

## PADM 596 **Data Analysis for Decision Making**

Course Credits: 3

Professor Agustin Leon-Moreta

Fall 2023

**Class Meeting:** 6 to 8:30 pm on Thursday at Dane Smith Hall (DSH) 132

**Office Hours:** 4 to 6 pm on Friday. Also Zoom or phone meetings available by appointment.

**Address:** Social Sciences 3006

**Email:** Email normally is best to get in touch. *Allow 24 hours for a response to emails.*

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**Phone:** Call (505) 277-1092 if you need immediate assistance.

### **EXPECTED BACKGROUND**

- STAT 145 Introduction to Statistics or equivalent coursework

### **COURSE DESCRIPTION**

Welcome to PADM 596 *Research Methods for Public Managers: Data Analysis*. This course introduces students to basic statistical methods and their application to public management, policy, and decision-making. It covers the essential elements of descriptive statistics, univariate and bivariate statistical inference, and an advanced introduction to multivariate analysis. While discussing the foundations of statistical theory, the course emphasizes applied statistics and data analysis using the software package SPSS.

The course provides MPA students with fundamental tools for applied research and analysis in public and nonprofit organizations. It develops the knowledge and skills you will need to understand and effectively use statistical methods of research. We'll begin the course by reviewing fundamental concepts and techniques of descriptive statistics and then concentrate on methods of inferential statistics, emphasizing data analysis and reporting for applied public management and policy research. We'll study a variety of methods, including measures of central tendency, measures of dispersion, normal distribution theory, analysis of variance (ANOVA), chi-square, correlation, and multiple regression.

### **COURSE GOALS**

This course presents methods for inquiry and analysis by public managers and students of public administration. It covers strategies for the design of quantitative research the analysis of statistical data in institutional and field settings.

Students who complete the course are expected to leave with the ability to:

- Propose research questions for empirical analysis
- Design research strategies to test research hypotheses
- Understand the different types of data used by public managers, policy analysts, and researchers in public administration, policy, and applied social science
- Learn when and how to use alternative methodological techniques
- Appreciate the importance of using plain language to report data analyses and findings
- Use SPSS to analyze statistical data

## STUDENT LEARNING OUTCOMES

The following MPA core outcomes of learning are addressed in this course. Students will be able to analyze:

1. Policies and programs by applying appropriate information technology and data management techniques
2. Policies and programs by applying appropriate quantitative methods of data analysis and reporting

## COURSE POLICIES

*Punctual Attendance Required:* Beginning the first day, attendance will be recorded at noon. Per the UNM Student Handbook, a student may be dropped from the course as a consequence of absences from class. This attendance requirement applies equally to main-campus students and distance/online students. Online students are expected to use a desktop computer, a camera, and cable internet or high-speed connection for participating in class. Your camera **must be on** during class meetings. Students invisible to the professor won't be considered in attendance.

*No Late/Makeup Assignments:* Late or makeup assignments won't be accepted. Under extraordinary circumstances, I may consider a late submission for partial credit.

*Time/Workload Commitment:* This is a core course of the MPA program that requires **independent work and study**. To learn the course material successfully, graduate **students should commit at least 10 hours per week** to the course outside of class.

*Electronic Devices:* **Turn off cell phones** during class. A computer only is permitted for class-related work only, such as participating in class or taking notes. **Don't use your computer for other purposes.**

*Student Feedback:* Your feedback on the course will be welcome and appreciated. We'll ask for your feedback through various channels, formal and informal, throughout the semester.

*Email Communication:* Using your UNM email account is encouraged for electronic communication.

*Syllabus Changes:* This **syllabus will be updated** as needed at any time. I reserve the right to change any content of the syllabus including the grading rubrics, re-weighting, and assignments. Assignments may be changed or added at any point. I'll announce any major change during class or update the syllabus. **Check the most recent syllabus posted on Canvas.**

## UNIVERSITY POLICIES

*Academic Integrity and Consequences:* The University of New Mexico believes that academic honesty is a foundation principle for personal and academic development. All University policies regarding academic honesty apply to this course. Academic dishonesty includes, but is not limited to, cheating or copying, plagiarism (claiming credit for the words or works of another from any type of sources such as print, internet or electronic database, or failing to cite the source), fabricating information or citations, facilitating acts of academic dishonesty by others, having unauthorized possession of tests and exams, submitting work of another person or work

previously used without informing the professor, or tampering with the academic work of other students. **All course assignments are independent, individual work.** Student assignments will be checked for originality through the UNM Turnitin system. The University's statement on academic honesty and the consequences for failure to comply are available in the Catalog and the Pathfinder.

*Accommodation Statement:* In accordance with University Policy 2310 and the Americans with Disabilities Act (ADA), academic accommodations may be made for any student who notifies the instructor of the need for accommodation. It is imperative that you take the initiative to bring any such needs to my attention since I'm not legally permitted to inquire. Students who may need assistance in emergency evacuations should contact me as to the most appropriate procedures to follow. If you need accommodation based on how course requirements interact with the impact of a disability, you should contact me to arrange an appointment as soon as possible. At the appointment, we can discuss the course format and requirements, anticipate the need for adjustments, and explore potential accommodations. I rely on the Disability Services Office for assistance in developing strategies and verifying accommodation needs. If you haven't previously contacted them, I'd encourage you to do so. Contact the Accessibility Resource Center at 277-3506 or [arcsrvs@unm.edu](mailto:arcsrvs@unm.edu) for more information.

## **COURSE REQUIREMENTS**

*Participation:* This will be worth 10 points out of 100 points. **Punctual attendance is required for every class** meeting of the semester. Active participation in class is expected. In class, please feel free to interrupt me with questions or comments. Please thoroughly study the weekly material in preparation for class participation. Participation includes asking questions, commenting on the class material, answering the instructor's questions, collaborating in group activities, and citizenship behavior in class. This participation requirement applies equally to main-campus students and distance/online students.

