

STAT 608 - Least Squares and Regression Analysis

Prerequisites: STAT 601 or 641

Text: Detailed class notes will be used in place of a text book.

Case Study: *Store24* (Harvard Business School Case Study 9-103-058) by Susan Kulp, V.G. Narayanan, Dennis Campbell

Computing: Data sets will be analyzed using the R software package, which is available free at <http://www.r-project.org/>. R-scripts which perform every calculation in the class notes are available on the course website

Topics:

1. Introduction
2. Simple linear regression
3. Diagnostics and transformations for simple linear regression
4. Weighted least squares
5. Multiple linear regression
6. Diagnostics and transformations for multiple linear regression
7. Variable selection
8. Logistic regression
9. Serially correlated errors
10. Mixed models

Grades:

Homework	30%
Midterm Exam	30%
Final Exam	40%

Exams: There will be closed book Midterm Exam and a comprehensive closed book Final Exam. One single sided 8.5" × 11" page of notes is allowed for the midterm and two such single sided pages are allowed for the final.

Make-up: Make-up of missed exams will be allowed only in the case of a University excused absence. If at all possible, the instructor is to be notified of the absence prior to the completion of the scheduled exam. If necessary, a make-up exam will be given in the last week of the semester and may be comprehensive.

Homework: Homework will be regularly assigned and collected. Dana Bergstresser will be first grader of all homework assignments. In addition, I will review all homework assignments. Please adequately explain your reasoning when answering homework problems. You may discuss the homework problems with other students, but you should write up your solutions independently. Do not copy other students' solutions as plagiarism is a serious example of academic misconduct. (For details, see <http://compliance.tamu.edu/CodeConduct.aspx>.)

- **ADA, Plagiarism, and Academic Integrity Statement:**

TAMU STATEMENT ON DISABILITIES: The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation for their disabilities. If you believe you have a disability requiring an accommodation, please contact the Office of Disabilities Services in Room B118, Cain Hall. The phone number is 845-1637.

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INCOMPLETE GRADE: A temporary grade of I (Incomplete) at the end of a semester indicates that the student has completed the course with the exception of a major quiz, final exam, or other work. The instructor shall give this grade only when the deficiency is due to an authorized absence or other cause beyond the control of the student.