

ECON 332- ECONOMETRICS II

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Course Hours:	Mo 09.00 - 12.00 D228		
Recitations/Lab Sessions:	Fr 12.00 – 14.00 GB07		
Office Hours:	Mo 14-16 Wednesday 13.00 – 15.00		
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GENERAL INFORMATION

Catalog Description

Estimation of binary dependent variable models. Use of instrumental variables technique. Introduction to forecasting models. Analysis of time series data. Detection of autocorrelation and heteroscedasticity in time series data. Identification of stationarity and cointegration of time series. Causality in time series models.

Course Structure/ECTS

(3+0+0) 3/ 6 ECTS

Prerequisites and co-requisites

ECON 331, Good command of English and solid knowledge of Statistics and Introductory Econometrics will be very helpful with following the course.

Course Objective

This course aims to provide the necessary background techniques needed to analyse the behaviour of time series processes; to develop the analytical skills required to characterize the theoretical properties of different time series processes; to provide a sound understanding of the applicability and limitations of the univariate time series methodology as a means for empirical modelling and producing forecasts of economic time series.

Computer Usage

assignments/case study/research review, presentations and a Statistical Software (STATA) for the lab applications and their written projects. **Official STATA license is provided by STATA Corporation for students use due to extraordinary health risks in Spring 2020.**

Teaching Material

Textbook

- Stock. J. H., and M. W. Watson, *Introduction to Econometrics*. 4th Edition, Addison Wesley-Pearson Education, Boston, 2020. (S&W)
- Wooldridge. J., *Introductory Econometrics: A Modern Approach*. 7th Edition, South-Western College Pub., Cincinnati, 2019. (W)

Lecture Notes

- Lecture Slides/Notes: They will be available online at Moodle.
- Moodle for TEDU: <u>http://moodle.tedu.edu.tr/</u>
- Exercise Sets, Grading Activity Dates, Recitation/Lab Materials, Grades and other course updates will be on Moodle. It's your responsibility to follow up the updates for this course on Moodle and TEDU Emails.
- Recitation/Lab Materials will be on Moodle.
- Exercise Sets will be on Moodle.

Suggested/Complementary Reading:

- Pedace, R., *Econometrics For Dummies*, 1st edition, John Wiley & Sons, New Jersey, 2013.
- Brockwell, P. J. and Davis, R. A., *Introduction to Time Series and Forecasting*, 2nd edition, Springer, 2002.
- Damodar N. Gujarati and Dawn C. Porter, *Basic Econometrics*, 5th Edition, McGraw-Hill Education, 2009.

Learning Outcomes of the Course

After a successful finishing of the course, the student should be able to

- 1) Demonstrate understanding of verbal, graphical, mathematical and econometric representation of economic ideas and analysis, including the relationship between them.
- 2) Demonstrate more extensive knowledge and skills of quantitative economics and econometrics.
- 3) Apply complex ideas to solve problems; reason logically and work analytically; perform with high levels of accuracy.
- 4) Apply mathematical, statistical and graphical techniques in an appropriate manner and analyze and solve complex problems accurately.
- 5) Relate economic questions to empirical observations and try to deal with those using econometric models based on sound hypotheses.
- 6) Have a working knowledge of statistical software and use it to address empirical questions.
- 7) Demonstrate the ability to apply econometric principles by writing a quality paper and giving oral presentations of the findings of the paper as an individual and as a group member.

Homework:

Problem sets will be assigned periodically throughout the semester. They will be posted on the Moodle and you are responsible to follow Moodle. They are crucial in helping you to understand the material taught in class, but they will also ask you to apply concepts from class to a variety of real world issues to develop your critical thinking skills. In addition, they help you in preparing for the exams.

You may work together to understand the concepts, but you need to submit your own work, with your own words. Note that late assignments are not accepted!

In-Class Activities:

This course adopts interactive learning methods which require active participation from the members of the class.

Midterm Exam:

There will be <u>one mid-term exam</u>. Material for the exam will be taken from the assigned readings, recitations and class discussions.

Final Exam:

There will be a <u>final exam</u> covering the material studied after the midterm exam. Material for the exam will be taken from the assigned readings and class discussions.

Empirical Project

The empirical project is a very important part of your learning experience in the class. It provides you with the opportunity to use the tools you learn in the class to answer a question that you come up with and that you care about. It is designed to guide you through the steps of answering a research question the way applied economists do.

