

MACROECONOMIC DATA ANALYSIS

ECON 112 - Winter 2020

University of California, San Diego

Instructor: Prof. Giacomo Rondina, grondina@ucsd.edu

Office Hours: Thu 3:30pm-5:00pm, Economics 226

SYLLABUS

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.

This syllabus covers all the important organizational details. Further information if not specified here, will be given in class at the appropriate time.

LOGISTICS AND IMPORTANT DATES

We meet twice a week on Tuesdays and Thursdays in Economics 300 from 2 pm to 3:20 pm. I will hold office hours on Thursdays from 3:30pm to 5:00 pm; my office is in Economics 226.

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

- **Quiz 1, Tue Jan 21st, class time;**
- **Quiz 2, Tue Feb 11th, class time;**
- **Quiz 3, Tue Mar 3rd, class time;**
- **Final Exam, Thursday Mar 19th, 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. The Department of Economics has purchased several copies of the book that have been placed on reserve at the Geisel library.

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 <http://cran.stat.ucla.edu/>. 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 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 special office hours that will be held by our Teaching Assistant.

WRITING ASSIGNMENTS

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. I strongly encourage to contact the Writing + Critical Expression 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. The system is highly catered to getting you help fast and efficiently from classmates, and myself. Rather than emailing questions to me, I encourage you to post your questions on Piazza. Our class page is at: <https://piazza.com/ucsd/fall2019/econ112/home>

GRADING

Your final grade will be determined according to the following percentages

Quizzes	30%	(10% each)
Final Exam	10%	
Homework Assignments	25%	(5% each)
Writing Assignments	35%	(WA 1 15%, WA 2 20%)

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 behind 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 dishonesty 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 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 within two working days of the student's return to campus. Failure to comply with any of the above in the specified manner will result in a grade of zero (0) for the exam.

ELECTRONICS IN CLASS

Cell phones must be turned off during lecture. Any sort of use of cell phones in class will not be tolerated and anyone violating such rule will be asked to leave the classroom.

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 - WINTER 2020

Week	Date	Topic	Assignments
Week 1	Lec. 1 (Jan 7)	Intro + R + Math Review	HW 1 Post
	Lec. 2 (Jan 9)	OLS, Hypothesis Testing	
Week 2	Lec. 3 (Jan 14)	MA and AR Models	HW 1 Due
	Lec. 4 (Jan 16)	MA and AR Models	PPS 1 Post
Week 3	Lec. 5 (Jan 21)	Quiz 1 + Estimating AR Models	HW 2 Post
	Lec. 6 (Jan 23)	Estimating AR Models	HW 2 Due, WA 1 Post
Week 4	Lec. 7 (Jan 28)	Forecasting	
	Lec. 8 (Jan 30)	Nonstationarity	
Week 5	Lec. 9 (Feb 4)	Trends and Cycles	WA 1 Due, PPS 2 Post
	Lec. 10 (Feb 6)	Trends and Cycles	
Week 6	Lec. 11 (Feb 11)	Quiz 2 + Trends and Cycles	HW 3 Post
	Lec. 12 (Feb 13)	Endogeneity Bias	
Week 7	Lec. 13 (Feb 18)	Vector Autoregression (VAR)	HW 3 Due, HW 4 Post
	Lec. 14 (Feb 20)	Vector Autoregression (VAR)	
Week 8	Lec. 15 (Feb 25)	Structural VAR	HW 4 Due, PPS 3 Post
	Lec. 16 (Feb 27)	Structural VAR	
Week 9	Lec. 17 (Mar 3)	Quiz 3 + Structural VAR	WA 2 Post
	Lec. 18 (Mar 5)	Structural VAR	
Week 10	Lec. 19 (Mar 10)	Spurious Regressions	HW 5 Post
	Lec. 20 (Mar 12)	Cointegration	HW 5 Due
Final Exam	Thu Mar 19	Time and Place TBD	
WA 2	Due on Friday Mar 20		

HW = Homework Assignment

WA = Writing Assignment

PPS = Practice Problem Set