

# STAT:1020:0001 Elementary Statistics and Inference (Fall 2023)

**Lectures:** 10:30–11:20 a.m. MWF, 71 Schaeffer Hall.

**Instructor:** Haley Jeppson

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Office: 386 Schaeffer Hall

Office hours: W 11:20 - 12:50 p.m., F 8:00 - 9:30 a.m.; and by appointment.

**Grader:** Ying Xiang, [ying-xiang@uiowa.edu](mailto:ying-xiang@uiowa.edu), 241 Schaeffer Hall

**Department:** Statistics and Actuarial Science, [stat.uiowa.edu](http://stat.uiowa.edu)

**DEO:** Dr. Kung-Sik Chan, 241 Schaeffer Hall, 319-335-2849

## Course Description

The main objective of this course is to introduce basic statistical concepts for summarizing, analyzing and presenting data. Main topics include regression, prediction, probability, estimation, and tests of significance.

**Learning Objectives:** This course is approved for the general education “quantitative or formal reasoning” requirement. The primary purpose of courses approved in this area is the development of the analytical powers of the student as they might be exercised in the presentation and evaluation of mathematical or other formal symbolic systems.

**Textbook:** *Intro Stats*. 5th edition, by Richard De Veaux, Paul Velleman, and David Boeck, 2014.

**Course webpage:** I will post announcements, homework problems, lecture notes, and other course information on ICON <https://icon.uiowa.edu>

**R Software:** Basic statistical computing using R will be taught and used in assignments. R is open-source statistical software—one of the most popular and powerful for data analysis. It is freely available at <https://www.r-project.org/> and can be downloaded to personal computer for free use. It is also available on the university Virtual Desktop and at the Instructional Technology Centers (ITCs) such as 41 SH. See the instructions of R installation and an R introduction in ICON.

**Calculator:** A basic calculator is required for the class. Any device with an internet connection (cellphone, smartphone, iPod touch, etc.) does not count as a calculator. Calculators may not be shared during exams. The most complicated function the calculator must perform is the square root. It is recommended that you bring your calculator to class so that you can follow along with example calculations.

**Attendance and Classroom Environment:** Attendance is very vital to your success in this course. Regular attendance is expected and roll may be taken on random days. When in class, please refrain from talking on cell phones, texting, using laptops/tablets (if not for note-taking purpose), and prolonged conversation with a fellow student. Wireless-capable devices such as laptops, tablets, smartphones, etc. must be put away during exams.

**Email Etiquette:** You are always welcome to email me questions. Mention Stat 1020 in the email title and I will do my best to answer email questions within 24 hours.

## Extra Help:

- **Statistics Tutorial Lab:** Extra help beyond office hours is available for free at the Statistics Tutorial Lab for students in this course. During available times, a graduate student will be present to assist you. Hours for the tutorial lab can be found at <https://stat.uiowa.edu/resources/tutoring>
- **Private For-Pay Tutors:** The Department of Statistics and Actuarial Science maintains a list of private tutors at <https://stat.uiowa.edu/resources/tutoring>
- Note that for qualified students, tutoring may be available through The Center for Diversity and Enrichment <https://diversity.uiowa.edu/division/center-diversity-and-enrichment-cde>

## Assessment

Your final course grade is computed based on the following proportions:

- 20% Homework
- 10% Quizzes
- 45% Two in-semester exams
- 25% Final Exam

The letter grades will be made according to the following scale:

- A = 90%-100%
- B = 80%-90%
- C = 70%-80%
- D = 60% - 70%

Plus (+) and minus (-) grading will be given as deemed appropriate. At the discretion of Dr. Jeppson, depending on class performance and attendance/participation in class, these ranges may be adjusted, but only downward - criteria will only become easier, not harder. A+ grade will be used only to indicate rare and extraordinary academic achievement.

**Homework:** Regular homework will be assigned periodically in ICON; mostly week-long assignments. Students will turn in their assignment using file upload in ICON by its due date and time. **Homework should be turned in as a pdf.** Please double check your submission each time, as points will be deducted if submission cannot be opened or read, or has missing pages. Unless prior or prompt arrangements are made for reasons judged to be acceptable by Dr. Jeppson, homework turned in after it is due will receive 0 (zero) credit. Additionally, as answer keys will be posted soon after the due date, late homework submission will only be considered in exceptional circumstances and with prior or prompt notification. All or only some of the problems (in case of time constraints) may be graded for correctness, but students are responsible for understanding all questions.

Students are allowed to discuss homework assignments, but everyone should write up their own individual answers and do their own individual calculations and programming. Discussions among students can be posted on the ICON Discussion Boards; notice that Discussion Board posts are public that everyone in the class will be able to read all of the posts and responses, and respond to them.

