Syllabus: Introduction to Statistics with Computer Applications
ECON 3818 - 040

Spring 2026
Last revised: January 8, 2026

General Information

- **Instructor:** Sungyoun Chung

- **Email:** Sungyoun.Chung@colorado.edu

- **Class Meetings:** MWF 11:15 am – 12:05 pm, Hellems Arts & Sciences Bldg E1B60

- **Office:** ECON 401

- **Office Hours:** Monday 2:00 – 4:00 pm

- **Websites:** Canvas, MacMillan Achieve

Email Policy

- If you would like to contact me through email, please use your **official school email address**. I will not respond to emails sent through your personal email address. Please allow me 24 hours to respond to your emails. If I have not responded after a day, please feel free to send me a follow-up email.

- Please use the subject title **ECON3818** for all your emails. This sets a filter in my inbox and makes it easier for me to see your emails. Please also mention your full name in the email so that I know who I am talking to.

- In compliance with Federal Rights and Privacy Act (FERPA) of 1974, the TAs and I will **NEVER** reply via email to inquiries regarding performance on assignments or grades.(https://www.colorado.edu/registrar/students/records/ferpa).

Course Description

The purpose of this course is to introduce you to the principles of statistical reasoning and inference. To this end, the ultimate goals of the course are for you to thoroughly understand the following concepts: describing data with graphs and numbers, basic probability rules, sampling distributions of test statistics, hypothesis testing, and confidence intervals across multiple settings covered in the course, and finally, knowledge of simple regression. This foundational course is essential to your success in the study and long-run understanding of economics.

This syllabus will cover the organizational details of the course. Any relevant information not specified here, will be given in class at the due time.

Prerequisites

Econ 2010 and Econ 2020 and either Econ 1088 or Math 1081 or Math 1300 or Math 1310 or APPM 1350 (all minimum grade C-). Restricted to students with 22-180 units completed.

Textbook

The Basic Practice of Statistics, 9th Edition, by David Moore, William Motz, and Michael Fligner.

The course will use MacMillan Publishing's Achieve homework system that comes with an electronic version of the book embedded in the system. You will sign up for the Basic Practice of Statistics + Achieve System through Canvas. Detailed instructions for signing up are provided on the course Canvas site.

R Computer Applications

R is a free programming language that is available for Mac, Windows, and Unix operating systems. It is pre-installed on computers in most University computer labs and can be downloaded from the Internet. You will use the R Studio Interface to do R exercises. We will spend some of our class/recitation time working on these. R has good self-contained documentation in the basic R installation. On your first R exercise, you will get some basic training on how to install and do some basic operations in R. I will help you through the semester. An additional free resource is the book Modern R with the tidyverse by Bruno Rodrigues: (https://modern-rstats.eu/)

Course Outline

1. Exploring Data

   - Introduction to R
   - CH 1: Picturing Distributions with Graphs
   - CH 2: Describing Distributions with Numbers
   - CH 3: The Normal Distributions
   - CH 4: Scatterplots and Correlation
   - CH 5: Regression
   - CH 6: Two-Way Tables

2. Producing Data

   - CH 8: Producing Data - Sampling
   - CH 9: Producing Data - Experiments
   - CH 10: Data Ethics

3. From Data Production to Inference

   - CH 12: Introducing Probability
   - CH 13: General Rules of Probability
   - CH 14: Binomial Distributions
   - CH 15: Sampling Distributions
   - CH 16: Confidence Intervals: The Basics
   - CH 17: Tests of Significance: The Basics
   - CH 18: Inference in Practice

4. Inference about Variables

   - CH 20: Inference about a Population Mean
   - CH 21: Comparing Two Means
   - CH 22: Inference about a Population Proportion
   - CH 23: Comparing Two Proportions

5. Inference about Relationships

   - CH 26: Inference for Regression

Grading

All submission deadlines are expressed in Mountain Daylight Time (MDT), unless differently specified

Date	Component	Weight
due on the assigned due dates, Sunday by 11:59 PM	Homework (10)	16%
Sunday, February 22nd, by 11:59 PM	R Projects 1	3%
Sunday, March 22nd, by 11:59 PM	R Projects 2	3%
Sunday, April 19th, by 11:59 PM	R Projects 3	3%
Friday, February 13th, in class	Midterm 1	20%
Friday, March 27th, in class	Midterm 2	20%
Tuesday, April 28th, 1:30PM	Final Exam	25%
Every Recitation	Attendance	10%
Total Grade		100%

(1) *Homework*:

Homework will be done in the MacMillan Achieve system.

For the sake of the final grade, I will drop the lowest <u>two</u> homework grades.

While any date prior to the due date is acceptable, any late submission is associated with a penalty of 50% of the grade (that is you can get at most 50 out of 100). No late submissions will be accepted after the University Reading Day.

(2) *R Projects*:

There will be three R projects. Each project is worth 3% of your total grade. For each project, you will write code in R and submit an `.R` file. The projects will be similar to the R exercises you learned and practiced in the course.

(3) *Recitation Attendance*:

In person recitations are mandatory. If you miss a recitation, you will get a zero. **For the sake of the final grade, I will drop <u>two</u> recitation sessions**.

The goal of the recitations is to review concepts, ask questions, improve your understanding of the materials, solve questions, and practice for exams in smaller groups.

(4) *Exams*:

Midterm 1 - Chapter 1, 2, 3, 4, 5, 6

Midterm 2 - Chapter 8, 9, 12, 13, 14, 15, 16, 17

Final Exam - Midterm 1 + Midterm 2 + Chapter 18, 20, 21, 23, 26

Mobile phones are strictly prohibited during midterm exams. Any student found using or holding a mobile phone during the exam will receive a failing grade for the course. Physical calculators (excluding mobile phones) are permitted.

