PPPM 656: Quantitative Methods for Planning, Public Policy & Management
Fall 2015 (15143)

Class: Tuesdays and Thursdays, 4-5:20, 112 ESL
Lab: 12-1:20, 442 McKenzie

Prof. Grant Jacobsen
Office: 128 Hendricks Hall
Phone: 541.346.3419
Email: gdjaco@uoregon.edu
Office Hours: Tu, 2:30-3:30, Th, 1:30-2:30

Course GTF: Lauren Branch
GTF Email: lbranch@uoregon.edu
GTF Office: Hendricks 1A
GTF Office Hours: M, 12:30-1:30; W, 11:30-12:30

COURSE DESCRIPTION

A key trend in public administration 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.
4. Students will be able to write clearly and professionally about the results of data analysis.
COURSE STRUCTURE

Textbook, Readings, and Software


**Optional Supplementary Readings:** For certain lectures, I will post an 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.


**Stata:** In this class we will use Stata, which is a very 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). 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 for $98 for a one year license or $179 for a perpetual license (as of 2013).
Assignments and Course Grades
The course grade will be based on the following components:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lab Assignments</td>
<td>24%</td>
</tr>
<tr>
<td>Written Assignments</td>
<td>12%</td>
</tr>
<tr>
<td>Exam #1</td>
<td>16%</td>
</tr>
<tr>
<td>Exam #2</td>
<td>16%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>32%</td>
</tr>
</tbody>
</table>

- **Lab Assignments**
  The lab will be taught by the course GTF. In the lab, you will apply the data analysis techniques that we discuss in lecture class. Each week there will be a lab assignment that is due by the beginning of the next lab meeting (i.e. the next Friday).

- **Written Assignments**
  Three written assignments will be due during the term, each based on one or more readings. More detail about these assignments will be provided at the time of assignment. Due dates are on the course schedule below.

- **Exams**
  There will be two mid-term exams and a comprehensive final exam.

- **Policies Related to Turning in Assignments**
  **Electronic vs. Hard Copy:** Unless otherwise stated, all assignments must be turned in via hard copy (i.e. printed). Electronic submissions will not be accepted. If you cannot make it to class to turn in a lab assignment, please place your lab assignment in the GTF’s mailbox in Hendricks Hall before the due date.
  **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.

CLASSROOM DETAILS AND ACADEMIC POLICIES

Course Website
The course website is located on the University of Oregon’s Canvas system. The class syllabus, announcements, and other materials will be posted on the Canvas site. Please check the course website frequently for updates.

Calculators
Only basic calculators will be allowed during exams (i.e. no graphing calculators, no cell phones).

Classroom Policies
The classroom is a place of focused learning. This requires that everyone arrive on time, stay until the end of the class period, not disrupt the class by leaving the room temporarily, and refrain from non-learning activities.

- **Environment:** In order to create a classroom in which everyone is comfortable expressing his/her opinions and perspectives, please approach the contributions of others with both an open mind and a willingness to question one’s own assumptions and biases.
- **Laptops/phones/tablets:** The use of laptops, tablets, or phones/smartphones during lecture is not permitted.
- **Food:** Please avoid eating in class. Drinks are fine.

**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.

**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.

**Missed Class Policy**

If you must miss a class, please arrange to get class notes from a classmate.

**Missed Assignments / Exams**

Make-up exams or extensions on assignment deadlines will be allowed only in the case of a documented emergency. 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 to a documented emergency, 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 Department 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.


Writing Lab
If you would like to improve your writing skills, I strongly encourage you to use the services of the Writing Lab. The Writing Lab begins week two of the term and closes at 5:00 pm the Wednesday of finals week. Free tutoring is available on a drop-in basis or by appoint. (You must go to the writing lab to schedule your appointment.) 9:00am – 5:00pm, Monday – Friday, 72 PLC (Prince Lucien Campbell).

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 School of Architecture and Allied Arts 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. The University Bias Response Team is also a resource that can assist you.

Policies Related to the Course GTF
If you are concurrently taking any courses with the GTF assigned to this course, please let the instructor know. The GTF will not be involved with any review of assignments for students in this course who are taking other courses with the GTF concurrently. If you do not want a GTF 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. GTFs 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 GTF cannot view student names, social security numbers, student IDs, or other potentially identifying information.
## COURSE SCHEDULE
Below is a tentative outline of the course sessions with assigned readings. Dates may change. Please rely on the class Canvas account for up-to-date information on the class schedule. Shaded rows indicate Friday labs.

