Political Science 678 – Quantitative Methods in Public Administration

Class meets Thursday evenings, 6:00 P.M. to 8:40 P.M., 509 Pray-Harrold

Office:	601E Pray-Harrold	**Office Hours:**	Tuesday 11 A.M. – 12 P.M.;
Office Phone:	487-6970		Wednesday 11 A.M.-1 P.M.;
Cell Phone:	734-417-5540		Thursday 2 P.M.-4:00 P.M.;
E-mail:	jeffrey.bernstein@emich.edu		*and by appointment*

E-mail is an effective way to reach me; I check my messages frequently. In addition to my office hours, I will be available before and after class every week. If these times do not work for you, talk to me and we can make an appointment. Never hesitate to talk to me if you have a problem, comment, or concern.

Overview of the Class

This class presents a rigorous introductory treatment of the exciting world of statistical methods in public administration. While perhaps not the most exciting thing in your life, or even something you have been looking forward to taking, this is an important subject for you to know. For most of you, the need to conduct, evaluate or use studies in the field of public administration at some point will require familiarity with this subject. You NEVER want to be at the mercy of other people just because they understand statistical analysis better than you do. The ability to perform your own statistical analyses, and to understand the analyses others perform, will stand you in good stead during your career. Trust me.

Throughout the course, our emphasis will be on learning by doing. We will meet in a computer lab, and spend much of our time applying what we are learning in the lab. We will have multiple datasets that we will explore, and that will give you hands-on experience learning the material I am sharing with you in class. I cannot emphasize enough the importance of "practicing" the skills you gain here, asking any questions you may have, and taking an active approach to learning. The material is probably different from what you have done in the past and will challenge you at first. However, by keeping up with the readings, coming to class, and working diligently, you can master the material and do well in this course. I haven't lost a student yet, and I don't intend to start now!

Readings and Other Course Materials

I have ordered one required book for this course, which is available in all of the local bookstores, and online. Most of you, fortunately, probably already own it. The book is:

Nishishiba, Masami, Matthew Jones, and Mariah Kraner. 2014. *Research Methods and Statistics for Public and Nonprofit Administrators: A Practical Guide*. Thousand Oaks, CA: Sage Publications, Inc. **Hereafter referred to as Nishishiba, Jones, and Kraner.**

This basic textbook presents a straightforward treatment of the topics we will be covering this term. We will largely be picking up in the book from where PLSC 578 left off. In some cases, I will spend time backtracking, just to make sure you have a solid grasp of foundational course material. In other cases, we will backtrack to give you an opportunity not just to learn about a technique, but to actually perform analyses using that technique. There is a difference, of course, between reading about a technique and using it yourself, so we will sometimes backfill your knowledge to fill in that gap.

In addition to the textbook, there are a few other readings assigned during the term. My goal with these readings is get you thinking about how the authors designed their projects, and hence how they are forced to use different kinds of statistics. These articles provide some very nice examples for us to use and discuss. I will make them available to you on the course management system (Canvas).

Class Requirements and Grading

My most central expectation is that you will do the assigned readings (and review previously covered material) **before** class. I prefer to run the course as a discussion, with me as the discussion leader; this will work only if you come to class prepared. You cannot learn from each other, and I cannot learn from you, if you are not prepared for class. Don't be passive; class will be much more interesting, and you will learn the material better, if you are active participants. Attending class will obviously prove very useful to you; **a great deal** of the material you will be responsible for can be learned best in class.

Graded work will fit into two categories. First, there will be four graded "short assignments" throughout the course. These exercises will typically require you to do some statistical analyses and write up the results; they are meant to ensure that you are keeping up with the material and understanding what you need to understand. Each of these assignments will be brief, but is critical for your learning the material required in this course.   The assignments will also explore the issue of "audience" in writing, concentrating not just on writing up statistical results accurately, but also on thinking about who you are writing for, and how you would explain yourself differently to people with differing levels of statistical expertise.

A second graded assignment is the final paper. This paper will use one of the datasets I provide to you and will be based upon a real-world problem a public administrator might be asked to address. You will be asked to write a memo that addresses the question (something like a consultant might write). It will be due to me by Thursday, December 13, at 9 P.M. I will have *much* more to say about this assignment as the term unfolds.

