

**The University of Iowa
The College of Liberal Arts and Sciences
Fall 2025**

Title of Course: Elementary Statistics and Inference
STAT:1020 / PSQF:1020 Lecture Section A

Course meeting time and place: 8:30 – 9:20 am M, W, F; 101 BCSB

Department of Statistics and Actuarial Science: <https://stat.uiowa.edu/>

Course ICON Site: To access the course site, log into [Iowa Courses Online \(ICON\)](#) using your Hawk ID and password.

Course's College (Administrative Home)

The College of Liberal Arts and Sciences (CLAS) is the home of this course, and CLAS governs the add and drop deadlines, academic misconduct policies, and other undergraduate policies and procedures. Other UI colleges may have different policies. Questions may be addressed to 120 Schaeffer Hall, or see the [CLAS Academic Policies Handbook](#).

Instructor: Dr. Ankenmann
Office location: S316 LC
Student drop-in hours: 11 am – 12 noon, M, W, F, or by appointment; S316 LC
Email: robert-ankenmann@uiowa.edu
DEO: Dr. Kung-Sik Chan, 241 SH, kung-sik-chan@uiowa.edu

Teaching Yuyue Sun, 257 SH, yuyue-sun@uiowa.edu

Assistant:	Discussion	A11	7:30 – 8:20 am	T	31 SH
	Sections	A13	9:30 – 10:20 am	T	51 SH
		A12	7:30 – 8:20 am	Th	31 SH
		A14	9:30 – 10:20 am	Th	51 SH
	Office Hours		2:30 – 3:30 pm, M; 8:30 – 9:30 am, T & Th		

Course Description

This course provides an overview of the logic and techniques involved in quantitatively analyzing and interpreting empirical data. Methods for displaying data graphically and for describing characteristics of data will be covered in the first part of the course dealing with descriptive statistics. The second part of the course includes topics in elementary probability theory and sampling, forming a basis for techniques of statistical inference. The problem of inference, attempting to make generalizations that go beyond the data at hand, is the focus of the third part of the course.

Learning Objectives

This is a *General Education* course in *Quantitative or Formal Reasoning*. Courses approved in this area have as their primary purpose the development of the analytical powers of the student as they might be exercised in presentation and evaluation of mathematical or other formal symbolic systems. Students will learn and practice methods of statistical reasoning. Students

will also learn to evaluate arguments made in the symbolic system embodied in the course, and will become familiar with its major concepts and ways of formulating questions.

Textbook/Materials

The required textbook for this course is an E-text:

- Intro Stats, 6th Edition
- E-text ISBN: 9780136806905, 0136806902
- Richard D. De Veaux; Paul F. Velleman; David E. Bock
- Pearson
- 2022
- You can get to the E-text (and a variety of other tools) from the **MyLab Statistics** Module on the ICON course website
- Handouts for lectures and discussion sections, as well exam review questions and answers/solutions, will be posted on the ICON course website



UI Email

Students are responsible for all official correspondences sent to their UI email address (uiowa.edu) and must use this address for any communication with instructors or staff in the UI community. For the privacy and the protection of student records, UI faculty and staff can only correspond with UI email addresses.

Drop Deadline for this Course

You may drop an individual course before the drop 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. To discuss how dropping (or staying in) a course might affect your academic goals, please contact your Academic Advisor. Directions for adding or dropping a course and other registration changes can be found here: <https://registrar.uiowa.edu>. Undergraduate students can find policies on dropping CLAS courses [here](#).

Academic Honesty and Misconduct

All students in CLAS courses are expected to abide by the [college’s standards of academic honesty](#). Undergraduate academic misconduct must be reported by instructors to CLAS according to [these procedures](#). Collaboration among students is permitted on homework assignments. Students must work alone on all three exams.

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 DEO (Chair) of the department, school or program offering the course. Sometimes students will be referred to the department or program’s Director of Undergraduate Studies (DUS). Undergraduate students should contact [CLAS Undergraduate Programs](#) for support when the matter is not resolved at the previous level.

