

STAT 6450: Applied Regression Analysis

Spring 2016

Instructor: Dr. Xinyi Xu

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Office Hours: Thursday 1:30-3pm

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Lecture Hours: WF 3-4:50pm, Cockins Hall (CH) 232

Prerequisites: A good background in Statistics 6201 materials (or at least 3 credit hours in calculus-based statistics). Knowledge of matrix algebra and computing skills will be helpful.

Course Description: This course aims to provide an introduction to regression analysis techniques and their applications in practice. We assume that students are familiar with organizing and summarizing data, the nature of relationships between variables, sampling distributions and the underlying rationale for hypothesis tests and confidence intervals. Core topics covered in this course include: Simple linear regression, multiple linear regression, model diagnostics and model selection, and regression analysis with categorical variables.

Text: *Applied Linear Regression Models*, 4th Edition by Kutner, Nachtsheim, and Neter, 2004.

Unless instructed otherwise, you are responsible for all the materials in the sections of the book that are covered in lecture even if some of the material in the book section is not covered in class. If you are unsure if you are responsible for a particular topic, be sure to ask the instructor.

Website: <https://carmen.osu.edu/>

Many course materials will be made available here, including important announcements, homework assignments and solutions, and a select set of course handouts.

Statistical Computing: You will be required to do some basic statistical analyses on the computer using the statistical software package R for your assignments. Information on R will be given on the course website.

Grading:

Homework	30%
Midterm	30%
Comprehensive Final	40%

Homework: Homework will be collected approximately bi-weekly. **NO late homework will be accepted.** When you put together your homework solutions, be sure to include computer outputs with edits and annotations. You may lose points if the grader has trouble following the thread of your solution. Moreover, being able to interpret results from a statistical analysis and explain those results to a non-statistician are crucially important skills. We work to build those skills in this class. Thus, solutions to applied problems must always be given in proper English in terms of the problem. You are encouraged to work together, but do not copy any part of a homework. Each student must produce his/her own homework to be handed in.

Exams: There will be one midterm and one final exam.

Midterm: March 2, Wednesday, 3-4pm

Final (Comprehensive): April 28, Thursday, 4-5:45pm

- Both exams will be in-class, close-book/closed-notes; however, you will be allowed a calculator and double-sided 8.5"×11" formula sheets (one page for the midterm and two pages for the final).
- There will be NO makeup exams. The only excuses for missing an exam are a serious illness or a major family crisis. Proof must be provided in the form of an official document. A note from a family member alone is not sufficient.
- You have until one week after receiving your grades on the exams to dispute the grade; the same applies to any homework grade. Note that when asking for a question to be re-graded, the entire assignment/exam may be re-graded, and so you run the risk of losing more points than you gain back.

Academic Misconduct: Academic misconduct **will not be tolerated** and will be dealt with procedurally in accordance with University Rule (<http://oaa.osu.edu/procedures>).

Special Accommodations: Students with disabilities that have been certified by the Office of Disability Services will be appropriately accommodated and should inform the instructor as soon as possible of their needs. The Office for Disability Services is located in 150 Pomerene Hall, 1760 Neil Avenue; telephone 292-3307, TDD 292-0901; <http://www.ods.osu.edu>.