

THE UNIVERSITY OF TEXAS AT EL PASO
COLLEGE OF SCIENCE
DEPARTMENT OF MATHEMATICAL SCIENCES

Course #: STAT 5428
(CRN 13385)

Course Title: Introduction to Statistical Analysis

Credit Hrs: 4

Term: Fall 2019 (Instruction 08/26/2019-12/05/2019)

Course Meetings & Location: 09:30am – 10:50am TR Hudspeth Hall 213
11:00am – 11:50am TR Bell Hall 130

Prerequisite Courses: STAT 2480 with a grade of C or higher.

Instructor: Xiaogang Su

Office Location: Bell Hall 320

Contact Info: Phone: (915) 747-6860 [O]
xsu@utep.edu
Fax: (915) 744-6502

Office Hours: 2:00-2:50pm TR

Class Web page: <https://sites.google.com/site/xgsu00/stat-5428>

Textbook(s), Materials: Required: Daniel, W. W. and Cross, C. L. (2013).
Biostatistics: A Foundation for Analysis in the Health Sciences, 10th Edition. Hoboken, NJ:
JohnWiley & Sons, Inc.
ISBN-13: 978-1-118-30279-8

Recommended: Kerns, G. J. (2010). Introduction to Probability and Statistics Using R. ISBN: 978-0-557-24979-4.
Available at <http://cran.r-project.org/web/packages/IPSUR/vignettes/IPSUR.pdf>

Course Description and Learning Outcomes: Fundamental techniques for statistical data analysis, including basic probability concepts, inference about means and variances of two populations, analysis of variance and covariance, least squares and logistic regression, categorical data analysis, nonparametric tests and experimental design. Analysis of data sets from biological and other application areas using statistical software packages, checking validity of modeling assumptions, and alternatives when modeling assumptions are not satisfied. Computer simulations are used to illustrate concepts such as power and confidence level. Open to students of all disciplines.

Topic Outline The course is aimed to provide coverage of commonly used statistical methods and show how to use them with R to analyze data and interpret results. This course schedule below is tentative and the instructor may vary from it when necessary. Please use this primarily as an outline of the course materials covered throughout the semester and refer to the class web site for updated information.

1. Introduction and Reviews – The basics and preliminaries
2. Introduction to R
3. Describing data: descriptive statistics and statistical graphics
4. One-Sample Inferences
 - a. Statistical Inference: Estimation and hypothesis testing
 - b. Continuous data - mean/median, variance, skewness, and kurtosis
 - c. Categorical data – proportion, one-way contingency tables
5. Two-Sample Inferences (similarly aligned)
6. Designs of experiments and ANOVA
7. Simple/Multiple Linear Regression
8. Model Selection and Diagnostics
9. Logistic Regression (if time allows)

Course

Activities/Assignments: Lecture Component (class instructions) plus Lab Component (mostly on programming and exercise problems)

Course Schedule: 08/26 Class starts
11/01 Class drop deadline
12/09 - 12/13 Final Exam Period
Holidays
09/02 Labor Day
11/28-11/29 Thanksgiving

Grading Policy: There will be three midterms and one comprehensive final exam, plus several computer projects and a few in-class pop quizzes, which, in together, add up to the final grade. Homework assignments will be made available on the course web page. No homework will be collected or graded. But you are highly recommended to do homework regularly and independently.

	Date and Time	Proportion
Midterm Exam I	09/26 Thursday 9:30-10:50am	20%
Midterm Exam II	10/24 Thursday 9:30-10:50am	20%
Midterm Exam III	11/21 Thursday 9:30-10:50am	20%
Computer Projects	TBA	15%
In-Class Pop Quizzes	TBA	5%
Final Exam	12/10 Tuesday, 10:00am-12:45pm	25%

Letter grades are determined according to the following scale below. Note these raw final scores are out of 105 with five extra credits; however, the extra credits are only applicable to those who complete all assignments and exams without any unexcused absence.

Grade Score

- A > 90
- B 80-89
- C 70-79
- D 60-69
- F <60

Make-up Policy: Incomplete grades and make-up exams are given only in extreme instances and only with prior permission of the instructor. All assigned projects must be turned in on time. No late coursework or project will be accepted, except extreme scenarios.

Attendance Policy: Class attendance is required. Students are expected to actively participate in class discussions and group activities. A late arrival of 15 minutes or more will be considered as an absence. Students will be dropped for four or more unjustified absences from class or lab session. Any two or more unjustified absences from class or lab session will cause loss of eligibility of receiving extra credits. If you expect to miss up to 10 class hours for ANY REASON, then please do not consider taking this course.

Academic Integrity Policy: The University policy is that all suspected cases or acts of alleged scholastic dishonesty must be referred to the Dean of Students for investigation and appropriate disposition. Any student who commits an act of scholastic dishonesty is subject to discipline. Scholastic dishonesty includes, but is not limited to cheating, plagiarism, collusion, submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts. Each student is responsible for notice of and compliance with the provisions of the Regents' Rules and Regulations, which are available for inspection electronically at <http://www.utsystem.edu/bor/rules/homepage.htm>

All students are expected and required to obey the law, to comply with the Regents' Rules and Regulations, with System and University rules, with directives issued by an administrative official in the course of his or her authorized duties, and to observe standards of conduct appropriate for the University. A student who enrolls at the University is charged with the obligation to conduct himself/herself in a manner compatible with the University's function as an educational institution.

Any student who engages in conduct that is prohibited by Regents' Rules and Regulations, U. T. System or University rules, specific instructions issued by an administrative official or by federal, state, or local laws is subject to discipline, whether such conduct takes place on or off campus or whether civil or criminal penalties are also imposed for such conduct.

Civility Statement: Calculators may not be shared during quizzes and exams. Please do not use cell phones, pagers, iPods, MP3 players, blue tooth devices, etc. during class. Cell phones and pagers should be set to silent or vibrate, and any calls should be taken outside of class. Please do not wear headsets or blue tooth devices during class. Please don't talk in class. Cell phone calculators may not be used on quizzes or exams. Active participation in class is expected, teamwork in class will be implemented.

Disability Statement: If a student has or suspects she/he has a disability and needs an accommodation, he/she should contact The Center for Accommodations and Support services (CASS) at 747-5148 or at <cass@utep.edu> or go to Room 106 Union East Building. The student is responsible for presenting to the instructor any CASS accommodation letters and instructions.

Military Statement: If you are a military student with the potential of being called to military service and/or training during the semester, please contact me by the end of the first week of class.

UTEP College of Science Policies: **The UTEP Fall 2019 drop/withdraws deadline is April 5th, 2019.** The College of Science will remain aligned with the University and not approve any drop requests after that date.

All grades of Incomplete must be accompanied by an Incomplete Contract that has been signed by the instructor of record, student, departmental chair, and the dean. Although UTEP will allow a maximum of one year to complete this contract, the College of Science requests it be limited to month based upon completion data. A grade of Incomplete is only used in extraordinary circumstances confined to a limited event such as a missed exam, project, or lab. If the student has missed a significant amount of work (e.g. multiple assignments or tasks), a grade of Incomplete is not appropriate or warranted.