

Economics 4002.02
Intermediate Macroeconomic Theory
Syllabus
Smriti Verma
Spring 2023

Meetings: Wednesdays and Fridays, 9:35am – 10:55am
Page Hall 10

Email Address: verma.211@osu.edu

Course Website: Carmen/Canvas

Office Hours: **Wednesdays, 11:15 am – 12:15 pm (subject to change with prior info)**

Course Objectives: Our broad objective will be to develop the foundations of modern macroeconomic theory, which builds explicitly on the principles of microeconomic theory, and use it to study a variety of macroeconomic issues. A key focus will be on the channels by which fiscal policy and monetary policy can affect the economy. We will trace through some of the history that led to modern macroeconomic analysis being what it is today. Throughout, the emphasis will be on theoretical and logical rigor and policy applications, including to the conduct of policy amidst the relatively slow economic recovery.

Prerequisites:

Principles of Microeconomics

ECON 2001.01 or 2001.02 or 2001.03H

Principles of Macroeconomics

ECON 2002.01 or 2002.02 or 2002.03H

Mathematics

MATH 1131 (Calculus for Business) or

MATH 1151 (Calculus I) or

MATH 1152 (Calculus II) or

MATH 1161 (Accelerated Calculus I) or

MATH 2182H (Honors Calculus II) or

MATH 4181H (Honors Analysis I)

Please note that we WILL use calculus throughout the course.

Textbook: The required textbook for the course is:

Chugh, Sanjay K. *Modern Macroeconomics*, MIT Press, 2015.
ISBN: 9780262029377

In addition, a few topics may be developed through additional notes and readings provided during the course.

Grading: The final grade will be based on two problem sets (each worth 15% of your final course grade), a midterm exam (worth 30% of your final course grade), and a cumulative final exam (worth 40% of your final course grade).

Problem Set 1: Due **11:59 pm on Friday, February 17, 2023**, in pdf format on Carmen

Problem Set 2: Due **11:59 pm on Friday, April 14, 2023**, in pdf format on Carmen

Problem set solutions should be clearly, logically, and thoroughly presented. Your method of argument(s) and approach to problems is as important as, if not more important than, the “final answer.” Throughout, the analysis should be based on the ideas and concepts developed in class. **Problem set solutions may be typed or handwritten, scanned, and uploaded on Carmen. LATE PROBLEM SETS WILL NOT BE ACCEPTED.**

Midterm Exam:

Wednesday, March 8, 2022 (During Regular Lecture Period)

Final Exam:

Wednesday, April 26 10:00am-11:45am

Location: Page Hall 10 (Regular Classroom)

As per the OSU [**Final Exam Schedule**](#)

Academic Misconduct

It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term “academic misconduct” includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487).

For additional information, see the Code of Student Conduct:

<http://studentlife.osu.edu/csc/>

Tutoring Services

During Autumn and Spring Semesters, the Department of Economics runs the Economics Learning Center, where advanced undergraduate students provide free tutoring for students in ECON 2001, 2002, 4001, and 4002; assistance with other classes is frequently available as well. Note that the purpose of the tutoring center is not to provide answers to assignments, but to help students learn economics. As the student, you are ultimately responsible for all course work you submit.

Additional information can be found at

<https://economics.osu.edu/economics-learning-center>

Disability Services

The University strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability (including mental health, chronic or temporary medical conditions), please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with Student Life Disability Services (SLDS). After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion.

SLDS contact information:

slds@osu.edu

614-292-3307

098 Baker Hall

113 W. 12th Avenue

Mental Health

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. The Ohio State University offers services to assist you with addressing these and other concerns you may be experiencing. If you or someone you know are suffering from any of the aforementioned conditions, you can learn more about the broad range of confidential mental health services available on campus via the Office of Student Life's Counseling and Consultation Service (CCS) by visiting ccs.osu.edu or calling [614-292-5766](tel:614-292-5766). CCS is located on the 4th Floor of the Younkin Success Center and 10th Floor of Lincoln Tower. You can reach an on-call counselor when CCS is closed at [614-292-5766](tel:614-292-5766) and 24 hour emergency help is also available through the 24/7 National Suicide Prevention Hotline at 1-800-273-TALK or at suicidepreventionlifeline.org.

