

ECON 644
Empirical Analysis II: Introduction to Economic Models

Instructors' Contact Information and Class Logistics:

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Office Hours: posted on ELMS with weekly reminders sent as ELMS announcements

Class Location: 1400 16th Street, NW Suite 140, Washington DC
Class Time: Wednesday, 6:45 - 9:30 pm
Class Website <https://myelms.umd.edu>

Course Description

This course is an introduction to econometric methods with applications to public policy analysis. Primary focus on application and interpretation of multiple regression analysis.

Course Objectives

This is the second in the three-course series in empirical analysis required for the Masters in Professional Studies in Applied Economics. At the end of the course, you should be familiar with:

- OLS simple and multiple regression (estimation and inference)
- Linear transformations in OLS models (polynomials and log-transformations)
- Validity of estimates: omitted variable bias, measurement errors, heteroskedasticity
- Limited dependent variables
- Thinking critically about the internal and external validity of empirical work

using Stata be able to:

- Working with do-files that automatically over-write log-files with all the output
- Reading and writing data files (ECN643 review - Mitchell, Ch. 2)
- Creating and working with do-files and log-files (Acock Ch. 4)
- Creating New Variables (Mitchell, Ch. 5)
- Model and estimate regressions

Course Materials

Textbooks:

- Introductory Econometrics: A Modern Approach. Jeffrey M. Wooldridge. South-Western College Pub; 6th edition (ISBN10: 1-111-53104-8)
- Data Management Using Stata: A Practical Handbook. Michael N. Mitchell (2010), Stata Press (<http://www.stata.com/bookstore/data-management-using-stata/index.html>)

Course software:

- Our program's curriculum is designed to use Stata as the statistical software. Other leading statistical software packages include SAS and R. We have decided to focus on one package to enhance the continuity across courses in our program. A more superficial familiarity with multiple packages might be just as good as a deep understanding of a single package. But working with multiple packages would also result in less time to learn econometrics. Students in our program should purchase Stata. Stata offers different "flavors" and different lengths of license. Price varies according to these two factors. A description of the flavors is given here: <http://www.stata.com/products/which-stata-is-right-for-me/> .

Stata offers student discounts via the "Gradplan":

<http://www.stata.com/order/new/edu/gradplans/direct-ship-pricing/>

The least expensive appropriate option is \$69 for a 6-month license for "Stata IC". A one-year license is \$125, and a perpetual license (which never expires) is \$225. We do not recommend "Small Stata". Small Stata is too limited for the course work our program. Under the Gradplan, you may install Stata on up to three different computers. You may also eventually upgrade your version of Stata and your license, at a discount, if you wish.

Course Website:

Copies of the course syllabus, your grades, and other relevant links and documents will be posted on the course's ELMS/Canvas website. You can access the site via www.elms.umd.edu. You will need to use your University of Maryland "directory ID" and password.

Additional Resources:

- Stata Web-Book, UCLA (<https://stats.idre.ucla.edu/other/dae/>)
- Copies of this syllabus, lecture notes, problem sets, and other relevant documents will be made available through the course website.
- Acock, Alan (2014) A Gentle Introduction to Stata, 4th ed, Stata Press.

Prerequisites

Econ 643 – Empirical Analysis I: Foundations of Empirical Research:

- specifically it is assumed that you are familiar with the Stata topics covered in Chs. 1, 4, 5, and 8 of Acock, Alan (2014) A Gentle Introduction to Stata, 4th ed, Stata Press.

Course Structure

Based on the objectives of the course, each lecture would be split between concepts presentation (in the form of slides) and computer exercises using Stata. Lectures will follow textbooks.

Course Work

- **Problems Sets (30%):** There will be six problem sets assigned throughout the quarter. The problem sets are combination of analytical problems and empirical problems using Stata. They are due at the beginning of class on the designated due date (see below) and all work should be stapled together with your name on each page to avoid losing points due to missing pages. Stata work **must** be turned electronically in the form of Stata log files in ELMS. You are encouraged to consult with classmates in completing the problem sets. You are allowed to give and receive help on the problems. However, you are NOT allowed to share problem sets (i.e., written answers, Stata code) with others.
- **Online Discussion (5%):** The weekly online discussions are mandatory and will be conducted via online discussion utility in ELMS/Canvas. We will have 12 online discussions.
- **Midterm Exam (25%):** The midterm exam will be given in class and will be 90 minutes in length. During the exam you will be allowed to use your notes, textbook, calculator, and Stata's help menu. You will be asked to conduct statistical and econometric analyses using Stata and explain your findings. The midterm must be completed in the form of the Stata log file and submitted in ELMS
- **Final Exam (40%):** The final exam will be given on the last day of class and will be 120 minutes in length. The exam will be a comprehensive exam covering ALL material discussed throughout the course, including lecture slides, textbook and other reading material, in-class assignments and problem sets. During the exam you will be allowed to use your notes, textbook, calculator, and Stata's help menu. The final exam must be completed in the form of the Stata log file and submitted in ELMS.

