



Sol Price School of Public Policy

PPD 303 Statistics for Policy, Planning, and Development

Spring 2021 Tuesday, Thursday 10:00am – 11:50am

Course Location: online

Section 51105

Instructor: Julie Zissimopoulos, Ph.D.

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Teaching Assistant (TA): Shenjia Xu

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TA Office Hours and Zoom: TBA

Course Description

This course is an introduction to statistical methods. The course will provide you with the analytical and quantitative skills required to conduct applied statistical analysis. You will learn about the practical uses of statistics in social science, public policy, management, and everyday life. You will be able to evaluate statistics presented in scholarly journals and prepare yourself for future quantitative research projects and advanced statistical courses. The course focuses on understanding the conditions under which various statistical techniques may be properly used as well as understanding and interpreting the results. Little emphasis will be placed on learning formulas and equations per se. Since virtually all of the computation of statistics is done with computers, we will be devoting time for you to become familiar with statistical software. On examinations, some manual calculations will be required. You will need a hand calculator having a square-root function. One set of computer-based exercises will be required using Microsoft Excel. Homework will be assigned as needed to supplement each week's lecture. At the end of this course, you will be familiar with several types of statistics and be able to interpret statistical findings. We will end the course by learning Ordinary Least Squares (OLS) models.

Learning Objectives

The specific objectives of this first course in statistical analysis are:

- To develop an understanding of the basic statistical techniques
- To learn to choose a statistic appropriate for a particular analytical task
- To be able to translate the results of statistical analyses into a conclusion regarding the questions posed
- To introduce students to statistical software
- To show students the importance of statistics for their future work/school experience(s)
- To show how statistical techniques are used in scholarly journals
- Conduct basic data analysis using MS Excel

Course Notes

The course utilizes Blackboard (<http://blackboard.usc.edu>) for posting lecture slides, assignments, syllabus, and readings.

Classes

Students will use Zoom platform to attend or watch recorded lectures. The class online session can be accessed in the following link:

<https://uscprice.zoom.us/j/97235213602?pwd=elJhQzVqSXF0K0J3Ynp1S2xnM3ZyQT09>

Or

Meeting ID: 972 3521 3602

Passcode: 898478

The recorded version of the class will be posted on Blackboard the following day after the class is recorded.

Technological Proficiency and Hardware/Software Required

In-class activities will require a student to use a computer for data analysis. Excel software is required for in-class data analysis, excel labs, and some problem sets.

If you do not have Excel, you can download it for free with your USC student account at the following link: <https://itservices.usc.edu/officestudents/>

Required Readings and Supplementary Materials

Required and optional readings are noted as such. There is one required textbook.

REQUIRED

- Moore, David S., Notz, William I., Fligner, Michael A. 2015. *Basic Practice of Statistics*. Seventh Edition. New York: W.H. Freeman and Co. (5th Edition or 6th Edition is acceptable): **NOTE: Chapter Titles are the same but Chapter numbers will be different depending on edition.**

OPTIONAL

- Calberg, Conrad. 2015. *Introduction to Statistical Analysis: Microsoft Excel 2013* (other years okay). 1st Edition. Pearson Education.

There are also many free online resources for learning how to use Excel that you may find to be helpful. For example, Microsoft Office website: <https://support.office.com/en-us/article/Excel-2013-videos-and-tutorials-aaae974d-3f47-41d9-895e-97a71c2e8a4a>

Grading Breakdown

Category	% of Grade
Problem Sets 1-5 (5% each)	25
Excel Lab Exercises 1-3 (avg. score)	20
Quizzes 1-8 (mean of 6 highest)	15
Midterm Exam	20
Final Exam	20
TOTAL	100

Description and Assessment of Assignments

PROBLEM SETS (25%)

Students will be asked to complete 5 problem sets that will be made available on Blackboard (<http://blackboard.usc.edu>). You are encouraged to work on problem sets in groups of 2 or 3, but each of you is required to complete your own problem set and to describe results in your own words. **Copying answers from someone else's problem set is plagiarism and will be treated as such. Please include the names of the students you worked with for each problem set on top in the first page of your submission.**

Problem Sets Submission Policy:

Assignments will be submitted on Blackboard. Due dates for problem sets are given in the syllabus. Problem sets must be turned in before the class begins on the due date. Late assignments are penalized by 10% for late submission up to 24 hours after due date. After 24 hours, the assignment will not be accepted. Exceptions will be made for a written doctor's excuse.

