

Dalhousie University  
Faculty of Science Course Syllabus  
Department of Economics  
**ECON 4421: Macroeconomics Theory.**  
Fall 2022.  
**CRN: 11044**

**Instructor :**

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**Lectures :**

TuTh 1.05pm – 2.25pm in McCain building, room 2190.

**Prerequisites :**

ECON 2201.03, ECON 3700.03, MATH 1000.03 (or equivalent),

**Course Description:** this class bridges the gap between macroeconomic models and economic data from developed capitalistic 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 three 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. I will post my notes online *after* each class: they are the guideline I use for lectures and rest assured that all the tests will be based on them. As already mentioned the lecture notes are brief and they are supposed to be a reference rather than the main study tool: you are expected to take good notes in class. A sure way to have *really* good notes, is the following method: after having taken the notes in class, *during the same day* and possibly right after the lecture, you should rewrite the whole thing down, in good English and filling in all the blanks you left during the first pass. It is crucial to do this as early as possible, as your memory of the lecture is fresher! This approach is time consuming, but it will definitely fix in your memory the material. I will *not* post the lecture notes before the lecture, because this greatly decreases your incentives to write down your own material, and the class performance decreases greatly.

The class notes also contain the homework for thought-provoking questions and exercise practice. Putting the questions directly in the notes should help you to put the question in the appropriate context.

**Grading:** the final grade for this class will be based on two midterms (32.5% each), and a final exam (35%). All tests are comprehensive for this class. If you are unable to attend class on the day of an exam, you will 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, “carry forward” the weight of the missed test on future exams, or assign a grade of 0 if you miss the exam for frivolous reasons.

The same guidelines will apply for the final exam. 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, the same remedies outlined above for midterms will apply.

The tests will be conducted during normal class hours and the tentative schedule is the following:

- Tuesday, October 6<sup>th</sup>, Midterm 1.
- Thursday, November 3<sup>rd</sup>, Midterm 2.
- Final in 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 Indices.
- 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.