



**Carnegie  
Mellon  
University**

**73103: Principles of Macroeconomics**

Lectures: MTWRF 1:25pm–2:45pm

All Meetings in Gates 4211

Summer Session Two, 2022

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**Instructor Information:**

Nick Hoffman

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Office Hours: Mon. 3-4pm (Tepper 5117),

Thur. 10-11am (Zoom)



## **Course Description**

Macroeconomics seeks to understand why some countries are rich and others poor; why countries experience phases of (sometimes rapid) expansion and subsequent (sometimes sharp) contraction; where inflation comes from; the scope for government to accelerate economic growth and restrain price inflation. We will only begin to address these questions in this class, but we will do critical groundwork.

First, we will cover the topic of macroeconomic measurement. Macroeconomists (and many others) use a small number of economic aggregates to summarize the state of an economy. The most important of these is Gross Domestic Product or GDP. You will learn (exactly) what GDP is, how it is measured and what it is useful for. You will learn how aggregate price measures are constructed and used both to calculate measures of inflation and to adjust other measures to get “real” quantities. With this done we turn to a central question: why are some countries poor and others rich? We will use the concept of the production function to (begin to) make sense of this essential and complicated issue.



Next, we turn to specific markets that play an important role in macroeconomics. We start with labor markets. These are markets in which people trade their time, energy and skill with firms (and other people). In these markets, wages, employment and unemployment are determined. We will develop two frameworks for thinking about these markets. This will allow us to think about, amongst other things, the impact of technological change and migration on wages and employment opportunities. We then turn to financial markets and the determination of interest rates. In this context, we will discuss the role and functions of banks and briefly discuss the financial crisis of 2008/9.

Discussion of financial markets leads naturally to a discussion of money. As you will learn, economists have a precise definition of money. In this part of the course you will learn what money is and the role of the money supply in impacting prices and creating inflation. In the context of the US, we will discuss the functions of the Federal Reserve Bank and its tools for controlling the money supply and, hence, influencing inflation and economic activity. We then consider business cycles and economic fluctuations. You will learn what causes business cycles and how governments can, in principle, damp them down.

As we proceed, we will use the tools and knowledge we develop to explore specific topical issues. On the agenda this semester: Covid-19 and Economic Data, the impact of robots and AI, Fiscal Policies to address a Pandemic, and Monetary policy in the modern era. These issues are central for understanding the broader economy in which you (will) work, save and make business decisions. I also hope to whet your appetite for the amazing 73-240 Intermediate Macroeconomics course that economics @ CMU offers and which takes these issues further and deeper.

The topics that I have just described may seem quite different from those that you have seen in microeconomics. But all macroeconomics rests on microeconomics and you will see demand and supply diagrams, elasticities and (micro)economic reasoning and intuition all over the place, especially once we have covered the measurement section of the course.

**Learning Objectives:** By the end of this course you will be able to:

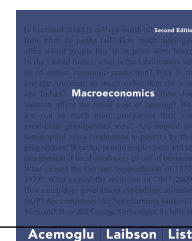
1. Understand the basics of macroeconomic measurement;

2. Calculate macroeconomic aggregates like GDP, CPI and GDP deflator and interpret movements in these variables;
3. Use production functions to make sense of patterns of economic development and growth;
4. Analyze and explain patterns of unemployment and employment over time and across countries;
5. Elaborate the economic function of banks and of the government in regulating banks;
6. Describe the history, mission and functions of the Federal Reserve Bank (Fed);
7. Understand the essential sources of inflation and the policy options available to the Fed in trying to contain inflation;
8. Explain the causes of economic fluctuations and the role of policy in stabilizing these fluctuations;

## Learning Resources

**Written Resources:** There are two main sources of written resources for you: (i) lecture slides and (ii) a set of course notes written by myself and other 73-103 instructors. All of these materials will be posted on Canvas. These materials and our in class discussion of regarding this content will serve as the basis for all of our course quizzes, homework, and exams.

**Textbook:** As an optional resource, we recommend *Macroeconomics*, 2<sup>nd</sup> edition, by Acemoglu, Laibson, and List (Pearson Education). While I think you will find the book useful, I do *not* require you to purchase it. If you do buy the book, I further recommend that you *purchase the e-text* and not the hard copy. Instructions for accessing the etext-book are available on Canvas. Please check Canvas >





Modules > Course Materials > Accessing the textbook.

**Piazza:** In addition to our course materials, I have created a Piazza forum for our class. The link to sign up for our Piazza page can be found at

[piazza.com/cmu/summer2022/73103](https://piazza.com/cmu/summer2022/73103).

