Stats 10 Course Syllabus

Introductory Statistics

Miles Chen, PhD

2020 Summer Quarter - Session C

Lecture times:

Mondays and Wednesdays 10AM - 11:50AM, Los Angeles Time (PDT)

https://ucla.zoom.us/j/98517619138?pwd=N09JOWt2V2hlMXJPTzgybFlMclJodz09

- Meeting ID: 985 1761 9138
- Passcode: 712906

Learning Outcomes

- Students will understand what kind of conclusions can be made from data.
- Students will be able to describe and summarize a distribution of data using numeric statistics and graphic displays.
- Students will be able to perform and explain statistical inference tests to test for proportions and means with one or two samples of data.

Course Calendar

Week	Monday	Tuesday	Wednesday	Friday
Week 1: 8/3 -8/7	Lecture 1-1; Discussion	1-1 View Quiz Due;	Lecture 1-2; Lab 1 Instructions	1-2 View Quiz Due; Gradescope Quiz 1 Due
Week 2: 8/10-8/14	Lecture 2-1; Discussion	2-1 View Quiz Due; Lab 1 Due	Lecture 2-2; Lab 2 Instructions	2-2 View Quiz Due; Gradescope Quiz 2 Due
Week 3: 8/17-8/21	Lecture 3-1; Discussion	3-1 View Quiz Due; Lab 2 Due	Midterm Review Lab 3 Instructions	**Midterm Exam** 10AM or 8PM
Week 4: 8/24-8/28	Lecture 4-1; Discussion	4-1 View Quiz Due; Lab 3 Due	Lecture 4-2; Lab 4 Instructions	4-2 View Quiz Due; Gradescope Quiz 3 Due
Week 5: 8/31-9/4	Lecture 5-1; Discussion	5-1 View Quiz Due; Lab 4 Due	Lecture 5-2; Lab 5 Instructions	5-2 View Quiz Due; Gradescope Quiz 4 Due
Week 6: 9/7-9/11	Lecture 6-1; Discussion	6-1 View Quiz Due; Lab 5 Due	Final Review No Lab	**Final Exam** 10AM or 8PM

Exam Dates

- Midterm: Week 3 Friday, August 21 10AM or 8PM California time. Proctored via Zoom.
- Final Exam: Week 6 Friday, September 11 10AM or 8PM California time. Proctored via Zoom.

Course website

All course materials, announcements, and assignments will be posted via CCLE. http://ccle.ucla.edu

Materials:

Software

Students will need to install Zoom to attend lectures. https://zoom.us

Labs will be conducted using RStudio, a free software. Instructions for completing the labs will be given in section.

Textbook

Introductory Statistics **Third edition**. by Robert Gould; Rebecca Wong; Colleen Ryan

OR

Essential Statistics **Second edition**. by Robert Gould; Rebecca Wong; Colleen Ryan

Both books are identical for Chapters 1 - 10. Buy one or the other. Do not buy both. Students do not need extra content or access to online materials.

Calculator

You will need a calculator (graphing or scientific) for the class. If you do not have a good calculator, I recommend the Casio fx-115ES Plus, about $15 on Amazon.

Grading

- 18% Lecture Viewing Quizzes (10 quizzes, 1 is dropped)
- 12% Weekly Gradescop Quizzes (4 quizzes, none are dropped)
- 10% Lab Assignments (5 labs, none are dropped)
- 10% Homework
- 25% Midterm Exam
- 25% Final Exam

Grading scheme is subject to change.

Letter Grade cutoffs

Letter grades are assigned on a straight scale as follows:

- 59.9 and below: F
- 60.0 - 69.9: D
- 70.0 - 76.9: C, 77.0 - 79.9: C+
- 80.0 - 82.9: B-, 83.0 - 86.9: B, 87.0 - 89.9: B+
- 90.0 - 92.9: A-, 93.0 and up A, top 5% of students: A+

I do not curve grades. I do not assign C-, D+ or D-. The top 5% of students will get an A+. An A+ is the only grade assignment that is assigned based on performance relative to peers.

