

APPLIED STATISTICS IN INTELLIGENCE
INSS 5361, CRN #24866
THURSDAYS 6 :00-8 :50
EDUCATION BUILDING, ROOM 203
THE UNIVERSITY OF TEXAS AT EL PASO
SPRING, 2021

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Note: office hours will be held remotely by appointment until the University transitions to the “medium density” phase of access.

II. **TEXTBOOK**

Weiss, N.A. (2011). *Introductory Statistics (10th edition)*. Pearson. ISBN: 978-0-321-98917-8

Additional readings must be downloaded by students from the University library or may be available on Blackboard.

It is **extremely** important that assigned chapters be read prior to each class period. The lectures are meant to supplement and clarify the readings, not as a substitute for the readings. You are very unlikely to do well in this course if you do not read the assigned material.

III. **COURSE OBJECTIVES**

Upon satisfactory completion of this course, the student will be able to:

- A. Understand the statistical concepts and methods necessary for quantitative analysis of intelligence problems.
- B. Analyze data by graphs, charts, and inferential statistical tests.
- C. Acquire computing skills with SPSS.
- D. Apply quantitative reasoning to decision-making regarding intelligence and national security.

IV. **COURSE CATALOG DESCRIPTION**

This course provides the basic elements of statistics and analytical techniques for intelligence and national security stemming from applications within these fields. This empirical approach will allow students to formulate and demonstrate conceptual understanding of problems in

areas such as terrorism, biosecurity, homeland security, and defense via statistics. Practical assignments in text form will be supported by computer tasks to master basic software such as Excel and SPSS.

V. COURSE REQUIREMENTS

A. Homework assignments (15%)

There will be one homework assignment per week. The homework assignments are intended to consolidate your knowledge of the content covered during the course. You will be required to demonstrate your ability to perform calculations, as well as your conceptual grasp of the statistical concepts discussed. The assignments will be posted on Blackboard and answers must be uploaded to Blackboard prior to the following class period. Some assignments will require the use of SPSS. This software is available for download. You must show all of your work when performing calculations for homework questions and follow the homework instructions posted on Blackboard. Additional instructions will be given in class. Homework assignments are due by 6:00 the following week in which they were assigned. Failure to turn homework in on time will result in a 2% deduction from your grade for every day that it is late.

B. Critique of results section (20%)

You will be presented with a paper that describes quantitative research conducted in the field of intelligence or national security. You will be asked to critique the section of the paper that describes the results of the statistical analyses conducted as part of the research. As part of this critique, you will be required to describe the analyses conducted, the clarity of the author's description of the analyses, and the appropriateness of the analyses in addressing the hypotheses of the study. This paper will be due on **April 15th**. The paper must be turned in via Blackboard. Click on "Assignments", then click on "Critique" to submit the paper. Failure to turn in the critique on time will result in a 2% deduction from your grade for every day that it is late.

C. Exams (40%)

There will be two exams. The exams will include questions requiring you to perform calculations, interpret data from graphs or charts, interpret descriptive statistics and the results of statistical tests, and demonstrate your conceptual understanding of statistical concepts. You will NOT be required to memorize formulas. The final exam will not be cumulative. If you must miss the exams for any reason, you must see me prior to the exams to discuss alternate arrangements. Arriving late for an exam may result in forfeiture of the opportunity to take the exam and a grade of zero. Information covered on the exam will be taken from the book and class discussions. All of the information in the book will not be covered in the class. You are responsible for reading and knowing the assigned book material. Additionally, all of the information covered in class will not be in the book. You are responsible for coming to class regularly. If you miss a class, you are responsible for obtaining notes from a classmate. The scores on the exams will be adjusted so that the average score is 80% of the maximum possible

points. If you do not put your name on the exams, you may receive a grade of zero.

D. Data analysis paper (25%)

You will be required to analyze and interpret a set of data and write a 3-5 page paper about the results. As part of this assignment, you will be required to generate two hypotheses and analyze the data in a manner that allows for those hypotheses to be tested. This project will be completed in small groups. This paper will be due the date of the final exam. The paper must be turned in via Blackboard. Click on "Assignments", then click on "Data Analysis" to submit the paper. The paper will be due **May 13th**. Failure to turn in the critique on time will result in a 2% deduction from your grade for every day that it is late.