NO MAKEUP EXAMS WILL BE ADMINISTERED. If you anticipate a conflict with a scheduled exam, you must notify me by email at Sungyoun.Chung@colorado.edu at least one week prior to the exam date.

THE FINAL EXAM CANNOT BE MISSED UNDER ANY CIRCUMSTANCES. You must take the final exam. Otherwise, you will automatically receive F

Grading Scale

Grade	Percentage Range	Grade	Percentage Range
A	93.00–100	C	73.00–76.99
A–	90.00–92.99	C–	70.00–72.99
B+	87.00–89.99	D+	67.00–69.99
B	83.00–86.99	D	63.00–66.99
B–	80.00–82.99	D–	60.00–62.99
C+	77.00–79.99	F	0–59.99

There will be no end-of-the semester rounding up of any kind. Also, I am not allowed (by FERPA; 1974) to discuss grade related issues with you or anyone else via email. If you have questions or concerns about your grade, come see me during office hours.

A curve may be applied to the overall course grade to conform to departmental standards (it might be subject to normalization at the **discretion** of the instructor). Other than that, I will not grant any request to increase your grade to meet a certain cutoff. You will receive the grade that you earned throughout the course.

Recitation Schedule

Recitations are mandatory. Attendance determines the recitation grade. For this semester (2026 Spring), **recitations begin on Thursday, 15 January**. Recitations must continue through the last week of classes.

Section	Time	Room	TA
041	Mon 9:05am–9:55pm	Stadium Building 136C	JeongWon Ko
042	Wed 3:35pm–4:25pm	Center Acad Success & Engagmnt E230	JeongWon Ko

TA Office Hours

- **JeongWon (Michelle) Ko** michelle.ko@colorado.edu
  TBD (Office: ECON 414)

University Policies

Classroom Behavior

Students and faculty are responsible for maintaining an appropriate learning environment in all instructional settings, whether in person, remote, or online. Failure to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, political affiliation, or political philosophy. For more information, see the classroom behavior policy, the Student Code of Conduct, and the Office of Institutional Equity and Compliance.

Accommodation for Disabilities, Temporary Medical Conditions, and Medical Isolation

If you qualify for accommodations because of a disability, please submit your accommodation letter from Disability Services to your faculty member in a timely manner so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities in the academic environment. Information on requesting accommodations is located on the Disability Services website. Contact Disability Services at 303-492-8671 or dsinfo@colorado.edu for further assistance. If you have a temporary medical condition, see Temporary Medical Conditions on the Disability Services website.

If you have a required medical isolation for which you require adjustment, reach out to your TA via email. In compliance with the FERPA privacy protection, there is no need need for you to state the nature of your illness or require a doctor note (campus health services no longer provide "doctor's notes" or appointment verifications).

Religious Accommodations

Campus policy requires faculty to provide reasonable accommodations for students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. Please communicate the need for a religious accommodation in a timely manner, and no later than the end of the second week of classes. See the campus policy regarding religious observances for full details.

Preferred Student Names and Pronouns

CU Boulder recognizes that students' legal information doesn't always align with how they identify. Students may update their preferred names and pronouns via the student portal; those preferred names and pronouns are listed on instructor's class rosters. In the absence of such updates, the name that appears on the class roster is the student's legal name.

Honor Code

All students enrolled in a University of Colorado Boulder course are responsible for knowing and adhering to the Honor Code. Violations of the Honor Code may include but are not limited to: plagiarism (including use of paper writing services or technology), cheating, fabrication, lying, bribery, threat, unauthorized access to academic materials, clicker fraud, submitting the same or similar work in more than one course without permission from all course instructors involved, and aiding academic dishonesty. All incidents of academic misconduct will be reported to Student Conduct & Conflict Resolution: studentconduct@colorado.edu, 303-492-5550. Students found responsible for violating the Honor Code will be assigned resolution outcomes from the Student Conduct & Conflict Resolution as well as be subject to academic sanctions from the faculty member. Visit Honor Code for more information on the academic integrity policy.

Sexual Misconduct, Discrimination, Harassment and/or Related Retaliation

CU Boulder is committed to fostering an inclusive and welcoming learning, working, and living environment. University policy prohibits protected-class discrimination and harassment, sexual misconduct (harassment, exploitation, and assault), intimate partner violence (dating or domestic violence), stalking, and related retaliation by or against members of our community on- and off-campus. These behaviors harm individuals and our community. The Office of Institutional Equity and Compliance (OIEC) addresses these concerns, and individuals who have been subjected to misconduct can contact OIEC at 303-492-2127 or email cureport@colorado.edu. Information about university policies, reporting options, and support resources can be found on the OIEC website.

Please know that faculty and graduate instructors must inform OIEC when they are made aware of incidents related to these policies, regardless of when or where something occurred. This is to ensure that individuals impacted receive outreach from OIEC about resolution options and support resources. To learn more about reporting and support for a variety of concerns, visit the Don't Ignore It page.

Mental Health and Wellness

The University of Colorado Boulder is committed to the well-being of all students. If you are struggling with personal stressors, mental health or substance use concerns that are impacting academic or daily life, please contact Counseling and Psychiatric Services (CAPS) located in C4C or call 303-492-2277.

Free and unlimited telehealth is also available through Academic Live Care. The Academic Live Care site also provides information about additional wellness services on campus that are available to students.