

STAT 5385/ STAT 6385: STATISTICS IN RESEARCH

Fall 2024

Instructor: Rene Gutierrez Marquez	Time: T-Th 13:30 – 14:50
Email: rgutierrezmar@utep.edu	Place: Bell Hall 130A

CRN: 10686/14608.

Prerequisites: Math 3323 and Stat 4380

Office Hours: Tuesday and Thursday 14:50-15:30, Bell Hall 228.

Textbook: Applied Linear Regression Models by Kutner, Nachtsheim & Neter, Fourth Edition

Course Description: This graduate-level course offers a comprehensive introduction to regression analysis, a vital tool for examining relationships among variables and developing predictive models. The course covers a range of topics essential for understanding regression techniques, including simple and multiple linear regression, inference for regression parameters, and the construction of confidence and prediction intervals. Students will also explore model diagnostics, remedial measures, and model selection strategies to ensure robustness and accuracy in their analyses. In addition to linear regression methods, the course delves into logistic regression, generalized linear models, and nonlinear regression. Throughout the course, statistical software (**R**) will be employed for practical data analysis, enabling students to apply theoretical concepts to real-world datasets.

Course Objectives: By the end of this course, students will be able to:

- **Select Appropriate Methods:** Identify and apply suitable regression analysis techniques and statistical methods for addressing specific research problems.
- **Develop and Analyze Models:** Derive and formulate regression models—including simple, multiple, logistic, and generalized linear models—and use analytical methods to interpret and analyze data.
- **Diagnose and Remediate Issues:** Evaluate and verify the assumptions underlying regression models. Apply appropriate techniques to address any violations and ensure the accuracy and validity of results.
- **Utilize Statistical Software:** Employ statistical software (**R**) to conduct data analysis, interpret outputs, and effectively summarize findings.

Grading: There will be one midterm exam and one final exam as well as projects throughout the semester. The exams will be based on lecture notes, and material covered from the textbook. The final will be noncumulative, focusing on material covered since the midterm, however tools learned during the semester will be necessary for the final exam.

For the exams, students are permitted to bring handwritten notes. For the midterm, you may bring one 8.5" x 11" sheet of notes, written on both sides. For the final exam, you are allowed to bring two 8.5" x 11" sheets of handwritten notes. Exam dates will be announced in class or posted on Blackboard.

Grading:

Projects	30%
Midterm	35%
Final	35%

Make-up Policy: No late work will be accepted if the reason is not considered excusable. No make-up exam will be given unless there is a documented emergency.

Grading Scale:

90%-100% = A

80%-89% = B

70%-79% = C

60%-69% = D

0%-59% = F

Accommodations Policy: The University is committed to providing reasonable accommodations and auxiliary services to students, staff, faculty, job applicants, applicants for admissions, and other beneficiaries of University programs, services and activities with documented disabilities in order to provide them with equal opportunities to participate in programs, services, and activities in compliance with sections 503 and 504 of the Rehabilitation Act of 1973, as amended, and the Americans with Disabilities Act (ADA) of 1990 and the Americans with Disabilities Act Amendments Act (ADAAA) of 2008. Reasonable accommodations will be made unless it is determined that doing so would cause undue hardship on the University. Students requesting an accommodation based on a disability must register with the [UTEP Center for Accommodations and Support Services \(CASS\)](#). Contact the Center for Accommodations and Support Services at 915-747-5148, or email them at cass@utep.edu, or apply for accommodations online via the [CASS portal](#).

Excused Absences and/or course drop policy: According to UTEP Catalog, “At the discretion of the instructor, a student can be dropped from a course because of excessive absences or lack of effort. A grade of “W” will be assigned before the course drop deadline and a grade of “F” after the course drop deadline.” See Policies and Regulations in the UTEP Undergraduate Catalog for a list of excuse absences. Therefore, if I find that, due to non-performance in the course, you are at risk of failing, I will drop you from the course. I will provide 24 hours advance notice via email.

Or

I will not drop you from the course. However, if you feel that you are unable to complete the course successfully, please let me know and then contact the [Registrar’s Office](#) to initiate the drop process. If you do not, you are at risk of receiving an “F” for the course.

Academic Integrity: Academic dishonesty is prohibited and is considered a violation of the UTEP Handbook of Operating Procedures. It includes, but is not limited to, cheating, plagiarism, and collusion. Cheating may involve copying from or providing information to another student, possessing unauthorized materials during a test, or falsifying research data on laboratory reports. Plagiarism occurs when someone intentionally or knowingly represents the words or ideas of another as ones’ own. Collusion involves collaborating with another person to commit any academically dishonest act. Any act of academic dishonesty attempted by a UTEP student is unacceptable and will not be tolerated. All suspected violations of academic integrity at The University of Texas at El Paso must be reported to the [Office of Student Conduct and Conflict Resolution \(OSCCR\)](#) for possible disciplinary action. To learn more, please visit [HOOP: Student Conduct and Discipline](#).

Guidance on Artificial intelligence: The use of generative AI tools such as Chat GPT is permitted in this course for the following activities, which must be noted or cited:

- Reference

However, you may not use AI tools to complete the following activities:

- Project elaboration.

Students must cite any borrowed content sources to comply with all applicable citation guidelines, copyright law, and avoid plagiarism. Instances that violate these guidelines will be referred to the Office of Student Conduct and Conflict Resolution.

Course Resources: Where you can go for assistance:

Technology Resources

- **Help Desk:** Students experiencing technological challenges (email, Blackboard, software, etc.) can submit a ticket to the UTEP Helpdesk for assistance. Contact the Helpdesk via phone, email, chat, website, or in person if on campus.

Academic Resources

- **UTEP Library:** Access a wide range of resources including online, full-text access to thousands of journals and eBooks, plus reference service and librarian assistance for enrolled students.
- **University Writing Center (UWC):** Submit papers here for assistance with writing style and formatting, ask a tutor for help, and explore other writing resources.
- **Math Tutoring Center (MaRCS):** Ask a tutor for help and explore other available math resources.
- **History Tutoring Center (HTC):** Receive assistance with writing history papers, get help from a tutor, and explore other history resources.
- **RefWorks:** A bibliographic citation tool; check out the RefWorks tutorial, Fact Sheet, and Quick-Start Guide.
- **The Miner Learning Center:** Join peer-led study sessions in person or online to review content and discover study strategies in core curriculum courses.
- **UTEP Edge:** UTEP's cross-campus framework for student success and empowerment – develops students' assets through high-impact experiences made possible by the expertise and dedication of faculty, staff, alumni, and community partners.

Individual Resources

- **Student Success Help Desk (SSHHD):** Students experiencing challenges or obstacles to academic success including registration, financial, food, housing, and transposition resources may submit a ticket request for assistance to studentsuccess@utep.edu.
- **Military Student Success Center:** Assists personnel in any branch of service to reach their educational goals.
- **Center for Accommodations and Support Services:** Assists students with ADA-related accommodations for coursework, housing, and internships.
- **Counseling and Psychological Services:** Provides a variety of counseling services including individual, couples, and group sessions as well as career and disability assessments.
- **UTEP Food Pantry:** Non-perishable food items are available to students who are currently enrolled in classes. Bring a Miner Gold Card to Memorial Gym, Room 105, Monday through Friday, 10 a.m. to 2 p.m.