

## Applied Statistical Analysis CJ 7323-001

School of Criminal Justice  
Texas State University

Classroom: Hines Academic Center 105/101  
Class Meetings: Wednesday, 6:30 – 9:20  
Professor: Dr. Shayne Jones  
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Office Hours: By appt.  
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### Required Texts

Field, A. (2013). *Discovering statistics using IBM SPSS Statistics* (4<sup>th</sup> Ed.). Los Angeles: Sage.

### Course Description

This course is designed to provide doctoral students with the opportunity to acquire and demonstrate mastery in applying statistical concepts to data. This includes data manipulation, graphical analysis, data analysis, data interpretation, and communication of findings. Critical thinking and analysis is emphasized throughout the course. SPSS is the statistical program that is used. It is required that all students have successfully completed a basic statistics course at the master's level prior to enrolling in this course.

### Course Objectives

Although it is required that all students enrolled in this course have a conceptual understanding of statistics (e.g., knowledge of formulas, appropriate statistical tests for a given research question), conceptual issues will be discussed during lectures and appear on examinations. However, the primary focus is manipulating data so that it is appropriately analyzed, critiquing common practices, advancing scientifically and statistically sound approaches to data analysis, computing various statistical analyses (in SPSS), and communicating data analysis correctly. This latter component includes translating statistical output into tabular, graphical, and written results. Upon successful completion of this course, students will be able to perform many common statistical techniques and communicate findings succinctly. These objectives, once accomplished, will leave students in a position of being a better producer and consumer of statistics, both in reading and critiquing others' work, as well as appropriately conducting research. Also, reaching these goals will place students in a good position for the subsequent statistical courses that are taken during graduate training.

### Student Learning Outcomes

1. Manipulate data appropriately.
2. Learn how to use SPSS to conduct statistical analyses.
3. Learn how to interpret SPSS output.
4. Critique statistical techniques and methods.
5. Communicate statistical results in various forms.

### Course Structure

The course consists of lectures (online and in class) and class exercises. Students are required to complete the assigned readings and online lectures prior to class. Class time is reserved for summary lectures,

question and answer sessions, conducting statistical analyses, interpreting SPSS output, and how to correctly and succinctly report statistical findings. Throughout the semester, critical thinking is emphasized.

Due to the complex nature of the material and assignments, all questions should be covered in person with the instructor in order to prevent unnecessary confusion.

### **Course Assignments and Grading**

#### *Examinations – 60% of final grade*

There are 3 exams in the course, each worth 20% of the final grade. The exams may include open-ended questions (answered in prose), performing statistical tests, and interpretation of statistical tests (including SPSS output).

#### *Assignments – 40% of final grade*

There are 6 assignments to complete. Each assignment focuses on one or more statistical techniques that have been or are being covered. There are two components to the assignments. First, there is the technical component. This component is graded on whether the analysis is correctly conducted, and the interpretation is accurate. The second component focuses on the clarity with which the findings are reported. Given this bifurcated grading system, it is possible that the analysis and specific statistical information is correct, but it is poorly written. This will result in points being deducted even though a technically correct answer has been provided. The assignments are designed to provide students with an opportunity to apply statistical knowledge to data, and for the professor to assess how well each student is grasping the material. Under no circumstances are students allowed to work cooperatively with one another to complete the assignments. All assignments must be completed by each student individually. There might be times when a student has difficulty understanding a concept or procedure, or carrying out an analysis. If this occurs, ask the professor for assistance.

### **Course Grading Distribution and Scale**

<u>Grade Distribution</u>	<u>Grading Scale</u>
Examinations (60%)	90% - 100% → A
Exam #1 (20%)	80% - 89% → B
Exam #2 (20%)	70% - 79% → C
Exam #3 (20%)	60% - 69% → D
Assignments (40%)	Below 60% → F
Assignment #1 (5%)	
Assignment #2 (5%)	
Assignment #3 (5%)	
Assignment #4 (5%)	
Assignment #5 (10%)	
Assignment #6 (10%)	

## Course Policies

### *Classroom Expectations*

1. Respect other students and the professor.
2. Arrive on time.
3. Turn off electronic devices.
4. Pay attention.
5. Take good notes.
6. Ask questions when you do not understand.
7. Engage in ethical behavior (e.g., not cheating).
8. Abide by all school, college, and university policies and procedures. It is the responsibility of each student to learn these.