Your group must complete the following tasks (submitted in Blackboard) related to the presentation/proposal by the specified deadlines. Failure to complete these tasks by the designated deadlines will result in a 1% deduction from your final grade for every day that it is late.

Submit hypotheses

April 1st

Submit a description of the data set

April 15th

Submit a description of the statistical tests

April 22nd

VI. GRADING SCALE AT THE END

A = 90 – 100%

B = 80 – 89%

C = 70 – 79%

D = 60 – 69%

F = below 60%

NOTE: Final grades are a weighted average of assignment and exam grades. Final grades are not curved.

VII. TECHNOLOGICAL PROBLEMS/QUESTIONS

For all technological, hardware, software problems, lost files, and/or questions with Blackboard, as well as difficulties you are having during an exam, contact Technology Support Help Desk 24 hours a day, 7 days a week. Tech support is set up to specifically address technical questions and problems about Blackboard.

Professors are not technical support staff.

Phone: E-mail: Website: In Person:

915.747.4357 or toll free: 1-877-382-0491

<https://www.utep.edu/technologysupport/>

UTEP Library, Room 300

Please regularly refer to Blackboard for links, documents, announcements, and calendar changes. You are responsible for being up-to-date on all class information that is posted on Blackboard.

CHECK YOUR TECHNOLOGY

- A. Computer with a reliable internet connection. Mobile devices are not reliable to access exams and use the discussion board.
- B. Blackboard (BB) Learning Management System. The entire course is run through UTEP's BB system, so students must activate and use their BB accounts regularly. Always log in using your UTEP name and password, and never as a "guest" (the guest option will kick you out after 15-20 minutes, which is problematic when taking a test because you will not be able to finish your test). All students are responsible for regularly logging in and checking for posted announcements, submitting assignments, participating in discussion boards, and taking tests through BB. Contact UTEP tech support for any questions or concerns regarding navigating in BB or learning how to do something in BB.
- C. Browser Information (See the left side of the menu on the main BB page for hardware, software, and browser checks) Firefox seems to consistently work the best, but other supported Browsers include Chrome, Safari, and Internet Explorer. Be sure to "Allow pop-ups" for Blackboard Clear your browser cache
- D. Verify that you have the most updated version of "Java" <http://java.com>.
- E. All word documents should be saved with a ".docx" extension identifying it as a Microsoft Word file or compatible with MS Word, Windows Media Player, Quick Time, Adobe Reader, Adobe Flash Player

VIII. ACADEMIC DISHONESTY

If you are suspected of cheating on the exams or collaborating with other students on the homework or critique, the instructor will follow the University's policy regarding student dishonesty, which may result in a grade of zero and referral of the student to the Office of Student Conduct. If you are suspected of plagiarism, the instructor will follow the University's policy regarding student dishonesty, which may result in a grade of zero and referral of the student to the Office of Student Conduct.

Academic dishonesty or cheating is simply unethical and not acceptable under any circumstances. Plagiarism is a form of cheating that involves "stealing" the words and thoughts of others. It is a very serious academic violation and cannot be tolerated. The most common form of plagiarism is using information or original wording in a paper or other assignment without giving credit to the source of that information or wording. **Plagiarism also includes the direct copying of a source verbatim (word for word) and incorporating that copied material into the student's paper or assignment without first paraphrasing with proper referencing or placing the copied text into a direct quotation, again with appropriate footnotes or citations.** Students must use their own words when not using direct quotes. Direct quotes should be used

sparingly and only when appropriate to provide examples, evidence, or illustrate specific points. **You cannot simply “cut and paste” wording or text from source material to artificially “construct” their papers, essays, and other assignments. This practice is also considered plagiarism, even if references are done properly.**

Likewise, you must not submit work under their name that you did not do yourselves. You also may not submit work for this course that you produced for another course. If you are found to be cheating in any capacity including plagiarism and collusion, you will be subject to disciplinary action, per UTEP catalog policy. Cases of academic dishonesty will be sent to the Office of Student Conduct and Conflict Resolution for adjudication and possible sanctions. Possible penalties for academic dishonesty include a zero for the assignment, a failing grade for the course, suspension, and even expulsion from the university. You are responsible for understanding your specific obligations to maintain academic integrity at all times. Please refer to the following link for further information on UTEP’s policies on plagiarism and academic dishonesty: <http://sa.utep.edu/osccr/academic-integrity/>.