Misconduct/Violence

Title IX makes it clear that violence and harassment based on sex and gender are Civil Rights offenses subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories (e.g., race). If you or someone you know has been sexually harassed or assaulted, you may find the appropriate resources at <http://titleix.osu.edu> or by contacting the Ohio State Title IX Coordinator, Kellie Brennan, at titleix@osu.edu.

Diversity

The Ohio State University affirms the importance and value of diversity in the student body. Our programs and curricula reflect our multicultural society and global economy and seek to provide opportunities for students to learn more about persons who are different from them. We are committed to maintaining a community that recognizes and values the inherent worth and dignity of every person; fosters sensitivity, understanding, and mutual respect among each member of our community; and encourages each individual to strive to reach his or her own potential. Discrimination against any individual based upon protected status, which is defined as age, color, disability, gender identity or expression, national origin, race, religion, sex, sexual orientation, or veteran status, is prohibited.

Make-up Exam Policy

All students are required to take both, the midterm exam and the final exam **because these assessments are “major scheduled grading events.”** In addition, the two problem sets that are to be submitted are also designated “major scheduled grading events”. Make-up exams will be granted **only** to those students whose excuse complies with University policy. If you believe you are eligible to take a make-up exam, please inform the professor and provide the appropriate documentation as soon as possible.

Exam Regrade Policy

If, after going over your exam and the exam solutions, you believe some of your solutions were more correct than originally judged to be, you may submit, **in writing**, an exam regrade request. Your regrade request **must specify** which solutions(s) you believe were not graded appropriately **with a sufficiently substantive explanation** for why you think your solutions are more correct than originally judged (thus, regrade requests that consist of essentially nothing more than “I think I should have received more points on this question” will not be considered). **Your entire exam is subject to regrade.**

EXAM REGRADE REQUESTS ARE DUE NO LATER THAN FIVE CALENDAR DAYS AFTER EXAMS ARE RETURNED. This deadline applies even if you are not present in class the day graded exams are returned (it is your responsibility to pick up your graded exams in a timely manner).

Copyright Policy

Course materials are copyrighted.

Outline of topics: The following is a sketch of topics we will cover this semester – it may be modified as the course progresses.

Representative Agent Macroeconomics

Reading: *Modern Macroeconomics*, Chapter 0

Microeconomics of Consumer Theory

- Utility Theory
- Budget Constraints
- Optimal Choice
- Lagrangian Optimization

Reading: *Modern Macroeconomics*, Chapter 1

Static Consumption-Leisure Framework

- The Two “Goods”: Consumption and Leisure
- Real Wages
- Aggregate Labor Supply Function
- Consumption Demand Function
- Lagrangian Analysis

Reading: *Modern Macroeconomics*, Chapter 2

The Consumption-Savings Framework

- A Simple Intertemporal Utility Function
- Budget Constraints
- Optimal Intertemporal Choice – Consumption and Savings

Reading: *Modern Macroeconomics*, Chapter 3

Inflation and Interest Rates in the Consumption-Savings Framework

- The Fisher Equation
- Real Interest Rate
- Consumption-Savings Framework Revisited
- Aggregate Private Savings Function
- Lagrangian Analysis: Lifetime Lagrangian vs. Sequential Lagrangian

Reading: *Modern Macroeconomics*, Chapter 4

Ricardian Equivalence

- Basic Terminology
- Government Budget Constraints
- Taxation and Consumer Budget Constraints
- Ricardian Equivalence
- Distortionary Taxes and the Failure of Ricardian Equivalence
- Changes in Government Spending
- Lump-Sum vs. Distortionary Taxes

Reading: *Modern Macroeconomics*, Chapter 7

Infinite-Horizon Consumer Problem and Asset Pricing

- Basic Formulation
- Subjective Discount Factor
- Flow Budget Constraint
- Asset Structure
- Basic Asset Pricing Model
- Consumption-Savings Optimality in Infinite-Horizon Form
- Steady-State (aka Long-Run) Real Interest Rate

Reading: *Modern Macroeconomics*, Chapter 8

Firms: Labor Demand, Investment Demand, and Aggregate Supply

- Aggregate Production Function
- A Multi-Period Framework of Firms
- Dynamic Firm Profit Function
- Labor Demand
- Investment Demand
- Cobb-Douglas Production Function
- Production Function Shocks

