

COURSE SYLLABUS
PADM 6110 Statistics for Public Administrators
Tennessee State University
Spring 2017

Professor: Laurie Gavilo-Lane, Ph.D.

This is a sample for prospective students. Current students should NOT purchase books based on this - consult your instructor!

Course Location: 150 S. Allen Williams Campus

Course Dates: Thursdays - 5:30 to 8:20pm

Office Hours: Office hours are in-person or by appointment.

If you need help, E-MAIL or CALL as soon as you have problem. Don't wait!

Note: I will make every effort to work with you by other means if we cannot meet in person, so please do not hesitate to contact me.

Course Description

(3 credits) "This course introduces basic statistical techniques for public administration. Topics include measurement, analysis and reporting of data. Required for MPA and Health Planning Certificate." – [Tennessee State University. 2013-2015 Graduate Catalog](#)

Spring 2017: The delivery method for this course consists of a hybrid format. The course consists of weekly on-ground seminars. In addition, several on-line sessions will take place in lieu of on-ground class sessions. See course schedule (subject to change) for class meeting times and material covered.

Purpose and Rationale

This course will ground students in understanding the concepts and criteria for conducting quantitative research. The focus will be on developing a conceptual understanding of statistics and data analysis skills, and understanding their application to problems encountered by those in the public administration, management, policy analysis, public health and non-profit fields. This preparation will serve master students by providing a core understanding of this critical area of study, and prepare Ph.D. students for the advanced seminar in this topic. As this is the single required course in the field of statistics in the MPA curriculum, we have to cover a broad array of topics, which cannot be all-inclusive. However, the course content provides a foundation to prepare students to pursue further topics in the field as their work and research requires. The skills that are practiced in this course – analyzing quantitative data: descriptive and inferential statistics, developing a research/consultation paper, and presenting results of analysis – should prove beneficial in other curricular areas as well as in the workplace.

Audience and Prerequisites

This course is a required course in the MPA curriculum and Health Planning Certificate. PADM 6110 does NOT count towards the standard curricula of the graduate Masters of Professional Studies (MPS) and the graduate certificate of Non-profit Management. There are no prerequisites other than the graduate student status in the MPA or PhD programs. However, students may benefit from taking PADM 6130 - Research Methods prior to taking this course.

Learning Objectives

At the end of this course the student will be able to:

1. Apply statistical techniques using computer software programs (SPSS);
2. Develop research questions and test hypotheses for a research project;
3. Describe, analyze, and interpret descriptive and inferential statistics;
4. Design and implement a quantitative research project;
5. Prepare a quantitative research proposal/paper;
6. Understand practical applications of statistical concepts that can be used when managing in the public and non-profit sector.

MPA Program Competencies

1. Use decision tools to make data-driven evaluation and policy choices.
2. Apply statistics to novel problems and produce in a written and oral format.
3. Distinguish between different statistical approaches to decision-making using quantitative research

This is a sample for prospective students. Current students should NOT purchase books based on this - consult your instructor!

Learning Resources

REQUIRED – No exceptions!

1. Szafran, R. (2012). *Answering Questions with Statistics*. Thousand Oaks: Sage Publications. ISBN 978-1-4129-9132-2
2. IBM® SPSS® Statistics 20 or a more recent version of the software package is required.¹
3. G*Power software (free download): <http://www.gpower.hhu.de/en.html>
4. Class materials (i.e. readings^{2,3,4,5,6,7}, data files^{8,9}, homework assignments, exam study guides, etc.) will be posted on-line.

NOT REQUIRED

5. Berman, E. Wang X. (2012). *Essential Statistics for Public Managers and Policy Analysts, 3rd ed.* Washington, D.C.: Congressional Quarterly Press.¹⁰
6. Daniel, W. W. (1995). *Biostatistics: a foundation for analysis in the health sciences, 6th ed.* New York: John Wiley & Sons, Inc.¹¹

¹ **Note:** Students will need to purchase online OR access the TSU computer lab in order to complete assignments. In most cases, even the simplest SPSS package, the student version, with its limit of 1,500 cases and 50 variables, is adequate for completing assignments.

