

**University of Oregon**  
**PPPM 413: Quantitative Methods for Planning, Public Policy & Management**  
Fall 2022 (CRN 11700)

**Class:** Tu/Th 12-1:20 p.m., 276 Education

**Lab:** Fridays 8-8:50 a.m or 1-1:50 p.m., 442 McKenzie Hall

*Note: Lab seating is limited. Attend the section you are registered for.*

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Office Hours: Mon, 10 a.m.-12 noon

**Laura's Office Hours:**

- Office Hours are drop in (no appointment needed) on Zoom on **Wednesdays, 3-5 p.m.** (<https://uoregon.zoom.us/j/8912981257>).
- When you enter Zoom, you will enter the Waiting Room and office hours are first come/first serve.
- If you can't make office hours, you can make an appointment to meet me at another time via <https://lauraleete.youcanbook.me/> and choose a time that works for you. You can access your appointment at the same Zoom link above.
- If I don't have an appointment time that works for you, contact me and we'll find a time that works.
- If you email me with a question, I will try to respond within 48-hours. I typically provide feedback on assignments within one week.

**Due to Covid-19, certain course / classroom policies may need to be enacted (e.g. mask-wearing protocols) depending on university policy. See the first module listed in canvas for any updated Covid-19 policies.**

**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.

## **COURSE STRUCTURE**

### **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 optional 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 have marked the technical readings on the syllabus in parentheses. I will go over some highlights from these reading during lecture. The full readings are available to interested students on Canvas. The full references are listed below (in the order they appear in the syllabus). They’re marked on the course schedule with the author’s name and year.

- 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. *Turner 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*, which is 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/> ) and possibly also through the UO Virtual Computer Lab <https://ssil.uoregon.edu/vm/> ).

If you would like a copy for your own computer, a student version of *Stata* is available from through the *Stata* Campus Grad Plan Program (<https://www.stata.com/order/new/edu/profplus/student-pricing/> ).

### **Assignments and Course Grades:**

The course grade will be based on the following components:

Post-Class Canvas Quizzes	13%
Lab Assignments	28%
Exam #1	17%
Exam #2	17%
Final Exam	25%

### **Post-Class Canvas Quizzes**

- For each class, there will be a post-class quiz with at least one question that must be completed on Canvas. In many cases, these questions will be covered directly during our regular class time.
- The quizzes will be available starting on the class day to which they correspond and can be found in the Quizzes tab in Canvas. The quizzes will be titled based on the class day that they match with.
- The quizzes must be completed within one week of that class period, at which point Canvas automatically will disable access.

- Due to this grading component, success in the course will require regular engagement with the course material.
- To allow for missed quizzes due to extenuating circumstance / forgetfulness, each student's two lowest scores will be dropped.

### **Lab Assignments**

- There are seven lab assignments. The lab will be taught by the course GE. In the lab, you will apply the data analysis techniques that we discuss in lecture class.
- Lab assignments are typically due by 11:59pm on the Thursday following the Friday when the labs appear in the course schedule (precise due dates can be viewed in Canvas).

### **Exams**

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

## **ADDITIONAL INFORMATION AND ACADEMIC POLICIES**

### **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.

### **Professional Practice**

You are expected to behave in a professional manner at all times.

- All students should treat one other and the instructor with the professional courtesy and respect expected in a workplace.
- All communications relating to this course and all work turned in for this course should reflect professional standards in tone, presentation, formatting, and spelling.

- All course assignments should be completed using a word processor (do not turn in hand-written work).

### **Email**

I will try to respond to all email within 48 hours of receiving them. Please make sure that you have reviewed Canvas and the syllabus prior to asking any question about course logistics. Please do not send notifications if you need to miss a class for a routine matter such as a doctor appointment or job interview.

### **Grading Scale**

Letter grades are mostly based on conventional academic scales. 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 typically helps students. 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 documented serious illness. Arrangements must be made to take an exam early when absences are required due to approved university activities. If you miss a mid-term due illness or emergency, please email me and your final exam will be re-weighted to account for the missed mid-term.

### **Policy on Assigning an Incomplete Grade**

You are expected to turn in all assignments at the designated time. In accordance with university regulations, an 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."

### **Academic Misconduct**

Academic misconduct is prohibited and includes, but is not limited to, tampering with grades, resubmitting assignments for more than one class, cheating, plagiarism, fabrication, and furnishing false information. Please see the Dean of Student's web site for the complete definition of academic misconduct. You are responsible for ensuring that your actions do not constitute academic misconduct. If there is any question about whether an act constitutes academic misconduct, it is your obligation to clarify the question with the instructor before committing or attempting to commit the act. 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.

