STAT 5302: Intermediate Data Analysis II

Autumn 2016

Instructor: **Xinyi Xu**
Office: 440G Cockins Hall
Email: xinyi@stat.osu.edu
Office Hours: F noon-1:30pm

Grader: **Achal Awasthi**
Email: awasthi.12@osu.edu
Office Hours: MF noon-1pm

Lecture Hours: MWF 10:20-11:15am, Scott Lab 125

Prerequisites: 5301 or permission of instructor.

Text: *The Statistical Sleuth – A Course in methods of data analysis,* 3rd Edition, by Ramsey and Schafer, Duxbury Press, 2012.   The textbook is on reserve in the 18th Avenue Library.

Course Description: Statistics 5302 is the second course in a two semester sequence in Intermediate Data Analysis.   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.   We also assume that students are comfortable with a variety of models and inferential procedures.   Specifically, the material in 5302 relies heavily on the additive model (see the early part of the text for a description of this model) and one-way ANOVA.   The course will cover (simple and multiple) linear regression and ANOVA designs beyond the one-way layout. For each of the common statistical methods covered in the course, we will focus on generation of appropriate models for data, estimation of the model parameters and their inference, and model diagnostics.   Applications of the methods will be illustrated with data analysis.

STAT 5302 is a *GE Data Analysis* course.

Goals: Students develop skills in drawing conclusions and critically evaluating results based on data.

Expected Learning outcomes: Students understand basic concepts of statistics and probability, comprehend methods needed to analyze and critically evaluate statistical arguments, and recognize the importance of statistical ideas.

Website: Many course materials will be available on Canvas, including important announcements, homework assignments and solutions, and a selected 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 output as part of your answer.   Computer output alone without proper interpretation of the result would not be considered a complete answer either and you may lose points.   You don't need to include R script itself in your homework unless it is necessary to justify your answer.

Exams: There will be one midterm and one final exam.
    Midterm (tentative): October 17, Monday, in class
    Final (Comprehensive):   December 13, Tuesday, 10-11:45pm
- 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: Although students are encouraged to work together on assignments, each student must submit their own written work in his or her own words.   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 certi_ed by the Office for 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.ohio-state.edu/ .