² Cohen, J. (1992). Statistical power analysis. *Current Directions in Psychological Science, 1*(3), 98-101.

³ Hoffner, C., & Rehkoff, R. A. (2011). Young voters' responses to the 2004 US presidential election: Social identity, perceived media influence, and behavioral outcomes. *Journal of Communication, 61*(4), 732-757.

⁴ Clements, D. H., & Sarama, J. (2008). Experimental evaluation of the effects of a research-based preschool mathematics curriculum. *American Educational Research Journal, 45*(2), 443 – 494.

⁵ Nilsson, U. (2008). The anxiety-and pain-reducing effects of music interventions: a systematic review. *AORN Journal, 87*(4), 780-807.

⁶ Suresh, B. S., De Oliveira Jr, G. S., & Suresh, S. (2015). The effect of audio therapy to treat postoperative pain in children undergoing major surgery: a randomized controlled trial. *Pediatric surgery international, 31*(2), 197-201.

⁷ **Note:** Additional readings and/or on-line content will be assigned to clarify key concepts.

⁸ **Note:** SPSS® data files will be made available (on-line) with each assignment.

⁹ GSS 2010 dataset from the General Social Survey located at <http://www3.norc.og/GSS+Website/Download/SPSS+Format/>

¹⁰ **Note:** Dr. Stanley uses the Berman and Wang (2012) textbook. There is considerable overlap between Szafran (2012) and Berman and Wang (2012) textbooks. The main differences relate to style/presentation of information and the fact that the Szafran (2012) incorporates instructional information relating to performing SPSS® analysis. Berman and Wang (2012) text is not required for Spring 2016.

¹¹ **Note:** Introductory statistics textbooks that I was assigned as a MPH student. Not required!

7. Le, C. T. (2003). *Introductory Biostatistics*. New York: John Wiley & Sons, Inc.

Learning Environment. This course seeks to foster a positive and interactive learning environment. To this end, I've outlined classroom standards and expectations to ensure a clear, safe, respectful, and supportive learning environment.

Participation. Students are expected to attend and actively participate in class discussions, group work and examinations. This means students should have prepared in advanced by completing reading assignments and turning in homework in a timely fashion. In addition, students are expected to conduct themselves with civility and professionalism in all interactions connected to this course (in-person and on-line), so that a learning environment is maintained for all. This is a core course in a professional program, and individuals should maintain the same standards they would adhere to in the workplace.

Deadlines. The syllabus is a contract between the student and the professor. The class meeting times, assigned readings and homework/testing dates are clearly listed in the syllabus. Assignments can be turned in early but NOT LATE. **Assignments are to be submitted on-line by 11:59PM on the due date and students must be present for examinations on the date specified in the syllabus or they will receive a zero. This information is provided in advance and therefore NO LATE ASSIGNMENTS WILL BE ACCEPTED.** If there are extenuating circumstances (i.e. critical illness, death, birth, and/or job crisis), contact me asap; I will discuss options on a case-by-case basis.

If you are unable to submit assignments to eLearn, you must submit your assignment BY EMAIL TO laurie.gavilolane@gmail.com. You must plan ahead so that last-minute computer issues do not derail your submission of assignments on time.

Syllabus. I reserve the right to adjust this syllabus as the semester proceeds based on class progress and development, with notice to students.

Quality of written work. As academics and professionals in service or in training, I expect you to adhere to a high standard in your written work. Leave yourself time to reread and revise written work before the due date. Grammar and spelling errors distract the reader and lessen your credibility, in the classroom as in the workplace, and will affect the evaluation of your work.