**Exams and Quizzes:** We will (tentatively) have four to five announced quizzes in class. They will emphasize examples and key concepts that are repeatedly mentioned in class, as well as those encountered in homework problems.

The midterm exams are given at regular class meeting times. Any unexcused absence from an exam will result in a score of zero with no opportunity for a makeup. A makeup exam (different but equivalent to the original) will be considered only with documentation of reasons required by the university policy and under prior or prompt arrangement made with Dr. Jeppson, and it should be scheduled as soon as possible. The exam rules apply to all exams and makeup exams.

The final examination date and time will be announced by the Registrar generally by the fifth week of classes. It is your responsibility to know the date, time, and place of the final exam. Do not schedule your end-of-semester travel plans until the final exam schedule is announced by the University.

**Midterm Exam 1:** *tentatively* Wednesday, September 27, in class.

**Midterm Exam 2:** *tentatively* Wednesday, November 1, in class.

**Final Exam:** to be announced by the University.

## Schedule

Week 1	Chapter 1	Introduction, R, Displaying and Describing Categorical Data
Week 2	Chapters 2-3	Displaying and Describing Quantitative Data
Week 3	Chapter 4	Understanding and Comparing Distributions
Week 4	Chapter 5	The Normal Model
Week 5	Chapter 6	Scatterplots, Association, Correlation
Week 6	Chapters 7, 8	Linear Regression, Regression Wisdom
	<b>Midterm 1</b>	Review and Midterm Exam 1 (covering Chapters 1–6)
Week 7	Chapters 10, 11	Regression Wisdom, Sample Surveys, Experiments and Observational Studies
Week 8	Chapters 11, 12	Experiments, Randomness
Week 9	Chapters 12, 13	Probability, Sampling Distribution
Week 10	Chapter 13	Sampling Distribution, Confidence Intervals for Proportions
Week 11	Chapters 13	Confidence Intervals for Proportions, Testing Hypotheses about Proportions
	<b>Midterm 2</b>	Review and Midterm Exam 2 (covering Chapters 7–8, 10–12)
Week 12	Chapter 14	Sampling Distribution, Confidence Intervals for Means
Week 13	Chapters 15, 16	Testing Hypotheses, More About Tests and Intervals
Week 14	Chapters 17, 18	Two-sample t tests, Paired t test
Week 15	Chapters 18, 19	Paired Samples and Blocks, Comparing Counts (if time allows), Review for Final
Week 16	<b>Final exam</b>	(emphasizing Chapters 13–19 in detail)

## The College of Liberal Arts and Sciences Policy and Procedures

**Academic Honesty and Misconduct:** All students in CLAS courses are expected to abide by the [CLAS Code of Academic Honesty](#). Undergraduate academic misconduct must be reported by instructors to CLAS according to [these procedures](#).

**Absences from Class:** [University regulations](#) require that students be allowed to make up examinations which have been missed due to illness, religious holy days, military service obligations, including service-related medical appointments, jury duty, or other unavoidable circumstances or other University-sponsored activities. Students should work with faculty regarding making up other missed work, such as assignments, quizzes, and classroom attendance.

**Absences for Religious Holy Days:** The University is prepared to make reasonable accommodations for students whose religious holy days coincide with their classroom assignments, test schedules, and classroom attendance expectations. Students must notify their instructors in writing of any such Religious Holy Day conflicts or absences within the first few days of the semester or session, and no later than the third week of the semester. If the conflict or absence will occur within the first three weeks of the semester, the student should notify the instructor as soon as possible. See [Operations Manual 8.2 Absences for Religious Holy Days](#) for additional information.

**Absences for Military Service Obligations:** Students absent from class or class-related requirements due to U.S. veteran or U.S. military service obligations (including military service-related medical appointments, military orders, and National Guard Service obligations) shall be excused without any grading adjustment or other penalty. Instructors shall make reasonable accommodations to allow students to make up, without penalty, tests and assignments they missed because of veteran or military service obligations. Reasonable accommodations may include making up missed work following the service obligation; completing work in advance; completing an equivalent assignment; or waiver of the assignment without penalty. In all instances, students bear the responsibility to communicate with their instructors about such veteran or military service obligations, to meet course expectations and requirements.

**Accommodations for Students with Disabilities:** The University is committed to providing an educational experience that is accessible to all. If a student has a diagnosed disability or other disabling condition that may impact the student's ability to complete the course requirements as stated in the syllabus, the student may seek accommodations through Student Disability Services (SDS). SDS is responsible for making Letters of Accommodation (LOA) available. The student must provide a LOA to the instructor as early

in the semester as possible, but requests not made at least two weeks prior to the scheduled activity for which an accommodation is sought may not be accommodated. The LOA will specify what reasonable course accommodations the student is eligible for and those the instructor should provide. Additional information can be found on the [SDS website](#).

