

Meeting Time: MWF 1:30pm - 2:20pm, 110 MLH

Instructor Lan Luo, 205 SH, lan-luo@uiowa.edu

Office Hours: MWF 2:30pm - 3:20pm, or by appointment

Zoom link: <https://uiowa.zoom.us/j/3366988130>

Course Website. Announcements, lecture slides, **script**, and homework problems will be posted on ICON <http://icon.uiowa.edu>.

Course Description and Objectives. The demand for skilled data science practitioners in industry, academia, and government is rapidly growing. This course is intended for lower-level undergraduate students. The goal is to prepare students with the necessary knowledge and useful skills to tackle real-world data analysis challenges. This course will cover basic statistical concepts and computing skills in the field of data science. A tentative list of the topics to be covered include:

1. R basics (importing data, data types, sorting and summarizing)
2. data visualization with `ggplot2`, robust summaries (outliers, median, quantiles)
3. intro to probability, statistical inference, regression models with R
4. intro to machine learning (classification, clustering, prediction and cross-validation)

Requirements. One year of high school algebra or MATH:0100.

References (will not be discussed in class):

1. *An Introduction to Statistical Learning*, by James, et al.
2. *R in a Nutshell*, by Joseph Adler.
3. *The Art of R Programming*, by Norman Matloff.
4. *R Graphics*, by Paul Murrell.
5. *ggplot2: Elegant Graphics for Data Analysis*, by Hadley Wickham.

Grading. There are no traditional exams in this class. Your semester grade will consist of the following components:

Homework	60%	5 highest out of 6
Project 1	20%	October 15
Project 2	20%	December 10
Total	100%	

Please note that the exact grade boundaries will be determined at the end of the semester. However, the following minimum grades will be guaranteed:

Points achieved	Minimum guaranteed
90	A-
80	B-
70	C-
60	D-

Homework and project. Homework assignments will be given biweekly, and due on Wednesday before class. Students registered for this class are expected to complete two projects. Both assignments and projects should consist of two parts: (i) original R code with comments to explain the code and (ii) text file to show the outputs such as tables, graphs and explain your findings. Both should be submitted electronically to ICON. Late submission is not allowed.

Email policy. When emailing about this course, please put “STAT1015” into the subject line. Emails to the instructor could be organizational issues, such as requests for appointments, questions about course organization, etc. In general, discussion on technical issues over email is lack of efficiency, and we strongly encourage to solve those problems during office hours. Technical issues are questions concerning how to approach a particular problem, whether a particular solution is correct, or how to use the statistical software R.

Attendance is required.

Dept. of Statistics and Actuarial Science 241 SH, <http://www.stat.uiowa.edu>
 Prof. Chan, DEO, kung-sik-chan@uiowa.edu

College of Liberal Arts and Sciences
 Information for CLAS Undergraduates
 Fall 2021

Attendance and Classroom Expectations. Students are responsible for attending class and for knowing an instructor’s attendance policies, which vary by course and content area. All students are expected to attend class and to contribute to its learning environment. Students are also expected to comply with University policies and directives regarding appropriate classroom behavior or other matters. Students also have the right to be evaluated solely on their academic achievement and the fulfillment of related requirements.

Absences. Students are responsible for communicating with instructors as soon they know that an absence might occur or as soon as possible in the case of an illness. Students may use the CLAS absence form to aid in communication with instructors who will decide if the absence is excused or unexcused; the form is located on ICON within the top banner under ”Student Tools.” Delays in communication could result in a forfeit of what otherwise might be an excused absence.

Absences: Illness, Unavoidable Circumstances, and University Sponsored Activities. Students who are ill, in an unavoidable circumstance affecting academic work, or who miss class because of a University sponsored activity are allowed by UI policy to make up a missed exam. Documentation is required by the instructor except in the case of a brief illness. Students are responsible for communicating with instructors as soon as the absence is known.

Absences: Holy Days. Reasonable accommodations are allowed for students whose religious holy days coincide with their classroom assignments, tests, and attendance if the student notifies the instructor in writing of any such religious Holy Day conflicts within the first days of

the semester and no later than the third week. (See the University Operations Manual: <https://opsmanual.uiowa.edu/students/absences-class#8.2>).

Absences: Military Service Obligations. Students absent from class due to U.S. veteran or U.S. military service obligations (including military service-related medical appointments, military orders, and National Guard Service obligations) must be excused without penalty. Instructors must make reasonable accommodations to allow students to make-up exams or other work. Students must communicate with their instructors about the expected possibility of missing class as soon as possible. (For more information, see <https://opsmanual.uiowa.edu/iv-8-absences-class%C2%A0-0>).