Course Requirements

- readings (see **Lecture Schedule** for textbook chapters and topics)
- Optional exercises from textbook (for self study, and for review in discussion sections with the TA); see **Recommended Textbook Exercises (Optional)**
- students are expected to attend all lectures and discussion sections
- 10 graded homework assignments; see **Graded Homework Assignment Schedule** (below) for deadlines
- 3 exams (open book and open notes), each consisting of 25 multiple-choice questions; see **Exam Schedule** (below) for dates, times, locations, and content coverage; review questions and answers/solutions will be posted on ICON at least one week before each exam; exams are based on content covered in textbook readings, lectures, discussion sections, graded homework assignments, recommended textbook exercises, and review questions posted on ICON

Course Grades

Final grades are based on the best 9 out of 10 homework assignments (approximately 2.78% each; 25% altogether), and three exams (25% each).

Grading System and the Use of +/-

Final grades will be awarded based on the following ranges:

<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>F</u>
A+ 95 – 100	B+ 80 – 84	C+ 65 – 69	D+ 50 – 54	F 0 – 39
A 90 – 94	B 75 – 79	C 60 – 64	D 45 – 49	
A- 85 – 89	B- 70 – 74	C- 55 – 59	D- 40 – 44	

- these are **guaranteed cutoffs** so it's possible, but unlikely, that everybody receives a grade in the A range
- with this grading system **you are NOT graded on a curve**, so you aren't competing against other students
- students with an average homework assignment score exceeding 75% (based on the best 9 out of 10 homework assignments) will be eligible for borderline grade consideration for final grades if their overall score is within one point of the cut score for a grade (for example, if a student has an overall score of 74, and their average homework score is at least 75%, their grade would move from B- up to B)
- absence from an exam must be cleared with Dr. Ankenmann on or before the exam date
- any student who is absent from an exam must submit a completed *Absence Explanation Form* to Dr. Ankenmann before being allowed to take a make-up (see https://registrar.uiowa.edu/sites/registrar.uiowa.edu/files/wysiwyg_uploads/absence_explanation_form2019revised.pdf)
- any absence from an exam that has not been cleared with Dr. Ankenmann **before the exam** will result in a score of zero with no opportunity for a make-up

Date and Time of the Final Exam

The [final examination date and time](#) will be announced by the Registrar generally by the fifth week of classes, and it will be announced on the course ICON site once it is known. **Do not plan your end of the semester travel plans until the final exam schedule is made public. It is your responsibility to know the date, time, and place of the final exam.** According to the Registrar's final exam policy, students **have a maximum of two weeks after the announced final exam schedule** to request a change if an exam conflict exists or if a student has more than two exams scheduled for the same day. There are no exceptions to this policy: <https://registrar.uiowa.edu/students/exam-schedules#accordion-item-2686-0>.

Calendar of Course Assignments and Exams

Graded Homework Assignment Schedule	HW Assignment 1	Sept 10, 11:59 pm	Chapters 1, 2.1 – 2.3
	HW Assignment 2	Sept 17, 11:59 pm	Chapters 2.4, 2.5, 3
	HW Assignment 3	Sept 24, 11:59 pm	Chapters 3, 4
	HW Assignment 4	Oct 1, 11:59 pm	Chapter 5
	HW Assignment 5	Oct 22, 11:59 pm	Chapters 7, 8.1, 8.3, 8.5
	HW Assignment 6	Oct 29, 11:59 pm	Chapter 10
	HW Assignment 7	Nov 5, 11:59 pm	Chapter 12
	HW Assignment 8	Nov 19, 11:59 pm	Chapters 13, 14
	HW Assignment 9	Dec 5, 11:59 pm	Chapters 15, 16.3
	HW Assignment 10	Dec 12, 11:59 pm	Chapter 17

