

## Econ 300 Spring 2020 Course Syllabus

### Course information

Instructor: Salman Khan

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Office hour: Wednesday 3:15-4:15 pm

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Office: UH 813

Office hour: Thursday 1-2pm

Class meeting time: Monday and Wednesday - 4:30 - 5:45p

Location: Burnham Hall | Room 317

Course website: <https://uic.blackboard.com/>

Course CRN: 35164

### COURSE DESCRIPTION:

The goal of the course is threefold (in order of importance):

- 1) to develop a strong intuitive understanding of causal analysis and common regression-based econometric models;
- 2) to develop a basic understanding of the formal notation and the mathematical properties of these models;
- 3) to develop basic skills analyzing data and generating regression estimates using STATA.

More concretely, we will spend most of our time considering ways to answer questions such as:

- Does health insurance make people healthier?
- Will going to a private versus a public college increase your future income?
- Do minimum drinking-age laws reduce auto fatalities?

We will tackle these questions using various econometric tools—selection-on-observables, random assignment, instrumental variables, regression discontinuity, and differences-in-differences models—and we will focus extensively on understanding selection bias and the ways it can confound attempts to measure these relationships.

### PREREQUISITE COURSES:

ECON 120 or ECON 121 AND either ECON 270 or IDS 270

### Recommended Textbook:

Michael A. Bailey, *Real Econometrics: The Right Tools to Answer Important Questions* (ISBN: 9780190296827)

### Reference Texts:

Josh Angrist & Jörn-Steffen Pischke, *Mastering Metrics*, (ISBN 9780691152844)

### Course Software:

The study of econometrics is closely linked to and aided by statistical computer software. We will use an econometrics program called Stata in this course. This is the software that I use the most when conducting empirical research. It is available in many of the computer labs<sup>1</sup>, but you may want to purchase a copy to use on your own computer. One option requires internet access to login to a remote server. A license for the semester is \$50 from the UIC web store.<sup>2</sup> An alternative is to download & install a copy that you can buy directly from Stata for \$45 for a 6-month license.<sup>3</sup> This option does not require you to be connected to the internet in order to use Stata.

Several resources for learning to use Stata:

- Official: <http://www.stata.com/support/documentation/>
- Tutorials: <http://www.ats.ucla.edu/stat/stata/modules/>
- Forum: <http://www.statalist.org/forums/>

For saving your work, I suggest using your UIC BOX account. It is risky to save your work to a USB memory stick or other physical media. Since UIC provides UNLIMITED FREE storage to all students, a lost USB drive will not be an acceptable excuse for late work. You can also use Dropbox, Google Drive, Wuala, or any number of other cloud services if you prefer. Instructions for setting up your BOX account are here.<sup>4</sup>

### **Grading**

6 Problem sets: 30%	90% or higher is an A
3 Exams: 60% (2 Midterms 20% each, Final 20%)	80% to 89.5% is a B
Pop Quizzes: 10%	70% to 79.5% is a C
	60% to 69.5% is a D
	59.5% or lower is a F

### ***Problem Sets***

There will be 6 problem sets that must be turned in at the beginning of class on each due date. **Only hard copies are accepted. Late assignments are not accepted.** The problem sets are a mixture of written problems and data analysis problems that will allow you to apply your knowledge using STATA. The problem sets are meant to prepare you for the midterms and the final.

### ***Quizzes***

There will be around 10 quizzes.

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<sup>1</sup> For example, **SCE 408, SEL 2249, SPHPI178, SPHPIB34, and SPHW523**. Contact ACCC if you have questions about STATA availability.

<sup>2</sup> <https://webstore.illinois.edu/shop/product.aspx?zpid=3777>

<sup>3</sup> <https://www.stata.com/order/new/edu/gradplans/student-pricing/>

<sup>4</sup> <https://box.illinois.edu/>

**Exams:** Each exam will cover roughly one-thirds of the course. The midterm exams will be administered in class on **February 19th and March 19th**. The final exam will be administered during the finals week. **There will be no makeup exams.**

### **CLASSROOM PARTICIPATION & ETIQUETTE:**

With any luck, these are all unnecessary to point out but just so we are all on the same page, here are some basic expectations for classroom etiquette.