EXCEL LAB EXERCISES (20%)

Students will be asked to complete 3 Excel exercises. Students are required to use a Laptop with Excel during Excel Labs. You are encouraged to work on the excel exercises in groups, but each of you is required to complete your own excel exercise. Copying answers from someone else's excel exercise is plagiarism and will be treated as such. Please include the names of the students you worked with for each problem set on top in the first page of your submission.

Excel Exercises Submission Policy:

The Excel exercise will be submitted via Blackboard. Due date and time for Excel Exercises are provided in Course Schedule in the syllabus. Late assignments are penalized by 10% for late submission up to 24 hours after due date. After 24 hours, the assignment will not be accepted. Exceptions will be made for a written doctor's excuse..

QUIZZES (15%)

Students will be asked to complete 8 true/false and multiple-choice quizzes on Blackboard. Students must study class material to complete the quizzes, which test your understanding of course material and prepare you for the problem sets and exams. Students will be able to log in to Blackboard to complete each quiz due Fridays by midnight (see Course Schedule for dates) But once you open a quiz, you will have 10 minutes max to complete the quiz in one attempt. Your quiz grade will be based on the average of the 6 highest quizzes. **Quizzes are to be completed in 16 minutes in one attempt. Students requiring DSP accommodation are advised to submit their letters asap.**

EXAMS (40%)

Exams are cumulative and will emphasize application of the material learned in class.

PARTICIPATION (3% extra credit)

This course uses an applied approach that integrates lecture material with in-class exercises, labs, and other hands-on analysis and class discussion. Because attending all class meetings and completing all in-class work is the minimum expected of all students, class participation is not included directly in the grading breakdown above. Up to 3% extra credit will be rewarded for class participation based on attendance and class contribution.

Course Schedule: A Weekly Breakdown

	Topics/Daily Activities	Textbook *check topic names; chapter numbers differ depending on edition	Deliverable/ Due Dates
Week 1-Tues 01/19/21	Course Introduction	Moore Chapter 0	
Week 1-Thurs 01/21/21	Descriptive Statistics	Moore Chapter 1, 2	
Week 2- Tues 01/26/21	Descriptive Statistics Continued	Moore Chapters 1,2	
Week 2- Thurs 01/28/21	Excel Lab: Descriptive Statistics and Plots		Excel Lab Exercise 1 Due FRIDAY by midnight Quiz 1 (Wks 1, 2) Due Friday by midnight
Week 3- Tues 02/2/21	Distributions and Density Curves	Moore Chapter 3	
Week 3- Thurs 02/4/21	Correlation, Two-Way Tables	Moore Chapter 4, 6	Problem Set 1 Due TODAY Quiz 2 (Wks 2,3) Due FRIDAY by midnight
Week 4- Tues 02/09/21	Correlation, Two-Way Tables	Moore Chapter 4, 6	
Week 4- Thurs 02/11/21	Regression Intro	Moore Chapter 5	Quiz 3 (Wk 4) Due FRIDAY by midnight
Week 5- Tues 02/16/21	Excel Lab: Correlation, Regression, 2-Way Tables		Excel Lab Exercise 2 Due FRIDAY by 10am
Week 5- Thurs 02/18/21	Sampling	Moore Chapters 8, 9	
Week 6- Tues 02/23/21	Observation Data and Experiments	Moore Chapters 9	Problem Set 2 Due TODAY
Week 6- Thurs 02/25/21	Data Ethics	Moore Chapters 10	
Week 7- Tues 03/02/21	Excel Lab Review Class		Problem Set 3 Due TODAY
Week 7- Thurs 03/04/21	Review Class		
Week 8- Tues 03/09/21	Midterm Examination		Posted at 10 am Due 3/10 at 5:00 pm
Week 8- Thurs 03/11/21	Probability Theory	Moore Chapters 12, 13	
Week 9- Tues 03/16/21	Law of Large Numbers and Central Limit Theorem	Moore Chapters 15, 16	
Week 9- Thurs 03/18/21	Confidence Intervals	Moore Chapter 16	Quiz 4 (Wks 8, 9) Due FRIDAY by midnight
Week 10- Tues 03/23/21	NO CLASS		
Week 10- Thurs 03/25/21	Hypothesis Testing and Statistical Significance	Moore Chapters 17, 18	Quiz 5 (Wks 9, 10) Due FRIDAY by midnight

