ECONOMICS 4818
Introduction to Econometrics
Spring 2018

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Class website: https://learn.colorado.edu/
Office Hours: T 10:45am – 12:20pm & 3:15 – 4:35pm, TH 10:45am – 12:20pm, and by appointment (please give 2 weeks' notice for appointments).

Course Description:
This course provides an introduction to the theory and applications of modern econometrics. This course begins by reviewing and extending the statistical material covered in Econ 3818. Following this, students are guided through the principals of regression analysis starting with the simple regression model. We then turn to multiple regression analysis, examining issues in relation to estimation, inference and specification.

A more detailed outline of covered material and important dates is posted separately.

Text:
Introductory Econometrics: A Modern Approach, (4th or later edition) by Jeffery M. Wooldridge. The text in the 4th edition is nearly identical to the 5th edition, but some practice problems are missing in the old editions. The text is important, as I will follow it closely. Keep up with the readings. It is essential for success in this class.

Prerequisites:
Economics 3818, Introduction to Statistics with Computer Applications, or its equivalent. I assume that you did not only take the class, but also that you understand and remember the content. It is **very** important that you fulfill the prerequisite **before** you take this course, and **still** understand the materials in the prerequisite. If you have any uncertainty as to whether you are under or over qualified to take the course, please talk to me ASAP. The prerequisites must be strictly enforced.

Prerequisite Quiz
To be sure you are prepared for the material to be covered in this course, you will take a preliminary quiz. The quiz will cover some basic statistics and calculus. The quiz may have an impact on your overall grade. Two items are very important for passing this course: a good statistics and math foundation, and a willingness to strive to find answers even when they are not obvious. For this reason, you either need to score 80% or more on the prerequisite quiz, or at least continue to attempt to solve the problems given for a full 45 minutes. You need to either spend 45 minutes on the quiz, or score above 80%, or your overall grade will be reduced by 10%. I will also score the exams and give you feedback and possible options going forward. If you do very poorly despite a serious effort, we will discuss your prerequisites or other options.

Policy on Cheating:
If you are found to have violated the honor code (see below), by both the honor code council and myself, you will automatically fail the course!

Electronics in the Classroom
Laptops, tablets, and even phones can actually play a role and benefit learning in many types of classes. There are many pros and cons of allowing consistent use of these devices during the class period. However, it has become abundantly clear to me that these devices are more of a distraction than a learning aid in most (but not all) situations. In addition, taking notes by hand has actually been shown to be more effective than taking them on a laptop or tablet. Therefore, electronic devices will only be allowed in class in the last two rows of the classroom (this includes cell phone use for texting, etc.). **You also cannot use any form of electronic device during Group Assignments (it defeats the purpose of working together). If you use them on those days, you will automatically receive a zero for that day's assignment. You should take a calculator to class on Group Assignment days, and put your phone completely out of sight!** If you are expecting an important call or text, then simply put your phone on vibrate, sit near the door, and step out when the call/text comes through. Of course, if you have a disability services related need for these devices they will be allowed – in that case notify me of your exception ASAP. Some people write out their notes into a tablet; in this case, an exception may be made – again notify me ASAP.

A Note on Learning Systems and Assessments:
This course is a little more traditional than many of the other classes I teach. Lecture is still the primary component, but group assignments and discussions are taking on a slightly larger role. One of the most important changes from prior semesters is that all exams will be cumulative, and we will spend at least a little time reviewing for each exam. A little more detail on these systems is given below:

Learning systems:
1. Lecturing: explaining difficult material not easily learned on your own with text, groups, etc.
2. Exams: exams should be learning tools as well as assessment tools! We will go over each exam in depth in class. Reviewing exams is one area where in-class discussion and explanation are most effective. Just reading answers on a key has been shown to be one of the worst ways to learn material. Therefore, exam reviews will be the one area of class where no notes, associated pictures or keys will be posted.
3. Group scholarship: we will work some practice problems in groups, which can help your understanding of the material whether you already understand it fairly well, or are struggling a bit. These cooperative learning exercises are extremely helpful in preparing you to solve more in-depth analytical problems.
   Peer-learning of material is one of the most instructive learning systems because:
   a. *If you are going to inform others about what you know, you must first fully understand it yourselves. If you cannot explain a concept to others you may not fully understand it yourself.*
   b. *Most "real-world" careers require some form of teamwork skills.*
   c. *You can discern what it takes to teach others.*
   d. *It will teach you how to respond to critical questions in front of others.*
4. Self-study: reading the text and solving the review questions.

