

ECON 490**Course Syllabus****Macroeconometric Policy Analysis**

Credits: 3 Undergraduate; 4 Graduate

Semester: Spring 2021

Meeting Times & Location: Tuesdays and Thursdays 11am-12:20pm

Instructor: Pooyan Amir Ahmadi

Email: pooyan@illinois.edu

Office Location: DKH 101A

Office Hours: Tuesdays 2pm-3pm

Changes to office hours will be announced to students during the class meeting time before, by email, and/or on the course website. It is always a good idea to indicate via email or in-person your intention to visit office hours as I may have appointments with other students during that time. If your class schedule does not allow you visit office hours during this time, please discuss with me as we may schedule another time to meet. I reserve the right to change the office hours schedule if there is sufficient demand, I will announce changes.

TA Information:**Course Description**

The goal of the course is to introduce students to econometric methods of modern empirical macroeconomics to address current issues in macroeconomic policymaking. The course emphasizes both, the econometric concepts as well as applications of these techniques to understand how macroeconomic policy, such as monetary and fiscal policy interacts with the macro economy and financial markets. The focus is to give participants a solid understanding how to apply econometric methods in order to enhance our understanding of the economy and to address interesting macroeconomic policy questions. The course will provide students with the opportunity to gain experience in empirical analyses based on relevant, historical and contemporary data sets using the MATLAB.

Learning Outcomes

- **Analytical Skills/Problem-Solving:** ECON students will effectively visualize, conceptualize, articulate, and solve complex problems or address problems that do not have a clear answer, with available information, through experimentation and observation, using microeconomic and macroeconomic theory, as well as calculus and statistical tools.
- **Critical Thinking:** ECON students will apply economic analysis to everyday problems helping them to understand events, evaluate specific policy proposals, compare arguments with different conclusions to a specific issue or problem, and assess the role played by assumptions in arguments that reach different conclusions to a specific economic or policy problem.
- **Quantitative Reasoning:** ECON students will understand how to apply empirical evidence to economic arguments. Specifically, they may obtain and/or collect relevant data, develop empirical evidence using appropriate statistical techniques, and interpret the results of such analyses.
- **Specialized Knowledge and Practical Application:** ECON students will develop deeper analytical, critical, and quantitative skills in specialized areas by applying economic concepts to real world situations.
- **Interdisciplinary Knowledge, Diverse Issues, and Global Consciousness:** ECON students will broaden their global and disciplinary knowledge, enhancing their understanding of the world around them both within economics and beyond.

Website

We will use the black-board software: <https://compass2g.illinois.edu/>

Textbook/Other Required Materials (Optional)

Recommended Textbooks

- Francis Diebold (2017), "Forecasting", The MIT Press
- Stock and Watson (2019), "Introduction to Econometrics", Pearson
- Gary Koop (2008), "An Introduction to Econometrics"

Advanced Textbooks

- Helmut Lutkepohl (2007), "New Introduction to Multiple Time Series Analysis"

Exams

This course will include the following Exams:

Semester Exams: Two midterm exams (Dates, Times, Location tba).

Presentation: Short student presentation of a project in class.

Final Exam: One final exam (Dates, Times, Location tba).

It is the student's responsibility to confirm Exam dates, times, and locations. Final Exam Information is provided on the Course Explorer and Registrar's Website midway into the semester: <https://registrar.illinois.edu/final-exam-schedule-public>

Exam Conflicts will follow the Student Code Procedures:

It is the student's responsibility to notify the instructor immediately once final dates are announced, consistent with the student code.

Student Code Evening/Midterm/Hourly Exams: <https://studentcode.illinois.edu/article3/part2/3-202/>

Student Code Final Exams: <https://studentcode.illinois.edu/article3/part2/3-201/>

Grading

(15%) Problem sets

(15%) Presentation

(20%) Midterm Exam 1

(20%) Midterm Exam 2

(30%) Final Exam

The course evaluation will be based on assigned problem sets, two midterm exams, a presentation, and a final exam. The midterm and final exams will test your understanding of the material as well as your ability to solve and interpret variation of models studied in class. The final exam will be comprehensive and it will evaluate all the material covered in the class. The Presentation of a topic has to be in groups (determined during class). Your group will be responsible for finding the topic, while suggestions will be provided by the instructor. Specific details about the requirements and extent of the presentations will be provided during lectures. The maximum score of each evaluation will be 100 points. To calculate your final score, compute the weighted average of your evaluations.

Final Score = $0.15 \times \text{Problem sets} + 0.15 \times \text{Presentation} + 0.2 \times \text{Midterm1} + 0.2 \times \text{Midterm2} + 0.3 \times \text{Final}$

Then, compare that final score to the Plus/Minus Grade Cutoffs below:

A+ ≥ 97	97 > A ≥ 94	94 > A- ≥ 90
B+ ≥ 87	97 > B ≥ 84	94 > B- ≥ 80
C+ ≥ 77	97 > C ≥ 74	94 > C- ≥ 70
D+ ≥ 67	97 > D ≥ 64	94 > D- ≥ 60
60 > F		

Graduate Students (4 Credit Hour Section) (if applicable)

Graduate students enrolled in the course will be expected to complete a course paper as additional work. Details will be discussed during class at the beginning of the lecture.