Reading: *Modern Macroeconomics*, Chapter 6

Preference Shocks

- Utility Function with Shocks (a Demand Shock)
- Production Function with Shocks (a Supply Shock)

Reading: *Modern Macroeconomics*, Chapter 9

Intertemporal Consumption-Leisure Framework

- Individual's Preferences
- Lifetime Budget Constraint
- Extension of Consumption-Leisure and Consumption-Savings Optimality Conditions
Concepts to Infinite-Horizon

Reading: *Modern Macroeconomics*, Chapter 5

MIDTERM EXAM:

Wednesday, March 8, 2023 (regular lecture time and location)

History of Macroeconomics

- The Rise of Macroeconomics
- Keynesianism
- The Macroeconometric Models
- The Phillips Curve
- The Breakdown of Macroeconomic Theory and Policy in the 1970's
- The Lucas Critique
- The Real Business Cycle Revolution
- Dynamic Stochastic General Equilibrium

Reading: *Modern Macroeconomics*, Chapter 10

Real Business Cycle Theory (skim)

- The RBC Technology Shock
- Cobb-Douglas Production Function
- Technology Accounting
- Technology Shocks and Aggregate Fluctuations – An Overview
- Technology, Factor Prices, and Output
- Effects on Consumption-Leisure Margin
- Effects on Consumption-Savings Margin
- Putting it Together – Business Cycle Fluctuations

Reading: *Modern Macroeconomics*, Chapter 14

The Phillips Curve (skim)

- Nominal Rigidities and the Short-Run Phillips Curve
- The Long-Run Phillips Curve

Reading: *Modern Macroeconomics*, Chapter 12

Introduction to New Keynesian Economics (skim)

- Differentiated Goods and the Consumption Aggregator
- Monopolistically Competitive Firms
- The Aggregate Price Level and Aggregate Consumption Demand
- Staggered Price-Setting
- Critique of New Keynesian Theory
- Appendix: Theories of Price Stickiness

Reading: *Modern Macroeconomics*, Chapter 13

**NO CLASS WEDNESDAY, MARCH 15 AND FRIDAY, MARCH 17
(OSU SPRING BREAK WEEK)**

Monetary Policy in the Intertemporal Model

- Money-in-the-Utility-Function Model
- Linkage between Money Markets and Bond Markets
- Consumption-Money Optimality Condition
- Money Demand Function
- Neutrality and the RBC vs. New Keynesian Debate
- Monetarism: the Link Between Money Growth and Inflation

Reading: *Modern Macroeconomics*, Chapter 15

Financial Markets Imperfections and Interactions with the Macroeconomy

- Informational Asymmetries in Financial Transactions
- “Financial Accelerator” Framework
- Role of Collateral and Net Worth
- Risk Premium
- Shocks to Asset Prices and the “Adverse Feedback Loop”
- Policy Implications and Applications

Reading: *Modern Macroeconomics*, Chapter 21

Unemployment

- Labor Search and Matching
- Aggregate Matching Technology
- Labor Force Participation
- Costs of Recruiting Employees
- Probability of Successfully Finding a Job
- Probability of Successfully Hiring an Employee
- Match Surplus
- Labor Market Tightness
- Congestion Externalities
- Matching Market Equilibrium
- Wage Determination

Reading: *Modern Macroeconomics*, Chapter 27
 Modern Macroeconomics, Chapter 28
 Modern Macroeconomics, Chapter 29
 Additional Notes/Readings (as needed)

(Time Permitting)

Interactions Between Fiscal and Monetary Policy

- Consolidated Government Budget Constraint
- Seigniorage Revenue and Inflationary Finance
- Active vs. Passive Monetary and Fiscal Policies
- Ricardian vs. Non-Ricardian Fiscal Policies
- Fiscal Theory of the Price Level
- Fiscal Theory of Inflation

Reading: *Modern Macroeconomics*, Chapter 16

FINAL EXAM:

WEDNESDAY, APRIL 26, 2023, 10:00am – 11:45am

LOCATION: PAGE HALL 10 (REGULAR CLASSROOM)

As per the OSU [Final Exam Schedule](#)