Academic integrity. Students are expected to abide by and follow Tennessee State University's policies regarding plagiarism and cheating (as seen in TSU's Student Handbook and Graduate Catalog). Any student caught breaking these rules will be automatically sanctioned according to the guidelines and in most cases receive a grade of ZERO. It is expected that you complete your own work and follow academic standards rigorously in crediting the ideas, words and findings of others. Academic honesty is the foundation of scholarly pursuit of knowledge; if you are not sure what constitutes plagiarism or how to handle a specific instance of crediting another individuals' work, feel free to consult me at any point during the course.

Student grievances. Students with questions, disagreements concerning coursework or other course related issues should talk to the instructor first. If the student has talked to the instructor and has not found resolution to the problem, s/he may then approach the department chair. This procedure provides a fair route for grievance resolution that will be acceptable to the instructor, the student, and other students in the class.

Accommodations. TSU is committed to creating inclusive learning environments and providing all students with opportunities to learn and excel in their course of study. Any student with a disability or condition which might interfere with his/her class performance or attendance may arrange for reasonable accommodations by visiting the Office of Disability Services (ODS). ODS is located in Kean Hall, room 131 and can be reached at 963-7400 or www.tnstate.edu/disabilityservices. You will be required to speak with ODS staff and provide documentation of the need for an accommodation. If you qualify for an accommodation you will be provided with a document stating what type of classroom accommodations are to be made by the instructor. It is your responsibility to give a copy of this document to the instructor **as soon as you receive it**. Accommodations will only be provided **AFTER** the instructor receives the accommodation instructions from ODS; accommodations are not retroactive. You must follow this process for each semester that you require accommodations.

Dropping or withdrawing from class. To drop/withdraw from the course, you need to complete the required actions in myTSU by the last possible withdraw date. **March 31, 2017 is the last day to withdraw from this course:** [TSU Academic Calendar](#). I cannot withdraw a student from the class myself. But please note that faculty are required to report non-attendance or stopped attendance at certain intervals during the semester, which can result in your being taken out of the course by the registrar. If you stop fulfilling class requirements but do not take proper actions to withdraw by the deadline, and you remain on my roster at the end of the semester, you will receive a course grade based on what you completed plus zeroes for the course elements you did not complete. This often results in an F.

Course Evaluations. Student course evaluations at TSU are now conducted online. It is expected that all students in the course will complete the brief online evaluation process in order to provide important feedback to the instructor and the University, which will benefit future students.

Student Evaluation/Assessments

The final grade is based on the following assignments and their respective grades. Students are evaluated based on their top 4 homework assignments, 3 problem sets, 2 examinations, and a class presentation/participation; all assignments are to be completed individually, unless otherwise specified.

Homework	20%
Problem Set (Take Home)	30%
Midterm	20%
Final Exam	20%
<u>Class Presentation/Participation</u>	10%
Total	100%

Individual Project Grading Scale: A = 100 – 90; B = 89 – 80; C = 79 – 70; D = 69 – 60; F = below 60.

HOMEWORK (20%). Students are required to complete homework assignments. The three (3) homework assignments will be averaged and count towards 20% of your final grade. The homework assignments will be made available periodically via eLearn (i.e. a minimum of one week prior to the due date). If the assignments are not turned in on-line on the due date specified in the course syllabus via eLearn dropbox, an automatic zero will be recorded for that assignment.

PROBLEM SET (30%). Students are required to complete **ALL** (4) four problem sets. The top (3) three out of a possible (4) four research problem sets will be averaged and count towards 30% of your final grade (i.e. the lowest score will be dropped). For several of the problem sets, students are also given a data set, a description of the origin of the data set, and the level of measurement of each variable in the data set.

Each problem set should be completed as a report/narrative and should be approximately 500 – 1,000 words long -- much shorter than that means you're not doing an adequate job, much longer means you're not being selective enough about what to say. Each report should have *only* relevant computer output attached (note: computer output does not factor into the 500 – 1,000 word report length). The problem sets are meant to satisfy the writing requirement for this course, in lieu of a 10 – 15 page conference paper; consequently, it is highly recommended that students spend time to write a clear/concise report that can be submitted to the department as part of their writing portfolio. The problem sets will be made available via eLearn and are to be turned in on-line on the due date specified in the course syllabus or an automatic zero will be recorded for that assignment.

