Dr. Alex Liebrecht
alexander-liebrecht@uiowa.edu

The University of Iowa
The College of Liberal Arts and Sciences
Fall, 2023

STAT 1020:0CCC Elementary Statistics and Inference

Course meeting time and place: MWF 11:30 – 12:20 p.m. C20 PC

Department of Statistics: 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

Instructor: Alex Liebrecht
                alexander-liebrecht@uiowa.edu
                Office: 221 SH
                Phone: (319) 335-1038
                Office Hours: MWF 12:30 – 1:30 p.m.

TAs: Edward Addison, Yikai Zhang, Ash White

Graders: Sumedha Dhar

DEO: Kung-Sik Chan
           kung-sik-chan@uiowa.edu
           Office: 241 SH

Description of Course: The main objective of this course is to introduce students to 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. Courses approved in this area have as their primary purpose the development of the analytical powers of the student as they might be exercises in the presentation and evaluation of mathematical or other formal symbolic systems.

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

Calculators: It is recommended that you get a TI-83 or TI-84 for this course. Demonstrations in this class will be done with a TI-84 and *Microsoft Excel.*

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.

Dr. Alex Liebrecht
alexander-liebrecht@uiowa.edu

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. Graduate students should contact the CLAS Associate Dean for Graduate Education and Outreach and Engagement when additional support is needed.

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.

Grades: Grade cutoffs will be no higher than the usual 90-80-70-60 breakdown. The course will use the +/- grading system. The A+ grade is used only in extraordinary situations.

Homework (25% of grade): Homework will be assigned and collected on Fridays at 11:59 p.m. using ICON. *Homework should be turned in as a pdf*. Points will be deducted for homework that is not the appropriate file type.

During the semester, there will be two presentations---one on regression and one on hypothesis testing. These will be counted as a "double" homework assignment.

Exams (25/25/25%): Three exams will be given: two midterms and a final. The dates of the exams are TBD.

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).

Dr. Alex Liebrecht
alexander-liebrecht@uiowa.edu

Calendar of Course Assignments and Exams

Week	Assignment	Due Date
1	Intro	8/25/2023
2	HW1	9/1/2023
3	HW2	9/8/2023
4	Project 1	9/15/2023
5	HW3	9/22/2023
6	Exam 1	9/29/2023
7	HW4	10/6/2023
8	HW5	10/13/2023
9	HW6	10/20/2023
10	Exam 2	10/27/2023
11	HW7A	11/3/2023
12	HW7B	11/10/2023
13	HW8	11/17/2023
-----------	-----------	11/24/2023
14	Project 2	12/1/2023
15	Final Review	12/8/2023

Course Content

Unit 1: Introduction
Data, Variables, and Models (Chapter 1)
Displaying and Describing Data (Chapter 2)
Relationships Between Categorical Variables --- Contingency Tables (Chapter 3)
Sample Surveys (Chapter 10)
Experiments and Observational Studies (Chapter 11)
Unit 2: Regression
Scatterplots, Association, and Correlation (Chapter 6)
Linear Regression (Chapter 7)
Regression Wisdom (Chapter 8)
Unit 3: Probability
From Randomness to Probability (Chapter 12)
Unit 4: Discrete Distributions
Geometric and Binomial Distribution (Supplemented by Instructor)
Unit 5: Continuous Distributions
The Standard Deviation as a Ruler and the Normal Model (Chapter 5)
Unit 6: Confidence Intervals
Sampling Distribution Models and Confidence Intervals for Proportions (Chapter 13)
Confidence Intervals for Means (Chapter 14)
Unit 7: Hypothesis Tests
Testing Hypotheses (Chapter 15)
More About Tests and Intervals (Chapter 16)
Unit 8: Inference for Relationships
Comparing Groups (Chapter 17)
Paired Samples and Blocks (Chapter 18)

Dr. Alex Liebrecht
alexander-liebrecht@uiowa.edu

College of Liberal Arts and Sciences (CLAS) Course Policies

Attendance and Absences

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 me as soon as possible. Religious obligations must be communicated within the first three weeks of classes.

Exam Policies

Communication: UI E-mail

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

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