

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

Course #: STAT 4385(23005)
Course Title: Applied Regression Analysis
Credit Hrs: 3
Term: Spring 2021
Course Meetings & Location: Online Course: 01/19/21-05/06/21

Prerequisite Courses: Minimum Grade of C on STAT 2480 or 3330 or 3320.

Instructor: Francis Biney

Office Hours: TR 3.30pm -5.30 pm via Zoom

Class Web page: Black Board

Textbook(s), Materials: Required: *Practical Regression Analysis*
By Faraway, 2002 (open-source text – to be provided)

Suggested: *Special reprint of Applied Linear Statistical Models*, 5th ed., by
Kutner, Neter, Nachtsheim & Li

Linear Models in R, Faraway, J. 2005

An Introduction to Statistical Learning with R application
By J. Gareth, Witten, Hastie, Tibshirana

Course Description and Learning Outcomes: Students will learn to apply appropriate statistical techniques on model building, fitting, validation and subsequent inferences for various problems. Through assigned homework, students will also acquire skills to identify real problems that require advanced mathematical and statistical knowledge. The course will cover statistical inference (hypothesis tests and confidence intervals), simple and multiple linear regression, time series and forecasting. Students will have opportunities to gain hands-on experiences with real-world data projects.

- Topic Outline:
1. Introduction & Review: probability, expectation, distributions, statistical inference, types of regression models.
 2. Simple linear regression models
 3. Multiple linear regression models
 4. Model selection
 5. Model diagnostics
 6. Several special models: Logistic Regression, one/two-way ANOVA, interaction, polynomial models.
 7. Time series models (if time allow)
 8. Forecasting and application of time series models (if time allow)

Course Activities/Assignments: Students are expected to watch lecture video and do assigned homework. Homework and computer project will be assigned throughout the semester. We will also have two mid terms and a final exams.

Course Schedule: January 19: First Day of Classes
February 3: Census Day (Last day to drop without a W)
March 15 -19th :Spring Break
April 1:Drop Day (Last day to drop with a W)
TBA: Exams 1
TBA: Exams 2
TBA: Final exams

Make-up Policy: All assignments must be turned in on time. Communicate with me if you are unable to turn something in due to an excused reason.

Grading Policy: There will be a few of R-based computer project assignments, which make up 20% to your final score. There will also be a few Homework, which make up 20%. Two midterm exams each 15% and the final exam is comprehensive worth 30%. No make-up exam will be given and no late project submission is accepted without justifiable reasons.

Letter grades are determined according to A 90+, B 80-89, C 70-79,
D 60-69, F <60

Attendance Policy: You are expected to work toward the completion of the course assignments daily. Attendance in an online course is measured by the completed tasks. Failing to complete tasks is equivalent to being absent. Failure to complete assignments for several weeks may result in you being dropped from the course. You are expected to check Blackboard and your UTEP miners e-mail regularly for announcements .

Academic Integrity Policy: Please see <http://academics.utep.edu/Default.aspx?tabid=23785>

Civility Statement: This is a class where participation is required. You will be participating in classroom discussions. All students will be treated with respect.

Disability Statement: If you have a disability and need classroom accommodations, please contact The Center for Accommodations and Support Services (CASS) at 747-5148, or by email to cass@utep.edu, or visit their office located in UTEP Union East, Room 106. For additional information, please visit the CASS website at www.sa.utep.edu/cass.

Military Statement: If you are a military student with the potential of being called to military service and /or training during the course of the semester, you are encouraged to contact me as soon as possible.