

Course Information for STAT:3510:0BBB Biostatistics, Spring 2024

Instructor

Professor Dale Zimmerman, a.k.a. “Dr. Z,” 217 SH, Phone 5-0818, E-mail dale-zimmerman@uiowa.edu, Webpage <http://www.stat.uiowa.edu/~dzimmer>

Lectures

Lectures meet at 12:30-1:20 pm MWF in 1505 SC. Attendance at lecture is highly recommended, but is not part of your grade. Lectures are not recorded or broadcast via Zoom. By 6 pm every Sunday evening, **purposely incomplete** lecture notes for the following week will be uploaded to our class ICON site, which each of you should print and bring with you to lecture. **Complete** lecture notes will be presented on the screen in lecture, so you will be able to complete your lecture notes by attending lecture and filling in the missing stuff.

Discussions

Discussions (one per week) meet in the late afternoon on either Tuesday or Thursday. Attendance at discussion is also highly recommended, but is not part of your grade. Pre-announced, bi-weekly (approximately) quizzes will be given in discussion. Dates for the quizzes are January 30 or February 1, February 13 or 15, March 5 or 7, March 26 or 28, April 16 or 18, and April 30 or May 2.

Dr. Z’s Office Hours

TTh 1:00-3:00 pm, in 217 SH, with occasional exceptions to be announced in class; or by appointment. Dr. Z’s office hours are primarily for dealing with procedural issues (adds, drops, arranging and taking make-up exams, SDS issues, etc.) or clarifying points made in lectures or the textbook. The TA also has office hours, and it’s primarily her job to answer questions about homework problems, both inside and outside of the weekly discussions.

Teaching Assistant

Roya Bagherzadeh, 257 Schaeffer Hall, E-mail roya-bagherzadeh@uiowa.edu

Department Information

Department of Statistics and Actuarial Science, 241 Schaeffer Hall, Phone 335-2082

Department Executive Officer

Professor Kung-Sik Chan, 241 SH, Phone 335-0712, E-mail kung-sik-chan@uiowa.edu

Textbook

The required textbook for this course is *Statistics for the Life Sciences*, 5th edition, by Samuels, Witmer, and Schaffner, 2016, Pearson.

Course Prerequisite — 22M:001 (Basic Algebra) or equivalent.

Course Objective

To learn some of the basic statistical methods commonly used in the biological sciences, so that you can read, interpret, and evaluate elementary statistical analyses reported in the life science literature.

Exams

- Two 50-minute midterm exams, during the usual lecture periods on February 21 and April 3; places for these exams are given below.
- One 120-minute final exam, time and place TBD.

Calculators may be used for exams, and any necessary statistical tables will be provided. One 8.5" × 11" formula sheet (both sides) may be used for each midterm exam, which are "closed book"; the final exam is "open book/open notes." If an exam is missed, a make-up exam will be permitted only if the circumstances of missing the exam satisfy university policies. (Note: the make-up exam is different, perhaps more difficult, than the regular exam.) The first midterm exam will cover selected portions of Chapters 1–5 of the text, plus related material presented in lecture/discussion through February 19 (inclusive). The second midterm exam will cover Chapters 6–9 of the text, plus related material presented in lecture/discussion from February 23 through April 1 (inclusive). The final exam will cover Chapters 10–12, plus related material presented in lecture/discussion from April 5 through May 3 (inclusive). Thus, the final exam is not comprehensive in the strictest sense of the word; however, the subject of biostatistics, like most quantitative subjects, naturally builds on itself, so an understanding of the concepts presented earlier in the course is usually necessary for good performance on the final exam (the same thing could be said about the second midterm exam). Notice that the final exam period is 120 minutes long; nevertheless, the length of the final exam itself is designed for 50 minutes (the same length of the two midterm exams) because it contributes the same percentage to your grade as each of the two midterm exams.

Because our lecture venue, 1505 SC, does not have adequate space to accommodate sitting every other seat for exams, students in the Tuesday discussion sections will take the exam in 1505 SC, while students in the Thursday discussion sections will take it in W151 PBB.

Quizzes

Six 20-minute quizzes will be given at the end of Discussion periods spaced throughout the semester (approximately every two weeks). Dates for the quizzes are January 30 or February 1, February 13 or 15, March 5 or 7, March 26 or 28, April 16 or 18, and April 30 or May 2. Unless an excuse that satisfies university policies is provided, each student must take the quiz in the Discussion section for which they are registered. Only five of the quizzes will count toward your grade; you get to drop your lowest one. The first quiz you miss for any reason will count as your first drop; any additional quizzes missed will be made up only if the circumstances of missing the quiz satisfy university policies. (As with make-up exams, make-up quizzes may be more difficult than regular quizzes.) Each of the four discussion sections will take a different quiz (of equal difficulty). The quizzes are "closed book," but you may use one 8.5" × 11" formula sheet (both sides) for each of them. Calculators may be used, and tables will be provided, for quizzes just as for exams. Each quiz is based on material covered since the previous exam or quiz (whichever is most recent).

