

Dalhousie University  
Faculty of Science Course Syllabus  
Department of Economics  
**ECON 4421: Macroeconomics Theory.**  
Fall 2018.  
**CRN: 10948**

**Instructor :**

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**Lectures :**

Mondays 11.35 – 12.55      Dunn 301A  
Wednesdays 11.35 – 12.55      Dunn 301A

**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. This will enable you to *read* and *understand* a portion of current research pieces.

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. I will not post the lecture notes before class, as this will give you an incentive to not take your own notes, and in my experience that is not desirable. So, don't bother asking. The 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 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 pretending to be writing for your very good friend that did not attend class today. It is crucial to do this as early as possible, as your memory of the lecture is fresher! This approach will definitely fix in your memory the material.

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 will be based on weekly homeworks (5%), two midterms (30%), and a final exam (35%). Each homework is due on Wednesday **before the lecture starts**, unless otherwise indicated. 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 and the tentative schedule is the following:

- Wednesday, October the 10<sup>th</sup>, Midterm 1.
- Monday, November 21<sup>st</sup>, Midterm 2.
- Some day in December (decided by the Registrar Office), Final.

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 model

- Lecture 2: A review of the AS-AD model – part 1
- Lecture 3: A review of the AS-AD model – part 2
- Lecture 4: Introducing “Shocks” and Linear Algebra
- Lecture 5: Empirics I: Data and Price Indices
- Lecture 6: Empirics II: Introducing R
- Lecture 7: More on 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 Wold Decomposition Theorem.
- Lecture 13: Impulse response functions.
- Lecture 14: Orthogonalizations.
- Lecture 15: Forecasting and variance decomposition.
- Lecture 16: Estimating VARs.
- Lecture 17: Using estimated VARs.
- Lecture 18: Identification.
- Lecture 19: “Does Monetary Policy Generate Recessions?” Sims, Zha, *Macroeconomic Dynamics*, 2006.