Dalhousie University
Department of Economics
Fall 2023.
ECON 4421: Macroeconomics Theory.
Section 1, CRN: 11096

TuTh 10.05am – 11.25am

Room: DUNN - 301A

CRN: 11096

Instructor :

Andrea Giusto   andrea.giusto@dal.ca   Economics Department A24

Prerequisites. ECON 2201.03, ECON 3700.03, MATH 1000.03 (or equivalent), MATH 1010.03

Course Description: this class bridges the gap between macroeconomic models and the data produced by modern economies at the aggregate level. Modern economics has overwhelmingly been empirical in its focus and content and therefore we will focus on the conduct of empirical research in macroeconomics. This is *not* an applied class, but rather we will focus on *methodological* issues and try and assimilate the logic that lies behind some popular empirical strategies.

The past four decades have been very exciting times for macroeconomists due to substantial research efforts towards testing our models against the data. These efforts led to the formulation of a body of empirical methods they are very rarely – if ever – taught at the undergraduate level. This class seeks to get you started with these techniques, and therefore it will challenge you to learn concepts from a set of diverse fields such as linear algebra, calculus, computer programming, statistics, as well as economics. At the end of the class we will engage in the critical reading of one or two important papers that use the sort of techniques that we have learned in class.

Course Materials: I expect you to work mainly with two sources: your notes, and my notes. My lecture notes are brief and they are supposed to be a reference rather than the main study tool: you are expected to take your own notes while attending each lecture.

The class notes serve another purpose: *they contain your homework.* There won't be a separate document/message containing the assignment, but rather you have find in the notes where the homeworks are. I chose this format because (a) it is practical, and (b) it puts each question in the appropriate context.

Grading: the final grade for this class will be based on weekly homework assingments (worth collectively 5%), two midterms (30% each), and a final exam (35%). All tests are comprehensive for this class. Homework assignments are due **before the lecture begins**. In case you cannot come to class on the day a homework is due, you can turn in the homework in person before the due date (slip it under my door), or to send it via email in **PDF format**. This is **strict**: I will not accept any other formats. If you cannot turn in a homework assignment

on time and you have *very* good reasons for it, you will have to provide a timely warning to me (via email is usually best) and any supporting documentation that I will request. Depending on the case, I may grant an exemption from that homework, assign a new one, or deny your petition and assign a grade of zero to your missing essay.

If you miss a test for a good reason the same guidelines will apply. You will be expected to let me know your issue as soon as possible and to be able to produce any supporting documentation. Depending on the case I may either grant an exception for that midterm, schedule an oral examination on the relevant topics, or deny your petition and assign a grade of zero to your midterm.

The tests will be conducted during normal class hours, in person if possible, online otherwise. The tentative schedule is the following:

- Midterm 1: Thursday, October 12th.

- Midterm 2: Thursday, November 2nd.

- Final: December.

This schedule is intended to give you a sense of the deadlines you will be facing during the midterm and it is not firm: we will change it as needed depending on the pace we will be able to keep during the class.

Grading Scale.

Final Weighted Score	Letter Grade
$[90, 100]$	A+
$[85, 90)$	A
$[80, 85)$	A-
$[77, 80)$	B+
$[73, 77)$	B
$[70, 73)$	B-
$[65, 70)$	C+
$[60, 65)$	C
$[55, 60)$	C-
$[50, 55)$	D
$[0, 50)$	F

Course Content:

- Lecture 1: A Review of the IS–LM Framework.

- Lecture 2: Policy in IS–LM. The AS.

- Lecture 3: Transition Dynamics in the AS-AD model.

- Lecture 4: Economic Growth and Rational Expectations.

- Lecture 5: Introducing "Shocks" Linear Algebra.

- Lecture 6: Empirics: Data and Price Indeces.

- Lecture 7: Empirics: A Gentle Introduction to R.

- Lecture 8: The wrong way.

- Lecture 9: The right way.

- Lecture 10: The VAR(p) model.

- Lecture 11: The MA representation of VARs.

- Lecture 12: The VAR's Impulse Response Function.

- Lecture 13: Estimating VARs.

- Lecture 14: Orthogonalization.

- Lecture 15: Identification.

- Lecture 16: Specifying VARs.

- Lecture 17: A Simple Identified VAR Analysis.

- Lecture 18: "Does Monetary Policy Generate Recessions?" Sims, Zha, *Macroeconomic Dynamics*, 2006.

- Lecture 19: Expectations and Technological Growth.