In-class Problems
It is important to understand how to apply concepts as we cover them, so you will have the opportunity to work on some problems in class (in pairs or small groups) almost every day. These will be collected and add to your Group Assignments grade

Group Assignments
These cooperative learning exercises (detailed above) are extremely important. The group assignment dates are listed in the course outline. It is important not to miss these days without an excused absence. If you miss a group assignment with a valid excuse (e.g. a note from your doctor or Wardenburg), then the others will be re-weighted.

Software
We will utilize Microsoft Excel for the data analysis in this course. Excel is available in all campus computer labs, including the lab in the basement of the Economics building.

Attendance Policy
There are many studies showing a clear relationship between class attendance and student achievement. There is no strict attendance policy for this class, but we do in-class problems nearly every day and these problems are often similar to those found on exams. I will take attendance each day to gauge effort, which may be important if you have special requests near the end of the term. A sign-in sheet will be circulated daily when necessary. **In addition, you may be administratively dropped if you do not attend each (all) of the first 3 days of class.**

Exams
There will be three cumulative exams and a cumulative final. Tests will consist of short-answer questions and some longer problems. The exams will all be cumulative, and the material does build on itself so it is important to understand all of the concepts as we go. **Exams will be given in class on the days listed. If you miss an exam with a valid excuse (e.g. a note from your doctor or Wardenburg), then the weight of your final will be increased. Undocumented illnesses do <u>not</u> count as valid excuses (as long as this is not in conflict with a University policy). Note that the exam dates below are <u>not</u> tentative – exams will be given in class on the days listed. NO EXAMS Will Be DROPPED!!**

Exam Schedule
Exam I: Tuesday, February 20th
Exam II: Tuesday, March 20th
Exam III: Thursday, April 24th
Final exam: Monday, May 7th at 4:30pm in our usual room.

Final Exam Conflicts
Official University Policy states that: If you have three or more final exams scheduled on the same day, you are entitled to arrange an alternative exam time for the **<u>last</u>** exam or exams scheduled on that day. To qualify for rescheduling final exam times, you must provide evidence

that you have three or more exams on the same day, and arrangements must be made with your instructor no later than the end of the tenth week of the semester (i.e. before Spring Break!)

Weights of Assignments:

Group Assignments	12%
Exam I	19%
Exam II	21%
Exam III	22%
Final Exam	26%

Incompletes, Extra Credit, etc.

I adhere strictly to the University guidelines on Incompletes ("An I is given only when students, *beyond their control*, have been unable to complete course requirements. A substantial amount of work must have been *satisfactorily completed* before approval for such a grade is completed."). Bad grades, unsatisfactory performance, too many credit hours, work conflicts, etc. are not reasons for an incomplete.

I am adamant about giving each student an equal opportunity to perform well in the course, so there will be no extra credit opportunities that are not offered to the entire class. You should focus your efforts on learning the material and doing well on the exams.