Attendance is **REQUIRED** on 1/28/16 and 4/7/16. The guest speaker will introduce the randomized control trial that is the basis for problem set #3 on 4/7/16.

EXAMINATIONS (40%). There are 2 exams: **midterm: 20% and final: 20% of the final grade.** Please note the exam dates listed in the syllabus.

CLASS PRESENTATION (10%). The length of the presentations are dependent upon class size; typically, presentations have been limited to 15 minutes, with five additional minutes allotted to class questions and discussion. Students are required to present their answers to either problem set #1 or #4. The presentation will be timed. Given that students will be presenting complex numbers, concepts, statistics, data, it is highly recommended that every student use a PowerPoint and/or a handout to ensure the audience can follow along. Make sure to practice the timing of the presentation. Many times statistical analysis can be hard to interpret because there are conflicting results, not enough power, dirty data, confounding variables, etc. Your

colleagues and I will be evaluating presentations. Each student will receive written (anonymous except for me) evaluations of their class presentation.

***Note:* IF YOU DO NOT ATTEND ALL OF THE PRESENTATIONS, AN AUTOMATIC ONE-LETTER GRADE WILL BE DEDUCTED FROM YOUR ORAL PRESENTATION.**

Schedule:

Week Location	Date	Module Topic	Readings	Assignments
Week 1 AWC	1/19	Class Introduction Course Requirements Research Methods Review SPSS: Basics NIH Ethics Training (3/24/16)	<ul style="list-style-type: none"> Ch 1: pp 9 – 21: Research Methods 	HOMEWORK 1 Due: 11:59pm on Wed., February 1 st via eLearn Dropbox
Week 2 AWC	1/26	SPSS: Data Set/Codebook Basics Guest Presentation: Gregory R Martin, PI <small>12, 13</small>	<ul style="list-style-type: none"> Ch 2: Data Sets Watch the you tube videos: <ul style="list-style-type: none"> YouTube Introduction to SPSS: http://www.youtube.com/watch?v=eTHvIEzS7qQ YouTube SPSS: Code Book https://www.youtube.com/watch?v=wOnchdRr2Wg YouTube Coding a survey in SPSS: https://www.youtube.com/watch?v=ePkkYnwEYRI https://www.youtube.com/watch?v=wOnchdRr2Wg 	PROBLEM SET 1 Due: 11:59pm on Wed., February 15 th via eLearn Dropbox
Week 3 AWC	2/2	Descriptive vs. Inferential Statistics Research Questions Hypothesis Central Tendency & Variability Normal Curve Violations of Normality SPSS: Freq. Table & Univariate Charts	<ul style="list-style-type: none"> Ch 4: Central Tendency & Dispersion Ch 3: Frequency Tables & Univariate Chart Ch 11: Sampling Distributions & Normal Distributions 	HOMEWORK 2 Due 11:59pm on Wed., February 15 th via eLearn Dropbox

¹² Nilsson, U. (2008). The anxiety-and pain-reducing effects of music interventions: a systematic review. *AORN Journal*, 87(4), 780-807.

¹³ Suresh, B. S., De Oliveira Jr, G. S., & Suresh, S. (2015). The effect of audio therapy to treat postoperative pain in children undergoing major surgery: a randomized controlled trial. *Pediatric surgery international*, 31(2), 197-201.