Week 11- Tues 03/30/21	t Distribution	Moore Chapters 18, 20	
Week 11- Thurs 04/01/21	t Distribution	Moore Chapters 18, 20	Problem Set 4 Due TODAY Quiz 6 (Wk 11) Due FRIDAY by midnight
Week 12- Tues 04/06/21	Comparing Two Means	Moore Chapters 21	
Week 12- Thurs 04/08/21	Regression	Moore Chapters 5, 26	Quiz 7 (Wks 11, 12) Due FRIDAY by midnight
Week 13- Tues 04/13/21	Regression Continued	Moore Chapter 5, 26	
Week 13- Thurs 04/15/21	Excel Lab: Regression		Quiz 8 (Wks 12, 13) Due FRIDAY by midnight Excel Lab Exercise 3 Due FRIDAY by midnight
Week 14- Tues 04/20/21	Statistics in Practice	Research Paper TBD	
Week 14- Thurs 04/22/21	NO CLASS		
Week 15- Tues 04/27/21	Excel Lab Review & Statistics in Practice		Problem Set 5 Due TODAY
Week 15- Thurs 04/29/21	Review Class		
Week 16- Tues 05/04/21	No class		
Week 16- Thurs 05/06/21	No class		
Week 17- Tues 05/11/21	FINAL EXAMINATION	8:00-10:00am	

Additional Policies

Academic Conduct:

Plagiarism – presenting someone else’s ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in SCampus in Part B, Section 11, “Behavior Violating University Standards” policy.usc.edu/scampus-part-b. Other forms of academic dishonesty are equally unacceptable. See additional information in SCampus and university policies on scientific misconduct, policy.usc.edu/scientific-misconduct.

Support Systems:

Student Health Counseling Services - (213) 740-7711 – 24/7 on call
engemannshc.usc.edu/counseling

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

National Suicide Prevention Lifeline - 1 (800) 273-8255 – 24/7 on call
suicidepreventionlifeline.org

Free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week.

Relationship and Sexual Violence Prevention Services (RSVP) - (213) 740-4900 – 24/7 on call
engemannshc.usc.edu/rsvp

Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

Office of Equity and Diversity (OED) | Title IX - (213) 740-5086
equity.usc.edu, titleix.usc.edu

Information about how to get help or help a survivor of harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants. The university prohibits discrimination or harassment based on the following protected characteristics: race, color, national origin, ancestry, religion, sex, gender, gender identity, gender expression, sexual orientation, age, physical disability, medical condition, mental disability, marital status, pregnancy, veteran status, genetic information, and any other characteristic which may be specified in applicable laws and governmental regulations.

Bias Assessment Response and Support - (213) 740-2421
studentaffairs.usc.edu/bias-assessment-response-support

Avenue to report incidents of bias, hate crimes, and microaggressions for appropriate investigation and response.

The Office of Disability Services and Programs - (213) 740-0776
dsp.usc.edu

Support and accommodations for students with disabilities. Services include assistance in providing readers/notetakers/interpreters, special accommodations for test taking needs, assistance with architectural barriers, assistive technology, and support for individual needs.

USC Support and Advocacy - (213) 821-4710

studentaffairs.usc.edu/ssa

Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

Diversity at USC - (213) 740-2101

diversity.usc.edu

Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

USC Emergency - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call

dps.usc.edu, emergency.usc.edu

Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

USC Department of Public Safety - UPC: (213) 740-6000, HSC: (323) 442-120 – 24/7 on call

dps.usc.edu

Non-emergency assistance or information.

Academic Accommodations

Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to the instructor (or to a TA) as early in the semester as possible. DSP is located in STU 301 and is open 8.30 AM to 5.00 pm Monday through Friday. Website and contact information for DSP:

http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html (213) 740-0776 (Phone), (213) 740-6948 (TDD only), (213) 740-8216 (FAX), ability@usc.edu