As part of this assignment, you will team up with a group of students to present your findings to the class (who will play the part of City Council members and department heads). The written work on this assignment will be yours alone, but the presentation will be done in a group, with a shared grade. I know group work can be stressful, but as this mirrors the kind of work you will do in the field as a working professional, I use this assignment despite the stress it might cause. Of course, I will be as helpful as I can to you and your group as you pull this work together.

A final component of your work in here is class participation. Learning works best in an open and comfortable class environment. Each of you has something to contribute to the group, whether that something is a brilliant answer, an incisive analysis, a critical question, or even voicing that seemingly simple question that will help others further their understanding of the material. This is not my class – it is yours, and I **strongly** encourage each of you to be active, engaged participants.

Due Date	Assignment	Percent of Grade
September 13	Short Assignment #1	10
October 4	Short Assignment #2	15
October 25	Short Assignment #3	15
November 15	Short Assignment #4	20
November 29 or December 6	Presentation of Final Paper	15
December 13	Final Paper – Written Version	25

Your grade as determined by the above percentages is tentative. I reserve the right to raise grades based on dramatic improvement during the term, exemplary class participation, or other such things. When events warrant, I am more than happy to do this.

A Few Other Notes

Let me make a couple of other comments here. First of all, **academic integrity.** Here at the university, few issues are more important. Academic dishonesty, including all forms of **cheating and/or plagiarism**, will not be tolerated in this class. Anyone caught engaging in academic dishonesty will receive a grade of zero for the assignment in question and may receive, at my discretion, a failing grade for the entire course. In addition, you may be referred to the *Office of Student Conduct and Community Standards* for discipline that could result in suspension or permanent dismissal from the university. If you are not sure whether something constitutes academic dishonesty, talk to me.

For **students with disabilities**, if you wish to be accommodated for your disability, EMU policy requires that you first register with the *Disability Resource Center* in room 240K of the Student Center. You may contact the DRC by phone at (734) 487-2470; their website is http://www.emich.edu/drc/. Students with disabilities are encouraged to register with the DRC soon as you will only be accommodated from the date you register with them forward. **No retroactive accommodations are possible.** I am more than willing to offer you all accommodations to which you are entitled, but emphasize this is not something I can do on my own. If you have any questions, talk to me or to the Disability Resource Center.

I am willing to make all reasonable accommodations for **absences caused by religious observation**. I do ask that you keep me posted when situations like this occur. Like most people, I am familiar with religious observances in my own faith, but know less about other religions. Perhaps your informing me of your absences, should they be necessary, will give me an opportunity to learn something new!

In terms of my contacting you: for purposes of this course, when I need to reach all of the students, I will use e-mail, specifically e-mail sent to your emich.edu address. Please make sure that all messages sent to this account are accessible by you and, if you use a different account, that you are able to forward EMU e-mails to your other account. I will consider you to have been informed about something connected with the course if I e-mail it to you at your emich.edu address.

Schedule of Classes

Below, I have listed the topics to be covered in each class, and the readings that I expect you will do for each class. I anticipate sticking closely to this outline, although we may deviate from it slightly as events warrant. Remember to do all readings *before* the class in which we will discuss them.

September 6: Course Introduction; Some Important Words and Ideas
Reading: Nishishiba, Jones, and Kraner, chapter 4.
Topics: The basics of empirical research – variables, hypotheses and measurement.
    Variance and causation, two of the most important words you need to know.
    Experimental and quasi-experimental research design.
Assignments: *Today you will receive Short Assignment #1, due next Thursday*.