Week 4 AWC	2/9	Sampling Distributions vs. Frequency Distribution Confidence Interval, Confidence Level & Margin of Error Standard Scores: z-score & t-score Comparing Group Means SPSS: Creating new variables	<ul style="list-style-type: none"> • Ch 5: Creating New Variables • Ch 6: Comparing Group Means • Ch 11: Sampling Distributions Additional Readings: Standard Scores http://statistics.laerd.com/statistical-guides/standard-score.php	HOMEWORK 3: Ethics Due: 11:59pm Wed., March 29 th via eLearn Dropbox
Week 5 AWC	2/16	Crosstabs Chi-Square Nominal, Ordinal and Interval (Rho) Measures of Relationship	<ul style="list-style-type: none"> • Ch 7: Crosstab Tables • Ch 8: Nominal and Ordinal Measures of Association • Ch 15: Chi-Square YouTube Chi Squares: http://www.youtube.com/watch?v=Ahs8jS5mJKk	PROBLEM SET 2 Due: 11:59pm on Wed., March 8 th via eLearn Dropbox
Week 6 Online	2/23	NIH Ethics Training	Online Course: NIH Protecting Human Research Participants ¹⁴	Reminder!!! HOMEWORK 3: Ethics Due: 11:59pm Wed., March 29 th via eLearn Dropbox
Week 7 AWC	3/2	Review for Midterm		
Week 8 Online	3/9	MIDTERM		
Week 9	3/16	NO CLASS: Spring Break		

¹⁴ URL: <https://phrp.nihtraining.com/users/login.php>

Week 10 AWC	3/23	Pearson's Correlation Bivariate Regression Multiple Regression SPSS: Transforming Skewed Data	<ul style="list-style-type: none"> • Ch: 9 Pearson's Correlation and Bivariate Regression • Ch: 10 Multiple Regression • Chapter 4: Skewed Distribution p.111 - 112 • YouTube Transforming Skewed Data: https://www.youtube.com/watch?v=CbD1rUd-rcI 	PROBLEM SET 3 Due: 11:59pm on Wed., April 5 th via eLearn Dropbox
Week 11 AWC	3/30	T-Tests ANOVA MACOVA RM_ANOVA	<ul style="list-style-type: none"> • Ch 12: Hypothesis Testing and One-Sample t-Test • Ch 13: Paired and Independent Samples t-Test • Ch 14: Analysis of Variance (ANOVA) • YouTube ANOVA: http://www.youtube.com/user/bjwlsy#p/u/0/zqAfC976nQ 	
Week 12 AWC	4/6	Power Analysis	<p>Power Analysis:</p> <ul style="list-style-type: none"> • Cohen, J. (1992). Statistical power analysis. <i>Current Directions in Psychological Science</i>, 1(3), 98-101. • G*Power: http://www.gpower.hhu.de/en.html • Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. <i>Behavior Research Methods</i>, 39, 175-191. <p>Topic: RCT: Guatemala Music and Medicine^{15, 16}</p>	PROBLEM SET 4 DUE: 11:59 Friday, April 19 th via eLearn Dropbox
Week 13 AWC	4/13	Oral Presentations	*Note: If all of the student presentations can be completed on 4/20 and there are no interruptions to class (i.e. snow days, etc.), then we will not meet on the 13 th .	

¹⁵ Nilsson, U. (2008). The anxiety-and pain-reducing effects of music interventions: a systematic review. *AORN Journal*, 87(4), 780-807.

¹⁶ Suresh, B. S., De Oliveira Jr, G. S., & Suresh, S. (2015). The effect of audio therapy to treat postoperative pain in children undergoing major surgery: a randomized controlled trial. *Pediatric surgery international*, 31(2), 197-201.

Week 14 AWC	4/20	Oral Presentations		
Week 15 AWC	4/27	Final Exam Review		
Week 16 Online	5/4	FINAL EXAM		

EVALUATION FOR PROBLEM SET

CONTENT ELEMENTS

1. Format –

- 500 – 1,000 words (not including figures, tables, references)
- single-spaced
- report format
- appropriate tone (business; not too informal or academic)
- neat and clear organization

2. Sections –

Foreword: audience jurisdiction issue/objectives

Introduction: why is the topic important Research question memo attempts to answer Summary of background information

Background: key things decision maker needs to know draws on appropriate evidence

Conclusions (when relevant): recommendations and rationale and any risk factors, caveats, uncertainties, additional needed information

3. References –

- In-text citations present and used correctly & references listed APA format.