- homework assignments are due at 11:59 pm on Wednesday (HW 1 – 8) or Friday (HW 9 & 10); late submissions are accepted up until 11:59 pm on Sunday (that is, four days later for HW 1 – 8, or two days later for HW 9 & 10) with a 50% penalty on those questions answered after the Wednesday/Friday deadline; there are no exceptions or extensions to these deadlines for any reason

Exam Schedule	Exam 1	Thrs Oct 2, 6:30 – 8:30 pm, Sham LIB	Chapters 1 – 6, 8.3 – 8.5
	Exam 2	Thrs Nov 6, 6:30 – 8:30 pm, Sham LIB	Chapters 7, 8.1 – 8.2, 10, 12
	Exam 3	Date/Time/Location TBA	Chapters 13 – 15, 17 – 19

- students who have a conflict with either of the first two exams must make arrangements for a makeup with Dr. Ankenmann the week before the exam; make-up exams will occur earlier on the day of the exam, or the next day
- students with accommodations must make alternative arrangements with Dr. Ankenmann the week before the exam; exam accommodations will occur earlier on the day of the exam, or the next day
- the Final Exam Schedule is set by the Registrar's Office during the first five weeks of the semester; the date/time/location of Exam 3 will be announced after it has been set by the Registrar's Office
- the Registrar's Office defines/recognizes the following two kinds of exam conflicts: (1) two or more final exams scheduled during the same exam period, (2) more than two final exams scheduled on the same day; these are the only kinds of exam conflicts allowed by Dr. Ankenmann

- please note that travel arrangements, including airline flights, do not qualify as exam conflicts; therefore, students should not book any travel during Exam Week (Dec 15 – 19) until after you know the date and time of Exam 3
- students who have a qualifying exam conflict (as defined above) may request a make-up final examination from the instructor; they must register their intent to take advantage of the make-up exam opportunity with their instructor by October 1; the make-up exam period is Friday, Dec 19 from 5:30 – 7:30 pm
- students with accommodations must make alternative arrangements with Professor Ankenmann the week before the exam; exam accommodations will occur on the day of the exam, or the next day

Recommended Textbook Exercises (Optional)

Students are expected to know how to answer all of these exercises, even though they aren't scored/graded. Some of these questions are included in (or similar to) the homework assignments, and some are used as examples in lectures and/or discussion sections.

Chapter 1: 1, 7, 9, 21, 23, 25, 31, 33, 35, 37, 39

Chapter 2: 1, 3, 5, 13, 15, 17, 21, 23, 35, 39, 43, 45, 47, 53, 59, 61, 63, 65, 67, 71, 73, 79, 81

Chapter 3: 1, 3, 5, 9, 11, 15, 19, 23, 27, 29, 31, 35, 37, 41, 43

Chapter 4: 1, 3, 5, 7, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33

Chapter 5: 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 39, 41, 43, 45, 47, 49, 51, 53, 55, 57

Review (pages 163 – 172): 3, 5, 7, 15, 17, 19, 23, 25, 31, 37

Chapter 6: 3, 5, 7, 11, 13, 15, 19, 25, 27, 29, 31, 33, 35, 37, 39, 45

Chapter 7: 1, 3, 5, 7, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 33, 35, 39, 41, 43, 45, 47, 49, 51, 53, 55, 57, 67, 69, 75

Review (pages 323 – 334): 1, 3, 7, 9, 11, 15, 17, 21, 29, 31, 33, 43

Chapter 10: 5, 7, 9, 11, 13, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 39, 41, 43, 45

Review (pages 385 – 390): 1, 3, 5, 7, 9, 11, 13, 15, 17, 21, 23, 25, 27, 35, 39

Chapter 12: 3, 5, 7, 9, 10, 11, 12, 14, 23, 27, 31, 33, 35, 37, 39, 41, 43, 51, 53, 63

Chapter 13: 1, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 31, 33, 35, 37, 39, 41, 43, 45, 47, 49, 51, 53

