

University of Oregon
PPPM 656: Quantitative Methods for Planning, Public Policy & Management
Fall 2023 (CRN 14399)

Class: Tues/Thurs 2-3:20 p.m., 144 HEDCO

Lab: Wednesday 4-5:20 p.m., 445 McKenzie Hall

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Office Hours: Mondays 11:30-1 p.m.

Laura's Office Hours:

- **Drop-In Office Hours (first-come, first-served) Tuesdays and Thursdays from 12:30-1:30 p.m.** in the Café Verso in the Knight Library Basement level.
- I can also meet individually with students at other times by Zoom (<https://uoregon.zoom.us/j/98881489322>). Be in touch with me to set up an appointment.

COURSE DESCRIPTION

A key trend in the public and non-profit sectors is **evidence-based decision-making**, and this course is designed to improve your ability to use empirical evidence to make decisions related to planning, public policy, and management. You will learn the basics of statistical analysis, including which statistical techniques are appropriate to use to answer different research questions. You will use statistical software (*Stata*) to manage data and conduct statistical analysis. Additionally, you will learn to interpret empirical findings and write about the results of data analysis in an accessible and clear manner.

This course assumes no prior background in statistics and it requires no calculus. Basic algebra will be used to illustrate the intuition behind some of the statistical tests.

STUDENT LEARNING OUTCOMES

1. Students will develop skills in quantitative methods that can be used to effectively analyze issues related to planning, public policy, and management.
2. Students will develop fundamental competencies in using statistical software for data analysis.
3. Students will be able to evaluate external research and understand its implications for issues in planning, public policy, and management.

TEXTBOOK, READINGS, AND SOFTWARE

Course Textbook: Berman, E and Wang, X. *Essential Statistics for Public Managers and Policy Analysts*, 4th ed. Washington, D.C.: CQ Press, 2017. ISBN: 978-1506364315

Supplementary Readings: For certain lectures, I will post supplementary readings. These readings have been selected to demonstrate the importance of some of the topics we discuss to researchers, policy makers, or the general public. Some of these readings, especially toward the beginning of the class, are very brief and from “pop” sources, such as news sites or blogs. Other readings are articles published in academic journals and are more technical. I will go over some highlights from these reading during lecture. The full references are listed below (in the order they appear over the term).

- Nocera, J. 2012. The College Rankings Racket. *New York Times*.
- Thoma, M. 2011. Mean vs. Median Income Growth. *Economist's View*.
- Chetty, R., Hendren, N., Jones, M.R., Porter, S.R. 2020. Race and Economic Opportunity in the United States. *Opportunity Insights*.
- Schwabish, J. 2014. An Economist's Guide to Visualizing Data. *Journal of Economic Perspectives* 28(1): 209-234.
- Chivers, B. and G. Barnes. 2018. Sorry, Wrong Number: Tracking Court Attendance and Targetting Through Testing a “Nudge” Text. *Cambridge Journal of Evidence-Based Policy* 2:4-34.
- Astor, M. 2019. Why You Can't Volunteer for Election Polls, and Other Polling Facts. *New York Times*.
- Chugh et al. 2009. Women Have a Lower Prevalence of Structural Heart Disease as a Precursor to Sudden Cardiac Arrest: The Ore-SUDS (Oregon Sudden Unexpected Death Study). *Journal of the American College of Cardiology* 54(22): 2006-2011.
- Pew Research Center. 2019. As the Self-Employed Near Retirement, Are They Prepared? *Pew Trusts Research and Analysis Issue Brief*.
- Jacobsen, G. and Jacobsen, K. 2020. Statewide COVID-19 Stay-at-Home Orders and Population Mobility in the United States. *World Medical and Health Policy*.
<https://doi.org/10.1002/wmh3.350>
- Roberto et al. 2010. Evaluating the Impact of Menu Labeling on Food Choices and Intake. *American Journal of Public Health* 100(2): 312-318.
- Oster, E. 2014. Don't Take Your Vitamins. *Five Thirty Eight Blog*.
- Dee, T. 2009. Motorcycle helmets and traffic safety. *Journal of Health Economics* 28(2): 398-412.
- Hickey, W. 2018. The Ultimate Halloween Candy Power Ranking. *FiveThirtyEight.com*.
- Monkkonen et al. 2020. Built Out Cities? How California Cities Restrict Housing Production Through Prohibition and Process. *Terner Center Land Use Working Paper Series*.
- Nesbit, R. 2011. The Influence of Major Life Cycle Events on Volunteering. *Nonprofit and Voluntary Sector Quarterly* 41(6): 1153-1174.

Stata: In this class we will use *Stata*, a commonly used statistical software program. It is available for your use at no additional cost in the McKenzie computer classrooms (when no other classes are being taught - see SSIL website <https://ssil.uoregon.edu/>), in the PPPM Lab in the basement of Hendricks, and also through the UO Virtual Computer Lab <https://ssil.uoregon.edu/vm/>).