*Problem Sets:* Weekly problem sets will be worth 10 points out of 100 total points. They will be applied exercises regarding the weekly material. The problem sets are a very important component of the course because they give an opportunity for practical applications. The problem set will be announced on Canvas. I'm happy to take a look at working drafts of your work. If you'd like early feedback, feel free to send me draft versions at least twenty-four hours before the deadline. Your problem set must be submitted on Canvas by Thursday at 9 am.

*Tests:* These will be worth 20 points out of 100 total points. They will assess weekly reading assignments. **Readings must be completed before class** meetings when those readings will be discussed. Weekly readings will be based on the textbooks, but additional readings may be assigned during the semester. Weekly tests will be open on Canvas after class and are due on Thursday at 9 am. Tests may include a variety of questions. Tests are a very important component of this course because they give you opportunities for skill application and practice toward the final exam. To ensure the highest possible grade, each test offers three attempts for you to take.

*Final Exam:* The final exam will be worth 30 points out of 100 total points. The exam format will be similar to the tests but comprehensive of all course materials. This final examination will be open from December 7<sup>th</sup> after noon to the end of the 9<sup>th</sup>.

*Research Paper:* A research paper will be worth 30 points out of 100 total points. This project will include the submission of a paper. The paper should be written in the format of the PADM 553 Professional Paper (pro-paper). In this research, you'll follow and complete projects 1 and 4 from Appendix E of the text (plus project 2 from page 393), using data from the General Social Survey (GSS) of 2012. You'll provide reports of your research over the semester and an oral presentation. Students' submitted work will be checked for originality through the UNM SafeAssign system. Your research paper should effectively apply methodological techniques learned from the course. I'll provide, in class or by email, further information regarding this research paper. Turn in your research paper by December 16.

### **GRADING**

Participation	10
Problem sets	10
Tests	20
Research Project	30
<u>Final exam</u>	<u>30</u>
<b>Total grade</b>	<b>100 points</b>

### **Grading Rubric**

(A+) Excellent: Exceptional work for a graduate student. Work at this level is unusually thorough, comprehensive, creative, innovative, methodologically sophisticated, and well written. Work is of the highest professional quality.

(A/A-) Very good: Strong work for a graduate student. Work at this level shows signs of creativity, is thorough and well-reasoned, indicates a strong understanding of appropriate methodological or analytical approaches, and meets professional standards.

(B+) Good: Good work for a graduate student; well-reasoned and methodologically sound. This is the graduate student grade that indicates the student has accomplished the basic objectives of the course.

(B) Adequate: Competent work for a graduate student even though some weaknesses are evident. Demonstrates competency in the key course objectives but shows some indication that understanding of some important issues is less than complete. Methodological or analytical approaches used are adequate, but the student has not been thorough or has shown other weaknesses or limitations.

(B-) Borderline: Weak work for a graduate student; it barely meets the minimal expectations for a graduate student in the course. Understanding of salient issues is incomplete. Methodological or analytical work performed in the course is minimally adequate. Overall performance, if consistent in graduate courses, would not suffice to sustain graduate status in good standing.

(C/-/+) Deficient: Inadequate work for a graduate student; doesn't meet the minimal expectations for a graduate student in the course. Work is inadequately developed or flawed by numerous errors and misunderstanding of important issues. Methodological or analytical work performed is weak and fails to demonstrate the knowledge or technical competence expected of graduate students.

(F) Fail: Work fails to meet even minimal expectations for course credit for a graduate student. Performance has been consistently weak in methodology and understanding, with serious limits in many areas. Weaknesses or limits are pervasive.

## TEXTBOOK AND SUPPLIES

**Required software to rent:** SPSS Base Grad Pack 29.0: <https://www.ibm.com/products/spss-statistics/gradpack>. As an alternative, SPSS is available for free at UNM computer labs: <https://computing.unm.edu/map/index.php>

Your Canvas page is automatically loaded with the textbook by RedShelf. The cost of the ebook will be charged by the bookstore to your bursar account. If you want a print book or more information, check out [https://bookstore.unm.edu/t-1unm\\_inclusiveaccess.aspx](https://bookstore.unm.edu/t-1unm_inclusiveaccess.aspx) or contact [inclusiveaccess@unm.edu](mailto:inclusiveaccess@unm.edu). **Opt out before the deadline** if you prefer to buy the book from another vendor. Healey, Joseph. 2016. *The Essentials of Statistics: A Tool for Social Research*, 4<sup>th</sup> edition (posted on Canvas)

- Additional materials posted on Canvas

## SCHEDULE OF ACTIVITIES

Week	Read	Test-Set by
I	Ch. 1 introduction + Ch. 2 basic descriptive statistics	Aug 24
II	Ch. 3 measures of central tendency	Aug 31
III	Ch. 4 measures of dispersion	Sep 07
IV	Ch. 5 the normal curve	Sep 14
V	Ch. 6 introduction to inferential statistics	Sep 21
VI	Ch. 7 hypothesis testing I	Sep 28
VII	Ch. 8 hypothesis testing II	Oct 05
	FALL BREAK	Oct 12
VIII	Ch. 9 hypothesis testing III	Oct 19
IX	Ch. 10 hypothesis testing IV	Oct 26
X	Ch. 11 association for nominal variables	Nov 02
	APPAM conference (no class)	Nov 09
XI	Ch. 12 bivariate correlation and regression	Nov 16
	THANKSGIVING	Nov 23
XII	Ch. 13 partial correlation and multiple regression	Nov 30
	FINAL EXAM	Dec 7-9

*Note:* Your presentation of case studies and a class picture are scheduled for the last meeting.