

MACROECONOMIC DATA ANALYSIS

ECON 112 - Winter 2023

University of California, San Diego

Teaching Team

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SYLLABUS

Note: This syllabus covers all the important organizational details. I consider the Syllabus my contract with you and I commit to uphold it as written. While I do not anticipate doing so, situations may arise that require adjustments of the class rules to ensure that the quality of your learning is preserved, so please consider the information contained in the Syllabus as subject to revision.

The course examines time series methods for data analysis with an emphasis on macroeconomic applications. The aim of the class is to provide students with a basic formal introduction to modern time series techniques, hands-on experience in applying them to real-world macroeconomic data, and understanding of how to bring data to bear on policy-relevant macroeconomic theories.

LOGISTICS AND IMPORTANT DATES

We meet twice a week on Tuesdays and Thursdays from 8:00 am to 9:20 am, Pacific Time in Econ 300. Econ 300 does not have podcast recording capabilities, so lectures will not be recorded. However, I will make available the recordings of the lectures from Winter 2022, when the class was held remotely. Xintong, our TA, will schedule review sessions ahead of exams. More information about review sessions and office hours will be provided in Week 1.

There will be three in-class quizzes and one final exam. Please mark your calendar as follows:

- **Quiz 1, Thu Apr 20th, class time;**

- **Quiz 2, Tue May 9th, class time;**
- **Quiz 3, Tue May 30th, class time;**
- **Final Exam, Thursday June 15th, time TBD**

TEXTBOOK

The textbook for the class is “*Applied Time Series for Macroeconomics*,” by Hilde Bjornland and Leif Thorsrud, Gyldendal Publisher (2015). The book is not available for purchase in the U.S., although it can be ordered directly by writing at kundeservice@gyldendal.no.

STATISTICAL SOFTWARE

For our statistical computations we will be using R. R is a programming language and a free and open-source software environment that is widely used worldwide. The basic software can be downloaded at <https://repo.miserver.it.umich.edu/cran/>. I recommend operating R using RStudio Desktop, a free and open-source integrated development environment for R, downloadable at <https://www.rstudio.com/>.

HOMEWORK ASSIGNMENTS AND PRACTICE PROBLEMS

I will assign 5 Homework Assignments that will be graded. The lowest score of the 5 will be dropped. The purpose of Homework Assignments is twofold: (i) practice on the theoretical concepts covered in class; (ii) get you working on real data with the tools that are presented in class. The dates when the Homework Assignments will be posted and due are listed in the Class Schedule at the end of this Syllabus.

I will also post 4 Practice Problem Sets, one before each of the three quizzes and one before the final exam. The practice problem sets will not be graded, and solutions will be provided ahead of the tests. The purpose of the Practice Problem Sets is to have you practice on the material covered in class on which you will be tested. You will have the chance to review the solutions of the Practice Problem Sets during review sessions held by our TA.

WRITING ASSIGNMENTS AND RECORDED PRESENTATION

There will be two “Writing Assignments”, one due in Week 5 and one due in Finals Week. These assignments contain both a numerical component and a writing component. The purpose of the assignments is to help you develop the skills necessary to turn numerical results into well-articulated written explanations, and to showcase your critical thinking about using the tools you learned to interpret your results.

In addition, together with the second writing assignment, you will be asked to submit a short video of a presentation of the results contained in your writing assignment. More detailed on the presentation will be provided in class.

I encourage you to contact the Writing Hub at the Teaching + Learning Commons at UC San Diego. You can request a writing tutor to be assigned to you and help you with every stage in the writing process, at no charge. More details about the writing assignments and the writing tutor will be provided in class.

DISCUSSION BOARD

We will be using Piazza for class discussion. Rather than emailing questions to me or Xintong, we encourage you to post your questions on Piazza. You can find our Piazza page on Canvas or [here](#)

GRADING

Your final grade will be determined according to the following percentages

Participation	5%	
Quizzes	30%	(10% each)
Final Exam	10%	
Homework Assignments	20%	(5% each, lowest of 5 dropped)
Writing Assignments	35%	(WA 1 15%, WA 2 20%)

Participation. Participation points will be based on submitting the answer to three reflection questions asked at the end of each week. Submissions are due every Monday by noon, Pacific Time. Of the total 10 submissions, only 8 will count towards participation points (i.e. you can skip two submissions if you'd like with no consequences on your participation points).

Exam Modality All exams to be held in-person. If changes to this plan are needed, they will be promptly communicated.

ACADEMIC INTEGRITY

I deeply value creating a fair and safe community among students in my classes. I am committed to uphold academic integrity as a fundamental principle in our interactions. *You, as student, are expected to do your own work.* Cheating, plagiarism, fabrication, lying, bribery, threatening behavior and assistance to acts of academic dishonesty are examples of behaviors that violate academic integrity. All students of UC San Diego are responsible for knowing and adhering to the UCSD policy on Academic Integrity. Ordinarily, a student engaged in any act of academic dishonest will receive a failing grade for the course. In addition, all incidents of academic misconduct shall be reported to the Academic Integrity Office. Depending on its findings, students who are found to be in violation of the academic integrity policy will be subject to non-academic sanctions, including but not limited to university probation, suspension, or expulsion. The Academic Integrity Office can be contacted by email at aio@ucsd.edu or by telephone at 858-822-2163. Additional information regarding the University Academic Integrity policy is available at <https://academicintegrity.ucsd.edu/>.