Lecture Viewing Quizzes

Lectures are recorded and the videos will be posted on Youtube.

I do not have a way to take attendance during Zoom lectures. I also recognize that many students live in distant time zones which makes attending lecture impractical.

To reward students who watch the lectures, each lecture will have a corresponding lecture viewing quiz. The lecture viewing quiz will be multiple choice questions with choices A, B, C, D, E.

During each lecture, I will provide the answers to the viewing quiz audibly at arbitrary times in the lecture. Please make sure you complete the lecture viewing quiz after each lecture.

Students will not find the answers to the quizzes in the lecture notes. It is a violation of course policy to share the answers to the viewing quiz.

Weekly Gradescope Quizzes

There will be 4 quizzes. None of the quiz scores will be dropped. Quizzes are open-book and open-note.

Quizzes are intended to be low-stakes opportunities to test your learning.

Students cannot discuss the quiz with anyone other than the professor or TA.

Lab Assignments

There are five lab assignments. None of the lab assignments are dropped.

Lab assignments involve working with real data and applying lecture concepts to the data. Instructions for the labs are covered in section.

Late policy for lab assignments:

Deadlines are based on time in Los Angeles, California. If you live in a different time zone, you are still expected to submit the assignments by the deadline in California. Please be aware of what time these deadlines are for you.

There is a 10 minute grace period. Submissions up to 10 minutes and 59 seconds late will be accepted with no penalty.

Assignments submitted 11 minutes late or more will be accepted with penalty. There is a deduction of 5 points for being less than one hour late. An additional 5-point deduction will be taken for each additional hour it is late.

Deductions are suspended between the hours of 12:00 AM and 5:59 PM the following day. The penalties resume at 6 PM.

The maximum late penalty is 60 points.

So, if an assignment is due at 6pm, a homework assignment submitted on CCLE at

- 6:10:59 pm will receive no penalty.
- 6:11:00 pm will receive 5-point penalty.
- 6:59:59 pm will receive 5-point penalty.
- 7:00:00 pm will receive 10-point penalty.
- 7:59:59 pm will receive 10-point penalty.
- 8:00:00 pm will receive 15-point penalty.
- 11:59:59 pm will receive 30-point penalty.
- 12:00:00 am (following day) will receive 30-point penalty.
- 5:59:59 pm (following day) will receive 30-point penalty.
- 6:00:00 pm (following day) will receive 35-point penalty.
- 10:59:59 pm (following day) will receive 55-point penalty.
- 11:00:00 pm (following day) will receive 60-point penalty.
- Anything later will be accepted with a 60-point penalty.

I strongly recommend uploading the homework to CCLE well in advance of the deadline in case there are connectivity problems or server issues.

After 9 calendar days, late assignments will not be accepted for any reason.

Extensions   I will grant a 72-hour reprieve from the late penalty for submissions if the assignment is accompanied with documentation.

The documentation must be uploaded onto CCLE with the submission.

CCLE accepts multiple file submissions for assignments. Submit your assignment with a PDF or photograph of the documentation showing the **date** and reason for your inability to submit the homework on time.

Do not email the professor or your TA with your documentation.

Extensions beyond 72 hours will be granted in only the most extreme circumstances, and will only be granted in person by the professor.

Homework

Homework problems from the textbook are assigned for students to work through.

Homework problems are not collected and will not be graded.

At the end of the quarter, everyone receives full credit for the homework portion of their grade.

Exams

There will be 2 exams, a midterm and a final. Exams will be taken online. Exams are open-book and open-note. Students cannot discuss the exam with anyone other than the professor or TA.

Exams are two hours long and will be proctored live via Zoom. Each exam will have two sessions: one at 10AM and one at 8PM California time. Students do not need to tell me which session they will attend; they can simply show up in the zoom room at the designated time.

- Midterm: Week 3 Friday, August 21 10AM or 8PM California time. Proctored via Zoom.
- Final Exam: Week 6 Friday, September 11 10AM or 8PM California time. Proctored via Zoom.

Make up policy for Exams

We will have two exams in class.