RUBRIC CRITERIA

WRITTEN EXPRESSION	<input type="checkbox"/> A - Excellent	<input type="checkbox"/> B - Good	<input type="checkbox"/> C - Minimum Expectations	<input type="checkbox"/> Unsatisfactory
Demonstrates written communication practices (organization, clarity, spelling, grammar) expected of an entry-level professional public administrator.	Clearly organized, almost no grammar or spelling errors; writing style all the way through is clear; consistent with thorough proofreading and editing.	Most of the work is well- organized and clearly written. A few spelling or grammar errors may be present but do not interfere with comprehension.	Much of the work is poorly organized, with distractingly frequent grammar or spelling errors. Some sentences may be unclear.	Fragmented, unorganized work, with many grammatical and spelling errors which interfere with comprehension. A number of sentences may be unclear.
ACCURACY AND PRECISION	<input type="checkbox"/> A - Excellent	<input type="checkbox"/> B - Good	<input type="checkbox"/> C - Minimum Expectations	<input type="checkbox"/> Unsatisfactory
Demonstrates specific, detailed understanding acquired about the assigned topic, questions or issues.	Entire work is accurate and appropriate to the topic. Reflects depth of understanding of the topic throughout.	Most of work is accurate and appropriate to the topic. No important aspect of the topic is omitted. Portions of memo show depth of understanding	Some important aspects of topic left out, or large amounts of inaccurate/inappropriate material included. Demonstrates mostly	Shows multiple significant gaps in coverage of the topic, or is completely off-target. What content relates to the topic is superficial in nature.

		of the topic.	superficial understanding of the topic.	
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CRITICAL THINKING	<input type="checkbox"/> A - Excellent	<input type="checkbox"/> B - Good	<input type="checkbox"/> C - Minimum Expectations	<input type="checkbox"/> Unsatisfactory
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Demonstrates critical thinking, including synthesis and evaluation, in written work.	Shows evidence of original, synthetic thought on the topic, in addition to successful application. Connections are made between ideas, and clearly addresses the evaluative or synthetic aspects of the question if applicable.	Work shows evidence of ability to apply knowledge appropriately in response to the question. Some effort is made to address evaluative or synthetic aspects of the question if applicable.	Work shows comprehension but some errors in application, and very little evidence of analysis, synthesis or evaluation.	Work does not provide evidence of progression beyond knowledge – errors in comprehension are clear, and there is little or no evidence of analysis, synthesis or evaluation.
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ADHERENCE TO STANDARDS FOR ATTRIBUTION OF SOURCES

	<input type="checkbox"/> 1 – No Issues	<input type="checkbox"/> 2 – Minor Issues	<input type="checkbox"/> 3 – Moderate problem	<input type="checkbox"/> 4 – Major problem	<input type="checkbox"/> 5 – Severe problem
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Demonstrates adherence to standards for giving credit for wording, findings, facts and ideas from other sources, including full paraphrase with citation, quotation with citation when appropriate, and avoidance of all types of plagiarism and academic dishonesty. <i>See Support Module on writing, syllabus, and Statement on Academic Responsibility for Written Work for further information on expectations. It is not possible to detail here all the varieties of potential issues along this spectrum of writing behaviors– those listed are examples.</i>	+3 on grade	-3 on grade Ex.: A few instances of partial though insufficient paraphrase - but credit was always given to source.	-10 on grade Ex.: Multiple instances of exact words without quotes with citation, or partial paraphrase without citation, etc.	-20 on grade Ex.: Much of paper includes instances of partial paraphrase, exact words without quotes; with or without citation, etc.	Zero on assignment and/or further penalties See Statement on Academic Responsibility for Written Work for examples of potential issues.
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