Each group will identify and submit their research question by the end of the 3rd week (March 27th). During the 6th week (April 10), each group will pass in a document that quantitatively describes their sample and the relevant variables in it. During the last week of the classes (May 29) each group will do a presentation of their results, and June 9th 2023 groups will submit a written project report that includes a data, descriptive analysis, methodology, and discussion of the empirical analysis.

GRADING

The course grade will be based on the following:

	Weight
Homework – Class activities	10%
Participation- Lab assignments	20%
Midterm Exam	20%
Project	25%
Final	25%

TEACHING and LEARNING

Planned Learning Activities and Teaching Methods:

Telling/Explaining, Discussions/Debates, Questioning, Reading, Demonstrating, Problem Solving, Case Study/Scenario Analysis, Video Presentations, Oral Presentations/Reports, Hands-on Activities, Web Searching.

Student Workload:

Lectures 42 hrs, Quizzes / exams 24 hrs, Course Readings 42 Hours, Assignments/Case Study/Research Review 24 hrs, Recitation/Lab Applications 18 hrs, Written Performance Project/Presentation 24 hrs -- Total workload is 174 hours.

Computer Usage:

Students will use MS Office applications (Word, Excel, and PowerPoint) to work on their assignments/case study/research review, presentations and a Statistical Software (STATA) for the lab applications and their written projects.

Course Policies:

If you fail to take an exam when it is scheduled you will earn a grade of zero (0) for that exam, unless we have prearranged an acceptable accommodation. Students who miss an exam for a verifiable and valid reason may take a makeup exam. Missed assignments, quizzes or activities will also result in a grade of zero (0). There will be no make-up for quizzes. All the announcements, assignments and important dates will be on Moodle Course Page. You are responsible from following those. All cell phones must be STORED and TURNED OFF during class and exams, unless an emergency call is expected (in which case you may set the phone to stun).

Class attendance and active participation in the class discussions are very important and re critical to the learning process. Attendance is required and will be taken at the beginning of the class meetings for days randomly selected. Being in attendance is defined as being present for the entire class period. If you leave early or come late your attendance will be marked as absent. A student with less than 75 per cent attendance will not be allowed to sit in the final examination.

Ethic Code:

Cheating, plagiarism, and any other form of misconduct are unacceptable and are violations of TED University's policy on academic integrity. By registering for this course, you are promising to abide by all the requirements stated in this policy. If a student is caught cheating or plagiarizing on any assignment, quiz, or test, he/she will fail that particular assignment. If there is a second violation, the student will fail the course.

STUDENT CONDUCT

Academic Integrity:

Academic dishonesty in assignments, examinations, or other academic performance is prohibited and considered a violation of the Student Conduct Regulations. It includes `cheating' (the intentional use or attempted use of unauthorized materials, information or study aids); `fabrication' (the intentional falsification or invention of any information); `assisting in dishonesty or tampering' (intentionally of knowingly helping or attempting to help another commit an act of dishonesty or tampering with evaluation instruments and documents); and `plagiarism' (intentionally or knowingly representing the words or ideas of another person as one's own). Penalties for academic dishonesty may result in receiving an 'F' in the course, or referral to the Dean of the Faculty in which you are enrolled for further action.

Disruptive Behavior:

Behaviors that are disruptive to teaching and learning will not be tolerated, and will be referred to the Rector's Office for disciplinary action. Behaviors that create a hostile, offensive or intimidating environment based on gender, race, ethnicity, color, religion, age, disability, marital status or sexual orientation will be referred to the Rector's Office.

PLANNED SCHEDULE

#	Subject	Chapter
1	Syllabus and Introduction	S&W Ch8
	Nonlinear Regression Functions	
2	Assessing Studies Based on Multiple Regression	S&W Ch9
3	Regression with Panel Data	S&W Ch10
	Panel Data Models: Least Squares Dummy Variable	W Ch 13
	Model	
	Panel Data Models: Fixed Effects – Random Effects	W Ch 14
	Models	
5	Binary Dependent Variables	S&W Ch11 W Ch17
6	Instrumental Variables	S&W Ch12 W Ch15
7	Time Series and Forecasting	S&W Ch15 W Ch10
9	Autocorrelation/Serial Correlation	S&W Ch 15 W Ch 11,
		Ch12
10	Time Series Models and Heteroscedasticity	S&W Ch 16 W Ch12
11	Cointegration and Causality in Time Series	S&W Ch 17 W Ch 18
11	Student Presentations	