront some of these macroeconomic models and mechanisms with data.

The third objective, as illustrated by the paper requirement, is to help you to engage with macroeconomic issues, using some of the tools you will learn in this course.

Paper Requirement

The paper counts for 30% of the overall grade and is due in three installments. A one-page proposal is due on October 7 and will count for 10% of the paper grade. A first draft of the paper is due on November 2 and will count for 50% of the paper grade. The final draft of the paper is due on the last lecture, December 14, and will count for 40% of the paper grade. It is important to meet the earlier deadlines if you want to meet the final deadline with a decent paper. We reserve the right to overweight the final draft if it shows substantial improvement relative to the proposal and/or the first draft. More details about the paper requirement are provided in a separate, accompanying document.

Homework Requirements

There will be four problem sets that will account for 25% of your grade in total. The assignments will be posted online and your solutions will have to be uploaded on the course's webpage.

- No assignment will be accepted after 12noon EST on the due date. To insure you against bad shocks, only the best three assignments (out of the four in total) will be counted towards the homework portion of grade. This gives you the flexibility even to skip one assignment. But it's best not to exercise this option. Working out the problem sets is the best way to prepare for the exams. Plus, if you complete all four assignments with really good scores, you may qualify for a bonus.
- You are permitted to collaborate on the problem sets. However, each person must submit a separate write-up. If you choose to work within a group, each person is asked to list the members of the group at the top of the submission.

Exams and Grading

There will be two in-class exams: on Wednesday, October 19 and Wednesday, December 7. They will take place in lieu of a regular class and will last 1.5h each.

The two exams together will count for 40% of the grade. Again, as an insurance against bad shocks, your best exam will be overweighted: it will count for 25% of the total grade (and your worst exam will count for 15%).

Apart from this insurance, and barring verifiable medical emergencies, don't expect any other leniency or excuse for missing exams/deadlines.

Textbook and Readings

The course does not have any required textbooks. We will mainly rely on lecture slides that will be distributed in class.

The following textbooks are recommended and provide useful references for parts of the course.

- Charles Jones, *Macroeconomics*, 3rd Ed or 4th Ed.

- David Romer, *Advanced Macroeconomics*, 4th Ed or 5th Ed.

The Jones book covers most of the topics but at a less advanced level than in the lectures. It also provides more examples and case studies. Hence, it is a useful reference to reinforce your understanding of the topics. The Romer book covers most of the topics in the second half of the course (on business cycles) at a mathematically more advanced level than in the lectures. Hence, it is a useful reference to obtain a deeper understanding of the topics. It is also a good investment if you are contemplating to pursue graduate studies in economics.

A few journal articles will be made available through the course website as additional references. Most of these articles (particularly those from the *Journal of Economic Perspectives*) are accessible introductions to a topic. None of them is “strictly required” in the sense that you will not be tested on any of them. But they provide useful context to the lectures. What you are ultimately responsible for is to understand the findings from these articles that are discussed in lectures or recitations.

Lecture Notes

The lecture notes that we will use for the class are based heavily on past lecture notes prepared by Marios Angeletos and Alp Simsek. If you notice any typos/mistakes, please do let us know.

Recitations and Teaching Assistants

The TAs for the course are Shinnosuke Kikuchi (skikuchi@mit.edu) and Alex Carrasco (alexcm@mit.edu). The recitations will take place on Fridays at 10-11am. Alex will teach the recitations: he will cover material that will complement the lectures, go over the solutions of some of the questions in problem sets, and help you to prepare for the exams. Shin will guide you through the required paper.

Questions and Communication

Please include 14.05 in the subject line of all e-mails regarding the course. We hope to make 14.05 a great learning experience for everyone and look forward to teaching you this semester!

Reporting bias-related or other incidents

The Economics Department fully endorses the Institute Discrimination and Harrassment Response Office (IDHR) reporting process for any bias-related incident. You can submit reports at <https://idhr.mit.edu/submitincidentreport>. We encourage students to use this valuable resource if needed for any reason. This process is useful for addressing any issues that may arise with professors, teaching assistants, or other students in this course. If you’ve had a negative experience and aren’t sure if IDHR is the place to go, they can also help you find the right office at MIT to receive support. The department values such reports as important to our pursuit of equitable and inclusive treatment for all students, faculty, and staff.

Accessibility and support

The Economics Department values an inclusive environment. If you need a disability accommodation to access this course, please communicate with us early in the semester. If you have your accommodation letter, please meet with the faculty so that we can understand your needs and implement your approved accommodations. If you have not yet been approved for accommodations, please contact Student Disability Services at uaap-sds@mit.edu to learn about their procedures. We encourage you to do so early in the term to allow sufficient time for implementation of services/accommodations that you may need.

Key Dates

September 26 (Mon)	Problem Set 1 due
October 7 (Fri)	1st Part of Paper Requirement (proposal) due
October 17 (Mon)	Problem Set 2 due
October 19 (Wed)	No class; FIRST MIDTERM
November 2 (Wed)	2nd Part of Paper Requirement (first draft) due
November 14 (Mon)	Problem Set 3 due
December 5 (Mon)	Problem Set 4 due
December 7 (Wed)	No class; SECOND MIDTERM
December 14 (Wed)	3rd Part of Paper Requirement (final draft) due

Course Outline

- Introduction: Long run vs Short run, and Measurement (~1 lecture)

Part A. Long Run and Economic Growth

- Solow growth model (~4 lectures)
 - Aggregate production function, saving, and capital accumulation
 - The economy as an ODE: steady state and dynamics
 - The golden rule and dynamic inefficiency
 - Human capital and exogenous technological progress
 - Empirical applications: conditional convergence, cross-country income differences, growth accounting
- Neoclassical Growth Model, aka Ramsey model (~4 lectures)
 - Preferences and technology
 - The planner's problem and the Welfare Theorems
 - The economy as two ODEs: phase diagram, steady state and dynamics
 - Applications and policy implications
- Endogenous growth and determinants of productivity (~2 lectures)
 - Externalities and learning by doing
 - R&D and intellectual property rights
 - Biased technological change and income inequality
 - Trade, specialization, misallocation, and institutions

Part B. Short Run and Business Cycles (preliminary)

- Aggregate demand (~4 lectures)
 - Consumption: the Permanent Income Hypothesis
 - Consumption: precautionary motive, borrowing constraints, evidence
 - Investment: MPK, Q theory, borrowing constraints, evidence
 - Asset markets, banks and financial crises
- Aggregate supply (~1 lecture)
 - Labor supply
 - TFP, production networks, and misallocation
- The Real Business Cycle (RBC) model (~3 lectures)
 - Supply vs demand shocks
 - Taxation and government spending
- The Keynesian Model (~3 lectures)
 - Aggregate supply revisited: sticky prices and/or sticky wages
 - Demand shocks and output gaps
 - Inflation and Phillips curves
 - Monetary and fiscal policy
 - Liquidity traps, Great Recession, unconventional policy
- Recent Developments (~2 lectures)