If you miss an exam, you will need to provide documentation for your reason for missing the exam. Make-ups of the exam must be taken within 7 days of the actual exam, or a zero will be recorded. (For example, a missed exam originally given on Friday must be made up by the following Friday by 5pm.)

Zoom Lectures

Link for Zoom: https://ucla.zoom.us/j/98517619138?pwd=N09JOWt2V2hlMXJPTzgybFlMclJodz09

- Meeting ID: 985 1761 9138
- Passcode: 712906

Please log in with your **cameras turned on and microphones muted**. I request that your cameras be turned on because it feels very lonely talking to a bunch of blank rectangles and feels much better seeing students' faces. Ultimately, however, the decision to turn on your webcam is yours to make.

Because I am recording the lectures, there is a possibility that your thumbnail (with no name label) appears in the video. I will take steps to minimize student thumbnails from appearing in the videos.

I do post my videos on Youtube, so if you have a strong aversion to having your thumbnail appearing, you can still turn off your camera.

Participant Etiquette during lecture

- When you are in a zoom meeting, please use the "raise hand" feature to ask a question. To use the button, you may need to click the "participants" button to show the participant panel. In the participant panel there will be a button to "raise hand," along with other feedback icons like "yes," and "no" which you can use when I ask a question like, "does this make sense?"
- Please wait to be called upon before turning on your mic to ask a question. After asking your question, please mute your mic. You can also ask your question in the text chat without raising your hand.
- In general, please use your judgement and minimize distracting activities in video:
    - Please do not use virtual backgrounds during lecture.
    - Please avoid walking around with your laptops during lecture.
    - You are allowed to eat, drink, and snack.
    - You are allowed to get up and use the restroom.
    - If something distracting is happening, please turn off your camera.

Office hours will not be recorded and I am much more lax with the rules. You can leave your mic on the whole time during office hours and ask questions directly without raising your hand.

Exam Review Sessions

On the Wednesdays before the midterm and final exam, class time will be used to hold a review session.

Attending the review session is optional. The review sessions have no viewing quizzes.

Course Policies

Copyright Policy

All course materials posted on the course website or distributed in class (including but not limited to lecture slides, lab and homework assignments, lecture videos, quizzes, exams) are intended for personal use only by students enrolled in this course. **It is a violation of course policy to post, share, or distribute any course material electronically or physically without permission from the instructor, even after the course is over.**

Academic Integrity

As a student and member of the University community, you are here to get an education and are, therefore, expected to demonstrate integrity in your academic endeavors. All students must uphold University of California Standards of Student Conduct as administered by the Office of the Dean of Students. Students are subject to disciplinary action for several types of misconduct, including but not limited to: cheating, multiple submissions, plagiarism, prohibited collaboration, facilitating academic dishonesty, or knowingly furnishing false information.

In addition, each student is the sole owner of their own code and work and must NOT:

- Submit work that is not original.
- Publish code or solutions online.
- Post the course questions on forums like chegg, stack overflow, or other similar places.
- Submit someone else's work, or a modification of that work, with or without that person's knowledge.
- Allow someone else to submit their work, or a modification of their work.
- Contract course work out to others.
- Plan or execute with another student some form of cheating during an exam.
- Make use of unauthorized material during an exam.

For more information about academic integrity and student conduct code, please go to http://www.deanofstudents.ucla.edu/Student-Conduct

Gender Discrimination, Sexual Violence, and Harassment

Title IX prohibits gender discrimination, including sexual harassment, domestic and dating violence, sexual assault, and stalking.

http://www.sexualharassment.ucla.edu/

http://www.sexualviolence.ucla.edu/

> The University of California is committed to creating and maintaining a community dedicated to the advancement, application and transmission of knowledge and creative endeavors through academic excellence, where all individuals who participate in University programs and activities can work and learn together in an atmosphere free of harassment, exploitation, or intimidation.

If you, or someone you know, have been a victim of sexual harassment or sexual violence, please seek help.

Any type of harassment of any other student will not be tolerated. Please be aware that your TA and Lecturer are legally compelled to report any information in regards to sexual harassment or sexual violence to the Title IX officer.