**Basic Needs and Student Support:** It can be difficult to maintain focus and be present if you are experiencing challenges with meeting basic needs or navigating personal crisis situations. The Office of the Dean of Students can help. Contact us for one-on-one support, identifying options, and to locate and access basic needs resources (such as food, rent, childcare, etc.).

Links to Basic Needs info: [Food Pantry at Iowa](#), [Clothing Closet](#), [Basic Needs and Support Resources](#).

Contact: [Student Care and Assistance](#), 132 IMU, [dos-assistance@uiowa.edu](mailto:dos-assistance@uiowa.edu), 319-335-1162

**Classroom Expectations:** Students are expected to comply with University policies regarding appropriate classroom behavior as outlined in the [Code of Student Life](#). While students have the right to express themselves and participate freely in class, it is expected that students will behave with the same level of courtesy and respect in the virtual class setting (whether asynchronous or synchronous) as they would in an in-person classroom. Failure to follow behavior expectations as outlined in the [Code of Student Life](#) may be addressed by the instructor and may also result in discipline under the [Code of Student Life](#) policies governing E.5 Disruptive Behavior or E.6 Failure to Comply with University Directive.

**Communication and the Required Use of UI Email:** Students are responsible for official correspondences sent to their UI email address (uiowa.edu) and must use this address for all communication within UI ([Operations Manual, III.15.2](#)).

**Drop Deadline for this Course:** You may drop an individual course before the deadline; after this deadline you will need collegiate approval. You can look up the drop deadline for this course [here](#). When you drop a course, a “W” will appear on your transcript. The mark of “W” is a neutral mark that does not affect your GPA. Directions for adding or dropping a course and other registration changes can be found on the [Registrar’s website](#). Undergraduate students can find policies on dropping CLAS courses [here](#).

**Free Speech and Expression:** The University of Iowa supports and upholds the First Amendment protection of freedom of speech and the principles of academic and artistic freedom. We are committed to open inquiry, vigorous debate, and creative expression inside and outside of the classroom. Visit the Free Speech at Iowa website for more information on the university’s policies on free speech and academic freedom.

**Mental Health:** Students are encouraged to be mindful of their mental health and seek help as a preventive measure or if feeling overwhelmed and/or struggling to meet course expectations. Students are encouraged to talk to their instructor for assistance with specific class-related concerns. For additional support and counseling, students are encouraged to contact University Counseling Service (UCS). Information about UCS, including resources and how to schedule an appointment, can be found at [counseling.uiowa.edu](#). Find out more about UI mental health services at: [mentalhealth.uiowa.edu](#).

**Non-discrimination Statement:** The University of Iowa prohibits discrimination in employment, educational programs, and activities on the basis of race, creed, color, religion, national origin, age, sex, pregnancy, disability, genetic information, status as a U.S. veteran, service in the U.S. military, sexual orientation, gender identity, associational preferences, or any other classification that deprives the person of consideration as an individual. The university also affirms its commitment to providing equal opportunities and equal access to university facilities. For additional information on nondiscrimination policies, contact the Director, [Office of Institutional Equity](#), the University of Iowa, 202 Jessup Hall, Iowa City, IA 52242-1316, 319-335-0705, [oie-ui@uiowa.edu](#). Students may share their pronouns and chosen/preferred names in [MyUI](#), which is accessible to instructors and advisors.

**Sexual Harassment/Sexual Misconduct and Supportive Measures:** The University of Iowa prohibits all forms of sexual harassment, sexual misconduct, and related retaliation. The [Policy on Sexual Harassment and Sexual Misconduct](#) governs actions by students, faculty, staff and visitors. Incidents of sexual harassment or sexual misconduct can be reported to the [Office of Institutional Equity](#) or to the [Department of Campus Safety](#). Students impacted by sexual harassment or sexual misconduct may be eligible for academic supportive measures and can learn more by [contacting the Office of Institutional Equity](#). Information about confidential resources and videos explaining these resources can be found on the [Division of Diversity, Equity, and Inclusion website](#).

**Student Complaints:** Students with a complaint about a grade or a related matter should first discuss the situation with the instructor and/or the course supervisor (if applicable), and finally with the Director or Chair of the school, department, or program offering the course. Undergraduate students should contact [CLAS Undergraduate Programs](#) for support when the matter is not resolved at the previous level.