Course Overview and Syllabus: Math 3350, Sec 05. Statistical Methods, Fall 2025

Course Website: https://jeswheel.github.io/3350_f25

Instructor Information

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Office: PS 314C
Office Hours:

- TBD

You can contact me during office hours or via Email. I will try my best to respond to questions within 24 hours during Mon-Fri. Feel free to email me over the weekends, but I may not be actively monitoring my emails during these times and you may have longer response times.

Course Description

A calculus-based introduction to statistical procedures, including simple regression, basic experimental design, and non-parametric methods. PREREQ: MATH 1160 or MATH 1170.

This course is 3 Credit Hours, and we meet every Monday, Wednesday, Friday 9:00 am - 9:50 am, PS 324, with the exception of university-observed holidays and breaks.

This course is a prerequisite for Math 4457, Math 4458, and Math 4459. A student must earn a C- or better in this class in order to use this as a pre-requisite for one of these courses.

Course Objectives and Outcomes

- Students will perform a descriptive data analysis for one variable and descrive the relation between two variables.
  - Select and display the proper graph for the data.
  - Compute the appropriate numberical values for summarizing the variable or relationship.

  - Write an informative but brief descritption of the variable or relation between variables in the context of the problem.

- Students will demonstrate an understanding of probability models.
  - Perform computations using the basic axioms and rules of probability.
  - Compute probabilities using a common probability model.

- Students will perform an inferential analysis.
  - Perform a hypothesis test or construct a confidence interval.
  - Assess the required assumptions and conditions.
  - Select and compute the appropriate numerical values.
  - State a correct conclusion in the context of the problem.

Course Format

This is a standard class where we will meet in-person. All students are required to attend all classes during the first week. Any student having to miss during the first week needs instructor approval. Students will be dropped from their courses if they do not attend the first week and do not have permission from the instructor.

After the first week of classes, attendance is expected but will not be recorded. Lectures will not be recorded, but slides will be available to students who miss lecture. Course materials, activities, and assignments will be posted on Canvas.

General course information can be found at the course website: `https://jeswheel.github.io/3350_f25`

Assessment Methods

Student understanding will be assessed via homework, quizes, a midterm exam, and a final exam.

Textbook and Course Materials

Baldi, Brigitte, and David S. Moore. *The practice of statistics in the life sciences*. Freeman, 2012. ISBN: 9781319403348.

Software

This semester we will use the  programming language; for the purpose of our class, think of this software as a special calculator used for Statistics. To interact with this software, I highly

recommend using RStudio, an Integrated Development Environment (IDE) built for writing R code.

Why R? R and RStudio are both free, and widely used software in both academia and industry. R has been built specifically to help practicioners do statistics easily.

- Installing R: https://cran.r-project.org/
- Installing RStudio: https://posit.co/download/rstudio-desktop/. Note that you should install R prior to installing RStudio.

Other types of calculators are permitted, but it is not anticipated that they will be beneficial beyond what you can do in R.

Grading

Grade	Percentage Range
Participation Quizes	5%
Homework	50%
Midterm	15%
Final	30%

Table 1: Assignment Weights

Grade	Percentage Range
A	93–100
A-	90–92.99
B+	87–89.99
B	83–86.99
B-	80–82.99
C+	77–79.99
C	73–76.99
C-	70–72.99
D+	67–69.99
D	65–66.99
D-	60–64.99
F	0–54.99

Table 2: Grade Breakdown

An instructor may give an X grade when a student has not attended or stops attending, therefore giving the instructor no basis to calculate a grade for that student. The X grade is equivalent to an F. No credits or grade points are awarded in any courses for which an X grade is reported.

Schedule (Tentative)

The table below provides a tentative schedule of the course. This table will be updated on the course website as needed.

Week	Dates (MWF)	Textbook Chapters	Topic
1	Aug 25, 27, 29	Chapter 1, 2	Graphs and Summaries
2	Sep ~~1~~, 3, 5	Chapter 3	Scatterplots and Correlation
3	Sep 8, 10, 12	Chapter 4	Regression
4	Sep 15, 17, 19	Chapter 5	Two-Way Tables
5	Sep 22, 24, 26	Chapter 6, 7	Samples vs Experiments
6	Sep 29, Oct 1, 3	Chapter 9	Probability
7	Oct 6, 8, 10	Chapter 10	Independence
8	Oct 13, 15, **17**	Chapter 11, 12	Common Distributions
9	Oct 20, 22, 24	Chapter 13	Sampling Distributions
10	Oct 27, 29, 31	Chapter 14	Inference
11	Nov 3, 5, 7	Chapter 15	Inference in Practice
12	Nov 10, 12, 14	Chapter 17-18	Inference for Population Mean
13	Nov 17, 19, 21	Chapter 18-19	Inference for Proportions
14	Nov 24, 26, 28	Fall Break - No Classes	
15	Dec 1, 3, 5	Chapter 20	Comparing Proportions
16	Dec 8, 10, 12	Chapters 21-23	Additional Topics
17	Dec 15–19	Finals Week (Dec 17)	

For other important dates and deadlines, please see the University academic calendar: `https://www.isu.edu/academiccalendar/`.

