

ECON 411: Advanced Macro (Spring 2023)

Mon/Wed/Fri 10:00-10:50, Chancellors 123

CONTACT INFORMATION

Professor Throckmorton

E-mail: nat@wm.edu

Office: Chancellors 246

Office Hours: Tues 9:00-12:00

or by appointment any afternoon (please e-mail at least one day in advance)

COURSE DESCRIPTION AND PREREQUISITES

Macroeconomists use dynamic models with many markets to examine the relationship between aggregate income, consumption, investment, and other variables over time. A few models we can solve by hand (using some algebra and calculus), but we usually need the help of a computer. Getting that solution allows us to examine the short- and long-run outcomes of policy changes made by governments and their central banks around the world. Models will build on theory from the intermediate courses, emphasizing the microeconomic foundations of macroeconomic models. Prerequisites include both Intermediate Micro and Macro (ECON 303 and 304) and Calculus I (MATH 108/111/131).

RESOURCES

- Book: McCandless, George (2008): *The ABCs of RBCs: An Introduction to Dynamic Macroeconomic Models*. (Cambridge, MA: Harvard University Press)
- MATLAB: for installation instructions, please visit <https://software.wm.edu/wp-content/uploads/2021/01/Matlab-Instructions.pdf>
- L^AT_EX: <https://www.overleaf.com/>

MATLAB

In addition to theoretical tools, modern macroeconomics often requires extensive computational expertise to solve and estimate models. At several points during the semester, we will use MATLAB, which is commonly used by macroeconomists. Throughout the semester, you may want a guide for learning MATLAB so here are a few options:

- Miranda, Mario J. and Paul L. Fackler (2002): *Applied Computational Economics and Finance*. (Cambridge, MA: The MIT Press)
- Gilat, Amos (2010): *MATLAB: An Introduction with Applications*, 4th ed. (Hoboken, NJ: John Wiley & Sons)
- Pratap, Rudra (2009): *Getting Started with MATLAB: A Quick Introduction for Scientists and Engineers*. (New York, NY: Oxford University Press)

There are also countless forums (e.g., MathWorks or Stack Exchange) and publicly available MATLAB scripts (including my own).

EXAMS

There are two exams, each worth 200 points (or 20% of your final grade):

- Exam 1: Friday, March 10
- Exam 2: Friday, April 21

If you cannot take an exam, please let me know as soon as possible, and we'll come up with a plan so you can earn the points.

Please note that anything discussed in class or any topic in the assigned reading from the textbook is “fair game” for the exams. There may be material presented in class that is not in your textbook, so **make sure that you have a full set of notes.**

ASSIGNMENTS

- In total, there are 3 problem sets, making up 15% of your course grade.
- There are 3 writing assignments worth 35% of the course grade. There is a brainstorming exercise (5%), a literature review and research proposal (10%), and a final paper (20%). The main goal is to build up to the final paper gradually in a manageable way where rewriting is an important part of the process.
- There is a short 10 minute presentation of your literature review to the class followed by a 5 minute Q&A. That is worth 10% of your final grade.

All assignments must be typeset in L^AT_EX, and some of the assignments will require MATLAB. All assignments must be turned in, in class, on the due date. Late work will *not* be accepted. I encourage you to work together, and you may work in groups of 3 people or less. I will not assign groups nor will I police them; you may change groups throughout the semester.

GRADES

The classes will be a mixture of lecture, discussion, MATLAB demonstrations, and review. The grading scheme follows:

Activity	Points	Percent
Writing Assignments	350	35%
Problem Sets (3@50)	150	15%
Presentation	100	10%
Exam 1	200	20%
Exam 2	200	20%

There are 1000 total points available in this class. Please note that it is possible to miss the next highest grade by only a few points. This may happen, so be aware of this possibility. If you want

to appeal any grading, you must contact me no later than one week from the date I post your score. The following table indicates the minimum number of points needed to guarantee a certain grade.

Grade	Minimum Points	%	Grade	Minimum Points	%
A	920	92	C	700	70
A-	880	88	C-	670	67
B+	850	85	D+	640	64
B	800	80	D	580	58
B-	770	77	D-	550	55
C+	740	74	F	<550	<55

ATTENDANCE

I expect you to attend all classes and take all exams. If you are unable to attend class or take an exam, please let me know as soon as you can. (You do not need to explain why unless you want to.) If you are unable to attend class, I will send a zoom link shortly before class and you may attend remotely if you are able. I will not record lectures. In some cases, I will upload slides or take pictures of anything I write on the whiteboard. In other cases, you will need to obtain notes from a classmate. If I am unable to attend, I will teach remotely via zoom. If I am unable to teach remotely, I will try to find a substitute teacher, otherwise class may be cancelled. I scheduled two catch up and review days during the semester for flexibility.

STUDENT ACCESSIBILITY SERVICES

William & Mary accommodates students with disabilities in accordance with federal laws and university policy. Any student who feels they may need an accommodation based on the impact of a learning, psychiatric, physical, or chronic health diagnosis should contact Student Accessibility Services staff at 757-221-2512 or at sas@wm.edu to determine if accommodations are warranted and to obtain an official letter of accommodation. For more information, please see www.wm.edu/sas.

HONOR CODE

I expect everyone to follow the Honor Code. Please see your student handbook for details. “As a member of the William and Mary community, I pledge on my honor not to lie, cheat, or steal, either in my academic or personal life. I understand that such acts violate the Honor Code and undermine the community of trust, of which we are all stewards.” Financial and economic crises are precipitated by breeches of trust, so you must understand this is not only very important to me but also to our entire society. I will not hesitate to punish violators of the Honor Code.

MENTAL AND PHYSICAL WELL-BEING

I recognize that students juggle different responsibilities and can face challenges that make learning difficult. There are many resources available at W&M to help you navigate emotional/psychological, physical/medical, material/accessibility concerns, including

- The W&M Counseling Center, 757-221-3620 (services are free and confidential)
- The W&M Health Center, 757-221-4386
- For additional support, contact the Dean of Students, 757-221-2510
- For additional resources, visit <https://www.wm.edu/offices/wellness/resources/>.



TENTATIVE COURSE OUTLINE

This is a tentative outline. I encourage you to independently work through these resources. Each topic will take up several classes. I will announce any modifications to this schedule in class.

1. **Basic Dynamic General Equilibrium Model**

Readings: McCandless (2008, Chapter 3), Wickens (2012, Chapter 2, on blackboard)

2. **Recursive Methods and Dynamic Programming Introduction**

Readings: McCandless (2008, Chapters 4-5), Sargent (1987a, Chapter 1, on blackboard)

3. **Linear Rational Expectations Models and the Lucas Critique**

Readings: McCandless (2008, Chapter 6), Dejong & Dave (2011, Chapters 2, 4, on blackboard)

4. **Real Business Cycle Models**

Readings: Cooley (1995, Chapter 1, on blackboard), Romer (2011, Chapter 5, on blackboard)

IMPORTANT DATES

Date(s)	Assignment/Activity
Feb 10	Brainstorming Exercise
Feb 17	Problem set #1
Mar 3	Problem set #2
Mar 10	Exam 1
Mar 24	Literature Review
Apr 14	Problem set #3
Apr 21	Exam 2
Apr 26, 28 and May 1, 3	Presentations
	Final Paper, Tuesday, May 16, 2:00pm

OTHER IMPORTANT DATES

Date(s)	Event
Feb 3	Add/drop deadline
Mar 11-19	Spring Break
Mar 6-26	Midterm grading period
Mar 27	Withdraw deadline