Applied Business and Economics Data Analysis II (Econometrics II)
ECON 5339-001 / BSAD 6318-001
Spring 2015

Instructor: Mahmut Yaşar　　　　　　　　Class Hours:　7:00 – 9:50　PM　TU
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https://www.uta.edu/mentis/public/#profile/profile/view/id/4040/category/1

"Econometrics is not a good tool when wielded blindly."
Makoto Ohta and Zvi Griliches

"Research is not good simply because it is mathematical or statistical, or because it makes use of ingenious machines. Research is good if it is significant, if it is fruitful, if it is consistent with established principles, or if it helps to overthrow erroneous principles." Henry Schultz

"...the real world is not as rational and dynamically optimal as economists would like to believe." Robert Pindyck

"It is however always important to remember that the ability to see things in their correct perspective may be, and often is, divorced from the ability to reason correctly and vice versa. That is why a man may be a very good theorist and yet talk absolute nonsense." Joseph A. Schumpeter

Course Description
This course covers the traditional and recent cross section, panel data, and limited dependent variables methods. There is a dual focus on underlying theory and on the application of the techniques on real data sets. Topics include bootstrapping, panel data methods, instrumental variable estimation, simultaneous equation models/structural equation modeling, sample selection corrections, limited dependent variable models, rank-ordered logistic regression, multilevel/hierarchical models, spatial econometrics, and quantile regression. Material covered has many practical/research applications in various fields. The course provides the opportunity to learn and use statistical packages such as EXCEL, SAS, R and STATA to apply these techniques to real data. The course covers articles from the business literature and teaches how the models/factors/variables (such as *diversification/entropy index, market value, Q, CAPM, entry barrier measures*) that are being used often by Accounting, Finance, Management, Marketing, and OPMA/INSY can be calculated and used for research purposes.

Course Objectives/Student Learning Outcomes
The objective of the course is to have an understanding of the advanced econometric techniques needed for empirical research. By the end of the course, participants should

gain an understanding of the problems that inherently arise from different data and how to address them. They should obtain the necessary knowledge and skills to be able to critically assess the work in the literature, and to improve and/or apply the techniques to their own research or data analysis.

Prerequisites: Econ 5336/ BSAD 6317 or consent of the instructor. **STAT 5301 or BSTAT 5325 should also be fine.**

Recommended Texts
Angrist, J.D., and JS. Pischke. *Mastering 'Metrics: The Path from Cause to Effect.* Princeton University Press, 2014.

Angrist, J. D., and JS Pischke. *Mostly Harmless Econometrics: An Empiricists Companion.* Princeton: Princeton University Press, 2009.

Greene, W. *Econometric Analysis.* 5th or 7th edition Prentice Hall, 2003 or 2012.

Hamilton, L. C. *Statistics with Stata*, Brooks/Cole, 2004.

Wooldridge, J.M. *Econometric Analysis of Cross Section and Panel Data.* MIT, 2002 or 2010.

Required Textbook
Wooldridge, J. M., *Introductory Econometrics*: *A Modern Approach*, South-Western College Publishing, 3rd or 4th or 5th edition.

The lectures will mainly be based on some of the articles in the economics and business literature. Throughout the semester, I will assign required readings and the articles for which you need to write a report. I will post this information on the class conference. I do not always stick to the book. You are responsible for all material, including topics covered in class that are not in the book or are treated differently from the book.

Course Schedule/Outline
(Note that this is a tentative schedule subject to modification during the course of the semester. If any changes are made they will be announced in advance.)

Topics
Overview and Motivation
Bootstrapping

Difference-in-Difference Estimation / Simple Panel Data Methods and (Chap. 13)
     A. Pooling Independent Cross Sections Across Time
     B. Policy Analysis with Pooled Cross Sections
     C. Two Period Panel Data Analysis
     D. Policy Analysis with Two Period Panel Data
     E. Differencing with more than Two Time Periods

Advanced Panel Data Methods (Chap. 14)   A. Fixed Effects Estimation

B. Random Effects Models
Instrumental Variables Estimation (Chap. 15)
A. Motivation
B. IV and 2SLS Estimation of the Multiple Regression Model
C. Testing for Endogeneity and Overidentification Restrictions
Simultaneous Equations Models/ Structural Equation Modeling (Chap. 16)
A. Nature of Simultaneous Equations Models
B. Identifying and Estimating a Structural Equation
C. Systems with More than Two Equations
E. Seemingly Unrelated Regression (SUR)
F. Three-Stage Least Squares
Limited Dependent Variable Models and Sample Selection Corrections (Chap. 17)
A. Logit and Probit Models for Binary Response
B. The Tobit Model for Corner Solution Outcomes
C. The Poisson Regression Model for Count Data
D. The Negative Binomial Model for Count Data
E. Censored Regression
F. Sample Selection Corrections
If Time Permits:
Dynamic Panel Data Models
Self Selection and Propensity Score Matching Methods
Quantile Regressions
Multilevel/Hierarchical Models
Spatial Panel Data Econometric Models
Rank-ordered logistic regression/Conjoint Analysis/Exploded Logit Model/the Plackett-Luce model