Many students also find it convenient to have Stata installed on their own computer. A student version of Stata is available from Stata (<https://www.stata.com/order/new/edu/profplus/student-pricing/>). **A 6-month license for Stata/BE (for mid-sized datasets) is \$48.**

Assignments and Course Grades:

The course grade will be based on the following components:

Post-Class Quizzes	7%
Lab Assignments	24%
Exam #1	22%
Exam #2	22%
Final Exam	25%

Post-Class Quizzes

- For most class meetings, there will be a post-class quiz with one or two questions that draw on that day's material. Due to this grading component, success in the course will require regular engagement with the course material.
- The quizzes will be available starting on the class day. **The quizzes must be completed within one week of that class period, at which point Canvas automatically will disable access.**
- To allow for missed quizzes due to extenuating circumstance / forgetfulness, **each student's two lowest scores will be dropped.**

Lab Assignments

- There are **eight** lab assignments. The lab will be supervised by the course GE. In the lab, you will apply the data analysis techniques that we discuss in class.
- All labs are due by 11:59 p.m. of the assigned day. **Lab assignments are typically due on Tuesday in the week after the lab.** Some Lab due dates are extended if there is an intervening exam. See the class calendar for exact due dates.

Exams

- There will be **two mid-term exams and a comprehensive final exam.** Exams will be completed **online** through Canvas during the regularly scheduled meeting time.

Policies Related to Turning in Assignments

- **Electronic Submission:** Unless otherwise stated, all assignments must be turned in through Canvas.
- **Late Assignment Policy:** Unless otherwise stated, **late assignments can be turned in within a week of the due date for half credit.** Assignments that are more than a week late will receive a zero.

Course Website

- The course website is located on the University of Oregon's Canvas system: <https://canvas.uoregon.edu/>. Your UO email login and password will give you access to the system. Except for the readings in the required textbooks, all class materials will be posted here. **Please check the course website frequently for updates.**
- **Announcements and email on the Canvas site, along with your UO email address, will be the primary means that the course GE and I will use to communicate with you.** Check and adjust your Canvas settings under Account > Notifications.

Grading Scale

Letter grades are based on conventional academic scales (90-100=A, 80-89=B, etc). To the extent possible, I attempt to set cut points for each letter range based on natural breaks in the distribution of student scores. This adjustment will only help students by pushing them up to a higher grade. It also reduces the probability that a single point on any course element is pivotal in a student's final grade.

Missed Assignments / Exams

Make-up exams or extensions on assignment deadlines will be allowed only in the case of a documented emergency or serious illness. **Arrangements must be made to take an exam early when absences are required due to approved university activities.**

Incomplete Grades

Students are expected to turn in all materials at the designated time. In accordance with university regulations, a grade of 'Incomplete' will only be given when "the quality of work is satisfactory, but a minor yet essential requirement of the course has not been completed for reasons acceptable to the instructor." My interpretation of "minor" is less than or equal to 30%.

Math Review

This course requires some familiarity with basic concepts in mathematics and algebra at the high school level. The following (optional) book might be helpful for students seeking a review of some basic high school math skills.

- *Schaum's Outline of Elementary Algebra*, 3rd Ed, by Barnett Rich and Philip Schmidt. Schaum's Outline Series, McGraw-Hill, New York, ISBN 0-07-141083-X. (Available on Amazon for example: https://www.amazon.com/Schaums-Outline-Elementary-Algebra-3ed/dp/0071611630/ref=sr_1_1?crd=3RID3T0AOPTE7&keywords=schaums+outline+elementary+algebra&qid=1663893970&srefix=schaums+outline+elemenary+%2CCaps%2C189&sr=8-1)

ADDITIONAL INFORMATION AND ACADEMIC POLICIES

Professional Practice

In the MPA professional degree program. As such, students are expected to behave professionally at all times and to treat each other and the instructor with the professional courtesy and respect expected in a workplace. Similarly, all communications relating to this course and all work turned in for this course should reflect professional standards with attention to presentation, formatting, spelling and so on.

Academic Misconduct

The University Student Conduct Code (available at <https://conduct.uoregon.edu>) defines academic misconduct. Students are prohibited from committing or attempting to commit any act that constitutes academic misconduct. By way of example, students should not give or receive (or attempt to give or receive) unauthorized help on assignments or examinations without express permission from the instructor. All work (including exams and quizzes) submitted should reflect the efforts of the submitting student alone. Copying content from other students (past or present) and submitting it as your own work is grounds for failing the class. I will report any instance of misconduct to the Office of Student Conduct and Community Standards. The penalty for academic misconduct can range from 0 points on an assignment or quiz to an 'F' in the class, depending on the severity of the offense.

Violations of Course Policies

Students who fail to adhere to the guidelines described in this section may receive an F for the course and may be subject to additional penalties from the School or the University.

Documented Disabilities

Students who have a documented disability and anticipate needing accommodations in this course should make arrangements to see the instructor as soon as possible and should request that the Counselor for Students with Disabilities send a letter verifying the disability.