### *Policy Regarding Absences, Late Assignments, and Missed Assessments*

Attendance is strongly encouraged. In the event of an absence, no student will be given the opportunity to earn credit toward an in-class assignment or an examination. The professor is not obligated and will not provide to any absent student lecture notes, class summaries, or any other information that was provided in class. The university has detailed policies regarding absences, including what constitutes an excused absence (see <http://www.provost.txstate.edu/pps/policy-and-procedure-statements/4-teaching/pp4-01.html>). In the event of a university-excused absence, the professor will follow the guidelines set forth by the university. Each student is expected to review, be familiar with, and follow the university's guideline regarding absences.

In the event of an emergency, it may be necessary to suspend normal operations. During this time, the university might opt to continue delivery of instruction through alternative methods or scheduling. It is the responsibility of the student to monitor the TRACS site for each class for course specific communication, and the main Texas State University, College, and department websites, and emails for important general information.

Students are expected to notify their instructors at the beginning of each academic term if they intend to be absent for a class or examination. Students absent for religious reasons should notify the instructor preferably at the beginning of the semester, but no later than two weeks prior to the scheduled absence. For further information, please refer to: <http://www.txstate.edu/effective/Upps/Upps-02-06-01.HTML>

### *Requests for Information on Grades*

Every effort will be made to promptly list the grades on TRACS. If any additional information related to grading is requested by a student, that student must schedule a time to meet with the professor. Grades and related issues will not be discussed via email or phone.

### *Policy Regarding Special Accommodations*

If you are a student with a disability who will require an accommodation(s) to participate in this course, please contact the instructor as soon as possible. You will be asked to provide documentation from the Office of Disability Services. Failure to contact the instructor in a timely manner may delay your accommodations.

### *Disruption of Academic Process*

Disruption of academic process is defined as the act or words of a student in a classroom or teaching environment which in the reasonable estimation of a faculty member: (a) directs attention from the academic matters at hand, such as noisy distractions, persistent, disrespectful or abusive interruptions of lecture, exam or academic discussions, or (b) presents a danger to the health, safety or well-being of the faculty member or students. Disruption of the classroom or teaching environment is unacceptable. This cannot be tolerated in the University community and will be punishable, according to the seriousness of the offense, in conformity with this rule.

### *Class Notes and Tape Recordings*

Any student who wishes to tape record class lectures must first get permission from the instructor. Any recording, whether audio or written (i.e., class notes), can only be used by the individual who recorded them. No student has permission to sell or distribute any recording (in any form, including the provided lectures) made in the course.

### *Modifications to Course Schedule*

While care and effort have been taken to delineate the activities and assignments throughout the semester, the professor reserves the right to modify the course schedule. Such modifications can occur at any time and as many times during the semester as the professor deems necessary. Students will be notified in class if such changes are made.

### *Texas State University Honor Code*

All faculty, staff and students are responsible for supporting the principles of conscientiousness, respectfulness and honesty and demonstrating a commitment to the university's Academic Honor Code. Plagiarism and other forms of academic dishonesty undermine the very purpose of the university and diminish the value of an education. Specific expectations for academic integrity and sanctions for academic dishonesty are outlined on the Honor Code Council website: <http://www.txstate.edu/honorcodecouncil/>, and in UPPS No. 07.10.01 <http://www.txstate.edu/effective/upps/upps-07-10-01.html>.

### *Code of Student Conduct*

This Code of Student Conduct, hereafter also referred to as this code, is applicable to any student currently enrolled; enrolled in the previous semester/session and eligible to enroll in the next consecutive semester/ session; or newly or re-admitted and eligible to enroll in the next semester/session. A student who withdraws from school is subject to disciplinary action for any conduct that occurred while the student met the aforementioned criteria. Students involved in misconduct that would subject them to disciplinary action while not enrolled may be required to appear before the Dean of Students or designee before being readmitted to the university.