Academic Misconduct. All undergraduates enrolled in courses offered by CLAS have in essence agreed to the College's Code of Academic Honesty. Academic misconduct affects a student's grade and is reported to the College which applies an additional sanction, such as suspension. Outcomes about misconduct are communicated through UI email (<https://clas.uiowa.edu/students/handbook/academic-fraud-honor-code>).

Academic Accommodations for Students with Disabilities. UI is committed to providing an educational experience that is accessible to all students. A student may request academic accommodations for a disability (such as a mental health, attention, learning, vision, and a physical or health-related condition) through the Student Disability Services (SDS) office. The student is responsible for discussing specific accommodations with the instructor. Note that accommodations are not granted retroactively but from the time of the student's request to the instructor onward; additionally, accommodations must be requested at least two weeks in advance of the related assignment or exam (<https://sds.studentlife.uiowa.edu/>).

Class Recordings: Privacy and Sharing. Course lectures and discussions are sometimes recorded or live-streamed. These are only available to students registered for the course and the intellectual property of the faculty member. These materials may not be shared or reproduced without the explicit written consent of the instructors. Students may not share these recordings with those who are not enrolled in the course; likewise, students may not upload recordings to any other online environment. Doing so is a breach of the Code of Student Conduct and could be a violation of the Federal Education Rights and Privacy Act (FERPA); also see <https://dos.uiowa.edu/policies/code-of-student-life/>.

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 (Operations Manual, III.15.2). Emails should be respectful and brief, with complex matters addressed during the instructor's drop-in hours, for example. Faculty are not expected to answer email after business hours or during the weekends.

Communication: Free Expression. The University of Iowa supports and upholds the First Amendment protection of freedom of speech and the principle of academic freedom to foster a learning environment where open inquiry and the vigorous debate of a diversity of ideas are encouraged. Students will not be penalized for the content or viewpoints of their speech if student expression in a class context is germane to the subject matter of the class and is conveyed in an appropriate manner. To learn more, visit <https://freespeech.uiowa.edu/>.

Complaints about Academic Matters. Students with a complaint about a grade or a related academic matter should first visit with the instructor and then with the course supervisor if one is assigned, and finally with the Chair of the department or program offering the course. Stu-

dents may next bring the issue if not resolved to the College of Liberal Arts and Sciences. See <https://clas.uiowa.edu/students/handbook/student-rights-responsibilities>.

Final Examination Policies. The final exam schedule is published during the fifth week of the fall and spring semesters or on the first day of summer classes; students are responsible for knowing the date, time, and place of their final exams. Students should not make travel plans until knowing this information. A student with exams scheduled on the same day and time or who have more than two final exams on the same day should visit this page for how to resolve these problems by the given deadline: <https://registrar.uiowa.edu/makeup-final-examination-policies>. No exams are allowed the week before finals, but with some exceptions made for labs, language courses, and off-cycle courses (<https://registrar.uiowa.edu/final-examination-scheduling-policies>).

Home of the Course. The College of Liberal Arts and Sciences (CLAS) is the home of this course, and CLAS governs the courses add and drop deadlines, the “second-grade only” option (SG0), and other undergraduate policies and procedures. Different UI colleges may have other policies or deadlines. See <https://clas.uiowa.edu/students/handbook>. Questions? Contact CLAS at clasps@uiowa.edu or 319-335-2633.

Mental Health. Students are encouraged to seek help as a preventive measure or if feeling stressed or overwhelmed. Students should talk to their instructors for guidance with specific class-related concerns and are encouraged to contact University Counseling Service (UCS) at 319-335-7294 during regular business hours to schedule an appointment. USC offers group and individual therapy as well as counseling for couples about relationships while making referrals to other resources (<https://counseling.uiowa.edu/>). Student Health can also address related concerns (<https://studenthealth.uiowa.edu/>). These visits are free to students. After hours, students are encouraged to call the Johnson County Community Crisis Line at (319) 351-0140 or dial 911 in an emergency.

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 based on race, class, gender, sexual orientation, national origin, and other identity categories indicated by the University’s Human Rights policy. For more information, contact the Office of Equal Opportunity and Diversity at <https://diversity.uiowa.edu/division/office-equal-opportunity-and-diversity-eod>.

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 are expected to conduct themselves in a manner that maintains an environment free from sexual harassment and sexual misconduct. Those experiencing sexual harassment are strongly encouraged to report the incidents and to seek help (<https://osmrc.uiowa.edu/>).