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Text Reading</th>
<th>Supplemental Reading (opt.)</th>
<th>Due</th>
</tr>
</thead>
</table>
| Sep. 29 | **Course Introduction** | Berman, Ch. 1  
Berman, Ch. 2 (pg. 20-25) | | |
| Oct. 1 | **Measurement and Data Sources and Sampling** | Berman, Ch. 3  
Berman, Ch. 5 | Nocera, 2012 | |
| Oct. 2 | *Introduction to Stata (Lab Assignment 1)* | | | |
| Oct. 6 | **Central Tendency** | Berman, Ch. 6 | Thoma, 2011 | |
| Oct. 8 | **Measures of Dispersion** | Berman, Ch. 7 | Schwabish, 2014 | |
| Oct. 9 | *Graphing in Stata (Lab Assignment 2)* | | Lab 1 | |
| Oct. 13 | **Confidence Intervals (part 1)** | Berman, Ch. 7 | | |
| Oct. 15 | **Confidence Intervals (part 2)** and **Midterm Review** | Berman, Ch. 7 | Writing Assn #1 | |
| Oct. 16 | *Data Management and Summary Statistics (Lab Assignment 3)* | | Lab 2 | |
| Oct. 20 | **EXAM 1** | | | |
| Oct. 22 | **Contingency Tables and Pivot Tables and Hypothesis Testing with Chi-Square (part 1)** | Berman, Ch. 8  
Berman, Ch. 10 | Chugh et al., 2009  
(technical) | |
| Oct. 23 | *Data Appendix (1 extra credit point)* | | Lab 3 | |
| Oct. 27 | **Hypothesis Testing with Chi-Square (part 2)** | Berman, Ch. 10 | | |
| Oct. 29 | **The T-Test (part 1)** | Berman, Ch. 12 | Gibb, 2008  
(technical) | |
<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Text/Author</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct. 30</td>
<td><em>Chi-Square and T-test (Lab Assignment 4)</em></td>
<td></td>
<td>Data Appdx.</td>
</tr>
<tr>
<td>Nov. 3</td>
<td><strong>The T-Test (part 2)</strong></td>
<td>Berman, Ch. 12</td>
<td></td>
</tr>
<tr>
<td>Nov. 5</td>
<td><strong>ANOVA</strong></td>
<td>Berman, Ch. 13</td>
<td>Roberto et al., 2010 (technical) Writing Assn #2</td>
</tr>
<tr>
<td>Nov. 6</td>
<td><strong>ANOVA (Lab Assignment 5)</strong></td>
<td></td>
<td>Lab 4</td>
</tr>
<tr>
<td>Nov. 10</td>
<td><strong>Simple Regression and Intro to Multiple Regression</strong></td>
<td>Berman, Ch. 14</td>
<td>Berman, Ch. 15</td>
</tr>
<tr>
<td>Nov. 12</td>
<td><strong>EXAM 2</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nov. 13</td>
<td><strong>Finding data sources in your area (Lab Assignment 6)</strong></td>
<td></td>
<td>Lab 5</td>
</tr>
<tr>
<td>Nov. 17</td>
<td><strong>Multivariate Regression (part 1)</strong></td>
<td>Berman, Ch. 15</td>
<td>Oster, 2014</td>
</tr>
<tr>
<td>Nov. 19</td>
<td><strong>Multivariate Regression (part 2)</strong></td>
<td>Berman, Ch. 15</td>
<td>Dee, 2009 (technical)</td>
</tr>
<tr>
<td>Nov. 20</td>
<td><strong>Regression Analysis (Lab Assignment 7)</strong></td>
<td></td>
<td>Lab 6</td>
</tr>
<tr>
<td>Nov. 24</td>
<td><strong>Multivariate Regression (part 3)</strong></td>
<td>Berman, Ch. 15</td>
<td></td>
</tr>
<tr>
<td>Nov. 26</td>
<td><strong>No Class - Thanksgiving</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nov. 27</td>
<td><strong>No Lab - Thanksgiving</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec. 1</td>
<td><strong>Causality</strong></td>
<td>Berman, Ch. 2 (pg. 30-40)</td>
<td>Nesbit, 2012 (technical)</td>
</tr>
<tr>
<td>Dec. 3</td>
<td><strong>Regression Summary and Course Takeaways</strong></td>
<td></td>
<td>Writing Assn #3</td>
</tr>
<tr>
<td>Dec. 4</td>
<td><strong>Review Lab</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**FINAL EXAM:** December 7, 12:30pm