IX. STUDENTS WITH SPECIAL NEEDS

If you have a disability that requires an accommodation, you may contact Center for Accommodations and Support Services at 747-5148.

X. UTEP COURSE DROP POLICY

If unforeseen circumstances happen where a drop is necessary, you are responsible for initiating any course drop. It is your responsibility to determine how dropping courses may affect financial aid. **You are limited to dropping no more than 6 courses over their entire academic career of all courses taken at any public college or University in Texas.**

- A. If a course is dropped before the “official census date,” the course will not appear on the transcript, and doesn’t count toward the 6-course drop limit.
- B. Dropping a course after the official census date, but before the “course drop date” will generate a “W” in the course—although the drop shows on your transcript, a “W” does not lower your GPA. However, a “W” counts against your 6-drop limit.
- C. If the course is dropped after the “course drop date” or if the you just stops participating, taking tests, etc., UTEP requires the instructor to issue an “F” in the course that permanently remains on the transcript.
- D. UTEP also allows instructors to administratively drop any student because of too many times the student fails to submit assignments, discussion questions, or because of disciplinary reasons. In this case, you will be notified of the course drop through your UTEP student email account. A “W” or an “F” will be issued. A “W” for these reasons counts against the 6-drop limit.

XI. STUDENT CONDUCT

You must be respectful of other students and of all opinions. All communication should be free of vulgar, offensive, and/or discriminatory language. While it is appropriate to share your opinion on particular issues, your opinion should be presented as such (not as a fact) and should be supported by valid, factual arguments. You may also provide constructive criticism of other opinions. Constructive criticism is provided respectfully and professionally, criticizing the merit of the arguments or the veracity of the facts not the person.

Cell phones should not be used in class without the permission of the instructor. You should attend to the instructor during class lectures. If you are disruptive to the class, you will be asked to leave. You must obtain the instructor's permission to record lectures. Laptops are allowed during class for taking notes or to aid in classroom exercises. If you use a laptop for other purposes, you will be asked to put it away.

According to University policy, "The Texas Department of Public Safety defines a concealed handgun as a handgun, the presence of which is not openly discernible to the ordinary observation of a reasonable person. This same definition is utilized at UTEP. At all times, the handgun must be on or about the license holder's body or secured and concealed safely." This means that handguns may not be openly displayed on campus.

You should ensure that all emailed communication is written using appropriate etiquette. Please use a salutation (for example, "Dear Dr. Duke", or "Hello Dr. Duke"), a clear and thorough communication of your question or concern, and a closing (for example, "Thanks, Bill Martinez" or "Sincerely, Angel Gomez"). Make sure to proofread your emails for grammar, spelling, and clear meaning. Also, please be sure to indicate the course title or number in your email.

XII. COVID-19 SAFETY POLICY

All students should complete COVID-19 student training [here](#) prior to the start of the semester.

The present course has a hybrid component that permits for actual face to face interactions with faculty and other students enrolled in this class. Everyone who attends in person activities must wear a face mask (not a face shield, bandana, or mask with valve; cloth or surgical masks are required) at all times while such meetings are taking place, maintain social distance of a minimum of 6 or more feet, and practice proper hygiene practices. Anyone not wearing a mask will be required to leave. The mask must cover your nose and mouth at all times. As you enter or exit campus, minimize the number of encounters with others to avoid infection by the SARS-CoV-2. Use preventive safety and health measures at all times until informed otherwise by campus officials.

