Syllabus for Stat 6910: Applied Statistics I

Instructor: Dr. Laura Kubatko
Office: 219 Cockins Hall
Office Hours: MR 11:00am-12:00pm, other times by appointment
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Prerequisite: Stat 6801 (may be taken concurrently), or permission of instructor

Texts:

1. *Introduction to Probability and Statistics Using R*, G. J. Kerns, available at `https://cran.r-project.org/web/packages/IPSUR/vignettes/IPSUR.pdf`

2. *Design and Analysis of Experiments*, A.M. Dean and D. Voss, Springer.

Course Description and Learning Outcomes: Statistics 6910 is a course on applied statistics. It will quickly cover material on descriptive statistics and on the basic techniques of inference (hypothesis tests and confidence intervals), including techniques appropriate for samples from normal distributions, techniques based on randomization theory, and techniques for simple, tabular data. Following the introductory material, we will move on to experimental design. In this part of the course, we will cover the basic principles of design and the techniques used to analyze experiments that follow standard experimental designs. Specific designs to be covered include one-way ANOVA, two-and-higher-way ANOVA, factorial designs, and block designs.

Upon successful completion of the course, students will be able to

1. Grasp the basics of descriptive and inferential statistics from an applied perspective

2. Appreciate the importance of the assumptions that the models are based on

3. Make sound decisions for an analysis

4. Understand and use appropriate statistical notation and terminology

5. Implement formal techniques flawlessly

6. Summarize an analysis appropriately

Website: Please visit `http://www.carmen.osu.edu/`. Check Carmen periodically for announcements about the class and other class material.

Homework: Homework problems will be assigned and graded weekly. Homework must be turned in during lecture on the date it is due. There is a penalty of 10% per day for homework turned in late. If you are unable to attend lecture when the homework is due, you must bring it to me in my office **earlier** in the day. Please write your name on the top of each page of your assignment, and staple the pages together.

Exams: There will be two in-class exams and a final exam. Statistical tables will be provided as needed. Calculators may be used on the exams, but the calculators on cell phones, PDAs, or any other communication device are NOT allowed.

Full credit on homework and exam problems: You need to show your justification for or work on each homework or exam problem. Answers without work will not receive full credit.

Final Grade: Your final course grade will be based on the following weighting of assessment components:
Homework – 20%   Midterm 1 – 20%
Midterm 2 – 20%   Final exam – 40% **Tuesday, December 15, 8:00-9:45am**

R Software: The R and RStudio software will be used for the course. This software is installed in most computer labs on campus. It is free software that you can download and install on your personal machines as well. We will spend some time getting started with R in the first few weeks of the course. The online text by Kerns is also a good resource for this.

Course Teaching Assistant: Your TA is Mr. Han Zhang. Mr. Zhang will hold office hours on Mondays from 10:00-11:00am.

Academic Misconduct: Please help us to maintain an academic environment of mutual respect, fair treatment, and personal growth. You are expected to produce original and independent work for exams. Although students are often encouraged to work together on homework assignments, all students must submit their own written work IN THEIR OWN WORDS. Academic misconduct will not be tolerated and will be dealt with procedurally in accordance with University Rule 3335-31-02. (This policy can be found at http://oaa.osu.edu/procedures/1.0.html.)

E-mail Correspondence: In order to protect your privacy, all course e-mail correspondence must be done through a valid OSU name.nn account. If you have not activated your OSU email account, you can activate your account at https://acctmgt.service.ohio-state.edu/cgi-bin/KRB1EntryAdd.

Special Accommodations: All students who feel they may need accommodations based on the impact of a disability should contact the instructor privately to discuss their specific needs. Students with documented disabilities must also contact the Office of Disability Services (ODS) in 150 Pomerene Hall (phone: 292-3307) to coordinate reasonable accommodations for the course. ODS forms must be given to your instructor as early in the quarter as possible to be filled out and returned to you.

Drop dates: The last day to drop the course without a "W" appearing on your record is Friday, September 18. The last day to drop the course without petitioning is Friday, October 30.