



College of the Holy Cross
Department of Economics and Accounting
Economics 266 – Quantitative Macroeconomics
Course Syllabus
Fall 2021

Course Description

In this course we will learn:

- How to construct, solve, and simulate dynamic macroeconomic models.
- How to obtain and analyze macroeconomic data.
- Methods to forecast macroeconomic time series.
- How to work with Excel
- How to program in Matlab.

This course extends static models of economic fluctuations (e.g. IS-LM/AS-AD) to a dynamic context. We learn how to solve these models using computer software such as Excel and Matlab. Additionally, students will gather economic data from online sources and learn to manipulate it using software applications such as Excel and Matlab. Finally, students will learn numerical techniques for forecasting these macroeconomic time series. The goal of the course is to bring the theoretical concepts from Econ 256 to life through analysis of macroeconomic data and macroeconomic forecasting applications.

Professor:

Dan Tortorice
dtortori@holycross.edu
Stein 505

Office Hours: (On Zoom) Tuesdays 10-12pm and 1-3pm

<https://holycross.zoom.us/j/6810415663?pwd=TnZxeWRBKzRhVU0wVUUh1L1RWdDRzUT09>

(In person) Fridays 10-11am & 1-2pm and by appointment.

Prerequisites

Econ 256 (Macroeconomics)
Econ 249 (Statistics)
One year of calculus or equivalent

Class Schedule

Section 1: Mon/Wed/Fri 11:00am – 11:50am Room: Stein 311

Required Readings

[M] Mankiw, N. Gregory (2019) Macroeconomics, Worth Publishers, 10thed

[HA] Hyndman, Rob and Athanasopoulos, George (2020) Forecasting: Principles and Practice. Available at: <https://otexts.com/fpp3/>

Students will read excerpts from Federal Reserve publications to improve their ability to write about economics and present economic data

Supplementary Readings

Diebold, Francis (2017) Forecasting in Economics, Business, Finance and beyond. Available at: <https://www.sas.upenn.edu/~fdiebold/Teaching221/Forecasting.pdf>

Coursework and Grading

Coursework will consist of class attendance and participation, 8 problem sets, maintaining an economic forecast log, short papers in response to reading federal reserve publications, two midterm exams and a forecasting project/paper. The final grade is determined using the following weighting scheme: problem sets are 15%, class participation is 5%, maintaining the forecast log is 10%, the response papers are 10%, the first exam is 20%, the 2nd exam is 20%, and the final project is 20%.

Problem sets are due by the end of the class day as indicated on the syllabus and problem set. The lowest problem set grade will be dropped.

Students will maintain a forecast log throughout the semester where they will forecast key macroeconomic variables the day before their data are released. The variables to be forecasted are indicated on the syllabus along with release dates. (Release dates are also available at: https://www.newyorkfed.org/research/calendars/nationalecon_cal.html.) Student must update their log on the day **BEFORE** the release date and return afterwards to compare their forecast with the actual value.

Students will read four federal reserve publications and write a short response to each in response to a writing prompt. Due dates for these responses are indicated on the syllabus.

This course requires a substantial student effort. Success in this course is based on the expectation that students will spend a minimum of 9 hours of study time per week in preparation for class (readings, review of lecture notes, working on problem sets, attending office hours and preparation for exams, etc.)

Course Policies

Laptops and Cell Phones

Use of laptop computers, tablets, or cell phones is not allowed in the classroom at any time unless specifically requested by the professor.

Class Attendance and Participation

Students are expected to attend class and attendance will be recorded. In addition, students are expected to come to class on time and be attentive during class. Excessive breaks from class, use of electronic devices in class (except when requested by the professor), and excessive in-class discussions with other students will result in students being marked absent.

Absence from Exams

Check the date of the midterm exams. Notify me as soon as possible if you are unable to make the exam dates.

I only excuse students from a midterm exam if they have obtained an excused absence from the Class Dean and except in the case of emergency or sudden illness all excused absences must be obtained in advance. For more information see the College policy at:

(http://www.holycross.edu/sites/default/files/files/registrar/excused_absence_policy.pdf)

Students receive a grade of zero for any exam for which there is an unexcused absence.

Late Problem Sets

Once solutions have been posted (usually immediately after class on the due date) problem sets will no longer be accepted and a grade of zero will be given for any missing assignment.

I realize circumstances may prevent students from turning in an assignment. That is why I drop the lowest problem set grade. If a serious illness or an emergency prevents a student from turning in an additional problem set on time I may at my discretion excuse a student with proper documentation. If excused, all other problem sets will be reweighted accordingly.

Late Policy for other assignments

The four response papers are due as indicated on the syllabus by the end of the day. Students will receive a grade of zero for any later papers unless given an extension by the professor **before** the due date. Such extensions will be rare and short lived. The forecast log must be updated by the due date with no exceptions. The final paper is due during final exam week. Extensions will be granted only in exceptional circumstances.

Collaboration and Academic Honesty

Students are expected to work with each other on the problem sets. However, the final write up of answers and computer program code you turn in are to be your own. Do not copy someone else's answer. You will gain nothing and will be in violation of the College's rules.