Assignment and Test Dates:

Problem Set #1	Assigned: June 6, 2018	Due: June 13, 2018
Problem Set #2	Assigned: June 13, 2018	Due: June 20, 2018
Problem Set #3:	Assigned: June 20, 2018	Due: July 5, 2018
Midterm Exam	July 11, 2018	
Problem Set #4:	Assigned: July 18, 2018	Due: July 25, 2018
Problem Set #5:	Assigned: July 25, 2018	Due Aug 1, 2018
Problem Set #6	Assigned: Aug 1, 2018	Due: August 8, 2018
Final Exam	August 15, 2018	

Contact me immediately if you foresee a problem with the dates of the midterm. Final cannot be re-scheduled unless a student has a valid excuse with documentation.

Final Grade

Based on the course work your grade will be calculated based on the following absolute scale scores:

93-100	A
90-92	A-
80-89	B+
70-79	B
60-69	B-
50-59	C+
40-49	C
30-39	C-
20-29	D+
10-19	D
0-9	F

The points will be allocated as follows:

- Each problem set will earn a maximum of 50 points for a total of 300 points. Your total problem set score will be the sum of each problem set divided by 10. *Example:* if your total problem sets receives 250 points, your problem set score is 25.
- Each discussion will earn a maximum of 5 points for a total of 60 points. Your total online discussion score will be the sum of each discussion divided by 12. *Example:* if your total online discussions receives 24 points, your online discussion score is 2.
- The midterm exam will earn a total of 100 points. Your midterm score is the total midterm points divided by 4. *Example:* if your earn 84 points on the midterm, your midterm score is 21.
- The final exam will earn a total of 120 points. Your final score is the total final points divided by 3. *Example:* if your earn 114 points on the final, your final score is 38.

Based on the these hypothetical examples, the total score for the course is: $25 + 2 + 21 + 38 = 86$ which translates into a grade of $B +$.

University of Maryland and Department of Economics Policies

Email:

Email is the primary means of communication outside the classroom, and I will use it to inform you of important announcements. Students are responsible for updating their current email address via <http://www.testudo.umd.edu/apps/saddr/> AND for paying attention to messages I send to the class via ELMS. Failure to check email, errors in forwarding email, and returned email due to “mailbox full” or “user unknown” will not excuse a student from missing announcements or deadlines. I will do my best to respond to email within 36 hours.

Contact Hours:

Three credit courses at the University of Maryland require a minimum amount of contact between instructors and students. Our courses' 12 weekly 3-hour meetings only satisfy 80% of the university's contact requirement. The other 20% is satisfied by weekly mandatory and graded online contact. In principle, the contact hours requirement could be satisfied by scheduling 3 additional 150-minute meetings per term, or 6 additional 75-minute meetings, or 10 additional 45-minute meetings. But in practice the contact hours requirement is satisfied by the weekly online discussions. The weekly online discussions are a more flexible way to ensure that our program's courses in DC provide the same level of student-instructor contact as the traditional 15-week, face-to-face, version of the same course when it is taught on campus in College Park.

Work Load:

Mastering the material covered in this course requires a significant amount of work outside of class. Students should expect to spend more time outside of class than in class – typically at least twice as much time. The courses in our DC program are 12-week courses that cover all the same material as a traditional semester-long 3-credit course (15 weeks). The compressed schedule makes it possible to complete our degree in just 15 months if you take 2 courses each term. But the compressed schedule also implies an accelerated pace with an average of 25% more work per week in a given course ($15/12 = 1.25$). The normal full-time load in a master's program is 3 courses per semester, or 6 courses per year. Students who take 2 courses per quarter in our program complete 8 courses per year. So taking 2 courses per quarter in our program is equivalent to 133% of a full-time load per year ($8/6 = 1.33$).

Academic Integrity:

The University of Maryland has a nationally recognized Code of Academic Integrity, administered by the Student Honor Council. This Code sets standards applicable to all undergraduate and graduate students, and you are responsible for upholding these standards as you complete assignments and take exams in this course. Please make yourself aware of the consequences of cheating, fabrication, facilitation, and plagiarism. For more information see www.studenthonorcouncil.umd.edu.

