

Instructor

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Office hours: Mondays after class, Wednesdays after class, and by appointment
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STAT 705 website: Available through www.chrisbilder.com; additional items on Canvas

Supplementary textbooks

Faraway, J. (2025). *Linear Models with R*, 3rd edition. CRC Press.
Fieller, N. (2015). *Basics of Matrix Algebra for Statistics with R*. CRC Press.
Fox, J. and Weisberg, H. (2018). *An R Companion to Applied Regression*, 3rd edition. Sage.
Kutner, M., Nachtsheim, C., and Neter, J. (2004). *Applied Linear Regression Models*, 4th edition. McGraw Hill.

Prerequisites

One previous statistics course

Grades

There will be three regular tests during the semester and one comprehensive final at the end of the semester. With these three regular tests, the lowest grade will be dropped. If you miss a test, it will be your drop test. This policy includes class absences that are “university excused” or due to extenuating circumstances. If you miss more than one test, please contact me to discuss the situation and include any documented proof needed to support your case.

Overall course grades will be based on the following:

	Highest test	2nd highest test	Final	Projects and quizzes
% of grade	25%	25%	20%	30%

Grading scale:

A	B	C	D	F
$\geq 90\%$ and $\leq 100\%$	$\geq 80\%$ and $< 90\%$	$\geq 70\%$ and $< 80\%$	$\geq 60\%$ and $< 70\%$	$< 60\%$

No late projects or quizzes are accepted.

I recommend completing the projects in groups. If you work in a group, all group members are expected to participate equally and have a complete understanding of all components for it. I will lower a student's project grade if they do not abide by this group work policy.

Statistical software

All computations and plots are required to be completed with the R software package. R is available to download for free from <http://www.r-project.org>. Links to download the Windows and Mac versions are <http://cran.r-project.org/bin/windows/base> and <https://cran.r-project.org/bin/macosx>, respectively.

Class recordings

Classes will be recorded during the semester. Links to these recordings will be posted to the schedule web page on the course website. Please use these recordings to review and as a back-up if extenuating circumstances prevent you from attending class.

Final exam

The final exam is scheduled for 11:50AM-1:40PM on Monday, December 14.

Learning outcomes

After completing the course, students will be able to do the following:

1. Write a model in its correct form
2. Estimate a model and account for variability with it
3. Perform statistical inference procedures relative to the model
4. Formulate explanatory variables
5. Diagnose problems with a model
6. Perform model selection
7. Implement estimation and plotting procedures in R
8. Communicate results from the statistical analysis

Expectations of students

1. Understand all the material in the course notes
2. Understand all programming code and calculations
3. Reproduce all parts of the examples in the course notes
4. Watch the videos
5. Ask questions when something is not clear

AI

The use of AI is not allowed for any graded items in the course.

Additional information

Please see <https://www.k-state.edu/provost/policies-resources/classroom-policies-teaching-resources/course-syllabi-statements>.