Subject: EBGN   Number: 590
Course Title: Econometrics & Forecasting
Section: 1
Semester/year: Spring 2017

Syllabus date 01/09/17. Subject to change.

Instructor or Coordinator: Peter Maniloff

   Contact information: Engineering Hall 323, x3481, maniloff@mines.edu

   Office hours: Wednesdays 11-12 & by appointment, TA Tuesdays 9:30-10:30, EH 212

   Class meeting days/times: Tuesdays and Thursdays, 11-12:15

   Class meeting location: GC 265

   Programming sessions: Wednesdays 9:00-10:00 in EH 211

   Web Page/Blackboard link (if applicable): blackboard.mines.edu

Teaching Assistant (if applicable):

   Contact information (Office/Phone/Email):

Instructional activity: _3__ hours lecture   ___ hours lab   ___ semester hours

Course designation: ___ Common Core   ___ Distributed Science or Engineering

                __x_ Major requirement   ___ Elective   ___ Other (please describe _____)

Course description from Bulletin: Using statistical techniques to fit economic models to data. Topics include ordinary least squares and single equation regression models; two stage least squares and multiple equation econometric models; specification error, serial correlation, heteroskedasticity; distributive lag; applications to mineral commodity markets; hypothesis testing; forecasting with econometric models, time series analysis, and simulation. Prerequisites: MATH111, MATH530, EBGN509; or permission of instructor.

Textbook and/or other requirement materials:

   Required text: Real Econometrics. Michael A. Bailey. Oxford University Press

   Suggested supplemental texts: I am not going to assign readings or assignments from the following books. I am including them as recommendations for further reading.

   Peter Kennedy, A Guide to Econometrics. This is the best reference for practicing econometricians. If you're going to get paid to do econometrics, you should have a copy on your shelf.

   Angris & Pischke, Mostly Harmless Econometrics. An excellent, intuitive, and readable book on identification. That is, how do you know that your regression means what you think it means?

   Wooldridge, The Econometrics of Cross-Section and Panel Data. All the math.

Student learning outcomes: At the conclusion of the class students will…

1.   Understand basic regression models
2.   Perform basic econometric analyses

Brief list of topics covered:

1.   Probability & Statistics
2.   Regression
3.   Using statistical software.

Policy on academic integrity/misconduct: The Colorado School of Mines affirms the principle that all individuals associated with the Mines academic community have a responsibility for establishing, maintaining an fostering an understanding and appreciation for academic integrity. In broad terms, this implies protecting the environment of mutual trust within which scholarly exchange occurs, supporting the ability of the faculty to fairly and effectively evaluate every student's academic achievements, and giving credence to the university's educational mission, its scholarly objectives and the substance of the degrees it awards. The protection of academic integrity requires there to be clear and consistent standards, as well as confrontation and sanctions when individuals violate those standards. The Colorado School of Mines desires an environment free of any and all forms of academic misconduct and expects students to act with integrity at all times.

Academic misconduct is the intentional act of fraud, in which an individual seeks to claim credit for the work and efforts of another without authorization, or uses unauthorized materials or fabricated information in any academic exercise. Student Academic Misconduct arises when a student violates the principle of academic integrity. Such behavior erodes mutual trust, distorts the fair evaluation of academic achievements, violates the ethical code of behavior upon which education and scholarship rest, and undermines the credibility of the university. Because of the serious institutional and individual ramifications, student misconduct arising from violations of academic integrity is not tolerated at Mines. If a student is found to have engaged in such misconduct sanctions such as change of a grade, loss of institutional privileges, or academic suspension or dismissal may be imposed.

The complete policy is online.

Grading Procedures:

Homework	25%
Project	25%
Midterm	25%
Final	25%

Homework: Approximately 6 problem sets over the course of the semester. If homework assignments refer to problems from the textbook, I expect you to complete the problems in the assigned edition. If you use a different edition, ensuring that they match is your responsibility. Computer-based questions are to be completed in R, which is freely available.

Project –This will be a substantial econometrics project over the course of the semester. Grading will be based on both analysis and a paper. There will be more detail on the project assignment handout. PhD students may do different econometric projects with my permission.

Statistics software lessons: Course staff will hold special sessions on Wednesdays (EH 211, 9-10) to introduce you to R. By the end of the semester you will be able to manipulate, explore, and visualize data as well as run basic econometric analyses. Attendance at these is optional but is highly encouraged if you are not already proficient in R. R is available on computers in the departmental computer lab on the first floor of Engineering Hall.

Coursework Return Policy: Course staff will endeavor to return graded materials within a week of submission. If problem sets are due shortly before exams, I will post an answer key to Blackboard so that you can use that as a study aid.

Absence Policy (e.g., Sports/Activities Policy): Standard CSM policies for official CSM absences

Homework:
- Homework must be turned in before it is due to be graded – plan ahead.
- Exams: If you will be absent during a scheduled exam, you should schedule a make-up time before you leave.

Common Exam Policy (if applicable): No common exams

Detailed Course Schedule:
I will provide detailed lecture notes posted on Blackboard for most topics. These will be posted before class. I will expect you to read both lecture notes and assigned chapters before class. Generally, the lecture notes will be more formal, while the textbook will be more expository.

Class	Date	Lecture Topic	Chapter	HW
1	R 1/12	What is Econometrics?	1,2	
2	T 1/17	Probability		
3	R 1/19	Statistics		
4	T 1/24	Regression with OLS	3	
5	R 1/26	Regression with OLS	3	PS 1, due 2/7
6	T 1/31	Hypotheses Testing	4	
7	R 2/2	Hypotheses Testing	4	PS 2, due 2/28
8	T 2/7	Multivariate OLS	5	
9	R 2/9	Multivariate OLS	5	
10	T 2/14	No class – Career Fair		
11	R 2/16	Dummy Variables	6	
	T 2/21	No class		

	R 2/23	No class		
13	T 2/28	Identification		PS 3 (due 3/9)
14	R 3/2	Panel Data	8	
15	T 3/7	Panel Data	8	
16	R 3/9	review of regression		
17	T 3/14	Midterm		
18	R 3/16	Go over midterm		
19	T 3/21	Instrumental Variables	9	PS 4 (due 4/6)
20	R 3/23	Instrumental Variables	9	
	T 3/28	Spring Break		
	R 3/30	Spring Break		
21	T 4/4	Time Series	13	
22	R 4/6	Time Series	13	PS 5 (due 4/18)
23	T 4/11	Time Series	13	
24	R 4/13	Time Series	13	
25	T 4/18	MLE, Probit and Tobit		
26	R 4/20	Selection and Truncation		
27	T 4/25	Special Topics		

28	R 4/27	Graphical presentation of data and results		
29	T 5/2	Student presentation – practice of econometrics		Project due
30	R 5/4	Review		
		Final - Take home - **Due TBA**		