

**ECON 3318**  
**Data Analysis and Visualization**  
**Spring 2019**

**Instructor(s):** Dr. Levent Kutlu

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**Office Hours:** Tuesday 16:00-17:20

**Section Information:** ECON 3318-001

**Time and Place of Class Meetings:** Tue & Thu 17:30-18:50 COBA 349

**Description of Course Content:**

This course develops an understanding of statistical and econometric techniques so participants can evaluate claims made by others, come to their own conclusions, and make better judgments about future events. There is a dual focus on underlying theory and on the application of the techniques on data sets. It provides the opportunity to learn how to use Microsoft Excel and Stata as statistical packages and as tools for the visual display and analysis of data. Key will be the application of these techniques to real data for practical managerial decision making. Topics include descriptive statistics, statistical inference, simple and multiple regression analysis, specification, data issues, different functional forms and heteroscedasticity. Material covered has many practical applications in various fields.

**Student Learning Objectives:**

- Students will know the key assumptions, strengths and weaknesses of the Classical Linear Model.
- Students will understand how to handle non-linear relationships in the Classical Linear model
- Students will utilize regression analysis to test hypotheses about economic behavior, with examples draw from economics and other social sciences.
- Students will know how to correctly interpret coefficients for binary variables.
- Use other statistical methods to test the applicability of the regression results.
- Gain a working knowledge of Excel and Stata and how to visually display information in these programs
- Utilize techniques that allow for statistical analysis of data that violate the basic classical linear regression assumptions.

**Class Description:**

The application of economic theory and statistical techniques for the purpose of testing hypotheses and estimating and analyzing economic phenomena. Prerequisite: STAT 3321 or MATH 3313.

**Required Textbooks and Other Course Materials:**

Wooldridge, J. M., *Introductory Econometrics: A Modern Approach*, South-Western College Publishing, 5th edition.

Although this is the textbook that we will follow, the lectures will also be based on my own notes. Hence, **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.**

### **Some Important Dates:**

**Jan 14:** First day of classes

**Jan 21:** Martin Luther King Jr. Day Holiday

**March 7:** Midterm exam

**March 11-16:** Spring Vacation

**April 23, 25, 30 & May 2:** Tentative presentation dates

**May 3:** Last day of classes

**May 9:** Final exam (17:30)

### **Course Schedule:**

As the instructor for this course, *I reserve the right to adjust this schedule* in any way that serves the educational needs of the students enrolled in this course.

**Jan 15:** Welcome – Ch1, A1, A2, A3 (self read)

**Jan 17:** Introduction to Data, Excel, Stata

**Jan 22-Feb 14:** Simple regression (Ch2)

**Feb 19:** Stata

**Feb 21-28:** Multiple regression: Estimation (Ch3)

**Mar 5:** Midterm review

**Mar 7:** Midterm exam

**Mar 19-28:** Multiple regression: Inference (Ch4)

**Apr 2:** Stata session

**Apr 4-9:** : Multiple regression: Further issues (Ch6.2-6.3 & Ch8.1-8.3)

**Apr 11-18:** Dummy variables (Ch7.1-7.4)

**Apr 23-May 2:** Tentative presentation dates

**May 9:** Final exam

### **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, 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. See makeup policy section for details.

**Term Project & Presentations**– The term project involves posing a problem, collecting or obtaining an appropriate data set, conducting an econometric analysis, and presenting your project. Participants are free with instructor consent to choose a topic of personal interest within their own field as long as the econometric tools used in the project match the content of the course. You are free to 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 (Depending on the class size I may update the max group size). The final version of slides are due on the presentation day. 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. The length of presentations will depend on the number of groups, which will be announced later in the course.

I will let you know about the exact deadline for choosing your group. If you want, let me know about the names of your group members earlier than the deadline. Once you let me know about the members of the group, you cannot change members unless there is an acceptable reason that I confirm. Please have one of the group members email me (and CC others) with the names of the members. The groups will be working on the term project. Sometimes some group members may drop the class and in case the number of group members drop to one, you may join another group conditional on letting me know about the issue and finding a group that accepts you. When you drop the class please let your group members know about this so that they and I can figure out a solution on time. The earlier you let me know about your group members the later your presentation date will be.

**Problem Sets/Homework** – 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. The homework will give you some idea about the exams and will help you to learn the material better. Late homework will not be accepted under any circumstance. If you are risk averse and do not want to miss a homework, finish it earlier than the deadline. You can work in groups and submit one homework per group (up to three members). **Note that you cannot submit the same homework as separate groups.** So, if you worked together DO NOT submit two copies of the same (or similar) homework. In case this happens, your grade will be reduced for not following the instructions. There will be four homework and each homework would have reasonably high weight in grading. Hence, treat each homework as a mini 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:**

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 presentations (10%), a midterm exam (30%), 4 homework (5 points each), and a comprehensive final exam (40%). The grading scheme is as follows.

90-100% (A)  
78-89.9% (B)  
70-77.9% (C)  
60-69.9% (D)  
< 59.9% (F)

### **Make-up Exam:**

Missed exam will be given a grade of zero unless adequate evidence is presented. In this case, your grades from other exams (excluding presentation grade) will be equally distributed to the missed exam if I confirm it prior to the exam date. The student must consult with the professor as to whether the reason for missing the exam is acceptable before missing the exam. Hence, **do NOT assume** that I will accept your excuse without consulting me because if your reason is not acceptable you will get zero from the missed exam. Some acceptable reasons are: university duty (need to present a written proof by relevant unit in the university) and sickness that prevent you taking the exam (e.g., flue is not acceptable unless the dr. advise otherwise). Some unacceptable reasons include oversleeping, flat

tire, traffic related problems etc. Finally, you must take the final exam so you cannot use midterm exam(s) as a proxy for the final exam if you miss the final.