Chapter 14: 5, 9, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37

Chapter 15: 1, 3, 5 (only b and c), 7, 9, 15, 17, 19, 25, 27, 29, 31, 33, 35, 37, 39, 41, 43

Chapter 17: 1, 3, 9, 11, 13, 15, 23, 25, 27, 29, 31, 33, 37, 39, 49, 51, 53, 57, 59, 61, 63, 75, 77, 83

Chapter 18: 1, 9, 13, 23 (only a and b), 25, 27 (only a and b), 29, 31, 33, 39

Chapter 19: 1, 3, 5, 13, 17, 19, 23, 25, 27, 39, 41, 47, 49

Review (pages 724 – 733): 5, 11, 17, 19, 21, 31, 33, 35, 37, 47

ICON Direct Information

- This class will be taught with electronic content. The course material is available in the ICON course site. Students may opt out of this content, but the consequences of doing so may affect their outcomes in this course.
- Students will lose access to any additional content the instructor might add to the eTextbook, such as links to other content; additional supplemental resources; and highlights, annotations, and any study tips the instructor may add to guide your engagement and learning in the course. ***Please consider that if you choose to opt out, you may not be able to earn course points or assignment grades associated with this content.***
- Students risk falling behind in the course if they have not acquired alternate versions of the same materials prior to the first day of the class.
- Faculty are not responsible for providing students with alternative materials or waiving course/class requirements.

College of Liberal Arts and Sciences (CLAS) Course Policies

Attendance and Absences

- lecture and discussion section attendance are not recorded, and do not count directly toward the final grade; however, it is expected that students attend all lectures and discussion sections in order to be adequately prepared for the exams
- this is a 3-semester-hour course; therefore, students are expected to spend (on average) 6 additional hours of outside work per week (not including discussion sections or exams), for a total of 10 hours per week if lecture and discussion section times are included
- of course, you need to keep in mind that the '6 additional hours of outside work per week' is an average taken over the weeks in the semester and over a diverse collection of students and courses; thus, effort amounts will vary from week to week and from student to student; however, it's fair to say that the more effort you put in, the more you will get out of the course

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 their instructors 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 [Policy 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 students. 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 to the student (<https://sds.provost.uiowa.edu/students/letter-accommodation>).

The student must provide an 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](#).

Student Support Services and Related Policies

Academic Support for this Course

Information about tutoring will be available here starting the second week of class: <https://stat.uiowa.edu/resources/tutoring>. Tutoring is also available from the **Tutor Iowa** academic support site: <https://tutor.uiowa.edu/>.

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.

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.).

Student Care and Assistance

132 IMU

dos-assistance@uiowa.edu

319-335-1162

Basic Needs info:

- [Food Pantry at Iowa](#)
- [Clothing Closet](#)
- [Basic Needs and Support Resources](#)

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 Civil Rights Compliance](#) 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 Civil Rights Compliance](#). Information about confidential resources and videos explaining these resources can be found on the [Office of Civil Rights Compliance website](#).

Conflict Resolution

The Office of the Ombudsperson is a confidential, impartial, informal, and independent resource for any member of the university community with a problem or concern. The Office of the Ombudsperson offers a safe place to discuss conflicts or concerns. Students are encouraged to reach out for assistance. The office will brainstorm with students to help identify options, answer any questions, and provide referrals to other offices as appropriate. More information about the Office of the Ombudsperson, including how to schedule an appointment, can be found at ombudsperson.org.uiowa.edu.

Other UI Policies

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.

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 (including childbirth and related conditions), disability, genetic information, status as a U.S. veteran, service in the U.S. military, sexual orientation, gender identity, or associational preferences. The university also affirms its commitment to providing equal opportunities and equal access to university facilities. For additional information on nondiscrimination policies, contact the Senior Director, Office of Civil Rights Compliance, the University of Iowa, 202

Jessup Hall, Iowa City, IA 52242-1316, 319-335-0705, ui-ocrc@uiowa.edu. Although not required, students have the option to share their pronouns and chosen/preferred names in class and through MyUI. Instructors and advisors can find information about a student's chosen/preferred name in MyUI.