Homework

Regular (weekly) homework assignments are an *essential* component of the course. A typical assignment consists of 6–8 problems from the textbook. Reading assignments and homework assignments, and the dates they are due, will be posted on Dr. Z's webpage,

<http://homepage.divms.uiowa.edu/~dzimmer/>

Homework will always be due in lecture on Fridays, and must be submitted to Dr. Z, either in person or electronically, by 1:30 pm on those Fridays. If you attend lecture on a given Friday, please submit your homework in person in that lecture. Unless prior arrangements are made for reasons judged to be acceptable by Dr. Z, homework not turned in by the deadline will receive ZERO credit because homework solutions will be posted on ICON immediately after the deadline. Homeworks are graded by a papergrader, under the supervision of the TA and Dr. Z. The lowest two homework scores (on a percentage basis) will be dropped from each student's overall homework percentage, so each student can fail to turn in up to two homework assignments, for any reason, without penalty. With this policy in force, there is no need for make-up homework assignments.

You are allowed (encouraged, in fact!) to work on homework together, but must write up your own answers.

Tutors

If you consistently find that you are unable to do the homework problems without considerable guidance from the TA, that's a sign that you are "in over your head"; you should consider dropping the class and either retaking it when you are more well prepared or less busy, or drop and take a lower-level stats class (if allowed for your major), or look into the possibility of hiring a personal tutor (they don't work for free!). Dr. Z may be able to provide a list of such tutors; inquire if interested.

Attendance

Attendance is optional, but students who are absent from class without acceptable excuse may not seek help from Dr. Z or the teaching assistant for material missed, either during office hours or otherwise.

Grading

- Midterm Exams, 25% each
- Final Exam, 25%
- Quizzes, 10% (2% each for your five highest out of the six)
- Homework, 15%

A plus-minus grading system will be used. Grades are earned relative to an absolute standard (see below), not curved. At the discretion of Dr. Z, grade cut-offs may be adjusted downward slightly (e.g. 87.8% could earn an A), but will never be adjusted upward. No extra credit is offered.

Percentage of points earned	Letter grade	# assigned in Spring 2022
≥97%	A+	2
[88 – 97)%	A	23
[85 – 88)%	A-	4
[82 – 85)%	B+	9
[77 – 82)%	B	17
[74 – 77)%	B-	6
[71 – 74)%	C+	7
[62 – 71)%	C	9
[59 – 62)%	C-	2
[57 – 59)%	D+	1
[50 – 57)%	D	6
<50%	F	4
		90

Academic Fraud

All forms of plagiarism and any other activities that result in a student presenting work that is not his or her own are academic fraud. All academic fraud is reported first to the departmental DEO and then to the Associate Dean for Academic Programs and Services. See Academic Fraud at http://www.clas.uiowa.edu/students/academic_handbook/ix.shtml for the complete policy.

Course Objective

To learn some of the basic statistical methods commonly used in the biological sciences, so that you can read, interpret, and evaluate elementary statistical analyses reported in the life science literature. Making a Suggestion or Complaint

Students have the right to make suggestions or complaints and should first visit with me, then with the departmental DEO (if necessary). All complaints must be made as soon as possible. For more information, visit Student Complaints at

http://www.clas.uiowa.edu/students/academic_handbook/ix.shtml

Students with Disabilities:

I would like to hear from anyone who has a disability that may require some modification of seating, testing, or other class requirements so that appropriate arrangements can be made. Please see me about this as soon as possible.

Understanding Sexual Harassment

Sexual harassment is reprehensible and will not be tolerated by the University. It subverts the mission of the University and threatens the well-being of students, faculty, and staff. Visit this site (<http://www.sexualharassment.uiowa.edu/>) for definitions, assistance, and the full University policy.

Reacting Safely to Severe Weather

The University of Iowa Operations Manual section 16.14 outlines appropriate responses to a tornado (see subsection (i)) or to a similar crisis. If a tornado or other severe weather is indicated by the National Weather Service radar, the Johnson County outdoor weather sirens will sound. If these sirens sound (and it is not the first Monday of the month at 9:00 am when the

sirens are tested), members of the class will seek appropriate shelter immediately, continuing class if possible when the event is over.

Student Classroom Behavior

The ability to learn is lessened when students engage in inappropriate classroom behavior, distracting others; such behaviors are a violation of the Code of Student Life. When disruptive activity occurs, a University instructor has the authority to determine classroom seating patterns and to request that a student exit the classroom, laboratory, or other area used for instruction immediately for the remainder of the period. One-day suspensions are reported to appropriate departmental, collegiate, and Student Services personnel (Office of the Vice President for Student Services and Dean of Students).

Pearls of Wisdom

- Dr. Z's experience (from 30 reps of teaching this course) suggests that your success in this course depends on three factors:
 1. your innate or acquired quantitative reasoning skills upon entering the course
 2. your intellectual curiosity
 3. your commitment to work hard

With regard to the last of these, it is expected that a typical student (say, a “B” student) will spend an average of 6 hours per week reading, doing homework, studying for quizzes and exams, etc. outside of class.

- Do the assigned reading before attempting the homework. It is a lazy, misguided strategy to read the problems before reading the relevant text material and then leaf back through the assigned reading to look for something similar or relevant to the homework problems.
- It's a good idea to skim the assigned reading before lecture (in addition to reading it more carefully after lecture). You'll probably get more out of lecture that way.
- Remember that while this course is introductory, it is Stat 3510, not Stat “1510.” So it's not a freshman-level course. If you've had a 1000-level introductory stats class in high school, at Kirkwood, here at UI, or wherever, that's great — but be aware that this course ain't quite the same. It is likely that this one has higher expectations and covers more material than your previous one.