

## **SOC 201: Introductory Sociological Statistics**

Syllabus, Fall 2018

**Meetings** 9:30 – 10:45 on Mondays and Wednesdays  
208 Burnham

**Instructor** **Mahesh Somashekhar**  
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Office: 4170 Behavioral Sciences Building  
Office Hours: 9:30 – 10:45 on Thursdays, and by appointment

<b>Teaching Assistants</b>	<b>Nancy Toure</b>	<b>Nick Rochin</b>
	Sections: BB1, BB2 OH: 12:00 – 2:00 on Wednesdays, 4005 BSB Email: ntoure2@uic.edu	Sections: BB3 OH: 11:30 – 1:30 on Mondays, 4006A BSB Email: nrochi2@uic.edu

**Course Webpage** Available on Blackboard

**Contact** For simple questions, email is the best way to reach me or your TAs. We will respond to your messages within 72 hours. For more involved questions or discussions, please use our office hours.

### **Course Description and Objectives:**

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This course is an introduction to how social scientists use and interpret statistics. Statistics is both a tool and a language that helps people describe large amounts of information. As a tool, statistics allows analysts of the social world to simplify and organize quantitative data into coherent, rigorous observations. As a language, statistics enables social observers to talk about large-scale data in clear and precise ways. The types of data analyzed by statisticians come from many sources—television, social media, the government, marketing firms, even regular interactions with other people in social settings. A mastery of statistics can help students make useful contributions to their current and future employers, the social causes they fight for, and the communities of which they are a part.

The overall objective of the class is twofold. First, the course aims to provide you with the ability to use statistical tools to critically evaluate data. Second, the course teaches you to be an analytical consumer of information in the mass media. By the end of this course, you will be able to:

1. Define real world questions and problems in statistical terms.
2. Solve statistical problems.
3. Analyze and interpret the meanings of statistical solutions in relation to real world issues.

### **Prerequisites:**

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This is not a mathematics course, but you are expected to be capable of doing arithmetic. You will also be expected to be able to think through problems clearly and communicate your results. This course is designed to help you practice these skills. To be fully prepared for the course, you should have taken

SOC 100 or SOC 105; and either MATH 090 or MATH 092 or MATH 118 or the equivalent. With my approval, you may be able to take the course as well.

### **Required Equipment:**

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**Text:** There are two required textbooks for the course:

Diez, David, Christopher Barr, and Mine Cetinkaya-Rundel. 2017. OpenIntro Statistics (3<sup>rd</sup> Edition). (<http://www.openintro.org/stat/textbook.php>).

Illowsky, Barbara and Susan Dean. Introductory Statistics. ([openstax.org/details/introductory-statistics](https://openstax.org/details/introductory-statistics)).

These textbooks are available for free online. Although they are free, please donate some money when downloading the textbooks. **Without users' support, resources such as these texts will no longer be available, and instructors like me will be forced to send you to the bookstore to buy a physical textbook that costs upwards of \$200. So please be nice and donate what you can.** Each textbook emphasizes different aspects of statistics, so you can learn concepts from class more thoroughly.

**Calculator:** You will need a calculator that can add, subtract, multiply, divide, and take square roots. It is wise to bring this device to class every day because we will do many in-class activities that require them. **During midterms and exams, you cannot use a device that communicates with other devices (such as a cell phone) as your calculator. You also may not bring to class a Texas Instruments TI-type calculator on exam days.**

### **Assignments and Grading:**

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Your course grade will be based on the following:

- **Homework (33%)**

There will be 11 homework assignments. Each will be posted on the course website. All assignments are due on Saturdays at 11:59 pm and must be turned in on the course website. Late homework assignments will be accepted up to 2 days after the due date, and 20% will be deducted from your assignment grade for each day it is late. Homework that is more than 2 days late will not be accepted. For the final grade, your lowest score will be dropped, and your highest score will be doubled.

- **Midterm 1 (10%), Midterm 2 (10%), and Final Exam (25%)**

There will be three exams administered over the course of the semester, two midterms and one final. The midterms will be non-cumulative, but for the final, you will be tested on material covered during the full semester. Exams will include a variety of question types including multiple-choice, fill-in, and problems requiring calculations and interpretation. You will be allowed to use one page (8.5 x 11 inch double-sided) of notes during each exam. No make-up exams will be administered except under extreme circumstances and with approval prior to the scheduled examination time.

- **Laboratory Assignments (18%)**

Laboratory assignments will include software assignments and practice problems that are completed during laboratory sections. To account for circumstances, the lowest two grades on laboratory assignments will be dropped.

- **Participation (4%)**

This course includes extensive in-class activities where you will practice working through statistical problems and participate in analytical discussions of your results. Your participation in these activities will count towards your grade. On 7 randomly determined class days, your work from these in-class activities will be turned in. You will receive one participation point for each of the in-class activities that you turn in. To receive full credit for participation in the course, you must turn in at least 4 in-class activities. In other words, if you miss three in-class activities, you still get full participation credit. More than three absences will decrease your participation grade.