The only exception to not wearing mask at all time is while individuals are at the specific

outdoor locations on campus that are recommended to be designated as mask-free zones for use to drink, eat, and take a brief break. While at these locations, all individuals must maintain social distancing of 6-foot minimum, and must not move tables, seats or other items and must not stay in designated mask-free areas for more than 30 minutes.

If you are unable to wear a face covering (e.g., medical reasons), the best course of action is to enroll in courses that are entirely online or to work with academic advisors, if necessary, to identify alternative courses. If this is not possible, request an accommodation from [Center for Accommodations and Support Services \(CASS\)](#) prior to coming to campus for in-person activities. Students who receive an accommodation to not wear a face covering must share this with the professor and work to minimize contact with others in the class. Students who are considered high-risk according to CDC guidelines and/or those who live with individuals who are considered high-risk may contact [CASS](#) to discuss temporary accommodations for on-campus courses and activities.

Prior to each campus visit, you must complete self-screening at screening.utep.edu. If you are experiencing any symptoms of illness, **do not come to class**. You must stay at home until you are symptom-free. If you have been tested for COVID-19, do not come to class until you have received a negative result. You will not be penalized for not attending class; however, you must inform the instructor when you plan to not attend and I will provide accommodations for you. You must report 1) if you have been diagnosed with COVID-19, 2) are experiencing COVID-19 symptoms, or 3) have had recent contact with a person who received a positive COVID-19 test result. Reports should be made at screening.utep.edu.

Seats in the classroom will be distanced from one another by at least six feet; **do not move the chairs in the classroom or change seats during the class period**, even if you are conducting a small-group activity. The capacity of the classroom is 72; University policy requires a capacity of 38% of normal. Therefore, the classroom can safely hold a maximum of 27 students. You must maintain 6 feet of separation at all times, including when talking with other students. You must also follow the signage indicating specific entry and exit doors and pathways. Do not cluster in groups and keep hallways open. Wash your hands and/or apply hand sanitizer prior to entering the classroom and after leaving the classroom. Do not touch your face until hands are washed or sanitized. Use an alcohol wipe, which will be provided outside the classroom, to sanitize your seat and desk/table prior to class. Follow my protocols for leaving and entering the classroom.

If you fail to follow these guidelines, you will be dismissed from the class and subject to disciplinary action according to Section 1.2.3 Health and Safety and Section 1.2.2.5 Disruptions in the UTEP Handbook of Operating Procedures.

Please note that if COVID-19 conditions deteriorate in the City of El Paso, all course and lab activities may be transitioned to remote delivery. Please contact the instructor if you have any questions concerns related to your safety on campus.

XIII. PLAN FOR CLASS MEETINGS

You will meet with the instructor every week for this class during our assigned class times, either in-person or online. We will start by meeting online in Blackboard Collaborate; there is a link to Blackboard Collaborate on the Home Page of the Blackboard shell. Although you are expected to attend these meetings, they will be recorded in case you must be absent. You are requested to turn on your video during interactive online discussions (it is fine to have it off during lectures). You are also requested to have a working microphone. Please inform the instructor if you do not have video or microphone capability. Tentatively, class meetings will transition to in-person meetings in March. When that happens, the entire class will meet at once due to our assigned classroom being large enough to maintain social distancing.

XIV. CLASS CALENDAR*

Week 1: 1/21

The Nature of Statistics/Organizing Data

Weiss, Chapters 1-2

Optional: Committee on Behavioral and Social Science Research to Improve Intelligence Analysis for National Security (2011), p. 40

Week 2: 1/28

Descriptive Measures

Weiss, Chapter 3

Optional: Fair, C. C. (2013). Insights from a database of Lashkar-e-Taiba and Hizb-ul-Mujahideen militants. *Journal of Strategic Studies*, 37, 259-290.

Due: Homework #1 (Chapters 1 and 2)

Week 3: 2/4

Probability Concepts

Weiss, Chapter 4

Optional: Nicholas Schweitzer (1978) Bayesian analysis for intelligence: Some focus on the middle east, *International Interactions*, 4:3, 247-263, DOI: 10.1080/03050627808434492

Due: Homework #2 (Chapter 3)

Week 4: 2/11

Discrete Random Variables

Weiss, Chapter 5

Optional: Rooker, K., & Scouras, J. (2019). *Nuclear crisis outcomes: Winning, uncertainty, and the nuclear balance*. Johns Hopkins Applied Physics Library.

