

Economics 381-1

Econometrics

Winter 2019

Instructor

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KGH 3495

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Lectures: Mon, Wed 2:00 pm -3:20 pm, Harris 107

Office hours: Fri 3:00-3:50 pm or by appointment

Teaching Assistant

Ryan Lee, ryanlee2014@u.northwestern.edu

TA sections: Fri 2:00-2:50 pm, Frances Searle 1421

Office hours: Wed 10:00-11:30 am, Thu 5:00-7:00 pm , KGH 3198

Course Description

Most of economics is concerned with understanding relations among variables. Examples include the effects of education on earnings, the relation between the lengths of prison sentences and crime rates, and the relation between interest and inflation rates. Econometrics provides the statistical tools needed to infer these relations from data and test theory models of the relations. Thus, econometrics is the toolbox of empirical economics. This course covers the basic methods of empirical economics and provides tools that are needed to build and critically evaluate empirical econometric models. Topics will include the linear regression model, limited dependent variable models and causal inference.

Prerequisites

See <https://www.economics.northwestern.edu/undergraduate/student-services/course-curriculum-faqs.html>

Grading

Grading is based on the midterm exam (40%) and the cumulative final exam (50%). The midterm (75 minutes) will be on **February 11**, during our normal meeting time. The final exam will be on **March 19**, 3:00pm- 5:00 pm. You will also be required to complete 6 problem sets (10%) throughout the quarter, of which the best 5 will count towards your final grade (i. e. we will drop your lowest score). You are welcome to work in groups, but each student must write up his or her answers separately. The problem sets will be posted on Canvas and are **due at 12:00 noon in Ryan Lee's mailbox in KGH 3317 (Economics Department Main Office) on the following dates: Jan 18, Jan 25, Feb 1, Feb 22, Mar 1, Mar 8**

Stata

Stata is an econometric software package we will use this quarter and is available on most campus computers (see <https://www.library.northwestern.edu/visit/technology/computers/index.html> for locations).

Stata is also available for purchase to students at discounted prices, see

<https://www.stata.com/order/new/edu/gradplans/student-pricing/> .

Finally, students can apply for an NUworkspace account to use Stata from anywhere

(<https://nuworkspace.northwestern.edu/> , limited capacity).

Readings and Textbook

The textbook for this class is “Introduction to Econometrics” by Stock and Watson, 3rd (updated) edition. The relevant chapters for each class are indicated below. All other course material will be posted on Canvas.

Academic or athletic accommodation

Any student with a verified disability requiring special accommodations should speak to me, in office hours or via email, and to the Office of Services for Students with Disabilities (847-467-5530) as early as possible in the quarter, ideally in the first week, to arrange appropriate accommodation. Students on Northwestern varsity athletic teams who anticipate an exam conflict due to an NCAA event should work with Margaret Akerstrom (m-akerstrom@northwestern.edu) in Academic Services and ask her to contact me on your behalf. All discussions with me, with the Office of Services for Students with Disabilities and with Academic Services will remain confidential.

Course Outline

Class	Date	Topic	S&W chapters
1	1/7/2019	Probability and Statistics Review	2,3
2	1/9/2019	Probability and Statistics Review	2,3
3	1/14/2019	Regression Analysis with One Variable	4,5,17
4	1/16/2019	Regression Analysis with One Variable	4,5,17
5	1/23/2019	Regression Analysis with One Variable	4,5,17
6	1/28/2019	Regression Analysis with One Variable	4,5,17
7	1/30/2019	Regression Analysis with Multiple Variables	6,7,18
8	2/4/2019	Regression Analysis with Multiple Variables	6,7,18
9	2/6/2019	Regression Analysis with Multiple Variables	6,7,18
10	2/11/2019	MIDTERM	
11	2/13/2019	Regression Analysis with Multiple Variables	6,7,18
12	2/18/2019	Regression Analysis with Multiple Variables	6,7,18
13	2/20/2019	Nonlinear Regression Functions	8
14	2/25/2019	Assessing Regression Studies; Introduction to Causal Inference	9
15	2/27/2019	Panel Data	10
16	3/4/2019	Instrumental Variable Estimation	12
17	3/6/2019	Experiments and quasi-Experiments	13
18	3/11/2019	Estimation with Binary Dependent Variables	11
	3/19/2019	FINAL EXAM	