

**Purdue University**  
**Krannert School of Management**  
**Department of Economics**

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**Prerequisites**

Though this material will be reviewed in the course, it is extremely helpful to have a working knowledge of the following fields of Mathematics:

- Multivariate calculus
- Matrix algebra

No prior courses in Economics are required.

**Course description**

The course will introduce the major economic models and analytical tools used by macroeconomists and policymakers to assess and implement macroeconomic policies. The goals of policymakers are twofold: efficiency and growth. In order to achieve these goals, policymakers must understand how the policies interact with the institutions present in the economy to affect the incentives of households and firms to consume, work, invest, and produce. This requires a theory about how the decisions of households and firms are affected by prices and how they respond to shocks and changes in policies.

For that reason, the course focuses exclusively on micro-founded models in which there is an optimization problem by at least one agent. Examples include households maximizing utility subject to a budget constraint or firms maximizing profit subject to a technology constraint.

In addition to classic topics in the field of macroeconomics, this class also spends some time on financial models, as the financial side of the economy is inexorably connected with the real side of the economy.

## Learning outcomes

- Analyze economic data.
- Develop the tools to solve economic models to form predictions about the effects of policy on macroeconomic variables.
- Evaluate the effects of policy by combining both empirical and theoretical predictions.

## Course materials

All course material can be found on Blackboard. This includes:

- Course manuscript
- Video lectures
- Online quizzes

The course manuscript is comprehensive and contains all material that will be discussed in class (and more). During this course, we will not be able to cover all of the chapters in the course manuscript.

The video lectures are intended to complement the course manuscript.

## Course calendar

Note: All due dates are specified in the local time for West Lafayette, IN (the home of Purdue University). It is your responsibility to understand what this means and how it corresponds to your own time zone.

### Week 1: January 8 – 14

Course manuscript    Read Chapter 1: Macroeconomic Accounting.  
Videos                    Watch Chapter 1: Macroeconomic Accounting videos.

Assignment              Complete Quiz 1 (due Sunday, January 14 by 5 pm).

### Week 2: January 14 – 21

Assignment              Complete Homework 1 (due Sunday, January 21 by 5 pm).  
Homework 1 questions are available on Blackboard.

### Week 3: January 22 – 28

Course manuscript    Read Chapter 2: Mathematical Preliminaries.  
Videos                    Watch Chapter 2: Mathematical Preliminaries videos.

Assignment              Complete Quiz 2 (due Sunday, January 28 by 5 pm).

#### **Week 4: January 29 – February 4**

Course manuscript    Read Chapter 3: Microfoundations, Sections 3.1-3.6.  
Videos                    Watch Chapter 3: Microfoundations videos (Sections 3.1-3.6).

Assignment              Complete Quiz 3 (due Sunday, February 4 by 5 pm).

#### **Week 5: February 5 - 11**

Course manuscript    Read Chapter 4: Neoclassical Growth Model.  
Videos                    Watch Chapter 4: Neoclassical Growth Model videos.

Assignment              Complete Quizzes 4, 5, 6 (due Sunday, February 11 by 5 pm).

#### **Week 6: February 12 - 18**

Assignment              Complete Homework 2 (due Sunday, February 18 by 5 pm).  
Homework 2 requires you to complete the following exercises at  
the end of Chapter 4 in the course manuscript: **1, 2, 5, 7, 8, 9.**

#### **Week 7: February 19 - 25**

Course manuscript    Read Chapter 5: Endogenous Growth Theory.  
Videos                    Watch Chapter 5: Endogenous Growth Theory videos.

Assignment              Complete Quiz 7 (due Sunday, February 25 by 5 pm).

#### **Week 8: February 26 – March 4**

Assignment              Complete Homework 3 (due Sunday, March 4 by 5 pm).  
Homework 3 requires you to complete the following exercises at  
the end of Chapter 5 in the course manuscript: **1, 2, 4, 7, 8, 9.**

#### **Week 9: March 5 – 12**

##### Midterm Exam

Students will sign up for a 4-hour time slot to take the Midterm Exam. Students cannot download the exam questions from Blackboard until the beginning of that 4-hour window. They then have 4 hours to complete the exam and scan their responses back into Blackboard.

Students are permitted to use class notes and materials.

Students are not permitted to use other classmates for assistance or the internet (though the internet will not provide any assistance to the questions being asked).