### **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.

## **OTHER INFORMATION**

### **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*, 3<sup>rd</sup> 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?crid=3RID3T0AOPTE7&keywords=schaums+outline+elementary+algebra&qid=1663893970&srefix=schaums+outline+elemenary+%2Caps%2C189&sr=8-1](https://www.amazon.com/Schaums-Outline-Elementary-Algebra-3ed/dp/0071611630/ref=sr_1_1?crid=3RID3T0AOPTE7&keywords=schaums+outline+elementary+algebra&qid=1663893970&srefix=schaums+outline+elemenary+%2Caps%2C189&sr=8-1) )

### **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 a 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.

## COURSE SCHEDULE

Shaded rows indicate Friday labs.

<u>Lect. Num.</u>	<u>Date</u>	<u>Topic</u>	<u>Text Reading</u>	<u>Supplemental Reading (opt.)</u>	<u>Due</u>
1	Sept. 27	<b>Course Introduction</b>	Berman, Ch. 1 Berman, Ch. 2 (pg. 21-26)		
2	Sept. 29	<b>Measurement and Data Sources and Sampling</b>	Berman, Ch. 3 Berman, Ch. 5	Nocera, 2012	
	Sept. 30	<i>Introduction to Stata (Lab Assignment 1)</i>			
3	Oct. 4	<b>Central Tendency</b>	Berman, Ch. 6	Thoma, 2011 Chetty, 2020	
4	Oct. 6	<b>Measures of Dispersion</b>	Berman, Ch. 7	Schwabish, 2014	Lab 1
	Oct. 7	<i>Data Management and Summary Statistics (Lab Assignment 2)</i>			
5	Oct. 11	<b>Confidence Intervals (pt. 1)</b>	Berman, Ch. 7 Berman, Ch. 10	Astor, 2019	
6	Oct. 13	<b>Confidence Intervals (pt. 2) and Midterm Review</b>	Berman, Ch. 7 Berman, Ch. 10		Lab 2
	Oct. 14	<i>No Lab</i>			
	Oct. 18	<b><u>EXAM 1</u></b>			
7	Oct. 20	<b>Contingency Tables and Pivot Tables and Hypothesis Testing with Chi-Square (part 1)</b>	Berman, Ch. 8 Berman, Ch. 11	Chugh et al., 2009 (technical)	
	Oct. 21	<i>Graphing in Stata (Lab Assignment 3)</i>			
8	Oct. 25	<b>Hypothesis Testing with Chi-Square (part 2)</b>	Berman, Ch. 11	Pew, 2019	
9	Oct. 27	<b>The T-Test (part 1)</b>	Berman, Ch. 12	Chivers and Barnes, 2018 (technical)	Lab 3

	Oct.	28	<i>Chi-Square and T-test (Lab Assignment 4)</i>			
10	Nov.	1	<b>The T-Test (part 2)</b>	Berman, Ch. 12	Jacobsen and Jacobsen, 2020	
11	Nov.	3	<b>ANOVA</b>	Berman, Ch. 13	Roberto et al., 2010 (technical)	Lab 4
	Nov.	4	<i>ANOVA (Lab Assignment 5)</i>			
	Nov.	8	<b><u>EXAM 2</u></b>			
12	Nov.	10	<b>Simple Regression and Intro to Multiple Regression</b>	Berman, Ch. 14 Berman, Ch. 15		Lab 5
	Nov.	11	<i>No Lab - Veterans Day Holiday</i>			
13	Nov.	15	<b>Multivariate Regression (part 1)</b>	Berman, Ch. 15	Oster, 2014	
14	Nov.	17	<b>Multivariate Regression (part 2)</b>	Berman, Ch. 15	Dee, 2009 (technical)	
	Nov.	18	<i>Finding data sources in your area (Lab Assignment 6)</i>			
15	Nov.	22	<b>Multivariate Regression (part 3)</b>	Berman, Ch. 15	Hickey, 2018 Monkkonen, 2020 (technical)	
	Nov.	24	<b>NO CLASS - THANKSGIVING BREAK</b>			Lab 6*
	Nov.	25	<i>No Lab - Thanksgiving Break</i>			
16	Nov.	29	<b>Causality</b>	Berman, Ch. 2 (pg. 26-39)	Nesbit, 2012 (technical)	
17	Dec.	1	<b>Regression Summary and Course Takeaways</b>			
	Dec.	2	<i>Regression Analysis (Lab Assignment 7)*</i>			
<b>Friday</b>	<b>Dec.</b>	<b>9</b>	<b>FINAL EXAM 8-10 a.m.</b>			<b>Lab 7*</b>

\* Lab 6 due by 11:59 p.m. Wednesday, Nov 23. Lab 7 due prior to the Final exam time.