Confidential support and advocacy is available for students who have experienced sexual harassment or sexual violence at the CARE Advocacy Office for Sexual and Gender-Based Violence, John Wooden Center West 1st Floor, (310) 206-2465, CAREadvocate@careprogram.ucla.edu. Sexual violence or sexual harassment can also be reported directly to the University's Title IX Coordinator, 2241 Murphy Hall, titleix@conet.ucla.edu, (310) 206-3417.

Reach a confidential UCLA advocate, 24 hours a day, 7 days a week by calling the CAPS 24/7 Crisis Hotline (310) 825-0768

Mental Health and Student Well-Being

> Counseling and Psychological Services (CAPS) is a multidisciplinary student mental health center for the UCLA campus. CAPS supports the academic and student development missions of the University and the Division of Student Affairs. We're here to support your mental health needs as you pursue your academic goals. Our services are designed to foster the development of healthy well-being necessary for success in a complex global environment.

http://www.counseling.ucla.edu

Attending and completing university coursework is difficult and can become burdensome both physically and psychologically. Take care of your mental well-being and seek support from some of the many excellent resources offered at CAPS.

Accommodations for students with disabilities

Students needing academic accommodations based on a disability must contact the Center for Accessible Education (CAE) at (310) 825-1501 or present in person at Murphy Hall A255. CAE will assess all requests to determine reasonable disability accommodations and communicate appropriately with faculty. In the event that a student has approval for proctoring arrangements during exams, please inform your respective professors and/or Teaching Assistant before date of exams. When possible, students should contact the CAE within the first two weeks of the term as reasonable notice is needed to coordinate accommodations.

For more information visit http://www.cae.ucla.edu

Course Grade Changes

After course grades have been submitted to the registrar, grades are final. Grade changes will only be considered if there has been a clerical or procedural mistake. Students have one quarter to make requests for a grade change. Graded exams and other materials will be kept for one quarter. After one quarter, course grade changes will not be made.

List of Course Topics:

- Chapter 1
  - Purpose of Statistics as a subject
  - The nature of data
  - How data is collected
  - Differences between observational studies and experiments
- Chapter 2
  - Describe data with visual displays

- Dot plots, Histograms, Box plots
  - frequency tables

- Chapter 3

  - Describe numeric data with numeric summaries.
  - mean, median, standard deviation, range, and inter-quartile range.
  - shape of a distribution of numeric data
  - Z-scores

- Chapter 4

  - relationships between numeric variables
  - correlation
  - linear regression

- Chapter 5

  - probability
  - independent events
  - mutually exclusive events

- Chapter 6

  - normal probability model
  - the binomial probability model

- Chapter 7

  - Sampling distributions
  - The Central Limit Theorem
  - Confidence Intervals: interpretation and limitations
  - Confidence intervals based on a proportion from a single sample

- Chapter 8

  - Hypothesis Testing
  - Hypothesis Testing: One-Proportion Z-test
  - Hypothesis Testing: Two-Proportion Z-test
  - P-values
  - Type I and Type II error

- Chapter 9

  - Confidence intervals for the mean
  - Confidence intervals for a difference between means
  - Hypothesis Testing: One-sample T-test
  - Hypothesis Testing: Two-sample T-test for independent samples
  - Hypothesis Testing: Two-sample T-test for paired data

Additional Information

Undergraduate Mentoring

I am a mentor for undergraduates for the UCLA Department of Statistics. This means that you may visit me during office hours (or by appointment) for an informal meeting where you can ask questions unrelated to course content, such as research opportunities, graduate studies, career paths, or any other topic pertinent to your education. You are welcome to visit and meet even after the course ends.

Requests for Letters of Recommendation

I am generally only willing to write letters of recommendation for students who I know and recognize. If you think you might request a letter of recommendation in the future, please make an effort to make yourself known to me. I know with the distance learning format, this is more difficult. I am more likely to recognize students who consistently arrive to class on time, turn on their cameras, and actively participate. I am also more likely to recognize students who visit office hours multiple times during the quarter.

For a full guideline, please see this page on my personal website: https://smileschen.com/lor.html