Student Conduct:

Students are expected to treat each other with respect. Disruptive behavior of any kind will not be tolerated. Students who are unable to show civility to one another or myself will be referred to the Office of Student Conduct. You are expected to adhere to the Code of Student Conduct.

Excused Absences:

The University of Maryland's policy on excused absences is posted here:

<http://www.president.umd.edu/administration/policies/section-v-student-affairs/v-100g>

Please note:

If you miss any class meetings for any reason, you are still responsible for all material covered during the meeting you missed. It is your responsibility – not the instructor's – to get yourself caught up in the course. Instructors routinely facilitate things by posting lecture notes, etc.

If you need to miss an exam or other graded course requirement because of illness, injury, or some other emergency: Follow doctor's orders and get documentation. Get in touch with the

instructor as soon as you're able – preferably prior to missing the exam or deadline. Communicate with the instructor to make up the course requirement as soon as possible. You are entitled to recover before you make up the course requirement, but you are not entitled to extra days to study beyond the time the doctor's note says you're incapacitated. If you are incapacitated for more than a week or so beyond the end of the term, your grade in the course will be an "Incomplete". In such cases you must negotiate a plan with your instructor for completing the course requirements. Once you make up the course requirement the instructor will change your "I" to the appropriate letter grade.

School Closings and Delays:

Information regarding official University closing and delays can be found on the campus website and the snow phone line: (301) 405-SNOW (405-7669). Since our program is an evening program in downtown Washington, DC, rather than a day program in College Park, we do not always cancel classes on the same days as the College Park campus. The program director will always announce cancellation information to the program as an announcement on the program's ELMS/Canvas site. This will generally be done by 1:00 p.m. on days when weather or other factors are an issue.

Students with Disabilities:

The University of Maryland does not discriminate based on differences in age, race, ethnicity, sex, religion, disability, sexual orientation, class, political affiliation, and national origin. Reasonable accommodations will be made to students with documented disabilities. I will make every effort to accommodate students who are registered with the Disability Support Services (DSS) Office and who provide me with a University of Maryland DSS Accommodation form.

Academic Progress:

The graduate school requires that students maintain a GPA of at least 3.0. Students whose cumulative GPA falls below 3.0 will be placed on academic probation by the graduate school. Students on academic probation must ask the program's director to petition the graduate school if they want to remain in the program. The petition must include a plan for getting the student's GPA up to at least 3.0. Students who do not live up to their plan can have their enrollment in the program terminated without having earned the degree. Note: a grade of "B" corresponds to a GPA of 3.0. A grade of "B-" corresponds to a GPA of 2.7.

Building Access:

The door to the building at 1400 16th Street is unlocked on weekdays until 7:00 p.m. Students who arrive after 7:00 p.m. or on weekends will find the door locked. The building's security guard is stationed at a desk just inside the door until 11:00 p.m. and will let you in. You can also call the phone on the security guard's desk by dialing (202) 328-5158. If the security guard is off duty or happens to be away from his or her desk when you arrive, you can go around to the other door at 1616 P Street and pick up the black phone to the right of that door. You will be connected to the company that handles security for our building. If you tell them you are with the University of Maryland, they should ask you for a password. When you tell them the password, they will be able to unlock the door for you. You can get the password from the program coordinator, the TA, or the program director. Please note: the building security staff are not able to buzz you in at the 1400 16th Street door. You have to go around to the 1616 P Street door to be buzzed in.

Tentative Course Outline

This outline may be revised during the semester. For the latest version, check the course webpage.

Lectures	Dates	Text Book	Topics
1,2	May 30, 2018	Ch. 1, Appendix B,C Mitchell, Ch 2	Review: Probability and Statistics Review Reading and Writing Datasets
3	June 6, 2018	Ch. 2 Acock Ch. 4	Simple Regression Analysis Creating and Working with log-files
4	June 13, 2018	3 Mitchell, Ch 5 (first half)	Multiple Regression Analysis (MRA) Creating Variables
5	June 20, 2018	4	MRA - Inference
6	June 27, 2018	6 Mitchell, Ch 5 (second half)	MRA - Issues Creating Variables
7	July 5, 2018	7	MRA- Dummy Variables
Midterm Exam	July 11, 2018		
8	July 11, 2018	7	MRA- Dummy Variables
9	July 18, 2018	9 8	MRA- Measurement Errors Heteroskedasticity
10	July 25, 2018	8	Heteroskedasticity
11	August 1, 2018	Ch 17	Limited Dependent Variable Models
12	August 8, 2018	Ch 17	Limited Dependent Variable Models Final Review
FINAL EXAM	August 15, 2018		