September 13: Research Design and Some Examples of Research
Reading: Powell, Jack L. and Aaron D. Drucker. 1997. "The Role of Peer Conformity in the Decision to Ride with an Intoxicated Driver." *Journal of Alcohol and Drug Education* 43: 1-7.
Lewis-Beck, Michael and John R. Alford. 1980. "Can Government Regulate Safety? The Coal Mine Example." *American Political Science Review* 74: 745-756.
Bohte, John. 2001. "School Bureaucracy and Student Performance at the Local Level." *Public Administration Review* 61:92-99.
Topics: Continuing our treatment of experimental and quasi-experimental designs.
Three different kinds of designs and the statistics they require.
Assignments: *Short Assignment #1 is due today.*

September 20: Statistical Review; The Concept of Statistical Significance
Reading: Nishishiba, Jones, and Kraner, chapters 7 (skim) and 8.
Topics: Nominal, ordinal and interval measures and their statistical implications.
Issues in data collection – samples and populations
Measures of central tendency and spread for a single variable.
Interpretation of the concept of statistical significance.
Assignments: *Today you will get an assignment sheet for Short Assignment #2, due October 4.*

September 27: Statistical Significance and Chi-Square
Reading: Nishishiba, Jones, and Kraner, chapter 12.
Topics: Statistical significance and statistical inference.
What the chi-square statistic does and does not tell us.
Assignments: *You should be working on Short Assignment #2, due on October 4.*

October 4: Statistical Techniques for Categorical Variables
Reading: Nishishiba, Jones, and Kraner, chapter 11.
Topics: Proportional reduction in error (PRE).
Varieties of techniques to analyze categorical variables.
When to use each of the different statistical methods you have learned thus far.
Assignments: *Short Assignment #2 is due today.*

October 11: The T-Test for Differences of Means
Reading: Nishishiba, Jones, and Kraner, chapter 9.
Hayes, Danny, Jennifer L. Lawless and Gail Baitinger. 2014. "Who Cares What They Wear? Media, Gender, and the Influence of Candidate Appearance." *Social Science Quarterly 95*: 1194-1212.
Topics: Statistical techniques for one dichotomous and one continuous variable.
Applications to independent samples and paired samples.
Assignments: *Today you will receive Short Assignment #3, due on October 25.*
Today you will receive the Final Assignment, due on December 13. The oral presentation piece of the Final Assignment takes place on November 29 or December 6.

October 18: Analysis of Variance (ANOVA)
<u>Reading</u>:   Nishishiba, Jones, and Kraner, chapter 10.
<u>Topics</u>:   Using one categorical, non-dichotomous variable and one continuous variable.
             Exploring uses of t-tests and ANOVA.
<u>Assignments</u>: *You should be working on Short Assignment #3, due October 25.*

October 25: The Basic Multiple Regression Model
<u>Reading</u>:   Nishishiba, Jones, and Kraner, chapter 13.
<u>Topics</u>:   Assumptions made when using multiple regression.
             Bivariate regression.
             Formally introducing the multiple regression model.
<u>Assignments</u>: *Short Assignment #3 is due today*.
             Today you will receive Short Assignment #4, due on November 15.

November 1: Continuing Multiple Regression and Putting in into Practice
<u>Reading</u>:   Bohte, John. 2001. "School Bureaucracy and Student Performance at the Local
       Level." *Public Administration Review* 61:92-99.
             Stolle, Dietlind and Elisabeth Gidengill. 2010. "What do Women Really Know?
       A Gendered Analysis of Varieties of Political Knowledge." *Perspectives on Politics* 8:93-
       109. (re-read)
<u>Topics</u>:   Continuing to build an understanding of multiple regression.
             How regression is done, and results presented, in practice.
<u>Assignments</u>: *You should be working on Short Assignment #4, due November 15.*

November 8: Problems in Multiple Regression
<u>Reading</u>:   Nishishiba, Jones, and Kraner, chapter 13. (re-read)
<u>Topics</u>:   Causes of violating regression assumptions.
             An introduction to techniques for correcting violations of assumptions.
<u>Assignments</u>: *You should be close to finishing Short Assignment #4, due next week.*
             Time to start really working on the Final Assignment.

November 15: Pulling It All Together/Work Night for Groups
We will reserve much of this night for each group to work on their presentations for the first two
   weeks of December, and for each of you to work on your own individual papers for the Final
   Assignment.
<u>Assignments</u>: *Short Assignment #4 is due today*.

November 22: No Class Tonight – Thanksgiving Break

November 29 and December 6: Oral Presentation of Group Work
We will schedule each group's dates for their presentation well in advance of these weeks.

December 13: Final Assignment Due
Class does not meet in regular session, but your final assignment is due by 9 P.M.