Descriptions of Examinations and Major Assignments

Exam – The examination tests both your understanding of the concepts studied in the course and your ability to apply them to problem situations. Use of electronic calculators is expected, but computational methods must be clearly indicated in your answers for homework, in-class applications, and examination. If you have conflicts with the exam date contact me immediately (prior to the exam dates). Missed exam will be given a grade of zero unless adequate evidence is presented, preferably before the exam, that missing the exam cannot be avoided.

Term Project – The term project involves posing a problem, collecting or obtaining an appropriate data set, conducting an econometric analysis, and writing the results in the form of a short research paper. You are free with instructor consent to choose a topic of personal interest within your own field. You may use this as an opportunity to get started on or extend some of your own research. You are asked to work in groups of 2 or 3. To ensure timely progress, I will set up two deadlines for submission of: (1) a preliminary paper proposal that describes the problem statement, literature review and the data set to be used for early comment, and (2) the final version of your manuscript. I envision the

proposal to be about 1-3 pages and the final draft 10-25 pages, double-spaced. The proposal is due **February 10.** The final paper is due **May 5.** I will give you a more detailed description of the project during the semester, but at this point I suggest you start thinking about topics that you would like to address. Throughout the term we will discuss various topics that hopefully will trigger ideas of your own.

Problem Sets/Homework – There will be problem sets assigned as homework. Use of the real data sources, such as Compustat/WRDS and World Development Indicators, will be expected for some assignments. The class will have access to the WRDS, which provides access to COMPUSTAT, CRSP, IBES, NYSE-TAQ, Bureau van Dijk, Global Insight, OptionMetrics and many other good data sets. Participants can access this data using information that I will provide via Blackboard. You can connect to the WRDS and WDI databases by visiting the library databases at http://www.uta.edu/library/databases. I will provide you with the password. The purpose of these assignments is to aid in learning applications of econometric methods to problem situations and to provide an opportunity for individual feedback regarding the applications of concepts and models involved. Failure to hand-in homework on time will merit a grade of zero, unless prior arrangements have been made.

Computer Applications - Use of the econometric software of your choice, such as GAUSS, OX, STATA, SAS, and TSP, will be expected for the assignments. I will provide instructions for the use of STATA and EXCEL. Some instructions on SAS and R will also be provided. There are also extensive web-based tutorials on the use of Excel, STATA, R, and SAS for regression analysis. If you would like to obtain a copy of STATA for Windows, Macintosh or Linux for your own use, you may order it through the STATA GradPlan (http://www.stata.com/order/new/edu/gradplans/). These assignments allow you to consolidate and apply the concepts and techniques discussed in the class.

Verbal Reports and Class Discussion - You will also be expected to discuss some assigned articles in class. You will write reports (a maximum of 1 single-spaced typed page. You do not need to turn it in) and then discuss them verbally in class. *A randomly chosen participant(s) will be asked to summarize the paper for about 3 minutes. The papers will be announced ahead of time.*

Understanding of some papers comes only through detailed written analysis. Verbal reports also help ensure adequate understanding of the material. A verbal report is a structured evaluation and overview of a paper. Although many formats are effective, a possible format for the verbal report will be provided. Feel free to use this form or to develop your own form. You are expected to come to class prepared for discussion, having read the assigned paper(s).

Group Assignments
You will be asked to form a group of no more than three people during the first week of class. Please have one of the group members email me with the names of the members.

Group assignments include the homework assignments, verbal reports, and a term project.

Blackboard

I will use Blackboard, an electronic learning software platform, for the distribution of course information. There are detailed instructions on the use of Blackboard that can be accessed at http://www.uta.edu/blackboard/index.html. Be sure to check it on a regular basis for announcements, lecture notes, case studies, data sets, assignments, and other material related to class.

Attendance

The class meets on Tuesday from 7:00 to 9:50 pm. There will be two sessions of about 80 minute. A 10 minute break in between will be given. Attendance is not mandatory but you are virtually guaranteed to do poorly if you skip classes. **I do not always stick to the book. You are responsible for all material, including topics covered in class that are not in the book or are treated differently from the book.**

I will not factor attendance at class meetings into the grade, but attendance is strongly encouraged. At The University of Texas at Arlington, taking attendance is not required. Rather, each faculty member is free to develop his or her own methods of evaluating students' academic performance, which includes establishing course-specific policies on attendance.

