



Manoogian Simone College of Business and Economics

Time Series Analysis

Course Syllabus

Course Number:	ECON312
Number of Credits:	1 Credit
Term and Year:	Spring 2023
Class schedule:	Th 16:00-18:45
Classroom:	
Pre-requisites:	Econ 300, Econ 310
Co-requisites:	None
Moodle:	
Instructor Name:	Narek Ohanyan
E-mail:	narek.ohanyan@aua.am
Office Location:	234W
Office hours:	

Course Description:	<p>This course is an introduction to data analysis and econometric modeling using applications in finance and time series. The course uses concepts from microeconomics, finance, mathematical optimization, data analysis, probability models, statistical analysis, and econometrics. The course will be 5 weeks long. Each week consists of one 150 minutes lecture. Quantitative methods involve basic matrix algebra. Statistical topics include probabilities, expectation, joint distributions, covariance, normal distribution, sampling distributions, estimation and hypothesis testing, data analysis, linear regression, time series methods and simulations. There will be weekly frequent homework assignments requiring STATA programming. Students will work independently and periodically in groups to complete problem sets and group projects. Students will be graded on quizzes/problem sets, midterm and final exams. The course qualifies for all MSE tracks.</p>
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Required Materials: Hill, Griffiths, & Lim (2011). Principles of Econometrics, 4th edition.

Additional Reading: Adkins & Hill (2011) Using Stata for Principles of Econometrics, 4th Edition
Other materials will be provided through the Moodle class page.

Schedule and Topics: The schedule may be slightly different (prior notification will be made.)

Week	Topic	Reading	Other Tasks
1	Dynamic Nature of Relationships, Serial Correlation	Chapter 9	
2	Estimation with Serially Correlated Errors	Chapter 9	HA 1
3	Autoregressive Distributed Lag Models	Chapter 9	Quiz 1
4	Unit Root Tests for Stationarity	Chapter 12	HA 2
5	Co-integration, Error Correction Models	Chapter 12	Quiz 2

Course Structure: The course is organized around classes that will meet once a week. Students are expected to read assigned literature prior to the class meeting. Classes will be a combination of discussions and lecturing. All classes will be held in the assigned classroom unless otherwise announced beforehand.

Method of Evaluation: Student learning will be evaluated on the basis of the following weighted components:

Home assignments	20%
Quizzes	40%
Final exam	40%

Class participation: Students are supposed to attend all classes and actively participate. **Missing more than 2 classes will automatically result in class failure.**

Home assignment: Several home assignments will be provided during the course. Students are supposed to submit their typeset works (no photocopy of handwritten material is allowed), though no detailed feedback will be provided. The assignments must be submitted on exact time specified (**no late submissions allowed**).

Quizzes: There will be 2 quizzes as scheduled above. Instructions per quiz will be communicated beforehand.

Final exam: During the final exam week there will be a final examination of the knowledge acquired during the semester. The exam will be based on the literature covered and the discussions during the lectures and may include multiple-choice questions, short essays, and numerical problems to solve.

Bonuses: Bonus points are available for TeX-based submissions of home assignments (2% of the final grade per full assignment).

Substitution tests: There is no make-up for final exams or quizzes except for severe emergencies. (The determination of what constitutes a severe emergency will be made by the program chair in consultation with the dean.) Students must submit convincing evidence of a medical or other emergency that makes

completing a final assignment or taking a final exam or quiz at the scheduled time impossible. The date of make-up assignment, exam, and quiz will be given at the instructor's discretion.

Communication: Emails and Moodle chats will be used for communication between the instructors and students. The replies can be expected in 3 working days on average. Office hours will be held as assigned but prior agreement is highly encouraged.

Special Needs: Students requiring special accommodations for learning should contact the Center for Student Success by the end of the Drop/Add period with such requests. studentsuccess@aua.am, <http://studentsuccess.aua.am/disability-support-services/>

Academic integrity: Any breach of academic honesty will be punished to the fullest extent. Please ask or refer to the student code of ethics if in doubt: <https://studentsuccess.aua.am/student-code-of-ethics/>.

Grading Scale

Letter Grade	Max	Min	Grade Points
A+	100.00 %	97.00 %	4
A	96.99 %	94.00 %	4
A-	93.99 %	90.00 %	3.70
B+	89.99 %	87.00 %	3.30
B	86.99 %	84.00 %	3.00
B-	83.99 %	80.00 %	2.70
C+	79.99 %	77.00 %	2.30
C	76.99 %	74.00 %	2.00
C-	73.99 %	70.00 %	1.70
D+	69.99 %	67.00 %	1.30
D	66.99 %	64.00 %	1.00
D-	63.99 %	60.00 %	0.70
F	59.99 %	59.00 %	0

Policy on Grade Appeal: Students are entitled to appeal grades in line with the university's Grades Policies policy which is available online at <http://policies.aua.am>

Student Learning Outcomes

Course Outcomes	Student Learning Outcomes	Program Goal

<p>The course is intended to expose students to important Financial and Econometric concepts.</p> <p>This course will further develop understanding of Financial markets, Portfolio theory, asset pricing. Topics include asset return, econometric modeling using real data, time series.</p>	<p>Upon successful completion of this course students will master in:</p> <p>Explaining and applying fundamentals of Econometric theory.</p> <p>Collecting and analyzing economic data.</p> <p>Producing well-reasoned solutions related to economic issues and public policy.</p> <p>Engaging in economic decision making.</p> <p>Producing and delivering professional reports and presentations.</p> <p>Thinking critically and creatively, conceptualizing real-world problems from different perspectives.</p>	<p>Equip students with theoretical, quantitative skills, and analytical abilities to investigate and solve economic problems.</p> <p>Prepare students for careers and advanced studies in a wide range of economic fields.</p> <p>Provide students with a broad foundation of knowledge and skills and cultivate a commitment to life-long learning.</p> <p>Develop articulate, conscientious leaders.</p>
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