**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 (<http://www.uta.edu/aao/fao/>).

**Disability Accommodations:**

UT 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)*, *The Americans with Disabilities Amendments Act (ADAAA)*, and *Section 504 of the Rehabilitation Act*. 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 disability. Students are responsible for providing the instructor with official notification in the form of a **letter certified** by the Office for Students with Disabilities (OSD). Only those students who have officially documented a need for an accommodation will have their request honored. Students experiencing a range of conditions (Physical, Learning, Chronic Health, Mental Health, and Sensory) that may cause diminished academic performance or other barriers to learning may seek services and/or accommodations by contacting: **The Office for Students with Disabilities, (OSD)** <http://www.uta.edu/disability/> or calling 817-272-3364. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at [www.uta.edu/disability](http://www.uta.edu/disability).

**Counseling and Psychological Services (CAPS)** [www.uta.edu/caps/](http://www.uta.edu/caps/) or calling 817-272-3671 is also available to all students to help increase their understanding of personal issues, address mental and behavioral health problems and make positive changes in their lives.

**Non-Discrimination Policy:**

The University of Texas at Arlington does not discriminate on the basis of race, color, national origin, religion, age, gender, sexual orientation, disabilities, genetic information, and/or veteran status in its educational programs or activities it operates. For more information, visit [uta.edu/eos](http://uta.edu/eos).

**Title IX Policy:**

The University of Texas at Arlington (“University”) is committed to maintaining a learning and working environment that is free from discrimination based on sex in accordance with Title IX of the Higher Education Amendments of 1972 (Title IX), which prohibits discrimination on the basis of sex in educational programs or activities; Title VII of the Civil Rights Act of 1964 (Title VII), which prohibits sex discrimination in employment; and the Campus Sexual Violence Elimination Act (SaVE Act). Sexual misconduct is a form of sex discrimination and will not be tolerated. *For information regarding Title IX, visit [www.uta.edu/titleIX](http://www.uta.edu/titleIX) or contact Ms. Michelle Willbanks, Title IX Coordinator at (817) 272-4585 or [titleix@uta.edu](mailto:titleix@uta.edu)*

**Academic Integrity:**

Students enrolled all UT Arlington courses 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.*

UT Arlington faculty members may employ the Honor Code in their courses by 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. Additional information is available at <https://www.uta.edu/conduct/>. Faculty are encouraged to discuss plagiarism and share the following library tutorials <http://libguides.uta.edu/copyright/plagiarism> and <http://library.uta.edu/plagiarism/>

### **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>.

### **Campus Carry:**

Effective August 1, 2016, the Campus Carry law (Senate Bill 11) allows those licensed individuals to carry a concealed handgun in buildings on public university campuses, except in locations the University establishes as prohibited. Under the new law, openly carrying handguns is not allowed on college campuses. For more information, visit <http://www.uta.edu/news/info/campus-carry/>

### **Student Feedback Survey:**

At the end of each term, students enrolled in face-to-face and online classes categorized as "lecture," "seminar," or "laboratory" are directed to complete an online 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 via the SFS database is aggregated with that of other students enrolled in the course. Students' anonymity will be protected to the extent that the law allows. UT Arlington's effort to solicit, gather, tabulate, and publish student feedback is required by state law and aggregate results are posted online. Data from SFS is also used for faculty and program evaluations. For more information, visit <http://www.uta.edu/sfs>.

### **Final Review Week:**

For semester-long courses, 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.

### **Emergency Exit Procedures:**

Should we experience an emergency event that requires us to vacate the building, students should exit the room and move toward the nearest exit. When exiting the building during an emergency, one

should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist individuals with disabilities.

### **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](mailto:resources@uta.edu), or view the information at <http://www.uta.edu/studentsuccess/success-programs/programs/resource-hotline.php>

**The IDEAS Center** (2<sup>nd</sup> Floor of Central Library) offers **FREE** [tutoring](#) to all students with a focus on transfer students, sophomores, veterans and others undergoing a transition to UT Arlington. Students can drop in, or check the schedule of available peer tutors at [www.uta.edu/IDEAS](http://www.uta.edu/IDEAS), or call (817) 272-6593.

**The English Writing Center (411LIBR):** The Writing Center offers **FREE** tutoring in 15-, 30-, 45-, and 60-minute face-to-face and online sessions to all UTA students on any phase of their UTA coursework. Register and make appointments online at <https://uta.mywconline.com>. Classroom visits, workshops, and specialized services for graduate students and faculty are also available. Please see [www.uta.edu/owl](http://www.uta.edu/owl) for detailed information on all our programs and services.

The Library's 2<sup>nd</sup> floor Academic Plaza offers students a central hub of support services, including IDEAS Center, University Advising Services, Transfer UTA and various college/school advising hours. Services are available during the library's hours of operation. <http://library.uta.edu/academic-plaza>

<p><b>Emergency Phone Numbers:</b> In case of an on-campus emergency, call the UT Arlington Police Department at <b>817-272-3003</b> (non-campus phone), <b>2-3003</b> (campus phone). You may also dial 911. Non-emergency number 817-272-3381</p>
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