Stat-8010 # Statistical Methods I **Spring 2025**

Instructor: M. Yaseen

Email: myaseen@clemson.edu

Office: Martin Hall Room E-3A

Class Hours: 08:00AM - 09:15AM, TR, Martin Hall Room M-103

Office Hours: 01:45PM - 02:45PM, TR

TA: Dulshan Malshika (dmalshi@clemson.edu)

Texts: *An Introduction to Statistical Methods and Data Analysis.* **Lyman Ott and Micheal T. Longnecker**

Course Objectives: **Primary**: (a) Students will be able to summarize and interpret research data. (b) Students will be able to draw appropriate conclusions and inferences from data. (c) Students will demonstrate an understanding of various statistical techniques and know when and how to apply them. (d) Students will demonstrate knowledge of basic experimental designs and understand how to select an appropriate design for their research. **Secondary**: (a) Students will be able to use computers and statistical computing packages. (b) Demonstrate an awareness of the power and capabilities of statistical software to aid in performing statistical analyses. (c) Students will be able to review the importance of the scientific method in research. (d) Students will be able to read texts, periodicals, newspapers, etc., with a greater understanding of statistical information presented.

Attendance: College work proceeds at such a pace that regular attendance is necessary for each student to obtain maximum benefits for instruction. Regular and punctual attendance at all class sessions is a student obligation, and each student is responsible for all the work, including test and written work, in all class sessions. Should the professor be late for class, students are required to wait fifteen minutes before leaving.

Evaluation:

Homework/Quizzes:	10%
Exam 1:	30%
Exam 2:	30%
Final Exam:	30%

Letter Grades: **A**: >= 90.00; **A-**: 88.00 ~ 89.99; **B+**: 85.00 ~ 87.99; **B**: 80.00 ~ 84.99; **B-**: 78.00 ~ 79.99; **C+**: 75.00 ~ 77.99; **C**: 70.00 ~ 74.99; **C-**: 68.00 ~ 69.99; **F**: <= 67.99

Anticipated Exam Dates:

Exam 1:	Tuesday, February 18, 2025, 08:00AM - 09:15AM
Exam 2:	Thursday, March 27, 2025, 08:00AM - 09:15AM
Final Exam:	Friday, May 2, 2025, 07:00PM - 09:30PM

Academic Integrity: 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.

Accessibility: Clemson University values the diversity of our student body as a strength and a critical component of our dynamic community. Students with disabilities or temporary injuries/conditions may require accommodations due to barriers in the structure of facilities, course design, technology used for curricular purposes, or other campus resources. Students who experience a barrier to full access to this class should let the instructor know and are encouraged to request accommodations through SAS (Student Accessibility Services) as soon as possible. To request accommodations through SAS, please see this link: (https://www.clemson.edu/academics/studentaccess/register.html). You can also reach out to SAS with questions by calling 864-656-6848, visiting SAS at the ASC Suite 239, or stopping by the office as a drop-in appointment.

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Inclement Weather: Any exam that was scheduled at the time of a class cancellation due to inclement weather will be given at the next class meeting unless contacted by the instructor. Any assignments due at the time of a class cancellation due to inclement weather will be due at the next class meeting unless contacted by the instructor. Any extension or postponement of assignments or exams must be granted by the instructor via email or Canvas within 24 hours of the weather related cancellation.

Course Modality: Class meetings and office hours will be in person. In the event of instructor illness or university mandated move to virtual learning, lectures will be delivered using a synchronous online format and exams will be conducted online.

Tentative Course Schedule

Week	Topic	Reading
01	Statistics and the Scientific Method; Descriptive Statistics	Ch. 1 & 3
02	Descriptive Statistics, Graphical and Numerical Ways to Summarize Data	Ch. 3
03	Random Variables, Probability Distributions, and Sampling Distributions	Ch. 4
04	Inferences About a Single Population Mean, Estimating and Conducting Hypothesis Tests	Ch. 5
05	Inferences About Population Variances, Constructing Confidence Intervals and Conducting Hypothesis Tests	Ch. 7
06	Inferences About Two Population Means, Constructing Confidence Intervals and Conducting Hypothesis Tests	Ch. 6
07	Inferences About Two or More Population Means, Analysis of Variance (ANOVA)	Ch. 8
08	Inferences About Two or More Population Means, Analysis of Variance (ANOVA)	Ch. 8
09	Multiple Mean Comparisons	Ch. 9
10	Experimental Design: Completely Randomized Designs, and Randomized Complete Block Designs	Ch. 15
11	Introduction to Simple Linear Regression (Correlation and Least Squares Estimation)	Ch. 11
12	Inference for Simple Linear Regression, Constructing Confidence Intervals and Conducting Hypothesis Tests	Ch. 11
13	Inference for Simple Linear Regression, Constructing Confidence Intervals and Conducting Hypothesis Tests	Ch. 11
14	Categorical Data Analysis (Proportions and Frequency Tables)	Ch. 10
15	Categorical Data Analysis (Proportions and Frequency Tables)	Ch. 10
16	Categorical Data Analysis (Proportions and Frequency Tables)	Ch. 10