Grading

The grade in the course will be based on reports and weekly problem sets (18%), a term project (10%), midterm exam (32%), and a comprehensive final exam (40%). The grading scheme is as follows. 90-100% (A); 76-89.9% (B); 70-75.9% (C); 60-69.9% (D); < 59.9% (F).

Expectations for Out-of-Class Study

Beyond the time required to attend each class meeting, students enrolled in this course should expect to spend at least an additional 18 hours per week of their own time in course-related activities, including reading required materials, completing assignments, preparing for exams, etc.

Make-up Exams

Missed exam will be given a grade of zero unless adequate evidence is presented, preferably before the exam that missing the exam cannot be avoided.

Participant-Faculty Communication

You are expected to come to class prepared by reading and doing relevant assignments prior to class. You are expected and encouraged to ask questions and participate in class discussions. Your ideas, comments, suggestions, questions, etc. are always welcome. You can drop by my office anytime if you have any questions or concerns. You may come during office hours, or schedule an appointment because I may not be there all the time. I

can also be reached through email or voice mail. I endeavor to create an atmosphere that is favorable for learning through the encouragement of creativity, self-initiative, and dialogue. You are encouraged to ask questions in order to stimulate discussion and enhance understanding. **Please do not hesitate to see me if you have difficulty with the course material or need to discuss something with me.** I look forward to working with you this semester.

Grade Grievances

Any appeal of a grade in this course must follow the procedures and deadlines for grade-related grievances as published in the current undergraduate catalog. See the information at http://www.uta.edu/gradcatalog/2012/general/regulations/#grades.

Drop Policy

Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. Students will not be automatically dropped for non-attendance. Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships at http://wweb.uta.edu/ses/fao. ***Note that drops are not allowed after the official last day to drop.***

Americans with Disabilities Act

The University of Texas at Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including the Americans with Disabilities Act (ADA). All instructors at UT Arlington are required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of that disability. Any student requiring an accommodation for this course must provide the instructor with official documentation in the form of a letter certified by the staff in the Office for Students with Disabilities, University Hall 102. Only those students who have officially documented a need for an accommodation will have their request honored. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at www.uta.edu/disability or by calling the Office for Students with Disabilities at (817) 272-3364.

Title IX

The University of Texas at Arlington is committed to upholding U.S. Federal Law "Title IX" such that no member of the UT Arlington community shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity. For more information, visit www.uta.edu/titleIX.

Academic Integrity

Any form of academic dishonesty (e.g. cheating, plagiarism) will not be tolerated. All students enrolled in this course are expected to adhere to the UT Arlington Honor Code:
I pledge, on my honor, to uphold UT Arlington's tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.

I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.

Instructors may employ the Honor Code as they see fit in their courses, including (but not limited to) having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System Regents' Rule 50101, §2.2, suspected violations of university's standards for academic integrity (including the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student's suspension or expulsion from the University.

Student Support Services

UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to resources@uta.edu, or view the information at www.uta.edu/resources.

Electronic Communication

UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at http://www.uta.edu/oit/cs/email/mavmail.php.

Student Feedback Survey

At the end of each term, students enrolled in classes categorized as lecture, seminar, or laboratory shall be directed to complete a Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student's feedback enters the SFS database anonymously and is aggregated with that of other students enrolled in the course. UT Arlington's effort to solicit, gather, tabulate, and publish student feedback is required by state law; students are strongly urged to participate. For more information, visit http://www.uta.edu/sfs.

Final Review Week

A period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week *unless specified in the class syllabus*. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. During this week, classes are held as scheduled. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.

Useful Library Links

Library Home Page .... http://www.uta.edu/library

Subject Guides .... http://libguides.uta.edu

Subject Librarians .... http://www-test.uta.edu/library/help/subject-librarians.php

Database List .... http://www-test.uta.edu/library/databases/index.php

Course Reserves .... http://pulse.uta.edu/vwebv/enterCourseReserve.do

Library Catalog .... http://discover.uta.edu/

E-Journals http://utalink.uta.edu:9003/UTAlink/az

Library Tutorials .... http://www.uta.edu/library/help/tutorials.php

Connecting from Off- Campus .... http://libguides.uta.edu/offcampus

Ask A Librarian .... http://ask.uta.edu

Important Dates
First Day of Semester: Tuesday, January 20
Martin Luther King Jr. Day Holiday: Monday, January 19
Midterm Exam: Monday, March 3, in class
Spring Break: Monday-Friday, March 9-14
Last Day of Classes: Friday, May 8
Last Day to Drop: Friday, April 3
Final Exam Dates: May 9 - 14
Final Exam: Tuesday, May 12, 8:15-10:45pm.