The University of Iowa
The College of Liberal Arts and Sciences
Fall 2022

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) https://icon.uiowa.edu/index.shtml using your Hawk ID and password.

Course Home

The College of Liberal Arts and Sciences (CLAS) is the home of this course, and CLAS governs the add and drop deadlines, the "second-grade only" option (SGO), 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:	Professor Ankenmann
Office location:	S316 LC
Office hours:	11 am – 12 noon, M, W, F, or by appointment; S304 LC
E-mail:	robert-ankenmann@uiowa.edu
DEO:	Dr. Saba Ali, S361 LC, 335-5495
TA	J.C. Thomas, james-c-thomas@uiowa.edu

Discussion Sections	A11	7:30 – 8:20 am	T	75 SH
	A12	7:30 – 8:20 am	Th	60 SH
	A13	11:00 – 11:50 am	T	14 SH
	A14	11:00 – 11:50 am	Th	14 SH

Office Hours TBD; 348 SH

Description of Course

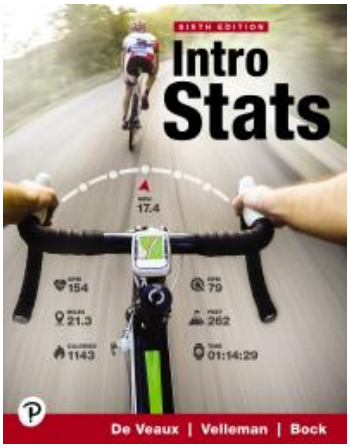
This course provides an overview of the logic and techniques involved in quantitatively analyzing and interpreting empirical data. Methods for displaying data graphically and for describing characteristics of data will be covered in the first part of the course dealing with descriptive statistics. The 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



- When students enrolled in the course, they were automatically registered for Pearson's **MyLab & Mastering** website, which includes access to the eText and a variety of other online resources (enrollment in MyLab & Mastering is mandatory for the completion of online homework assignments).
- Access Code: **WSDISE-SUNUP-WOVEN-SPITE-SWASH-JUTES**
- Students have the opportunity to opt out of the course material during the beginning of the course (https://teach.uiowa.edu/icon-direct-opt-out), but their ability to participate fully in the course without these materials may be limited. No charge to the student's U-Bill will be made if the course is dropped during the Opt Out period.
- Students are free to purchase a loose-leaf copy of the textbook (available at the UI bookstore).

The required textbook(s) for this course is:

- Intro Stats, 6th Edition
- E-text ISBN: 9780136806905, 0136806902
- Richard D. De Veaux; Paul F. Velleman; David E. Bock
- Pearson
- 2022

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. Graduate academic misconduct must be reported to the Graduate College according to Section F of the Graduate College Manual.

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. Students should contact CLAS Undergraduate Programs for support when the matter is not resolved at the previous level.

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 and withdrawing here. Graduate students should adhere to the academic deadlines and policies set by the Graduate College.

Course Requirements

- readings (see **Lecture Schedule** for textbook chapters)
- exercises from textbook (for self study, and for review in discussion sections with the TA); see the **Recommended Textbook Exercises**
- students are expected to attend/observe all lectures and discussion sections
- 11 graded homework assignments; see the **Graded Homework Assignment Schedule** (below) for deadlines
- 3 exams (open book); see the **Exam Schedule** (below) for dates, times, and locations

Course Grades

Final grades are based on the best 10 out of 11 homework assignments (2.5% each), and three exams (25% each).

Grading System and the Use of +/-

Final grades will be awarded based on the following ranges:

A	B	C	D	F
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	

- students with an average homework assignment score exceeding 75% (based on the best 10 out of 11 homework assignments) will be eligible for borderline grade consideration for final grades
- absence from an exam must be cleared with Professor Ankenmann on or before the exam date
- any student who is absent from an exam must submit a completed *Absence Explanation Form* to Professor Ankenmann before being allowed to take a make-up (see http://registrar.uiowa.edu/absence-class)
- any unexcused absence from an 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 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 in one day (see the policy here).

Calendar of Course Assignments and Exams

Graded Homework Assignment Schedule	HW Assignment 1	Sept 4, 11:59 pm	Chapters 1, 2.1 – 2.3
	HW Assignment 2	Sept 11, 11:59 pm	Chapters 2.4, 2.5, 3
	HW Assignment 3	Sept 18, 11:59 pm	Chapters 4, 5.1, 5.2
	HW Assignment 4	Sept 25, 11:59 pm	Chapters 5.3 – 5.5, 6
	HW Assignment 5	Oct 9, 11:59 pm	Chapters 7, 8.1, 8.3, 8.5
	HW Assignment 6	Oct 16, 11:59 pm	Chapters 10, 11
	HW Assignment 7	Oct 30, 11:59 pm	Chapter 12
	HW Assignment 8	Nov 13, 11:59 pm	Chapters 13, 14
	HW Assignment 9	Nov 27, 11:59 pm	Chapters 15, 16.3
	HW Assignment 10	Dec 4, 11:59 pm	Chapter 17
	HW Assignment 11	Dec 11, 11:59 pm	Chapter 18

- all homework assignments are due at 11:59 pm on Sunday; late submissions are accepted up until 11:59 pm on Tuesday (that is, two days later) with a 50% penalty on those questions answered after the Sunday deadline; there are no exceptions or extensions to these deadlines for any reason