## **Spring Break**

### **Week 10: March 19-25**

- Course manuscript    Read Chapter 8: Real Business Cycle.  
Videos                Watch Chapter 8: Real Business Cycle videos.
- Assignment            Complete Quiz 8 (due Sunday, March 25 by 5 pm).  
                             Complete Homework 4 (due Sunday, March 25 by 5 pm).  
                             Homework 4 requires you to complete the following exercises at  
                             the end of Chapter 8 in the course manuscript: **1, 2, 6, 7, 8.**

### **Week 11: March 26 – April 1**

- Course manuscript    Read Chapter 9: Fiscal Policy.  
Videos                Watch Chapter 9: Fiscal Policy videos.
- Assignment            Complete Quiz 9 (due Sunday, April 1 by 5 pm).  
                             Complete Homework 5 (due Sunday, April 1 by 5 pm).  
                             Homework 5 requires you to complete the following exercises at  
                             the end of Chapter 9 in the course manuscript: **2, 5, 11, 13, 14.**

### **Week 12: April 2 – 8**

#### **Fiscal Policy Case Study**

Students will select from a choice of 3 topics. Each student works individually to complete the requirements for the selected topic and present their findings in a 10-minute oral presentation (on the videoconferencing interface WebEx).

Case Study presentations take place April 7 and 8. Each student is assigned to one 45-minute time slot. Each time slot contains 3 students, each presenting a different topic and allocated 15 minutes for their presentation (10 minute presentation, 5 minutes question and answer).

### **Week 13: April 9 - 15**

- Course manuscript    Read Chapter 10: New Keynesian Monetary Theory.  
Videos                Watch Chapter 10: New Keynesian Monetary Theory videos.
- Assignment            Complete Quiz 10 (due Sunday, April 15 by 5 pm).  
                             Complete Homework 6 (due Sunday, April 15 by 5 pm).  
                             Homework 6 requires you to complete the following exercises at  
                             the end of Chapter 10 in the course manuscript: **1, 3, 4, 5, 6.**

## **Week 14: April 16 - 22**

Course manuscript    Read Chapter 13: Leverage Cycle.  
Videos                 Watch Chapter 13: Leverage Cycle videos.

Assignment            Complete Quiz 11 (due Sunday, April 22 by 5 pm).  
                              Complete Homework 7 (due Sunday, April 22 by 5 pm).  
                              Homework 7 requires you to complete the following exercises at  
                              the end of Chapter 13 in the course manuscript: **8, 9, 10, 11, 12.**

## **Week 15: April 23 – 29**

### Monetary Policy Case Study

Students will select from a choice of 3 topics. Each student works individually to complete the requirements for the selected topic and present their findings in a 10-minute oral presentation (on the videoconferencing interface WebEx).

Case Study presentations take place April 28 and 29. Each student is assigned to one 45-minute time slot. Each time slot contains 3 students, each presenting a different topic and allocated 15 minutes for their presentation (10 minute presentation, 5 minutes question and answer).

## **Week 16: April 30 – May 6**

### Final Exam

Students will sign up for a 4-hour time slot to take the Final Exam. Students cannot download the exam questions from Blackboard until the beginning of that 4-hour window. They then have 4 hours to complete the exam and scan their responses back into Blackboard.

Students are permitted to use class notes and materials.

Students are not permitted to use other classmates for assistance or the internet (though the internet will not provide any assistance to the questions being asked).

### **Methodology**

The course will be based on a series of video lectures. The video lectures perfectly complement the course text. The lectures are supported by:

1) *Quizzes (called online tests in Blackboard)*

Students are required to complete 11 quizzes. Quizzes are completed in Blackboard and are due by Sunday at 5 pm.

The tests can be taken an unlimited number of times, with only the highest grade counting toward your overall course grade.

2) *Homework assignments*

Students are required to complete 7 homework assignments. Homework assignments are submitted in Blackboard and are due by Sunday at 5 pm.

Solutions for all homework assignments (except Homework 1) will be released immediately after the due date. Homework 1 is a data analysis homework and the solutions (graphs and tables) are contained in the videos made available to the students already.

For that reason, no late homework submissions are accepted. A score of 0 will be received for any late homework submissions.

3) *Case studies*

See the grading rubric (Appendix to this document) for the required components of the oral presentations.

4) *Exams*

There is both a Midterm Exam and a Final Exam (see Course Calendar).

**Assessment**

Quizzes	15%
Homework	15%
Case study: Fiscal policy	15%
Case study: Monetary policy	15%
Midterm exam	20%
Final exam	20%

## Grading Rubric (100 total points)

### Organization (10 points)

Criteria: length of presentation

If < 8 or > 12 minutes: **-10 points**

If < 6 or > 14 minutes: **-20 points**

Criteria: introduction

The policy question is clearly stated at the beginning together with an order of the items to be discussed. **5 points**

Criteria: conclusion

The contribution of the research is succinctly summarized, including the highlighting of the key takeaway message. **5 points**

### Figures, Charts, and Tables (10 points)

Criteria: number of visual aids

Each presentation can have up to 3 visual aids. This includes all slides in a Powerpoint presentation.