You will need to follow this link to enroll in the course on Piazza. **Please do so as soon as possible**, so that you can see all of the questions and answers. If you see a question on Piazza and you have an answer, please feel free to provide it!

The purpose of our Piazza forum is for you to ask clarifying questions, which myself or (ideally) your classmates can answer. I will typically respond to all questions — either to give an answer if none has been provided, or to weigh in on an answer from a classmate — within **24 hours**. This is another reason to go through assignments as early as possible: if you have a question and ask within 24 hours of the deadline, I may not be able to answer in time.

As a final note: all content-related questions on Piazza **must** be marked as “Public.” Often, others will have the same question, and I’d like everyone to benefit from the discussion! If you submit a private question that is content-related, I reserve the right to either ask you to change it to public, or to do so myself.



## Course Delivery

**Instruction:** Unless I let you know otherwise, all classes will be **in person**. As such, attending class each day is essential to doing well in the course. I will make course materials (slides, notes, etc.) available on Canvas, but I will **not** be recording lectures, so there will not be a substitute for attending class, paying attention, and taking notes that will help you study.

In addition, I expect everyone to be active participants in the course: pay attention, take notes, and ask questions! I want to emphasize that last point: as we go along in this course, each new piece of material will build on the techniques and intuitions that we develop in learning the previous concepts. If you have a question, **please ask!!** These ideas take some repetition and practice to master, so I will always be happy to answer your questions. I will never consider a question too simple to go over, and I will not tolerate questions being met with derision from classmates.

Our course will aim to cover the same amount of material as a full semester-length course, in six weeks. So, we will be moving fast! If you feel that you are falling behind, or need extra help, please do not hesitate to reach out to me over email or in office hours.

**Additional resources:** In addition to the slides and lecture notes, I may release occasional supplementary videos on Canvas if I deem it necessary. These videos will serve as tutorials on specific techniques or topics that will help you on the homeworks and final projects. As always, these videos may not be shared with anyone not in the class! This is to protect your FERPA rights, as well as those of your fellow students.



## Grading, Assignments, and Assessments

The final cumulative score for this class is computed using the following categories:

Homework	30 %
3 Assignments	
Final Project	15%
Midterm (Friday, July 22, 2022)	25%
Final Exam (Friday, August 12, 2022)	30%

### Assignment Descriptions

- **Homework:** Homeworks will provide an opportunity for you to practice concepts introduced in class. I will release homeworks as far in advance as possible, in order to give you plenty of time to think about the problems, and to consult with classmates and class materials.

I offer a few points of advice on homeworks. First, begin as early as possible! I will not write homework questions to trick you, but I will write them to ensure that you understand course material by pushing you to think about applying concepts from class in new ways. The best way to do well on assignments like these is to start ahead of time, and mull the problems over. In addition, I recommend attempting problems on your own, before talking them over with classmates. While you will be permitted to consult and work with classmates on your assignment, your submitted work must be your own (and, you will take the midterm and final exams on your own).

- **Final Project** The final project for our class will be a policy memo, in which you will gather economic data and use concepts that we learn in class to analyze recent economic trends and recommend appropriate policy responses. I will release this assignment towards the end of July, and it will be due Wednesday, August 10. Your task on this assignment will be to produce



a well-structured, well-formatted, and concise memo that addresses each question clearly. I will provide more specific details when the assignment is released. The goals of this assignment are (i) to give you practice applying concepts from class to real-world macroeconomic questions, and (ii) to tie together everything that we have learned. As such, we will go over the questions from the final project after you have turned it in, as part of our review for the final.

- **Exams:** There will be a midterm and a final exam, both of which I plan to give in class. These exams are open book, but you are only permitted to use class materials provided to you this semester by myself. The midterm will be designed to be completed within an hour, so I will be giving it during our normal class meeting time.

The final exam will be in person (conditions permitting), and will last for 2 hours. I do not surprise students with unexpected questions in the exams. I prepare the exams so that any student who consistently works on homework sets, attends lectures, and carefully reads the slides, notes or textbook should do well at the end.

Final grades will be based on your cumulative score. Students who obtain a final cumulative score of 88-100% will receive an A. Students who obtain a final cumulative score of 79-87% will receive a B. Students who obtain a final cumulative score of 70-78% will receive a C. Students who obtain a final cumulative score of 60-69% will receive a D, and those scoring below a 60% will receive an R.

