Advanced Topics in Macroeconomics and Policy
DOC12a

Spring 2026

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Lecture:	Tuesday 2:00-4:00pm, Wednesday 11:00am-1:00pm in HOGM 00.74
Office hour:	By appointment or drop in (HOG 02.124 or online)
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This is a topics course in macroeconomics and is part of the Master of Advanced Studies in Economics. While Advanced Macroeconomics I and II equip you with toolboxes that help you start your own research in macroeconomics, this course will showcase how some of these methods are being used in academic research papers and will also allow you to apply the methods yourself. Macroeconomics is a very broad area with many subfields and the goal of this course is not to give you an overview of all those different topics. It is rather a (subjective and very small) selection of topics that have received substantial attention in macroeconomic research in the last years. We are going to cover both empirical and quantitative work, but the focus will be more on working through sets of models.

Topics covered in this course include

1. Review of RBC models
2. Government spending multipliers in RBC and NK models
3. Introduction to HANK
4. Basics of open-economy macroeconomics
5. Micro in Macro

Goal:
At the end of the course, the student
- Feels comfortable implementing a variety of DSGE models in dynare and can interpret the model results
- Knows how to approach theory-driven empirical work using micro data
- Understands and can critically evaluate state-of-the-art academic papers in macroeconomics related to the topics discussed in class
- Has improved their presentation skills
- Has developed the capacity to sketch research ideas & present them in an accessible way
- Has taken first steps in developing their own DSGE models

Prerequisites:
You should ideally have taken Advanced Macroeconomics I (and II) to be familiar with the basic business cycle model. That being said, we will quickly review the basic RBC model in the beginning and give a short introduction to dynare.

Software:
Modern macroeconomics is a quantitative science. As such, students will be expected to perform quantitative exercises using MATLAB. You will also be asked to download dynare, which is a set of codes used to solve, simulate, and estimate DSGE models. Throughout the course I present a variety of models that I solve using dynare. Many of the problem sets will feature a heavy MATLAB component. I strongly believe in "learning by doing," and I think you learn well by coding things up yourself. This quantitative work will have the added advantage of leaving you well-equipped to begin doing your own research in macroeconomics in the coming years.

Before the beginning of the course, you should install dynare on your computer and run their example code. We will build a dynare code together and I want to make sure that everyone has the code implemented and running by the end of the lecture.

To install dynare, see
https://www.dynare.org/resources/quick_start/

Please let me know by the end of the first lecture if you have any problems installing dynare.

Seeking help:
I expect quite a bit of heterogeneity & diversity among students. We all come to this course with different backgrounds. I see this as a big asset that can enrich our interactions and our course.

All students of any background are welcome in my class and belong to this class. Any student who faces challenges that may affect their performance in the course is urged to contact their ombudsperson. Furthermore, please notify me if you are comfortable in doing so. This will enable me to provide any resources that I may possess.

This course can be challenging at times. I struggled a lot as a Ph.D. student! Successful students seek help and ask questions during the course / after the course. If you feel that you're lost, talk to me. Chances are that you are not the only one. I much rather adjust the pace of the course than losing students along the way. My main goal for this course is for you to succeed!

Toledo forum:
We have a forum on Toledo where you can ask your questions regarding anything. We will have specific sections for each problem set. I strongly encourage you to make use of this forum!

Office hours:
Office hours are by appointment or by drop-in. You are free to stop in at any time, though I may not be able to meet with you then.

Meetings:
I would like to *meet all of you one-to-one at least 3 times* this semester: Once at the beginning to get to know you a bit more (17th of February after the lecture), once towards the middle (24th of March after the lecture) to see how you are doing and how I can help you, and once at the end (to be determined) after your presentation to discuss you presentation and your plans for the term paper.

Class format:
The course consists of lectures on both Tuesday and Wednesday. Four lectures will be replaced by a TA session that is intended to help you with the problem sets. In week 4, there are no lectures because of the Ph.D. course by Pablo Guerron during that week.

