STAT:4101 (0001) Mathematical Statistics II
Spring 2021

This version may be subject to some changes. The final version will be posted on the first day of instruction.

Lectures Recorded lectures posted on ICON

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Office Hours	M 12:30 PM – 2:00 PM, Th 11:30 AM – 1:00 PM
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Course Website. Announcements, homework problems, lecture notes, and other course information will be posted on ICON `http://icon.uiowa.edu`.

The schedule is listed here:
`https://docs.google.com/spreadsheets/d/10-BBDlsoIdv9ThEpJpBmbVFRHicaRC3AJlnBIKrRSTY/edit#gid=0`

Course Description and Objectives.
This is a course in mathematical statistics intended for upper-level undergraduate students in the mathematical sciences as well as for graduate students in all disciplines. The goal is to give students a solid foundation in the theory and methods of statistical inference. Main topics include convergence in distribution and convergence in probability, point estimation, confidence intervals, and testing of statistical hypotheses.

Prerequisites. STAT4100.

Lectures. Recorded lectures will be posted on UICapture on or before the lecture days. Ideally, the three lectures in a week will be posted on Monday.

Due to the technical level and the frequent quizzes of this course, **the virtual attendance is required**. *For each student, the viewing records of online lectures will be reviewed and the final letter grade will be assigned partially based on the viewing records.*

Textbook. Introduction to Mathematical Statistics (7th or 8th ed.) Hogg, McKean and Craig, (Prentice Hall). We will cover chapters 4-8. There is no essential difference between the two editions. Homework will be assigned based on 8th ed.

Software. The software R will be used in this class to produce graphs and conduct small simulations to corroborate theoretical results. R can be freely downloaded at `https://mirror.las.iastate.edu/CRAN`.

Office Hours. Reserve your slot using the following google sheet and send me a zoom calendar invitation before your scheduled time.
`https://docs.google.com/spreadsheets/d/1X8J2soY6gD36K6WC6QNOmW89OEn7upHd8n3i4-fBOHs/edit?usp=sharing`

To protect your privacy, use a nickname rather than your true name to reserve the office hours. You can reserve consecutive slots if you need more than 15 minutes. You are encouraged to visit the office hours in group.

Homework. Homework is weekly and due 11:59 PM every Monday. No late homework is accepted. To avoid grading penalty, place a $\boxed{\text{box}}$ around each final numerical answer, show all important steps in your reasoning. *The homework will be graded based on a three-point scale.*

If you write your homework by hand, take pictures or preferably scan your homework, and **must combine them into a single PDF**. The homework won't be graded if it is submitted in formats other than PDF. If multiple files are submitted, only the first file will be graded.

Homework Late Submission Policy: To ensure the grading can be done efficiently, the deadlines of homework are strict and no exception is granted. *Any email inquiring the possibility of accepting late submissions will be ignored.* Two lowest homework will be dropped.

Quizzes and Exams. There will be five quizzes due at the noon on the following Mondays: Feb 15, Mar 1, Mar 15, Mar 29, Apr 26. The quizzes will be posted at Friday noon and due in 72 hours. The quizzes are designed to be about 30-minute long but you will be given sufficient time to finish them. By understanding the quizzes take you some extra time, some lectures may be canceled.

Both the midterm and the final take two fours. The final exam will be comprehensive and the schedule will be announced by the university later.

All the quizzes, midterm, and final exam will be open-book. *You must work independently and cannot discuss with anyone else except for the instructor.* Any evidence of teamwork on quizzes or exams will be treated as academic misconduct and will be reported to the university.

Late Submission Policy: The late submissions of quizzes will not be accepted.

For the midterm and final, suppose the deadline is 8:00 PM. If your exam is submitted at 8:XX PM, which is XX minutes late, then the grade will be XX percent off. The submission is not accepted if it is later than 9:00 PM.

Make Up Exam Policy: There will be no make up exams for the quizzes; the lowest grade of the quizzes will be dropped.

Students must take exams as scheduled except in cases of officially university-approved absence such as class conflict with official exam time, illness, religious observance, and NCAA athletic competition. Documents of the visits from MyChart are required for illness-related absence. Makeup exams are not available for other reasons, including student org field trips, club competitions, job interviews, and personal events. If it is impossible to arrange a makeup exam during the scheduled week, the final exam score substitutes for the missing midterm exam score.

A student who is absent for more than five days or miss a quiz/exam due to an emergency or an illness may request the UI Service Center, 17 Calvin Hall, registrar@uiowa.edu, to notify me of the reason for the absence.

Some announcements may be posted through emails. Make sure you check your university email at least every 48 hours. More teaching policies and resources are seen in:
`clas.uiowa.edu/faculty/teaching-policies-resources-examination-policies`

Grading. Your semester grade will consist of the following components:

Homework	15%	
Quizzes	30%	
Midterm Exam	25%	Apr 7
Final Exam	30%	TBD
Total	100%	

As a **rough** guide, **A,A-**$= 90\% - 100\%$, **B+,B,B-**$= 80\% - 90\%$, **C+,C,C-**$= 70\% - 80\%$, **D+,D,D-**$= 60\% - 70\%$.