Due: Homework #3 (Chapter 4)

Week 5: 2/18

The Normal Distribution/The Sampling Distribution of the Sample Mean

Weiss, Chapters 6 and 7

Optional: Stewart, M. G., & Mueller, J. (2011). Cost-benefit analysis of advanced imaging technology full body scanners for airline passenger security screening. *Journal of Homeland Security and Emergency Management*, 8, Article 30.

Due: Homework #4 (Chapter 5)

Week 6: 2/25

Confidence Intervals for One Population Mean

Weiss, Chapter 8

Optional: Treyger, E., Robbins, M., Chang, J. C., & Tanverakul, S. (2020). *Modeling the impact of border-enforcement measures*. Homeland Security Operational Analysis Center.

Due: Homework #5 (Chapters 6 and 7)

Week 7: 3/4

Hypothesis Tests for One Population Mean

Weiss, Chapter 9

Optional: Omorogiuwa, T. B. E., & Imafidon, K. A. (2017). Socio-economic security and democratic participation in Nigeria. *International Journal of Education, Learning, and Development*, 5, 58-65.

Due: Homework #6 (Chapter 8)

Week 8: 3/11

Exam 1

Due: Homework #7 (Chapter 9)

Week 9: 3/18

No class-Spring Break

Week 10: 3/25

Inferences for Two Population Means

Weiss, Chapter 10

Optional: Mandel, D. R. (2013). Counterterrorism and Muslim public opinion. (H. Cabayan, V. Sitterle, & Yandura M., Eds.) *Looking Back, Looking Forward: Perspectives on Terrorism and Responses to It: Strategic Multi-layer Assessment Occasional White Paper*. Department of Defense.

Week 11: 4/1

Chi-Square Procedures

Weiss, Chapter 13

Optional: Goli, M., & Rezaei, S. (2011). Radical Islamism and migrant integration in Denmark: An empirical inquiry. *Journal of Strategic Security*, 4, 81-114.

Due: Homework #8 (Chapter 10)

Due: Hypotheses for Data Analysis Paper

Course drop deadline

Week 12: 4/8

Descriptive Methods in Regression and Correlation

Weiss, Chapter 14

Due: Homework #9 (Chapter 13)

Week 13: 4/15

Inferential Methods in Regression and Correlation

Weiss, Chapter 15

Optional: Rigterink, A. S. (2015). Does security imply safety? On the (lack of) correlation between different aspects of security. *Stability: International Journal of Security and Development, 4*, 1-21.

Due: Homework #10 (Chapter 14)

Due: Critique

Due: Description of dataset for Data Analysis Paper

Week 14: 4/22

Multiple Regression Analysis

Weiss, Module A

Optional: Sun, I. Y. (2007). Policing domestic violence: Does officer gender matter? *Journal of Criminal Justice, 35*, 581-595.

Due: Homework #11 (Chapter 15)

Due: Description of Statistical Tests for Data Analysis Paper

Week 15: 4/29

Model Building in Regression

Weiss, Module B

Optional: Ahram, A. (2011). Origins and persistence of state-sponsored militias: Path-dependent processes in third world military development. *Journal of Strategic Studies, 34*, 531-555.

Friedman, J. A., Lerner, J. S., & Zeckhauser, R. (2017). Behavioral consequences of probabilistic precision: Experimental evidence from national security professionals. *International Organization, 71*, 803-826.

Due: Homework #12 (Module A)

Week 16: 5/6

Model Building and Bayesian Analysis

Optional: Stoycheff, Wibowo, Liu, and Xu. (2017). Online surveillance's effect on support for other extraordinary measures to prevent terrorism. *Mass Communication and Society, 20*, 784-799.

Due: Homework #13 (Module B)

Week 17: 5/13

Exam 2 at 7:00 pm

Due: Data Analysis Paper

* This calendar is subject to change.