

STAT 8010: Statistical Methods I

Summer I 2023, Asynchronous Online

Instructor: Whitney Huang
Office: O-221 Martin Hall

Email: wkhuang@clemson.edu
Office Phone: (864) 656-3070

Office Hours: TBD and by appointment

Reference Books:

An Introduction to Statistical Methods and Data Analysis, 6th Edition. **Lyman Ott and Micheal T. Longnecker, Duxbury, 2010; ISBN-13:** 978-1305269477. Other editions and online text are permitted.

Statistical Software: The R project for Statistical Computing (<https://www.r-project.org/>) and RStudio (<https://rstudio.com/products/rstudio/>), an integrated development environment (IDE) for R. You can use other software if you feel comfortable (e.g., SAS, SPSS, Minitab, JASP (<https://jasp-stats.org/> free and open-source)). Students will be tested on understanding outputs of R.

Course Website: <https://whitneyhuang83.github.io/STAT8010/2023SummerI.html>

Course Objectives:

At the end of this course, the student will be able to:

0. read research data into a computer package
1. summarize, visualize, and interpret research data
2. apply statistical techniques and knowledge appropriately
3. perform statistical analyses using a computing package and interpret software output
4. draw appropriate conclusions and inferences from data

Attendance:

This course will be fully online and regular attendance via Zoom is expected. Students are free to leave if the instructor is more than 15 minutes late to class.

Make-up Work Due to Missed Attendance:

1. Students should speak with their course instructors regarding any scheduled absence as soon as possible and develop a plan for any make-up work.
2. In the event of an emergency, the student should make direct contact with the course instructor, preferably before a class or an exam takes place. It is the student's responsibility to secure documentation of emergencies, if required.
3. Course instructors must implement fair grading procedures and provide an opportunity to make up missed assignments and examinations that does not unfairly penalize the student. Issuing specific dates by which make up work must be submitted without confirmation from the student could constitute unfair penalization, as students with illness (including COVID-19-related illness) may not always respond in a timely manner. Such make-up work shall be at the same level of difficulty with the missed assignment or examination. Course instructors shall hold all students to the same standard for making up missed assignments or examinations.
4. While course instructors should seek to make reasonable accommodation for a student involved in University-sponsored activities, students should understand that not every course can accommodate absences and that absences do not lessen the need to meet all course objectives.

Exam Information:

There will be two **online** exams and **you are allowed to use statistical software**. The dates for the two exams are:

- **Online Exam I:** May 31, Wednesday
- **Online Exam II:** June 12, Monday

The **Online Final Exam** will be given on Thursday, June 22

Homework:

Homework will be assigned periodically to be graded and returned to you in a timely manner. All assignments are to be uploaded to Canvas by 3:30 pm on the due dates. **NO LATE HOMEWORK WILL BE ACCEPTED UNDER ANY CIRCUMSTANCES**. To accommodate unusual circumstances that prevent the completion of homework, the lowest homework grade will be dropped from evaluation of the homework average.

Evaluation:

- Grade Distribution:

Homework:	20%
Exam I	25%
Exam II	25%
Final Exam	30%

- Letter Grade:

≥ 90.00	A
88.00 ~ 89.99	A-
85.00 ~ 87.99	B+
80.00 ~ 84.99	B
78.00 ~ 79.99	B-
75.00 ~ 77.99	C+
70.00 ~ 74.99	C
68.00 ~ 69.99	C-
≤ 67.99	F

Key Dates:

- **May 17, Wed.:** Last day to register or add a class or declare audit
- **May 22, Mon.:** Last day to drop a class or withdraw from the University without a W grade
- **June 8, Thu.:** Last day to drop a class or withdraw from the University without final grades

Academic Integrity Statement:

“As members of the Clemson University community, we have inherited Thomas Green Clemson’s vision of this institution as a ‘high seminary of learning.’ Fundamental to this vision is a mutual commitment to truthfulness, honor, and responsibility, without which we cannot earn the trust and respect of others. Furthermore, we recognize that academic dishonesty detracts from the value of a Clemson degree. Therefore, we shall not tolerate lying, cheating, or stealing in any form. In instances where academic standards may have been compromised, Clemson University has a responsibility to respond appropriately to charges of violations of academic integrity.”

Please refer to the current Graduate School Policy Handbook for the graduate academic integrity policy.

Disability Access Statement:

It is university policy to provide, on a flexible and individualized basis, reasonable accommodations to students who have disabilities. Students with disabilities requesting accommodations should make an appointment with Disability Services (656-6848), to discuss specific needs within the first month of classes. Students should present a Faculty Accommodation Letter from Student Disability Services when they meet with instructors. Accommodations are not retroactive and new Faculty Accommodation Letters must be presented each semester.

Title IX Statement:

Clemson University is committed to a policy of equal opportunity for all persons and does not discriminate on the basis of race, color, religion, sex, sexual orientation, gender, pregnancy, national origin, age, disability, veteran’s status, genetic information or protected activity (e.g., opposition to

prohibited discrimination or participation in any complaint process, etc.) in employment, educational programs and activities, admissions and financial aid. This includes a prohibition against sexual harassment and sexual violence as mandated by Title IX of the Education Amendments of 1972. The University is committed to combatting sexual harassment and sexual violence. As a result, you should know that University faculty and staff members who work directly with students are required to report any instances of sexual harassment and sexual violence, to the University's Title IX Coordinator. What this means is that as your professor, I am required to report any incidents of sexual harassment, sexual violence or misconduct, stalking, domestic and/or relationship violence that are directly reported to me, or of which I am somehow made aware. There are two important exceptions to this requirement about which you should be aware: Confidential Resources and facilitators of sexual awareness programs such as "Take Back the Night and Aspire to be Well" when acting in those capacities, are not required to report incidents of sexual discrimination. Another important exception to the reporting requirement exists for academic work. Disclosures about sexual harassment, sexual violence, stalking, domestic and/or relationship violence that are shared as part of an academic project, a research project, classroom discussion, or course assignment, are not required to be disclosed to the University's Title IX Coordinator. This policy is located at <http://www.clemson.edu/campus-life/campus-services/access/non-discrimination-policy.html>. Ms. Alesia Smith is the Executive Director for Equity Compliance and the Title IX Coordinator. Her office is located at 223 Holtzendorff Hall, phone number is 864.656.3181, and email address is alesias@clemson.edu.

Tentative Course Schedule:

Week	Dates	Topic
1	May 16-19	Introduction & Exploratory Data Analysis
2	May 22-26	Probability
3	May 30-June 2	Distributions of random variables; Inference for a Single Population Mean
4	June 5-9	Inference for Multiple Population Means
5	June 12-16	Categorical Data Analysis; Correlation and Regression Analysis
6	June 19-20	Regression Analysis