"Incomplete" Grades. A grade of "Incomplete" will only be given under extraordinarily extenuating circumstances that prevent the student from completing the course requirements. Having a failing grade in the course is not an extraordinarily extenuating circumstance.

College of Liberal Arts and Sciences: Information for Undergraduates

Absences and Attendance Students are responsible for attending class and for contributing to the learning environment of a course. Students are also responsible for

knowing their course absence policies, which will vary by instructor. All absence policies, however, must uphold the UI policy related to student illness, mandatory religious obligations, including Holy Day obligations, military service obligations, unavoidable circumstances, or University authorized activities. Students may use the CLAS absence form to aid communication with the instructor who will decide if the absence is excused or unexcused. The form is on ICON in the top banner under "Student Tools." More information is at `https://clas.uiowa.edu/students/handbook/attendance-absences`.

Academic Integrity All undergraduates enrolled in courses offered by CLAS have, in essence, agreed to the College's Code of Academic Honesty. Misconduct is reported to the College, resulting in suspension or other sanctions, with sanctions communicated with the student through UI email. Visit this page for information:
`https://clas.uiowa.edu/students/handbook/academic-fraud-honor-code`.

Accommodations for Disabilities UI is committed to an educational experience that is accessible to all students. A student may request academic accommodations for a disability (such as mental health, attention, learning, vision, and physical or health-related condition) by registering with Student Disability Services (SDS). The student is then responsible for discussing specific accommodations with the instructor. More information is at `https://sds.studentlife.uiowa.edu/`.

Administrative Home of the Course The College of Liberal Arts and Sciences (CLAS) is the administrative home of this course and governs its add/drop deadlines, the second-grade-only option, and related policies. Other colleges may have different policies. CLAS policies may be found here: `https://clas.uiowa.edu/students/handbook`.

Class Behavioral Expectations. Students are expected to comply with University policies regarding appropriate classroom behavior as outlined in the Code of Student Life. This includes the policies and procedures that all students have agreed to regarding the Steps Forward for Fall 2020 in response to the COVID-19 pandemic. Particularly, all students are required to wear a face covering when in a UI building, including a classroom. In addition, the density of seats in classrooms has been reduced; in some instances, this will allow 6 feet or more between students while other cases, it may be less. Regardless, wearing a face covering and maintaining as much distance as possible are vital to slowing the spread of COVID19. In the event that a student disrupts the classroom environment through their failure to comply with the reasonable directive of an instructor or the University, the instructor has the authority to ask that the student immediately leave the space for the remainder of the class period. Additionally, the instructor is asked to report the incident to the Office of Student Accountability for the possibility of additional follow-up. Students who need a temporary alternative learning arrangement related to COVID-19 expectations should contact Student Disability Services (`https://sds.studentlife.uiowa.edu/fall-2020/covid-19-temporary-learning-arrangements/`; +1 319 335-1462).

Class Recordings: Privacy and Sharing. Some sessions of a course could be recorded or live-streamed. Such a recording or streaming will only be available to students registered for the course. These recordings are the intellectual property of the faculty, and they may not be shared or reproduced without the explicit **written** consent of the faculty member. *Students may not share these sessions with those not in the class; likewise, students may not upload recordings to any other online environment.* Doing so is a breach of the Code of Student Conduct and, in some cases, a violation of the Federal Education Rights and Privacy Act (FERPA).

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).

Complaints Students with a complaint about an academic issue should first visit with the instructor or course supervisor and then with the Chair of the department or program offering the course; students may next bring the issue to the College of Liberal Arts and Sciences; see this page for more information: `https://clas.uiowa.edu/students/handbook/student-rights-responsibilities`.

Final Examination Policies. The final exam schedule is announced around the fifth week of classes; students are responsible for knowing the date, time, and place of a final exam. Students should not make travel plans until knowing this information. No exams of any kind are allowed the week before finals with very few exceptions made (for labs, ESL and some world language courses, and off-cycle courses): `https://registrar.uiowa.edu/final-examination-scheduling-policies`.

Nondiscrimination in the Classroom. The University of Iowa is committed to making the classroom a respectful and inclusive space for people of all gender, sexual, racial, religious, and other identities. Toward this goal, students are invited in MyUI to optionally share the names and pronouns they would like their instructors and advisors to use to address them. The University of Iowa prohibits discrimination and harassment against individuals on the basis of race, class, gender, sexual orientation, national origin, and other identity categories set forth in the University's Human Rights policy. For more information, contact the Office of Equal Opportunity and Diversity (`https://diversity.uiowa.edu/eod`; +1 319 335-0705).

Sexual Harassment. Sexual harassment subverts the mission of the University and threatens the well-being of students, faculty, and staff. All members of the UI community must uphold the UI mission and contribute to a safe environment that enhances learning. Incidents of sexual harassment must be reported immediately. For assistance, please see `https://osmrc.uiowa.edu/`.