

Applied Statistics (MATH 4351)

Meeting Times: 11:15-12:10 am MWF in RBN 3039

Last day to withdraw: Monday, March 28, 2022.

Instructor: Nathan Smith

Office: RBN 4007

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Office Hours: TBA

Text: We will be using an online text available on the course canvas page.

Course Topics: Point estimators, confidence intervals, and hypothesis testing, (quickly). Then the main focus will be on regression and classification models: simple linear regression, multiple regression, analysis of variance, logistic regression, discriminant analysis, model selection, and diagnostics. We will consider other topics as time and student interest permit.

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

1. Fit appropriate regression models to data sets and draw conclusions from the model produced.
2. Fit appropriate classification models to data sets and draw conclusions from the model produced.
3. Apply model diagnostics and variable selection procedures.
4. Be able to 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. This being 2022, you probably have a laptop that you should probably bring to class with you and you should probably install **R** on it.

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. Earning 90% of the possible points will result in a grade no lower than 'A,' earning 80% of the possible points will result in a grade no lower than 'B,' and so forth.

Missed work: It is not expected that you will miss the tests. If an emergency situation or university-sanctioned event forces your absence on test day and if you have discussed the

situation in advance with the instructor, your final exam grade will be used to replace your lowest test grade.

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 tests 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/syllabuspolices.pdf>.