Exam Schedule	Exam 1	Thrs Sept 29, 6:30 – 8:30 pm, C20 PC	Chapters 1 – 6, 8.3 – 8.5
	Exam 2	Thrs Nov 3, 6:30 – 8:30 pm, C20 PC	Chapters 7, 8.1 – 8.2, 10 – 12
	Exam 3	Dec 12 – 16, Date/Time/Location TBD	Chapters 13 – 15, 17 – 19

- students who have a conflict with either of the first two exams must make arrangements for a makeup with Professor Ankenmann the week before the exam; makeup exams will occur earlier on the day of the exam, or the next day
- students with accommodations must make alternative arrangements with Professor 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 Professor Ankenmann
- please note that travel arrangements, including airline flights, do not qualify as exam conflicts; therefore, you should not book any travel during Exam Week (December 12 – 16) until after you know the date and time of Exam 3
- students who have a qualifying exam conflict (as defined above) may request a makeup final examination from the instructor; they must register their intent to take advantage of the makeup exam opportunity with their instructor by November 1; the makeup exam period is Friday, December 16 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

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, 49, 51

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:

Chapter 8:

Review (pages 323 – 334):

Chapter 10:

Chapter 11:

Review (pages 385 – 390):

Chapter 12:

Review (pages 564 – 566):

Chapter 13:

Chapter 14:

Chapter 15:

Review (pages 566 – 570):

Chapter 17:

Chapter 18:

Chapter 19:

Review (pages 724 – 733):

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 recommended that you 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

University regulations require that students be allowed to make up examinations which have been missed due to illness or other unavoidable circumstances. Students with mandatory religious obligations or UI authorized activities must discuss their absences with Professor Ankenmann as soon as possible. Religious obligations must be communicated within the first three weeks of classes.

Exam Policies

Communication: 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.

Where to Get Help

Information about tutoring will be available here starting the second week of class:
https://stat.uiowa.edu/resources/tutoring

University Policies

Accommodations for Students with Disabilities
Basic Needs and Support for Students
Classroom Expectations
Exam Make-up Owing to Absence
Free Speech and Expression
Mental Health
Military Service Obligations
Non-discrimination
Religious Holy Days
Sexual Harassment/Misconduct and Supportive Measures
Sharing of Class Recordings

Lecture Schedule

DAY	DATE	TEXTBOOK ASSIGNMENT / CHAPTER (SECTION)
UNIT 1 - EXPLORING DATA & RELATIONSHIPS BETWEEN VARIABLES (CHAPTERS 1 – 6, 8.3 – 8.5)		
1	Aug. 22 M	1.1 – 1.4
2	24 W	2.1 – 2.2
3	26 F	2.3 – 2.4
4	29 M	2.5
5	31 W	3.1 – 3.2
6	Sept. 2 F	3.2 – 3.4
*	5 M	LABOR DAY, No Class
7	7 W	4.1 – 4.2
8	9 F	4.1 – 4.2
9	12 M	5.1 – 5.2
10	14 W	5.3
11	16 F	5.4 – 5.5
12	19 M	6.1 – 6.2
13	21 W	6.2 – 6.3, 8.3 – 8.5
UNIT 2 – LINEAR REGRESSION, GATHERING DATA, & PROBABILITY (CHAPTERS 7, 8.1 – 8.2, 10 – 12)		
14	23 F	7.1 – 7.3
15	26 M	7.3 – 7.4
16	28 W	7.5, 8.1
	29 TH	**EXAM 1 (Chapters 1 – 6, 8.3 – 8.5), C20 PC, 6:30 – 8:30 pm**
17	30 F	7.6 – 7.7, 8.2
18	Oct. 3 M	10.1 – 10.3
19	5 W	10.4 – 10.7
20	7 F	11.1 – 11.3
21	10 M	11.4 – 11.6
22	12 W	12.1 – 12.3 (391 – 399 & 403 – 407)
23	14 F	12.3 (399 – 403)
24	17 M	12.4 – 12.5 (407 – 411)
25	19 W	12.5
26	21 F	12.5
UNIT 3 – CONFIDENCE INTERVALS & INFERENCE (CHAPTERS 13 – 15, 17 – 19)		
27	24 M	12.6
28	26 W	13.1 – 13.2
29	28 F	13.3
30	31 M	13.4 – 13.5
31	Nov. 2 W	13.6 & 14.1
	3 TH	**EXAM 2 (Chapters 7, 8.1 – 8.5, 10 – 12), C20 PC, 6:30 – 8:30 pm**
32	4 F	13.6 & 14.1
33	7 M	14.2, 14.3, 14.5
34	9 W	15.1 – 15.3
35	11 F	15.1 – 15.3
36	14 M	15.4 – 15.5, 16.3
37	16 W	15.4 – 15.5, 16.3
38	18 F	17.1 – 17.3
*	THANKSGIVING BREAK (Nov. 21 – 25)	No Classes
39	28 M	17.4 – 17.5
40	30 W	18.1 – 18.2
41	Dec. 2 F	18.1 – 18.2
42	5 M	18.3
43	7 W	19.1
44	9 F	19.4
Exam Week	**Dec. 12 – 16**	**EXAM 3 (Chapters 13 – 15, 17 – 19), Date/Time/Location TBD**