ST503–001: Fundamentals of Linear Models  Fall 2018

INSTRUCTOR DATA.

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COURSE DATA.

Section: 001 (in class)
Pre-req’s: ST501 and preferably an applied stat course, e.g., ST511 or ST512
Co-req’s: ST502
          Faraway, Extending the Linear Model with R (online via NCSU library)
Software: R, free to download at https://cran.r-project.org
Lectures: Mondays & Wednesdays, 8:30–9:45am, Winston Hall 131
TA: Mr. Chang Liu (email: cliu22@ncsu.edu)
Office hours: with instructor, Tuesday 1:00–2:00pm, or by appointment
             with TA, Monday 10:30–11:30am and Tuesday 10:00–11:00am
URL: http://www.stat.ncsu.edu/people/rmartin/courses/st503/
     (most if not all of the course material will be on Moodle)

COURSE CONTENT. ST503 focuses on the theoretical, methodological, and computational aspects of linear and generalized linear models. Topics include estimation via least squares and maximum likelihood, distribution theory, inference and prediction, model building strategies (e.g., diagnostic plots/tests and variable selection), and extensions to certain non-linear models. A more detailed outline is on the course website.

ASSESSMENTS. There will be “weekly” homework assignments, one midterm exam, and a cumulative final exam. More details about each below.

• Homework. These will be a mix of theory and applied/computational problems, mainly from the textbook. For full credit, sufficient work must be shown; for applied/computational problems, this includes providing the code and relevant output upon which your solution is based. Submissions can be either typed (preferred) or handwritten; in either case, the presentation must be clear and organized. Homework will be collected at the beginning of class on the day its due.

• Exams. The tentative date for the midterm exam is Wednesday, October 10th, and the final exam will be on Wednesday, December 12th, the day set by the university. Exams will be closed-book but one page—8.5 × 11, front and back—of handwritten notes is allowed for the midterm, and two such pages are allowed for the final. The exams may require some numerical calculations, so students will need a simple calculator, one that can evaluate square roots, exponentials, and logarithms.
Grades. Homework is worth 25%, the midterm exam is worth 35%, and the final exam is worth 40%. Grades will be assigned based on the rule:

\[
\begin{align*}
A+ & \geq 96 > A \geq 93 > A- \geq 90 \\
B+ & \geq 86 > B \geq 83 > B- \geq 80 \\
C+ & \geq 76 > C \geq 73 > C- \geq 70 \\
D+ & \geq 66 > D \geq 63 > D- \geq 60 > F.
\end{align*}
\]

The instructor reserves the right to make adjustments to the overall grading policy, but the letter grade cutoffs will be no stricter than those advertised above.

Miscellany.

- Attendance is expected at all lectures.
- No late homework assignments will be accepted, but the lowest homework score will be dropped.
- Disputes about homework/exam grading must be brought to the instructor’s attention within one week after the graded paper is returned.
- Students may discuss the homework problems with others. However, each student must submit their own independent write-up of the solutions. Copying someone else’s work—including on-line resources—is not acceptable and may result in disciplinary action. The instructor is committed to upholding the university’s policy on academic integrity, as described in the Code of Student Conduct.\(^1\)
- Reasonable accommodations will be made for students with verifiable disabilities. In order to take advantage of available accommodations, students must register with Disability Services for Students.\(^2\) Any student who feels they may need an accommodation based on the impact of a disability should contact the instructor privately to discuss your specific needs.
- Students are responsible for reading, understanding, and adhering to the university’s policies, regulations, and rules.\(^4\)

\(^1\)http://policies.ncsu.edu/policy/pol-11-35-01
\(^2\)http://www.ncsu.edu/provost/offices/affirm_action/dss/
\(^3\)https://policies.ncsu.edu/regulation/reg-02-20-01
\(^4\)https://policies.ncsu.edu