Exams

- **Final Exam**: Wednesday, Dec 17, 7:30-9:30 a.m. (Sorry about the time, I didn't chose this). The location will be our regular classroom.
- **Midterm**: Planned for **Oct 17**, during regular class time. Tentatively, the midterm will cover Chapters 1-10.

Homeworks

Homeworks make up the largest portion of your final grade. There will be 10 homework assignments, each worth 5% of your grade. Homework assignments will be due one week after they are assigned, which will be made clear to students via Canvas announcements. Late homework submissions will not be accepted, unless permission is provided by the instructor.

Quizes

There may be periodic quizes on Canvas. The point of these quizes is the assess student comprehension and satisfaction with the course. Some questions will be knowledge based, others survey / opinion based. Students who complete the quizes will be awarded full points, regardless of whether or not they answer questions correctly.

Academic Complaints / Grievances

Students with academic complaints / grievances should first meet with the instroctor responsible for the policy, proceedure, or decision that resulted in the student's initial complaint/grievance. If the student is still dissatisfied after that meeting, the student should next meet with the instructor's department chair (Dr. Rault, PS 318B, patrickrault@isu.edu) and then with the dean of the college (Dr. Widman, PS 120A, jameswidmann@isu.edu). For more information, see: `https://www.isu.edu/deanofstudents/advocacy-services/`.

Tutoring / Resources

The following link to the University Tutoring website includes hours of operation, a link for online (Zoom) tutoring, and other information: `https://www.isu.edu/tutoring/`

Accessibility Statement

Our program is committed to all students achieving their potential. If you have a disability or think you have a disability (physical, learning disability, hearing, vision, psychiatric) which may need a reasonable accommodation, please contact Disability Services located in the Rendezvous Complex, Room 125, 282-3599 as early as possible.

Academic Integretiy

Academic integrity is expected of all students. Academic dishonesty, including cheating or plagiarism, is unacceptable. The Idaho State University academic dishonesty policy allows an instructor to impose one of several penalties for cheating that range from a warning up to assigning a failing grade for the course or dismissal from the University. ANY use of an electronic device or other form of unauthorized materials during an exam or other assessment will be considered cheating.

For more information, see the ISU Policies and Procedures Student Conduct System. `http://coursecat.isu.edu/undergraduate/academic_integrity_and_dishonesty_policy/`

Title IX

Idaho State University is committed to fostering an environment in which students, faculty and staff from all backgrounds can live, work and learn free from the insidious and debilitating effects of prejudice, discrimination and marginialization. As such, ISU is committed to providing an environment free of all forms of discrimination, including sexual and gender-based discrimination, harassment, and violence such as sexual assault, dating violence, domestic violence, and stalking. If you (or someone you know) has experienced or is experiencing these types of behaviors, we have resources available to help.

ISU faculty and staff are concerned about the well-being and development of our students. If you inform me of any experience regarding harassment or discrimination, I (Jesse Wheeler) am obligated to share information with the ISU Title IX Coordinator to ensure that the student's safety and welfare is being addressed, consistent with the requirements of law. If you would like to talk to the Title IX Coordinator, Ian Parker directly, you may contact him at (208) 282-1439 or ianparker@isu.edu, located in Rendezvous 235. If you would like more information regarding Title IX or to make an online report please visit the Title IX homepage at https://www.isu.edu/title-ix/how-to-report/.

Health and Saftey on Campus

Idaho State University strongly encourages all individuals to receive a COVID-19 vaccine. Students who are experiencing COVID-19-like symptoms should not attend class in person. Individuals who are exhibiting symptoms of COVID-19 should contact University Health at (208) 282-2330 or their health care provider and complete the University's self-report form. Students are encouraged to notify faculty of illness and expected duration of absenteeism. Students are required to fully participate in the University's contact tracing process and follow all instructions related to quarantine and isolation.