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.

Class Recordings

Some of the sessions in this course may be recorded or live-streamed. Such recordings/streaming will only be available to students registered for this class. These recordings are the intellectual property of the instructor and they may not be shared or reproduced without the explicit, written consent of the instructor. Further, students may not share these sessions with those not in the class or upload them to any other online environment. Doing so would be a breach of the Code of Student Conduct, and, in some cases, a violation of state and federal law, including the Federal Education Rights and Privacy Act (FERPA). The unauthorized video or audio recording of academic activities (e.g., lectures, course discussions, office hours, etc.) by a student is prohibited. Students with a reasonable accommodation for recording approved by Student Disability Services should notify each instructor and provide the Letter of Accommodation prior to using the accommodation. A student may record classroom activities with prior written permission from the instructor and notice to other students in the class that audio or video recording may occur. Any and all classroom recording must be for personal academic use only. The distribution, sharing, sale, or posting of recordings on the internet (including social media), in whole or in part, is prohibited and doing so may be a violation of the Code of Student Life and/or state or federal privacy, copyright, or other laws.

Lecture Schedule

DAY	DATE	TEXTBOOK	TOPIC
PART 1 – EXPLORING DATA & RELATIONSHIPS BETWEEN VARIABLES (CHAPTERS 1 – 6, 8.3 – 8.5)			
1	Aug. 25	M	1.1 – 1.4
2	27	W	2.1
3	29	F	2.2
*	Sept. 1	M	Labor Day
4	3	W	2.3 – 2.4
5	5	F	2.5
6	8	M	2.5
7	10	W	3.1 – 3.2
8	12	F	3.2 – 3.4
9	15	M	4.1 – 4.2
10	17	W	5.1 – 5.2
11	19	F	5.3
12	22	M	5.3
13	24	W	5.4 – 5.5
14	26	F	6.1 – 6.2
15	29	M	6.2 – 6.3, 8.3 – 8.5
PART 2 – LINEAR REGRESSION, GATHERING DATA, & PROBABILITY (CHAPTERS 7, 8.1 – 8.2, 10, 12)			
16	Oct. 1	W	7.1 – 7.3
EXAM 1	2	TH	(Chpt 1 – 6, 8.3 – 8.5), Sham LIB, 6:30 – 8:30 pm
17	3	F	7.1 – 7.3
18	6	M	7.3 – 7.4
19	8	W	7.5, 8.1
20	10	F	7.6 – 7.7, 8.2
21	13	M	10.1 – 10.3
22	15	W	10.4 – 10.7
23	17	F	12.1 – 12.3
24	20	M	12.3
25	22	W	12.3 – 12.4
26	24	F	12.4 – 12.5
27	27	M	12.4 – 12.5
PART 3 – CONFIDENCE INTERVALS & INFERENCE (CHAPTERS 13 – 15, 17 – 19)			
28	29	W	12.6
29	31	F	13.1 – 13.2
30	Nov. 3	M	13.3
31	5	W	13.4
EXAM 2	6	TH	(Chpt 7, 8.1 – 8.2, 10, 12), Sham LIB, 6:30 – 8:30 pm
32	7	F	13.5 – 13.6
33	10	M	14.1
34	12	W	14.2, 14.3, 14.5
35	14	F	15.1 – 15.3
36	17	M	15.1 – 15.3
37	19	W	15.4 – 15.5, 16.3
38	21	F	15.4 – 15.5, 16.3
*	FALL BREAK (Nov. 24 – 28)		No Classes
39	Dec. 1	M	17.1 – 17.3
40	3	W	17.4 – 17.5
41	5	F	18.1 – 18.2
42	8	M	18.3
43	10	W	19.1
44	12	F	19.4
EXAM 3	Dec. 15 – 19		(Chpt 13 – 15, 17 – 19), Date/Time/Location TBA