

Economics 4002.02  
**Intermediate Macroeconomic Theory**  
**Syllabus**  
Smriti Verma  
Spring 2024

**Meetings:** Tuesdays and Thursdays, 11:10AM - 12:30PM; Lazenby Hall 002

**Email Address:** [verma.211@osu.edu](mailto:verma.211@osu.edu)

**Office Hours:** TBA

**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:** There is no required textbook for this course. We will be discussing topics in class and where necessary, I will be posting slides on Carmen, AFTER I have covered the topic in class.

**Grading:** The final grade for the course will be based on class participation, problem sets, and exams as follows:

Class attendance and participation - 5 percent

Problem sets - 25 percent

Midterm exam - 30 percent

Final exam (cumulative) - 40 percent

**LATE PROBLEM SETS WILL NOT BE ACCEPTED.**

**Midterm Exam:** (Tentative - will be confirmed in class)

**Thursday, March 07, 2024 (During regular lecture period and at regular lecture location)**

**Final Exam:**

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](mailto: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](https://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](https://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](mailto: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.”** 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.

## 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**

### **Microeconomics of Consumer Theory**

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

### **Static Consumption-Leisure Framework**

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

### **The Consumption-Savings Framework**

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

### **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

### **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

### **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

### **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

### **Preference Shocks**

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

### **Intertemporal Consumption-Leisure Framework**

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

### **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

### **The Phillips Curve (skim)**

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

### **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

### **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

### **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



## **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

## **(Time Permitting)**

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### **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