### **Academic Accommodations:**

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The University of Illinois at Chicago is committed to maintaining a barrier-free environment so that students with disabilities can fully access campus programs, courses, services, and activities. Students with disabilities must inform the instructor of the need for accommodations. Those who require accommodations for access and participation in this course must be registered with the Disability Resource Center. Please contact DRC at 312/413-2183 (voice) or 312/413-0123 (TTY).

### **Things You Should Do to Succeed in This Class:**

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This course tries to engage you in active rather than passive learning. That means it is not a standard lecture course. You will be expected to participate in activities and discussion in class. The following things will help you to succeed in this kind of course:

1. Read and study the assigned sections of the text *before* class. This is where you will learn the content of the course.
2. Come to and participate in class and laboratory section. This is where you will learn how to use the content in the textbooks.
3. Do homework assignments soon after class. Doing assignments soon after you have read the textbooks and participated in class activities will help solidify your learning and ensure better retention.
4. Think about the numbers, statistics and graphs that you see on the internet, in the newspaper, on TV, or in other classes. What do they tell you about the world? How do they relate to what we have been studying in this class? How could they be misinterpreted if you did not have statistical training?
5. Most importantly, ASK QUESTIONS. If you are confused, others likely are too. You will be doing your classmates a favor, and make it easier to keep up, by asking the question early.

### **Class Rules:**

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1. Maintain a good learning environment by:
  - entering quietly and politely if you happen to arrive late
  - turning off the ringers on your cell phones and any other devices
  - avoid loud eating or talking
2. Respect your class partners by:
  - participating honestly and earnestly

- pulling your weight during in-class group assignments
- listening carefully to other students, TAs, and the instructor.

**Academic Honesty:**

All students are expected to do their own work on all assignments and exams. Students representing the work of others as their own or cheating in any other way will receive a zero for the assignment in question and may fail the course or be referred to the college for disciplinary action.

**Schedule of Topics and Required Readings:**

**\*\*\*Dates listed below are subject to change. Changes will be announced in class and/or the class website\*\*\***

Dates	Topics	Required Reading	Due Dates and Notes
8/27	Introductions to the Course and Overview of Statistics	None	<i>No Lab During Week 1</i>
8/29	Producing Data: Surveys and Sampling	Diez, 1.1 – 1.4	<i>No Class on Labor Day, 9/3</i>
9/5	Producing data: Experiments	Diez, 1.5	Assignment 1 due by 11:59 pm on 9/7
9/10	Graphical Techniques	Illowsky, 2.0 – 2.4	<i>Bring an Example of a Good Graph or a Bad Graph to Class on 9/10</i>
9/12	Frequency tables	None	Assignment 2 due by 11:59 pm on 9/14
9/17 to 9/19	Measures of Central Tendency and Variability	Diez, 1.6.2 – 1.7 Illowsky, 2.5 – 2.6	Assignment 3 due by 11:59 pm on 9/21
9/24	Probability	Diez, 2.1, 2.5 Illowsky, 3.0 – 3.3, 4.1	
9/26	Normal Distributions	Diez, 3.1 – 3.2 Illowsky, 6.0 – 6.2	Assignment 4 due by 11:59 pm on 9/29
10/1	Review or Jump Start to Next Section	None	<i>No Lab During Week 6</i>
<b>10/3</b>	<b>MIDTERM #1</b>		

10/8	Sampling Distributions	Diez, 4.1 Illowsky, 7.0 – 7.3	
10/10	Confidence Intervals	Diez, 4.2 Illowsky, 8.0 – 8.1, 8.3	Assignment 5 due by 11:59 pm on 10/13
10/15 to 10/17	Hypothesis Testing for One Sample	Diez, 4.3 Illowsky, 9.0 – 9.2	Assignment 6 due by 11:59 pm on 10/20
10/22	t-Distributions	Diez, 5.0 – 5.1 Illowsky, 8.2	
10/24	Hypothesis Testing for Two Samples	Diez, 5.2 – 5.3 Illowsky, 10.0 – 10.2	Assignment 7 due by 11:59 pm on 10/27
10/29	Review or Jump Start to Next Section	None	<i>No Lab During Week 10</i>
<b>10/31</b>	<b>MIDTERM #2</b>		
11/5 to 11/7	Scatterplots and Correlation	Diez, 1.6.1, 7.0 – 7.1 Illowsky, 12.0 – 12.5	Assignment 8 due by 11:59 pm on 11/10
11/12 to 11/14	Bivariate Regression	Diez, 7.2 – 7.4 Illowsky, 12.6	
11/19 to 11/26	Multivariate Regression	Diez, 8.0 – 8.3	Assignment 9 due by 11:59 pm on 11/17  <i>No Lab During Week 13</i>
11/28 to 12/3	Two-Way Tables & The Chi-Square Test	Diez, Chapter 6 Illowsky, 11.0 – 11.5	<i>No Class on 11/21. Happy Thanksgiving!</i>  Assignment 10 due by 11:59 pm on 12/1
12/5	Review (And a Sneak Peek at Statistics Beyond This Class)	None	Assignment 11 due by 11:59 pm on 12/8
<b>12/11</b>	<b>FINAL EXAM, Burnham 208, 10:30am to 12:30pm</b>		