Statistics 431 – Statistical Analysis - Spring 2021

Instructor: Dr. Chris Williams
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Zoom Office Hours (Zoom only for Spring 2021): The hour after class or by appointment.
Meeting times: MWF 9:30-10:20
Prerequisites: Stat 251, Stat 301, or equivalent coursework.

Course Text
An Introduction to Statistical Methods and Data Analysis (7th ed.), by R.L. Ott and M. Longnecker.

Course Website
https://webpages.uidaho.edu/~chrisw/stat431live/
The website will contain announcements, summaries of lectures, lists of assignments, and other information.
The website and blackboard complement each other and will both be used throughout the course. Be sure to use the link above, if you google the course you may end up on a previous year’s version!

Course Goals
To develop an understanding of the role of statistics in scientific research, and to develop the ability to apply appropriate statistical methods to one's own research data.

Course Learning Outcomes
1. Understand multiple linear regression models. Be able to interpret and assess the validity of results from these models.
2. Be able to distinguish between common experimental designs such as Completely Randomized, Randomized Block, and Completely Randomized Factorial. Be able to interpret results of analyses of data from these designs and assess the validity of results from these models.
3. Understand and be able to interpret results of the analysis of covariance and assess the validity of results from these models.
4. Understand and be able to interpret results of chi-square tests of association for categorical data.

Lecture Outline and Software
We will cover much of the material in the second half of the text, to be detailed in the lecture schedule. We will use both the SAS and R computer packages, code will be available for both on the lecture page. Either choice will work fine for the course.
The HyFlex Model for Spring 2021
The hyflex model is designed to allow in-person interaction with instructors while providing a safe learning environment. My implementation of this model for Spring 2021 for this MWF class is to have roughly one-third of the students attend each meeting in-person. An announcement from Blackboard will let you know which day you should attend. The class meetings will also be recorded and posted in case you cannot attend.

Grades
The course grade will be determined by four take-home exams and an individual project. The exams will be handed in on Blackboard and are worth 20%, 25%, 25%, and 20%, respectively, of the course grade. The course project is worth 10% of the grade and will be handed in on Blackboard in two parts. The first part will be due around four weeks into the semester. This first part is a description of your proposed project that allows me to give you feedback before you start working on it. There will be homework sets assigned but not collected, they will be reviewed in class and will exemplify the types of problems on the exams.

Academic Honesty
You should be aware of University of Idaho policies concerning academic honesty (see Article II of the Student Code of Conduct). Breaches of academic honesty will not be tolerated and will result in an F for the course and referral to the Dean of Students for further disciplinary action.

Center for Disability Access and Resources
University of Idaho's Center for Disability Access and Resources recommends that faculty and instructors include on all syllabi a statement informing students with disabilities of their right to request reasonable accommodations in the classroom.
Center for Disability Access and Resources (CDAR) coordinates services to meet the educational needs of students with temporary or permanent disabilities. CDAR works with students and faculty to arrange reasonable accommodations and promote an environment that is inclusive for all learners.
Students with disabilities needing accommodations to fully participate in this class should contact Center for Disability Access and Resources (CDAR). All accommodations must be approved through CDAR prior to being implemented. To learn more about the accommodation process, visit CDAR's website at www.uidaho.edu/cdar or call 208-885-6307.

University of Idaho Classroom Learning Civility Clause
In any environment in which people gather to learn, it is essential that all members feel as free and safe as possible in their participation. To this end, it is expected that everyone in this course will be treated with mutual respect and civility, with an understanding that all of us (students, instructors, professors, guests, and teaching assistants) will be respectful and civil to one another in discussion, in action, in teaching, and in learning.
Should you feel our classroom interactions do not reflect an environment of civility and respect, you are encouraged to meet with your instructor during office hours to discuss your concern. Additional resources for expression of concern or requesting support include the Dean of Students office and staff, the UI Counseling & Testing Center’s confidential services, or the UI Office of Human Rights, Access, & Inclusion.