

STAT:1020:0CCC ELEMENTARY STATISTICS AND INFERENCE Fall 2022

(Cross References PSQF:1020:0CCC)

Class meeting: MWF 11:30am–12:20pm in C20 PC

Instructor: Dr. Erning Li, 231 SH, 335-0820, erning-li@uiowa.edu

Office hours (drop-in hours): MWF 12:45–1:45 pm; and by appointment.

Teaching Assistant: Thao Vy Dang, thaovy-dang@uiowa.edu

Office hours (drop-in hours): Tue & Thu 2:00–3:30 pm in 223 SH; and by appointment.

The TA is the instructor of all discussion sessions and also holds regular office hours. The TA will post discussion materials in ICON main course website under “Modules.”

Graders: Yan Shen, yan-shen@uiowa.edu; Roya Bagherzadeh, roya-bagherzadeh@uiowa.edu

Feel free to contact the graders regarding issues about homework grading.

Department Information: Department of Statistics and Actuarial Science, 241 SH, 335-2082.

DEO: Professor Kung-Sik Chan, 241 SH, 335-0712, kung-sik-chan@uiowa.edu

Required Textbook:

Intro Stats. 6th edition, by De Veaux, Velleman, and Bock, 2022.

Note: The required text is provided through ICON Direct and your U-Bill will be charged for this e-text, unless you opt out (<https://teach.uiowa.edu/icon-direct-opt-out>) prior to the “tuition and fee reduction” course deadline (<https://registrar.uiowa.edu/course-deadlines>). For most fall 2022 16-week courses the opt-out deadline is Friday, Sept 2, 2022, at 6 P.M. CDT.

Faculty are not responsible for providing students with alternative materials or waiving course requirements. I impose no restriction on the version (ebook, paper book, loose-leaf, or used) of the textbook that students obtain. Nearly all of the textbook contents will be covered in this course and many homework problems will be assigned from the textbook.

Lecture Notes: My lecture notes posted on ICON in advance will be intensively used. Students are strongly recommended to diligently take additional notes in class.

ICON Course Website: Course materials including syllabus, lecture notes, homework assignments, TA discussion materials, grades, answer keys, etc. will be posted on ICON <https://icon.uiowa.edu/>. Important announcements are emailed to the ICON class roster – Have your UIowa email address in the class roster and use it when corresponding with me via email (state the course number in your email).

Prerequisite: MATH:0100 basic algebra or equivalent.

Course Description and Objectives: Introduce students to basic statistical concepts and methods for summarizing, analyzing and presenting data and develop probabilistic reason-

ing and statistical solutions. Coverage includes visualizing and summarizing data, exploring relationships between variables, sampling survey, elementary probability models, sampling distributions, estimation and prediction, confidence intervals, hypothesis tests of significance, inference for relationships, correlation and regression, as well as basic statistical computing. This course will also emphasize applications and hands-on data visualization and analysis.

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.

Upon completion of the course students are expected to

- gain good understanding of statistical reasoning and logic of statistical inference;
- understand and interpret basic statistical analysis results;
- conduct basic data visualization and analysis using statistical software;
- appropriately deliver statistical findings.

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.

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. Please submit your homework in Word doc, pdf files, or clear, readable scans/images of reasonable size. 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. Li, 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.

Students are allowed to discuss homework assignments, but everyone should write up their own individual answers and do their own individual calculations and programming. If “blind copying” in a student’s answer sheets is identified, all involved students will receive zero score and be considered as plagiarism. 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.

Project: A course project will be assigned to provide experience with real data collection and statistical computing and with reporting and presenting results of a statistical analysis.

Low-stakes Quizzes: Prior to an exam, an online quiz may be given in ICON as a practice and discussed in class.

Exams:

Midterm Exam 1 (Tentatively) **Friday, September 30, in class.**

Midterm Exam 2 (Tentatively) **Friday, November 4, in class.**

Final Exam TBA by the University

You can bring one standard letter-size (8.5in × 11in like regular printer paper) sheet of paper with anything you want written or typed on both sides to each midterm exam, and three such self-prepared help sheets to the final exam. Also bring a scientific calculator (any type) to each exam. Other than these, all exams are closed-book and closed-notes.

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. Li, and it should be scheduled as soon as possible.

All exams and makeups are proctored and in-person. Students must attend exams in the class/course section they are enrolled in. These exam rules apply to all exams and makeups.

The midterm exams are given at regular class meeting times. 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.

Grading: A numerical overall score on the scale of 0 to 100 will be determined according to the following (tentative) breakdown

Homework	17%
Project	6%
Low-stakes Quizzes	3%
Midterm 1	23%
Midterm 2	23%
Final	28%

Conversion of these scores into letter grades will be made according to the following scale:

[90, 100] A; [80, 90) B; [65, 80) C; [50, 65) D; < 50 F.

At the discretion of Dr. Li, depending on class performance and attendance/participation in lectures and TA discussions, these ranges may be adjusted, but only downward—criteria will only become easier, not harder.

Plus (+) and minus (−) gradings will be given as deemed appropriate. A+ grade will be used to indicate rare and extraordinary academic achievement.

Integrity of Course Materials: I request that you preserve the integrity of the course materials.

This means that under no circumstance should you make public (either in print or via web postings, social networks, etc.) or disseminate any course materials such as lecture notes, handouts, assignments, exams, and solutions, as well as other materials that I prepare. You must also strive to avoid making use of any solutions provided by anyone outside of this class. Compliance with this request will be considered part of the academic honesty requirements discussed further below under Administrative Policies.

Participation and Classroom Environment: Participation in course activities 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, smart phones, etc. must be put away during exams.

Academic Honesty and Misconduct

All students in CLAS courses are expected to abide by [the CLAS Code of Academic Honesty](#).

Student Complaints

Students with a complaint about a grade or a related matter should first discuss the situation with the instructor, 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 [Registrars 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.

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](#)