A title page does not count toward the maximum of 3.

If more than 3 visual aids: **-10 points**

Criteria: Aesthetics

Visual aids are easy-to-read and have clearly defined titles, variables, axes, and labels **5 points**

Criteria: Relevance

The selected visual aids are the most appropriate means to relay information to the audience, in particular accounting for the limit on the number of visual aids.

Bullet points in a Powerpoint slide are not effective. These are easily replaced by simply reading each point out loud. The visual aids must play a role that cannot be replaced with words. **5 points**

### Theoretical Connection (20 points)

Criteria: theory predictions

The leading theoretical predictions (typically based upon the theoretical models covered during the course) are discussed. This includes the possibility that there may be conflicting theoretical predictions that are relevant to the topic. **10 points**

Criteria: theory applied to policy

No theory is perfect and not theoretical model can completely characterize an economic issue. For this reason, the basic theoretical model must be extended (with sound economic intuition, no formal mathematics is required) in order to be able to address the specific policy question. In this extension, all assumptions must be stated. **10 points**

### Empirical Analysis (20 points)

Criteria: data source

The data source is clearly identified.

It is also clear how the raw data was adjusted into the form tabulated, graphed, or discussed in the presentation. **5 points**

Criteria: originality of data

The data gathered is unique, in that it is the most appropriate data in order to address the particular policy question. **5 points**

Criteria: quality of data analysis

This refers to the summary statistics and econometric techniques used to analyze the data. It is not required to use any econometrics to earn full marks, though I also do not discourage its use. The data can be effectively used using only basic statistics and using only Excel. **10 points**

#### Policy Recommendation (**20 points**)

Criteria: coherent policy recommendation

Even though the evidence may point in different directions, there is a single, coherent policy recommendation. **5 points**

Criteria: looking forward

What new factors would lead to a change in the policy recommendation? Would the results be likely to change with updated data? What are some new data variables that need to be collected in order to properly address the policy question? **5 points**

Criteria: quality of policy analysis

The policy debate, including both sides of the issue, is well-understood and addressed, including unintended consequences and future concerns. Yet, the chosen policy recommendation is compelling and skillfully argued, ideally even convincing to initial skeptics. **10 points**

#### Question and Answer (**20 points**)

Criteria: quality of the responses

Questions are answered correctly and concisely in order to allow for a handful of questions in the 5-minute window. **10 points**

Criteria: future work, further research

It is possible that some questions cannot be answered. If the presenter is unable to answer a question given the research, it should be clear what steps would need to be taken in future research to be able to answer such a question. **10 points**



### **Qualities of a Great Presentation (A work)**

1. You state the topic and policy recommendation in the first 60 seconds, and summarize your findings in the final 60 seconds. Overall, you make efficient use of your time and respect the time commitment made by the audience.
2. You tie the argument back to the theory introduced in either this class or in previous economic coursework, and do this connection correctly.
3. Scholarly articles form the *basis* for motivation about which data series to analyze. If a scholarly article analyzed time series X over the period Y-Z, then you find the raw data on FRED (or other sources) and try to replicate the results.
4. You go the extra step and find different time series or pieces of evidence, especially those that have not been considered by presentations in past years.
5. You do additional statistical analyses, including (but not limited to) regressions, correlation, T-test, F-test, etc.
6. Although the evidence may point in different directions, you tie everything together under one coherent policy recommendation.
7. You remain an unbiased analyst of the data (a true economist).

### **Qualities of a Typical Presentation (B work)**

1. You exceed your allotted time window, because you did not plan how you would use your time and did not organize your arguments. This might be because you spent the first 2 minutes re-reading the case study assignment (which is common knowledge to the audience).
2. You ignore the class theory entirely and make vague references to “shifts” in imaginary curves that we can’t see. Shifts in these imaginary curves from ECON 101 can be justified by a large number of confounding sources. Even if we identified a single source, such analysis is static, whereas macroeconomics focuses on dynamic analysis.
3. Scholarly articles form the *evidence* in your presentation. You cite tables and figures created by others (copy and paste someone else’s figures into your slides), instead of finding the data yourself.
4. Your evidence and figures are very similar to presentations in past years. This commonly indicates that your presentation has the previous characteristic (where your chosen scholarly articles are the first hits on a Google search).
5. You use words like “big change”, “large increase”, or “seemingly different”, without any supporting statistical analysis.
6. Finding two pieces of evidence with opposite predictions, you claim that no prediction is possible instead of articulating that “if the economic conditions are as follows....., then the first prediction holds, whereas if the economic conditions are the other possibility....., then the second prediction holds.”
7. You allow your own personal experience to intrude on your analysis. Anecdotal evidence is a nice supplement to rigorous data analysis, not a substitute.