Lectures:
We are a small group of students, which allows us to have a rather interactive class. This is not an undergraduate lecture, but rather a forum for discussion. **If you have any questions, do not hesitate to ask them**. Questions are at the beginning of all research. If there is something you do not understand, it is likely that your classmate does not understand it either.

TA sessions:
Roughly a week before the submission deadline of a problem set, you will have a TA session. To prepare for the TA session, you should (i) have read any course notes related to the topic and (ii) have started tackling the problem set.

The TA will present the problem set and provide general guidelines on how to tackle the problem set. The TA might also review some of the key material that was discussed during the lecture. The course notes might be particularly useful in bridging the gap between the lectures and applying the material in the problem sets. The TA won't have time to go through all course notes, but the TA sessions are a good moment to discuss anything that might be unclear.

Every year together with other universities in Belgium, we invite a renowned speaker in macroeconomics to give a Ph.D. mini course. This year, we have **Pablo Guerron** from Boston College give a lecture on uncertainty shocks at KU Leuven from March 2 - 6. I expect you to attend the lectures (registration required).

Readings:

The focus of this course is on selected research papers and therefore does not follow any particular textbook. The following is a list of your main resources:

- *Slides*: Will be posted on Toledo before the lecture.
- *Papers*: For each topic assigned (mandatory) reading includes a list of papers (see reading list)
- *Course notes*: For certain topics, I have prepared course notes that are posted on Toledo.

Additional resources:

- Textbook: Jordi Galí, *Monetary Policy, Inflation, and the Business Cycle,* 2015.
- Excellent course notes by Eric Sims
- Textbook: Azzimonti, Krusell, McKay and Mukoyama: *Macroeconomics*

Articles can be downloaded from journal websites or the authors' website. You might need to go through the KU Leuven library to access the article. If you have trouble locating a particular article, please let me know and I will make copies available.

How to read research papers:

Research papers are not textbooks and the quality of the exposition differs quite a bit across authors. Many papers are written for a very specialized audience, making them less accessible. Other authors use a more accessible language, making complex concepts understandable to a broad audience. Some articles are worth the effort of understanding every single equation, but that is the minority.

A good indication is the quality of the journal, but there are some good articles that were published in minor journals or never got published. In economics, you often hear people talk about the "top 5", which refer to the top general interest journals: Journal of Political Economy (JPE), Econometrica, Quarterly Journal of Economics (QJE), American Economic Review (AER), and Review of Economic Studies (ReStud). There are also two very good journals that focus on macroeconomics: Journal of Monetary Economics (JME) and American Economic Journal: Macroeconomics (AEJ Macro). Overview articles are often published in the Annual Review of Economics, the Journal of Economic Literature, and the various Handbooks of Macroeconomics.

The way you read research papers is going to evolve over time. As you become more and more familiar with a topic, you will become more efficient in reading papers and finding the parts that you are interested in (e.g. you just want to know how to access the data they use, or how they determine the value of a contentious parameter). When you look at a paper for the first time, read the abstract and introduction (and conclusion). Then skim through the middle and check out tables and figures. If it's interesting, then try to read through the main body of the text. Many papers contain a literature review, which can be very useful to find related papers and get a sense of the broader literature. You can also use google scholar to find articles that cite the paper.

Grading:

1. Oral participation (10%). Be present. Be active and ask questions. Show that you engage with the material and that you have read the assigned readings. You are encouraged to stop me if you are confused and ask questions. I want this to be a discussion rather than a lecture as frequently as possible.

2. Problem sets (50%). There are five problem sets, each worth 10%. Students are permitted, and even encouraged, to discuss problem sets with each other. Copying from another student's answers is not allowed. The problem set requires coding using matlab and your answers need to be typed up in latex. You should also submit your code in a zipped folder that allows me to run your code.