MISSED EXAMINATIONS

No make-up exams will be given in this class. You must take the final exam in order to receive a grade in this course. The date is written above, be sure to mark your calendar. If you miss a quiz without a university accepted excuse, you will receive a grade of zero (0) on that test. If you miss a quiz with a university accepted excuse, the weight of the final exam will be increased accordingly. Excuses for missed exams must be pre-approved by professor Rondina (except when this is not possible in an emergency situation). A student who misses an exam due to physical illness will be required, when possible, to provide documentation from a health care professional indicating why the student was physically unable to take the exam. All documentation must be provided to professor Rondina as soon as reasonably possible. Failure to comply with any of the above in the specified manner will result in a grade of zero (0) for the exam.

UNIVERSITY POLICIES AND RESOURCES

Conduct Code. To foster the best possible working and learning environment, UC San Diego strives to maintain a climate of fairness, cooperation, and professionalism. UC San Diego's Principles of Community illustrate the expectations of all members of our community. Consistent with such principles, the Student Conduct Code underscores the pride and the values that define UCSD's community, while providing students with a framework to guide their actions and behaviors. I recommend reviewing the Student Conduct Code to make sure you are familiar with the behavior that is expected from you in class and on campus in general.

Disability Accommodations. Campus policy regarding disabilities requires that faculty adhere to the recommendations of the Office for Students with Disabilities (OSD). Any student eligible for and needing academic adjustments or accommodations because of disability should submit to me a letter from OSD describing appropriate adjustments or accommodations and should arrange to meet with me as soon as possible so that arrangements can be made in a timely manner. University policies regarding disabilities are available at <http://disabilities.ucsd.edu/students/>. Appointments with OSD (phone or in-person) can be made by calling 858.534.4382 or by email at osd@ucsd.edu. More information can also be found here.

Religious Observance. Campus policy regarding religious observances requires that faculty make every effort to reasonably and fairly accommodate all students who, because of religious obligations, have conflicts with scheduled examinations, assignments or required attendance. See full details of policies on examinations here [If you have scheduling conflict covered by this policy, please let me know as soon as possible so that we can reschedule the relevant assignment/examination.](#)

Harassment Policy. The University Policy on Discrimination and Harassment applies to all students, staff and faculty. Any student, staff member or faculty member who believes (s)he has been the subject of discrimination or harassment based on race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, political affiliation, or political philosophy, should contact the Office for the Prevention of Harassment and Discrimination (OPHD) at (858) 534-8298, ophd@ucsd.edu, or reportbias.ucsd.edu.

Data Privacy. The University adheres to the standards for student privacy rights and requirements as stipulated in the Federal Rights and Privacy Act (FERPA) of 1974, see <http://ucsd.edu/catalog/front/ferpa.html>.

Counseling. Managing the many challenges of being a college student can be very stressful. Always remember that talking to somebody that is professionally trained to help is just an email, or short walk, away: <https://caps.ucsd.edu/>.

ECON 112 - TENTATIVE CLASS SCHEDULE - SPRING 2023

Week	Date	Topic	Assignments
Week 1	Lec. 1 (Apr 4) Lec. 2 (Apr 6)	Intro + R + Math Review OLS, Hypothesis Testing	HW 1 Post
Week 2	Lec. 3 (Apr 11) Lec. 4 (Apr 13)	MA Models MA and AR Models	HW 1 Due, PPS 1 Post
Week 3	Lec. 5 (Apr 18) Lec. 6 (Apr 20)	AR Models Quiz 1 + Estimating AR Models	HW 2 Post WA 1 Post
Week 4	Lec. 7 (Apr 25) Lec. 8 (Apr 27)	Forecasting Nonstationarity	HW 2 Due
Week 5	Lec. 9 (May 2) Lec. 10 (May 4)	Trends and Cycles Trends and Cycles	WA 1 Due, PPS 2 Post
Week 6	Lec. 11 (May 9) Lec. 12 (May 11)	Quiz 2 + Trends and Cycles Endogeneity Bias	HW 3 Post
Week 7	Lec. 13 (May 16) Lec. 14 (May 18)	Vector Autoregression (VAR) Vector Autoregression (VAR)	HW 3 Due, HW 4 Post
Week 8	Lec. 15 (May 23) Lec. 16 (May 25)	Structural VAR Structural VAR	HW 4 Due, PPS 3 Post
Week 9	Lec. 17 (May 30) Lec. 18 (Jun 1)	Quiz 3 + Structural VAR Structural VAR	WA 2 Post
Week 10	Lec. 19 (Jun 6) Lec. 20 (Jun 8)	Spurious Regressions Cointegration	HW 5 Post HW 5 Due, PPS 4 Post
Final Exam	Thu Jun 15	Time and Place TBD	
WA 2 + Pres	Due on Friday Jun 16		

HW = Homework Assignment

WA = Writing Assignment

PPS = Practice Problem Set