1. Attend class and be on time. Not only is it important to allow us to make the most of limited class time, but showing up on time is a skill you will need for the rest of your life.
2. Basic etiquette during class:
  - a. Please do not text / browse the internet during lectures.
  - b. Please do not hold conversations during lecture.
  - c. Please do not walk out of class in the middle of lecture. If you must leave, then please do so *quietly* out of respect for both other students and your instructor.
3. Email correspondence: **Begin all emails with the subject line "ECON 300:"** followed by some additional subject information. Then please write an *electronic letter*. Do not email with a subject line like "can I get the notes?" and a body like "I missed class and need them thx." Writing clear, relatively formal emails is another important life skill worth practicing in college. If requesting an appointment, include several potential times you are available.
4. Attendance: Missing class deadlines will be viewed with considerable skepticism. The objective probability of anyone in the population of Chicago having a major car accident, a death in the family, a severe sickness, etc. over the next 15 weeks is extremely low; this is the prior belief I will use to evaluate excuses not exceedingly well documented in a formal/official manner. One invalid excuse for missing deadlines is booking any sort of discretionary travel during the class session (note: almost all travel is discretionary).
5. Taisiia and myself will be very happy to help you during office hours or at other times with any of the material we will cover. Your job in this transaction is to demonstrate that you have put in some effort prior to seeking help and to develop some specific questions about what you are unclear on prior to coming in (i.e. please don't come in and expect us to repeat the lecture all over again or for the first time if you missed class).

### **HONOR CODE & ACADEMIC INTEGRITY:**

This course and its associated coursework are being administered under the policies of the University of Illinois at Chicago (UIC) Honor Code. All students are expected to respect and uphold this code.

You are responsible for knowing and following the Student Disciplinary Policy at the UIC. See <http://www.uic.edu/depts/dos/studentconduct.html>. Cheating, plagiarizing, and other misconduct as discussed in the policy *will result in a failing grade and/or dismissal from the University*.

### **STUDENTS WITH DISABILITIES:**

Students with disabilities who require accommodations for access and participation must be registered with the Office of Disability Services (ODS). Contact the Disability Resource Center

at (312) 413-2183 (voice) or (312) 413-0123 (TTY only) if you have questions. More information can be found at [http://www.uic.edu/depts/oaa/disability\\_resources/index.html](http://www.uic.edu/depts/oaa/disability_resources/index.html).

### RELIGIOUS OBSERVANCES:

As per the UIC Senate Policy on religious holidays: "Students who wish to observe their religious holidays shall notify the faculty member by the tenth day of the semester of the date when they will be absent unless the religious holiday is observed on or before the tenth day of the semester. In such cases, the students shall notify the faculty member at least five days in advance of the date when he/she will be absent. The faculty member shall make every reasonable effort to honor the request, not penalize the student for missing the class, and if an examination or project is due during the absence, give the student an exam or assignment equivalent to the one completed by those students in attendance."

### ADDITIONAL NOTES:

Without a verifiable and accepted excuse per University policy (e.g. a doctor's note), no late work will be accepted and no make-up assignments or exams will be given. I reserve the right to amend this syllabus as necessary. I will clearly communicate any such changes to the class in a timely manner.

I reserve the right to alter the syllabus if it becomes necessary. This includes but is not limited to altering the due dates for problem sets or changing the order of topics covered. I will communicate all changes to the class in a timely manner.

## Tentative Course Schedule

### Summary

Time	Topic	Readings
Week 1	Statistics Review	RE 1, 2
Week 2	Statistics Review	RE 3
Week 3	Simple Regression	RE 4
Week 4	Simple Regression	RE 4
Week 5	Inference Testing	RE 5
Week 6	Multivariate Regression	RE 6
Week 7	Multivariate Regression	RE 7
Week 8	Multivariate Regression	
Week 9	Potential Outcomes/ Experiments	Notes
Week 10	Potential Outcomes/ Experiments	Notes
Week 11	Difference-in-Difference	RE 8
Week 12	Difference-in-Difference	
Week 13	Regression Discontinuity	RE 11
Week 14	Regression Discontinuity	
Week 15	Review/ Overview of Topics Not Covered	

**Detailed Course Schedule:**

Date	Day	Week	Deadline/ Events
1/13/2019	M	Week 1	
1/15/2019	W		
1/20/2019	M	Week 2	No Class
1/22/2019	W		
1/24/2019	F		Last day to register or drop course
1/27/2019	M	Week 3	PSET 1 Due
1/29/2019	W		
2/3/2019	M	Week 4	
2/5/2019	W		
2/10/2019	M	Week 5	
2/12/2019	W		PSET 2 Due
2/17/2019	M	Week 6	
2/19/2019	W		Exam 1
2/24/2019	M	Week 7	
2/26/2019	W		
3/3/2019	M	Week 8	PSET 3 Due
3/5/2019	W		
3/10/2019	M	Week 9	
3/12/2019	W		
3/17/2019	M	Week 10	PSET 4 Due
3/19/2019	W		Exam 2
3/21/2019	F		Last day to withdraw from course
3/24/2019	M	SPRING BREAK	No class
3/26/2019	W		
3/31/2019	M	Week 11	
4/2/2019	W		
4/7/2019	M	Week 12	PSET 5 Due
4/9/2019	W		
4/14/2019	M	Week 13	
4/16/2019	W		
4/21/2019	M	Week 14	
4/23/2019	W		
4/28/2019	M	Week 15	PSET 6 Due
4/30/2019	W		Review
Exam Week	M	Week 16	Final Exam. See exam schedule
	W		