Workplace Harassment Prevention

I support Title IX and have a duty to report relevant information. The UO is committed to providing an environment free of all forms of prohibited discrimination and sexual harassment, including sexual assault, domestic and dating violence and gender-based stalking. Any UO employee who becomes aware that such behavior is occurring has a duty to report that information to their supervisor or the Office of Affirmative Action and Equal Opportunity. The University Health Center and University Counseling and Testing Center can provide assistance and have a greater ability to work confidentially with students. UO employees also have a duty to report child abuse. All UO employees are required to report to appropriate authorities when they have reasonable cause to believe that any child with whom they come in contact has suffered abuse or any person with whom they come in contact has abused a child.

Inclusion Statement

The College of Design is a community that values inclusion. We are committed to equal opportunities for all faculty, staff and students to develop individually, professionally, and academically regardless of ethnicity, heritage, gender, sexual orientation, ability, socio-economic standing, cultural beliefs and traditions. We are dedicated to an environment that is inclusive and fosters awareness, understanding, and respect for diversity. If you feel excluded or threatened, please contact your instructor and/or department head. UO's Division of Equity and Inclusion also has resources that can assist you.

Policies Related to the Course GE

If you are concurrently taking any courses with the GE assigned to this course, please let the instructor know. The GE will not be involved with any review of assignments for students in this course who are taking other courses with the GE concurrently. If you do not want a GE to read assignments or assist in other evaluative duties or assist in workshop supervision (not including project coordination), then notify the instructor of record and he or she will assume those responsibilities. GEs will not enter grades in a grade book, electronic (e.g., Canvas) or written, or have access to the grade book unless all students are assigned random numbers and the GE cannot view student names, social security numbers, student IDs, or other potentially identifying information.

COURSE SCHEDULE

<u>Lect. Num.</u>	<u>Date</u>	<u>Topic</u>	<u>Text Reading</u>	<u>Supplemental Reading</u>	<u>Due</u>
1	Tues Sep 26	Course Introduction	Berman, Ch. 1 Berman, Ch. 2 (pg. 21-26)		
	Wed Sep 27	<i>No Lab</i>			
2	Thurs Sep 28	Measurement and Data Sources and Sampling	Berman, Ch. 3 Berman, Ch. 5	Nocera, 2012	
3	Tues Oct 3	Central Tendency	Berman, Ch. 6	Thoma, 2011 Chetty, 2020	
	Wed Oct 4	<i>Lab 1: Introduction to Stata</i>			
4	Thurs Oct 5	Measures of Dispersion	Berman, Ch. 7	Schwabish, 2014	
5	Tues Oct 10	Confidence Intervals (pt. 1)	Berman, Ch. 7 Berman, Ch. 10	Astor, 2019	Lab 1
	Wed Oct 11	<i>Lab2: Graphing in Stata</i>			
6	Thurs Oct 12	Confidence Intervals (pt. 2)	Berman, Ch. 7 Berman, Ch. 10		
	Tues Oct 17	EXAM 1			
	Wed Oct 18	<i>Lab 3: Measures of Dispersion</i>			Lab 2
7	Thurs Oct 19	Contingency Tables and Pivot Tables and Hypothesis Testing with Chi-Square (part 1)	Berman, Ch. 8 Berman, Ch. 11	Chugh et al., 2009	
8	Tues Oct 24	Hypothesis Testing with Chi-Square (part 2)	Berman, Ch. 11	Pew, 2019	Lab 3
	Wed Oct 25	<i>Lab 4: Chi-Square Tests</i>			
9	Thurs Oct 26	The T-Test (part 1)	Berman, Ch. 12	Chivers and Barnes, 2018	

10	Tues	Oct 31	The T-Test (part 2)	Berman, Ch. 12	Jacobsen and Jacobsen, 2020	Lab 4
	Wed	Nov 1	<i>Lab 5: T-Tests</i>			
11	Thurs	Nov 2	ANOVA	Berman, Ch. 13	Roberto et al., 2010	
	Tues	Nov 7	EXAM 2			
	Wed	Nov 8	<i>Lab 6: ANOVA</i>			Lab 5
12	Thurs	Nov 9	Simple Regression and Intro to Multiple Regression	Berman, Ch. 14 Berman, Ch. 15		
13	Tues	Nov 14	Multivariate Regression (part 1)	Berman, Ch. 15	Oster, 2014	Lab 6
	Wed	Nov 15	<i>Lab 7: Regression</i>			
14	Thurs	Nov 16	Multivariate Regression (part 2)	Berman, Ch. 15	Dee, 2009	
15	Tues	Nov 21	Multivariate Regression (part 3)	Berman, Ch. 15	Hickey, 2018 Monkkonen, 2020	Lab 7
	Wed	Nov 22	<i>No Lab - Thanksgiving Break</i>			
	Thurs	Nov 23	<i>No Class - Thanksgiving Break</i>			
16	Tues	Nov 28	Causality	Berman, Ch. 2 (pg. 26-39)	Nesbit, 2012	
	Wed	Nov 29	<i>Lab 8: Multivariate Regression</i>			
17	Thurs	Nov 30	Regression Summary and Course Takeaways			
Wed	Dec.	6	FINAL EXAM 12:30-2:30 p.m.			Lab 8