Academic Assistance

Students are encouraged to utilize the many resources we have throughout campus to assist with academics. We recommend that you seek them out starting early in the semester, not just in times of academic need, in order to develop good study habits and submit work which represents your full academic potential. Many resources may be located on the Economics Website, including information about the Economics Tutoring Center, other tutoring centers, : <http://www.economics.illinois.edu/undergrad/resources/accassistance/>

Academic Integrity

According to the Student Code, 'It is the responsibility of each student to refrain from infractions of academic integrity, from conduct that may lead to suspicion of such infractions, and from conduct that aids others in such infractions.' Please know that it is my responsibility as an instructor to uphold the academic integrity policy of the University, found here: <https://studentcode.illinois.edu/article1/part4/1-401/>

Academic dishonesty may result in a failing grade. Every student is expected to review and abide by the Academic Integrity Policies. Ignorance is not an excuse for any academic dishonesty. It is your responsibility to read this policy to avoid any misunderstanding. Do not hesitate to ask the instructor(s) if you are ever in doubt about what constitutes plagiarism, cheating, or any other breach of academic integrity.

Read the full Student Code at the following URL: <http://studentcode.illinois.edu/>

Students with Disabilities

To obtain disability-related academic adjustments and/or auxiliary aids, students with disabilities must contact the course instructor and the Disability Resources and Educational Services (DRES) as soon as possible. To contact DRES you may visit 1207 S. Oak St., Champaign, call 333-4603 (V/TTY), or e-mail a message to disability@illinois.edu DRES Website: www.disability.illinois.edu/

Emergency Response Recommendations

Emergency response recommendations can be found at the following website:

<http://police.illinois.edu/emergency-preparedness/>. I encourage you to review this website and the campus building floor plans website within the first 10 days of class. <http://police.illinois.edu/emergency-preparedness/building-emergency-actionplans/>.

Family Educational Rights and Privacy Act (FERPA)

Any student who has suppressed their directory information pursuant to Family Educational Rights and Privacy Act (FERPA) should self-identify to the instructor to ensure protection of the privacy of their attendance in this course. See <http://registrar.illinois.edu/ferpa> for more information on FERPA. Student information and records will not be released to anyone other than the student, unless the student has provided written approval or as required by law. More information may be found here: <https://studentcode.illinois.edu/article3/part6/3-601/>.

Sexual Misconduct Reporting Obligation

The University of Illinois is committed to combating sexual misconduct. Faculty and staff members are required to report any instances of sexual misconduct to the University's Title IX and Disability Office. In turn, an individual with the Title IX and Disability Office will provide information about rights and options, including accommodations, support services, the campus disciplinary process, and law enforcement options. A list of the designated University employees who, as counselors, confidential advisors, and medical professionals, do not have this reporting responsibility and can maintain confidentiality, can be found here:

<http://www.wecare.illinois.edu/resources/students/#confidential>.

Other information about resources and reporting is available here: <http://wecare.illinois.edu/>.

Student Support

The Counseling Center is committed to providing a range of services intended to help students develop improved coping skills in order to address emotional, interpersonal, and academic concerns. Please visit their website to find valuable resources and services: <https://counselingcenter.illinois.edu/>.

Counseling Center Information: 217-333-3704

Location: Room 206, Student Services Building 610 East John Street, Champaign, IL
Appointment: Scheduled for same day, recommend calling at 7:50 a.m.

McKinley Mental Health Information: 217-333-2705

Location: 3rd Floor McKinley Health Center 1109 South Lincoln, Urbana, IL

Hours: 8 a.m. – 5 p.m., Monday through Friday Appointment: Scheduled in advance.

Emergency Dean: The Emergency Dean may be reached at (217) 333-0050 and supports students who are experiencing an emergency situation after 5 pm, in which an immediate University response is needed and which cannot wait until the next business day. The Emergency Dean is not a substitute for trained emergency personnel such as 911, Police or Fire. If you are experiencing a life threatening emergency, call 911. Please review the Emergency Dean procedures: <http://odos.illinois.edu/emergency/>

Academic Dates and Deadlines

Students should make note of important academic dates for making changes to their courses (add, drop, credit/no-credit, grade replacement, etc.). <https://registrar.illinois.edu/academic-calendars>
Please check with your academic department regarding specific procedures and policies.

Course Outline (Tentative)

The following outline is what we plan to cover in class during the different class meetings, as well as all assignments and exams required. The outline is subject to change at the Instructor's discretion, and information on these changes will be provided in class.

Block I: Introduction

Week 1: Course overview and Introduction

Block II: Trend-Cycle Decomposition

Week 2: Modelling deterministic trends - *Applications*

Week 3: Filtering trends - *Applications*

Week 4: Modelling stochastic trends - *Applications*

Block III: Introduction to Econometric Software and Coding

Week 5: Introduction to econometric software and MATLAB

Block IV: I Basic Regression Analysis and Inference

Week 6: Regression analysis and hypothesis testing

Application: Phillips Curve and NAIRU estimation

Block V: Introduction to Time Series

Week 7: AR(p) models – Autoregressive models

Week 8: MA(q) models – Moving Average models

Week 9: Forecasting with ARIMA(p,d,q) models

Application: Forecasting Inflation and Output

Application: Assessing predictive power of the financial market for the macroeconomy

Application: Estimating Taylor rules to characterize monetary policy

Block VI: Volatility Modelling

Week 10: ARCH(p) and GARCH(p,q) models – Modelling and forecasting financial time series and

conditional heteroskedasticity

Week 11: Stochastic Volatility Models

Application: Predicting stock returns and volatility

Application: Assessing macroeconomic volatility

Block VI: Causal Inference: Structural Vectorautoregressions - SVAR

Week 12: VAR Basics

Week 13: Forecasting with VAR models

Week 14: Causal inference with structural VAR models

Week 15: Contemporary identification methods in structural VAR models

Application: Characterizing the dynamic effects of U.S. monetary policy shocks

Application: Unconventional Monetary policy Interventions – Quantitative Easing

Application: Financial and Uncertainty Shocks