In the interests of fairness, we apply the same rules to everyone and we are therefore unable to modify the cumulative score formula or offer you extra work to raise your grade to accommodate your circumstances. The only exception concerns midterms missed due to documented illness or family emergency. Some students will inevitably fall close to, but below a cutoff when we assign grades. Such students sometimes ask for cutoffs to be reduced. Please do not do this. If you are just below a cutoff you may be close to the lowest A or B, but still some way from the average A or B and we consider these when assigning cutoffs.



## Grading Policies

Homeworks and the Final Project will be submitted via Gradescope. Instructions for using and submitting work through Gradescope are available on our course Canvas site. Please check: Canvas > Modules > Course Materials > Gradescope Instructions.

- **Late-Work Policy:** I do not accept late submissions for take-home assignments. There are two reasons for this. First I will post solutions promptly after the deadline. Second, in fairness to everyone, I want to give all students the same amount of time to get the work done (and it is impossible for me to verify whether work was done late or just turned in late).
- **Make-up Work Policy:** There will be no makeups for homeworks, midterms, or the final project. If you miss a midterm for a documented illness, I will shift the weight to other exams/assignments. You will still be able to obtain full credit in the class. The final exam will be on the day designated by the university. There will be a makeup for the final exam on the designated makeup day provided by the university.
- **Re-grade Policy:** All regrade requests must be submitted through Gradescope *within two weeks* of the return of an assignment. Since I post solutions for every assignment, be sure to compare your answers to the solutions before submitting any re-grade requests. Please only submit a regrade request if your answer matches the answer key, but you were not awarded credit. The sole purpose of these requests is to bring to my attention any oversights that I may have made in grading. As such, I will only ever respond to regrade requests on Gradescope with one of two replies:

“You are correct, I have returned the appropriate missing points.  
Thank you for bringing this to my attention!”

or

“I cannot award any additional points for your response. If you would like further clarification, please see me after class or in office hours.”





I'll close this section with some legal stuff:

*All class materials on Canvas are for your use only and are copyrighted. You may not copy and circulate any of these materials or upload them to websites without the prior permission of the copyright holder.*

## **Class Schedule**

Below is an approximate class schedule. Since class discussion can sometimes be longer or shorter than expected, you should view this as a rough schedule. Please review the weekly module posting on Canvas for up-to-date information on what topics and materials we are covering.

- **Week 1 (July 4-8):** We will cover our introductory lecture, which introduces the class and the discipline of macroeconomics. We will also begin our unit on measuring GDP. **Note: we will not have class Monday, July 4.**
- **Week 2 (July 11-15):** We will finish our unit on economic measurement, discussing measurement of GDP, CPI, exchange rates, and PPP. We will also begin our unit on production. Our special topic this week will be **intangible capital**.
- **Week 3 (July 18-22):** We will use our knowledge of production to talk about economic growth, with the Maltus and Solow models. **The midterm exam will be Friday, July 22 .**
- **Week 4 (July 25-29):** This week we will focus on measuring and modelling labor. Our special topic this week will be **polarization in the labor force and the future of work**. We will also begin our unit on credit markets.
- **Week 5 (August 1-5):** We will finish our discussion of credit markets, and move on to the history of Money. Then, we will cover the Federal Reserve and Monetary policy, both in the past and today.
- **Week 6 (August 8-12):** We will finish our discussion of monetary policy, and review for the final exam. **The final exam will be Friday, August 12 .**
  - The makeup day for the final exam, if needed, is **Monday, August 15.**



**Last word.** You may have seen the message below on other syllabi. I repeat it because it is important. Please as you progress through my (and other) courses, take academics seriously, but keep things in perspective. Please seek out help academic or otherwise around campus as you need it. Especially during these unprecedented times, please reach out to your support system for help and to help your friends and peers.

*Take care of yourself. Do your best to maintain a healthy lifestyle this semester by eating well, exercising, avoiding drugs and alcohol, getting enough sleep and taking some time to relax. This will help you achieve your goals and cope with stress.*

*All of us benefit from support during times of struggle. You are not alone. There are many helpful resources available on campus and an important part of the college experience is learning how to ask for help. Asking for support sooner rather than later is often helpful.*

*If you or anyone you know experiences any academic stress, difficult life events, or feelings like anxiety or depression, we strongly encourage you to seek support. Counseling and Psychological Services (CaPS) is here to help: call 412-268-2922 and visit their website at*

*<http://www.cmu.edu/counseling/>*

*Consider reaching out to a friend, faculty or family member you trust for help getting connected to the support that can help.*