This code is adopted pursuant to authority granted by The Texas State University System Board of Regents.

This code is printed annually in the Student Handbook. The handbook is also available online at [ww.dos.txstate.edu](http://www.dos.txstate.edu). When this code is updated between printed editions, the most updated version, generally the online version, shall prevail.

For details of the Code of Student Conduct, see <http://www.dos.txstate.edu/handbook/rules/cosc.html>

### *Texas State University Mission and Shared Values Statements*

#### *Our Mission*

Texas State University is a doctoral-granting, student-centered institution dedicated to excellence and innovation in teaching, research, including creative expression, and service. The university strives to create new knowledge, to embrace a diversity of people and ideas, to foster cultural and economic development, and to prepare its graduates to participate fully and freely as citizens of Texas, the nation, and the world.

#### *Our Shared Values*

In pursuing our mission, we, the faculty, staff, and students of Texas State University, are guided by a shared collection of values:

- Teaching and learning based on research, student involvement, and the free exchange of ideas in a supportive environment;
- Research and creative activities that encompass the full range of academic disciplines—research with relevance, from the sciences to the arts, from the theoretical to the applied;
- The cultivation of character, integrity, honesty, civility, compassion, fairness, respect, and ethical behavior in all members of our university community;
- A diversity of people and ideas, a spirit of inclusiveness, a global perspective, and a sense of community as essential conditions for campus life;
- A commitment to service and leadership for the public good;
- Responsible stewardship of our resources and environment; and
- Continued reflection and evaluation to ensure that our strengths as a community always benefit those we serve.

### Tentative Course Schedule

Date	Topic	Homework
8/29	Introduction to course Review syllabus Course rationale and overview Foundation of Statistics	Chapters 1 (pp. 1-18) & 2 Demystifying Statistics <sup>1</sup> The PENIS of Statistics <sup>1</sup>
9/5	Analyzing data SPSS Data manipulation	Chapter 1 (pp. 19-34) Chapter 3 Entering Data into SPSS <sup>2</sup> The Viewer Window <sup>2</sup> The Syntax Window <sup>2</sup>
9/12	<b>Assignment #1 Due</b> Graphical analysis	Chapter 4 Editing Graphs in SPSS <sup>2</sup>
9/14**	<b>Assignment #2 Due</b>	
9/19	<b>Exam #1</b>	
9/26	Chi-square t-Tests	Chapters 18 (pp. 720-746) & 9 (pp. 357-378) Chi-Square test on SPSS <sup>2</sup> t-Test Using SPSS <sup>2</sup>
10/3	<b>Assignment #3 Due</b> ANOVA	Chapter 11 One-Way Independent ANOVA <sup>2</sup> Following-Up ANOVA <sup>2</sup>
10/5**	<b>Assignment #4 Due</b>	
10/10	<b>Exam #2</b>	
10/17	Correlation	Chapter 7 Correlation <sup>2</sup>
10/24	Linear regression	Chapter 8 The Linear Model <sup>1</sup> Bias in Linear Models <sup>1</sup>
10/31	Linear regression (cont.)	
11/7	<b>Assignment #5 Due</b> Logistic regression	Chapter 19 (pp. 760-797) How 2 Stats videos
11/14	Class canceled	American Society of Criminology Meeting
11/21	Class canceled	Thanksgiving Break
11/28	<b>Assignment #6 Due</b> Open	

12/5     **Exam 3**

12/12     **(Possible Exam 3)**  
5 PM

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\*\*Date we normally do not meet

<sup>1</sup> Andy Field Lectures (<https://www.youtube.com/playlist?list=PL343F1B5F55734D55>)

<sup>2</sup> Andy Field SPSS Tutorials (<https://www.youtube.com/playlist?list=PL25257A24840423AE>)

Other Useful Resources

How 2 Stats (<https://www.youtube.com/channel/UCr3OHuCSrwaO2KYP2CJB6zg>)

Khan Academy: Statistics (<https://www.youtube.com/playlist?list=PL1328115D3D8A2566>)