Grading Scale:

Your Score	**Grade**
92% to 100%	A
90% to 91%	A-
88% to 89%	B+
82% to 87%	B
80% to 81%	B-
78% to 79%	C+
72% to 77%	C
70% to 71%	C-
68% to 69%	D+
62% to 67%	D
60% to 61%	D-

Tentative Course Outline (Text chapters are in parentheses):

1. Review of Mathematics and Statistics (Appendices A, B and C)
2. The Simple Regression Model (Ch. 2)
3. Multiple Regression Analysis: Estimation (Ch. 3)

Exam 1

4. Multiple Regression Analysis: Estimation (Ch. 3)
5. Multiple Regression Analysis: Inference (Ch. 4)
6. Multiple Regression Analysis: OLS Asymptotics (Ch. 5)

Exam 2

8. Multiple Regression Analysis: Further Issues (Ch. 6)
9. Multiple Regression Analysis with Qualitative Information: Binary Variables (Ch. 7)
10. Heteroskedasticity (Ch. 8)

Exam 3
A detailed outline of important dates is posted separately.

Additional Notes:
Honor Code
All students of the University of Colorado at Boulder are responsible for knowing and adhering to the academic integrity policy of this institution. Violations of this policy may include: cheating, plagiarism, aid of academic dishonesty, fabrication, lying, bribery, and threatening behavior. All incidents of academic misconduct shall be reported to the Honor Code Council (honor@colorado.edu; 303-725-2273). Students who are found to be in violation of the academic integrity policy will be subject to both academic sanctions from the faculty member and non-academic sanctions (including but not limited to university probation, suspension, or expulsion). Additional information on the Honor Code can be found at
http://www.colorado.edu/policies/honor.html and at
http://www.colorado.edu/academics/honorcode

Disabilities
If you qualify for accommodations because of a disability, please submit to your professor a letter from Disability Services in a timely manner (for exam accommodations provide your letter at least one week prior to the exam) so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities. Contact Disability Services at 303-492-8671 or by e-mail at dsinfo@colorado.edu.

If you have a temporary medical condition or injury, see Temporary Injuries under Quick Links at Disability Services website and discuss your needs with your professor.

Religious holidays
A comprehensive calendar of the religious holidays most commonly observed by CU-Boulder students can be found at http://www.interfaithcalendar.org/ Review this list and the class syllabus. After reviewing the syllabus, please see the instructor if you believe that you need an accommodation for religious reasons. The instructor should be notified within the first two weeks of classes. Campus policy regarding religious observances states that faculty must make *reasonable* accommodation for them and in so doing, be careful not to inhibit or penalize those students who are exercising their rights to religious observance. For more information see
http://www.colorado.edu/policies/fac_relig.html

Code of Behavior
Students and faculty each have responsibility for maintaining an appropriate learning environment. Those who fail to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, color, culture, religion, creed, politics, veteran's status, sexual orientation, gender, gender identity and gender expression, age, disability, and nationalities. Class rosters are provided to the instructor with the student's legal name. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records. See policies at
http://www.colorado.edu/policies/classbehavior.html and at
http://www.colorado.edu/studentaffairs/judicialaffairs/code.html#student_code

Policy on Discrimination and Harassment
The University of Colorado Boulder (CU-Boulder) is committed to maintaining a positive learning, working, and living environment. The University of Colorado does not discriminate on the basis of race, color, national origin, sex, age, disability, creed, religion, sexual orientation, or veteran status in admission and access to, and treatment and employment in, its educational programs and activities. (Regent Law, Article 10, amended 11/8/2001). CU-Boulder will not tolerate acts of discrimination or harassment based upon Protected Classes or related retaliation against or by any employee or student. For purposes of this CU-Boulder policy, "Protected Classes" refers to race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, or veteran status. Individuals who believe they have been discriminated against should contact the Office of Discrimination and Harassment (ODH) at 303-492-2127 or the Office of Student Conduct (OSC) at 303-492-5550. Information about the ODH, the above referenced policies, and the campus resources available to assist individuals regarding discrimination or harassment can be obtained at http://www.colorado.edu/odh.

Any University policies that are in conflict with my own policies will supersede my policy!

A reply from one student to another on the discussion board for one of my colleague's online classes: "If you read the course syllabus you will find the answer to your questions. If you do not understand what you read I recommend you read multiple times. After reading the syllabus if you still have questions come back and I will try to help you as much as possible."