

Applied Statistics (MATH 4351)

Meeting Times: 12:00-12:50 am MWF in RBN 4019

Last day to withdraw: Wednesday, March 24

Final Exam: Wednesday, May 5, 12:30-2:30

Instructor: Nathan Smith

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Office Hours: 11-12 MWF

Text: *Applied Regression Analysis, Linear Models, and Related Methods* by John Fox. ISBN 0-8039-4540-X.

Course Topics: Point estimators, confidence intervals, and hypothesis testing, (quickly). Then the main focus will be on simple linear regression, multiple regression, and analysis of variance, model fitting, and diagnostics.

Student Learning Outcomes: By the end of the course students should be able to:

1. Fit appropriate single variable linear models to appropriate data sets and draw conclusions from the model produced.
2. Analyze single variable linear models for violation of regression assumptions, make appropriate transformations, and compare and contrast competing models.
3. Fit appropriate multi-variable linear models to appropriate data sets and draw conclusions from the model produced.
4. Analyze multi-variable linear models for violation of regression assumptions, make appropriate transformations, and compare and contrast competing models.

Computing: Statistics today is done on a computer. We will be using the statistical package/programming language R, which is an implementation of the S programming language designed at Bell Labs. R is available for free from <http://www.r-project.org/> for windows, mac, and unix platforms, and is available for your use in the computer lab in RBN 4021. If you have a computer available to you for use at home, you are encouraged to obtain and install R for use in this course.

Grading: There will be two midterm exams as well as a final exam. Each will count one fifth of your final grade. The remaining two fifths of your final grade will be based upon homework and in-class assignments.

Homework Help: You are always welcome to come by my office for help with homework. I will be in my office during the posted office hours. If I am in my office you are also welcome just to drop in. If I can't help you immediately, we can usually find a time that is better for both of us. Before coming to my office for homework help, you must have at least attempted the problems that you have questions about. You must bring your work so that I can examine it with you to determine your strengths and weaknesses. For this reason, I strongly encourage you to use a statistics notebook or folder and to use a diskette, USB thumb drive, rewritable CD or similar for your computing assignments. You should never come to my office for help without these.

Missed work: It is not expected that you will miss the midterm. If an emergency situation or university-sanctioned event forces your absence on the day of the midterm and if you have discussed the situation in advance with the instructor, your final exam grade will be used to replace your midterm.

Student Academic Conduct: It is your responsibility to learn the material in this course for your own benefit. You should not let this discourage you from working together on your homework but in the end what you turn in should reflect your understanding, not just be copied from someone else. *During the midterm exams and the final exam, a code of honor will apply under which students are to work alone and neither give help to others nor receive help from any sources.* Students are also expected to help enforce this code. Students are encouraged to obtain a copy of *A Student Guide to Conduct and Discipline at UT Tyler*, available in the Office of Student Affairs.

University Policies: For University policies concerning Students' Rights and Responsibilities, Grade Replacement/Forgiveness, State-Mandated Course Drop Policy, Disability Services, Student Absence due to Religious Observance, Student Absence for University-Sponsored Events and Activities, and the Social Security and FERPA Statement please see: <http://www.uttyler.edu/academicaffairs/syllabuspolicies.pdf>.