University of Colorado at Boulder
Department of Economics
Econ 4848-003 - Applied Econometrics, spring 2015
Visiting professor Kai Mynbaev

Office. Econ 115.
Meetings. TTh 11:00 AM - 12:15 PM, HUMN 1B45.
Office hours. TTh 13:00 PM - 15:00 PM. To make an appointment, email kai.trip@yahoo.com
Prerequisites. ECON 3818 or ECON 3070 (or equivalent).

Course description. This course is designed to equip you with basic undergraduate statistical/econometric knowledge and computational tools necessary to conduct empirical research. To that end we will:
1. study the classical linear regression model and extend it in ways necessary for your projects.
2. explore various sources of economic data
3. introduce you to the basic features of Stata (a data management and statistical software).
In the second half of the semester you will be able to carry out an empirical project that addresses a relevant social or economic issue using regression analysis and real data.

Course objectives. This course is considered a support course for the corresponding theory course. That is, we try to illustrate the theory with applications. We can discuss any topics from the theory of econometrics, mathematical statistics or economics that are relevant to your projects. Deep understanding is given preference over wide coverage. The necessary material from Statistics and Mathematics will be reviewed. Financial applications are my preferred topic and will be covered after the basics.

Learning some definitions and algebraic derivations is a must. Those who skip algebra will not get an A.

Course methodology. I experiment with a team-based method, see Michaelsen, L. K., Knight, A. B. and Fink, L. D. (*Team-based Learning: A Transformative Use of Small Groups.* Greenwood Publishing Group, 2002) or http://www.teambasedlearning.org/. You will work in teams of up to 6 students. Team-based method includes two elements: team discussions and team (joint) responsibility. Team discussions will be a primary way of study. The definition of team responsibility is "All for one and one for all": a randomly chosen representative of a team writes the quiz and his/her grade becomes team's grade. A part of the grade (quizzes, 30%) will be for team work. The remaining part (midterm, project, and final, 70% in total) will be given for individual work.

Attendance. All material discussed in the class will be included in quizzes and exams. Usually this means that the coverage of quizzes and exams is very different from any given textbook. Some or all models used for empirical projects will be included in the final exam. Therefore regular attendance is absolutely important.

Grades. The table below lists all evaluations, provides dates, and points.

Evaluation	Points	Date and time
Quizzes, up to 15	30 points	Usually once a week
midterm	20 points	March 19, 2015
empirical project	20 points	due May 1, 2015 (last class)
Final exam	30 points	To be determined

Textbook. Wooldridge, J., 2009, *Introductory econometrics.* South-Western Cengage Learning, OH.

Topics and readings
The following chapters and sections from the textbook will be covered as time permits.
1. The nature of econometrics and economic data: chapter 1.
2. The simple linear regression model and the least squares estimator: chapter 2, sections 2.1, 2.2, 2.3,
   2.4.
3. Multiple linear regression (MLR) model and the least squares estimator: chapter 3, sections 3.1, 3.2,
   3.3, 3.4., Appendix D, Appendix E.
4. Hypothesis testing for the MLR model under normality: chapter 4.
5. Data scaling, dealing with data transformations, regressor selection, goodness-of-fit and prediction: chapter 6.
6. Obtaining Economic Data
7. Regression with binary variables: chapter 7, sections 7.1, 7.2, 7.3 and 7.4.
8. Accounting for heteroscedasticity: chapter 8, sections 8.1, 8.2.
9. Functional form and regressor misspecification: chapter 9, sections 9.1, 9.2.
10. Limited dependent variable models: chapter 7 section 7.5, chapter 17 section 17.1.

Software. Stata is available in the computer laboratory in the basement of the Economics Building and in Humanities 1B45. Visit http://webdata.colorado.edu/labs/map/ for a list of computer laboratories and available software. If you wish to purchase Stata, visit http://www.stata.com/order/new/edu/gradplans/gp-campus.html.
As a student in the University of Colorado you will be able to purchase Stata at a discount through GradPlan. There are multiple sources of information online about Stata. Several links to books, tutorials and examples are listed on the teaching portion of my webpage. A particularly useful book is,

Baum, C. F., 2006, *An introduction to modern econometrics using Stata.* Stata Press, College Station, TX.

Important information.

- If you qualify for accommodations because of a disability, please submit to me a letter from Disability Services in a timely manner so that your needs may be addressed. Disability Services determines accommodations based on documented disabilities. Contact: 303-492-8671, Willard 322, and www.colorado.edu/disabilityservices.

- Campus policy regarding religious observances requires that faculty make every effort to reasonably and fairly deal with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. In this class, if the midterm, final or project due dates prevent/inhibit you from exercising your rights to religious observance, please inform me by August 31, 2014 so that reasonable accommodations can be made. See full details at www.colorado.edu/policies/fac relig.html

- Students and faculty each have responsibility for maintaining an appropriate learning environment. Students who fail to adhere to such behavioral standards may be subject to discipline. Faculty has the professional responsibility to treat all students with understanding, dignity and respect, to guide classroom discussion and to set reasonable limits on the manner in which they and their students express opinions. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, culture, religion, politics, sexual orientation, gender variance, and nationalities. See polices at www.colorado.edu/policies/classbehavior.html and at www.colorado.edu/studentaffairs/judicialaffairs/code.html#student _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). Other information on the Honor Code can be found at www.colorado.edu/policies/honor.html and at www.colorado.edu/academics/honorcode/.

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