You are expected to be familiar with and to follow the College's policies on academic integrity ([https:// https://catalog.holycross.edu/requirements-policies/academic-policies/#academicintegritytext](https://catalog.holycross.edu/requirements-policies/academic-policies/#academicintegritytext)). Instances of alleged dishonesty will be forwarded to the Class Dean. Potential sanctions include failing grades for the assignment to dismissal from the College.

Accommodations

Any student who feels the need for accommodation based on the impact of a disability should contact the Office of Accessibility Services (<https://www.holycross.edu/health-wellness-and-access/office-accessibility-services>) to discuss support services available. Once the office receives documentation supporting the request for accommodation, the student would meet privately with Accessibility Services to discuss reasonable and appropriate accommodations. The office can be reached by calling 508-793-3693 or by visiting Hogan Campus Center, room 215A.

If you are already registered with Disability Services, please be sure to get your accommodation letters and deliver them to me as soon as possible and not less than two weeks before a graded assignment or examination that you are requesting accommodation for. For more information see, <https://catalog.holycross.edu/requirements-policies/academic-policies/#coursepolicies>

Course Web Page

The course web page will be on Canvas. Course announcements, assignments, notes, and handouts will be posted on this page.

Recording of Classes

Classes may be recorded and posted to Canvas for use by students registered in this class.

Additional Readings

Staying astride of current economic news will make the course more informative and livelier. Any mainstream media outlet will report on economic news. I find the *Economist* and the *Wall Street Journal* particularly emphasize economics.

Many economists write blogs that will provide a nice complement to the work in this course. Some of my favorites are:

Tyler Cowen and Alex Tabarrok (<http://www.marginalrevolution.com/>)

Brad DeLong (<http://delong.typepad.com/>),

Paul Krugman (<http://krugman.blogs.nytimes.com/>),

Greg Mankiw (<http://gregmankiw.blogspot.com/>),

Dani Rodrik (<http://rodrik.typepad.com/>)

Frank Deibold (<https://fxdiebold.blogspot.com/>)

538 (<https://fivethirtyeight.com/>)

Many economists are active on twitter as well.

NOTE: Forecast log should be completed BEFORE date on the syllabus

Course Outline

| <u>Date</u> | <u>Topic</u> | <u>Readings</u> | <u>Assignments</u> | <u>Forecast Log</u> | <u>Fed Readings</u> |
|-------------|--------------------------|-----------------|--------------------|-----------------------|------------------------|
| 9/1 (W) | IS-LM Model | M Ch 10-11 | PS 1 Out | | |
| 9/3 (F) | | | | | Unemp. Rate |
| 9/6 (M) | AS-AD Model | M Ch 14 | | | |
| 9/8 (W) | | | PS 1 Due, PS 2 Out | Initial Claims | |
| 9/10 (F) | | | | | |
| 9/13 (M) | Dynamic AS-AD | M Ch 15 | | CPI Inflation | |
| 9/15 (W) | | | PS 2 Due, PS 3 Out | | |
| 9/17 (F) | | | | Okun's Law | |
| 9/20 (M) | | | | | |
| 9/22 (W) | Review | | PS 3 Due | Fed Funds Rate | |
| 9/24 (F) | Exam 1 | | | | |
| 9/27 (M) | Intro to Excel (LAB) | | | | |
| 9/29 (W) | DAS-DAD in Excel (LAB) | | PS 4 Out | | |
| 10/1 (F) | | | | PCE Inflation | |
| 10/4 (M) | Intro to Matlab (LAB) | | | | |
| 10/6 (W) | DAS-DAD Matlab (LAB) | | PS 4 Due, PS 5 Out | | |
| 10/8 (F) | | | | Unemp. Rate | Inflation Expectations |
| 10/18 (M) | Macroeconomic Data | M Ch 2 | | Industrial Production | |
| 10/20 (W) | Visualizing Data | HA Ch 2 | PS 5 Due, PS 6 Out | | |
| 10/22 (F) | | | | | |
| 10/25 (M) | Simple Forecasts Methods | HA Ch 3 | | | |
| 10/27 (W) | Simple Forecasts (LAB) | | Draft of Paper Due | GDP Growth | |
| 10/29 (F) | | | | | |
| 11/1 (M) | Linear Regression | HA Ch 5 | | | |
| 11/3 (W) | | | PS 6 Due, PS 7 Out | | |
| 11/5 (F) | | | | Unemp. Rate | |
| 11/8 (M) | Time Series Regression | HA Ch 5 | | | Are some prices |
| 11/10 (W) | | | | CPI Inflation | |
| 11/12 (F) | Regression (LAB) | | | | |

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|-----------|------------------------|-----------|-----------------|----------------------|-----------|
| 11/15 (M) | | | | Advance Retail Sales | |
| 11/17 (W) | Review | | PS 7 Due | | |
| 11/19 (F) | Exam 2 | | | | |
| 11/22 (M) | AR Models | HA Ch 8 | | PCE Inflation | |
| 11/29 (M) | ARMA Models | HA Ch 8 | PS 8 Out | | Bob Solow |
| 12/1 (W) | | | | | |
| 12/3 (F) | ARIMA Models (LAB) | HA Ch 8 | | Unemp. Rate | |
| 12/6 (M) | Smoothing Models | HA Ch 6-7 | | | |
| 12/8 (W) | | | PS 8 Due | | |
| 12/10 (F) | Smoothing Models (LAB) | | | CPI Inflation | |
| 12/15 (W) | | | Final Paper Due | | |