3. In-class presentation (20%). You will give an in-class presentation of an academic paper that is linked to the course. This is your opportunity to show that you can synthesize academic papers and relate them to the course. We will discuss and select the research paper before the Easter break. The presentation will take place in the last lectures before the in-class problem set. Grading will be based on the content (how well do you summarize the research paper; how well do you connect it to the course), your oral presentation skills, the effectiveness of the slides, whether you stay within the time limit, and the difficulty of the paper.

4. Short term paper (20%). The term paper asks you to write a small model based on the academic paper you're presenting. You are expected to implement the small model in dynare and present some numerical results (e.g. some IRFs). Your term paper could either distill the main idea of the paper or propose a simple model that might help explain the main empirical result of the paper.

Deadlines for problem sets (always before class):
1. March 3rd
2. March 24th
3. April 1st
4. April 19th
5. May 19th

Deadline for term paper:
June 24th, 5pm

Attending the students' presentations that will take place at the end of the course is compulsory. Given the small size of this course I do not plan to record any lectures.

Retake:
Evaluation for students doing the re-take is similar. There is no re-take for oral participation and the problem sets. Any grade achieved in these two categories are carried over.
- In-class presentations will be scheduled for August.
- Deadline for the term paper: September 2nd, 5pm

Using AI:
I promote the responsible and critical use of AI. You are free to use it for assignments to help you e.g. find coding errors. You should use it as a tool to learn rather than blindly copy whatever AI proposes. This course is designed for *you* to learn. Always remember that you have full responsibility for what you submit and you should be able to explain your code and your submission. You also want to make sure that your submissions allow me to evaluate the competences that *you* have acquired, not the competences of AI.

Useful resources:
More slides:
By now, many economists have posted their class material online: I've found slides by the following scholars particular useful:
- Adam Guren (Boston University)
- Emi Nakamura (UC Berkeley)
- Gabriel Chodorow-Reich (Harvard)
- Benjamin Moll (LSE)
My slides are partly based on their slides.

How to write in "economics":
Cochrane, John. 2005. "Writing tips for PhD students." Mimeo.

How to manage your data:
Gentzkow, Matthew, and Jesse M. Shapiro. 2014. "Code and data for the social sciences: A practitioner's guide." Chicago, IL: University of Chicago: 51.

How to give presentations:

Guren, Adam. 2018. "How to give a lunch talk." Presentation.

How to create figures:
Schwabish, Jonathan A. 2014. "An economist's guide to visualizing data." *Journal of Economic Perspectives* 28, no. 1: 209-234.

Many economists also publish a bunch of references for "good practice" on their website. For example:
Jeppe Druedahl
Bruno Lanz
Econ grad advice

Tentative course schedule
- subject to modifications during the semester -

Week 1 (February 9)
- Tue: Syllabus + Review RBC
- Wed: Review RBC + Intro dynare

Week 2 (February 16)
- Tue: Review RBC + Estimation in dynare
- Wed: Fiscal models

Week 3 (February 23)
- **Tue: RBC models, PS 1**
- **Wed: No class**

Week 4 (March 2)
- Tue: No class (Ph.D. course) (**PS 1**)
- Wed: No class (Ph.D. course)

Week 5 (March 9)
- Tue: NK models
- Wed: NK models

Week 6 (March 16)
- **Tue: NK models, PS 2**
- Wed: Multi-sector models

Week 7 (March 23)
- Tue: Multiplier estimates (**PS 2**)
- **Wed: Multi-sector models, PS 3**

Week 8 (March 30)
- Tue: HANK I
- Wed: HANK II (**PS 3**)

Week 9 (April 20)
- Tue: HANK III
- **Wed: HANK, PS 4**

Week 10 (April 27)
- Tue: Open-economy macro I
- Wed: Open-economy macro II (**PS 4**)

Week 11 (May 4)
- Tue: Micro in macro I
- Wed: Micro in macro II

Week 12 (May 11)
- **Tue: Open-economy macro, PS 5**
- Wed: Presentations

Week 13 (May 18)
- Tue: Presentations (**PS 5**)
- Wed: Presentations