STA 115-01: Statistics

Fall 2024 Course Syllabus

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EXPECTED RESPONSE TIME: within 24 hours during the week, intermittently on weekends
OFFICE HOURS: Wednesday 10am-11am
Friday 11am-12pm

Zoom and Recording:

Class sessions are held in person. However, the Zoom link serves as a backup plan and study tool. Lectures will be recorded for later viewing, and you will be able to watch live in case you are unable to attend class in person.

College Policy for Recording in the classroom:

Read the TCNJ Recording Policy

Course Description:

Introduction to descriptive statistics and statistical inference. Topics include: measures of location and variability, graphical displays, probability, normal distribution, sampling, estimation, and hypothesis testing. STA 115 cannot be taken if STA 215 has already been successfully taken.

Course Materials:

The required resource for this class is Achieve, which is being provided through the First Day program with the bookstore. With First Day, the publisher agrees to sell the access at a discounted rate, lower than the regular retail price. That charge is added to your term bill, so you're still able to use financial aid to pay for the course materials. You do have the ability to opt out of that charge, but doing so will mean you're responsible for obtaining Achieve access for *Statistics: Concepts and Controversies, 10th ed.* ISBN: 9781319395056, on your own, which will cost more. That access can be purchased from:

Go to Macmillan store page

You'll access Achieve, which includes the eBook and required homework assignments, through our course page in Canvas and grades completed work will periodically (not immediately) sync

to Canvas.

Students will also be expected to have a scientific calculator.

Learning Goals:

This course introduces the students to statistical ideas and concepts with an emphasis on the interpretation of data and the communication of statistical results. Topics include sampling, surveys, experimental designs, observational studies, data exploration, chance phenomena, and methods of statistical inference.

On completion of the course, students will be able to:

A. Recognize and apply the most appropriate probability sampling techniques in order to collect data from a population.

B. Understand the basic principles of statistical design of experiments and critically evaluate claims based on statistical reasoning from survey and experimental results.

C. Interpret and communicate statistical reasoning using basic statistical terms, descriptive statistics, and charts and graphs.

D. Recognize and evaluate the relationship between two quantitative variables through simple linear regression and correlation and be able to explain why correlation does not imply causation.

E. Analyze and interpret relationships in two-way tables.

F. Understand the relationship between sample statistics and population parameters, determine appropriate point and confidence interval estimates of selected population parameters and interpret the estimates.

G. Describe basic principles of probability, including the application of the normal curve to social and physical phenomena.

H. Understand the concept of statistical significance, including that it does not always imply practical significance.

I. Understand the concept of a hypothesis test and be able to describe the hypotheses, select the appropriate statistical test, determine the observed significance level (p-value), interpret the results, and draw appropriate conclusions.

Missing Class/Homeworks/Exams:

In the event that you miss class, you should email me so that I have a record of it. A recording of the lecture for each day can be found in: Zoom Module → Zoom → Cloud Recordings tab (on the top right). Click on the lecture you wish to view. You will be prompted for a password, which will have been automatically copied to your clipboard. Paste it to view the content. No Makeups will be given for homework assignments. If you are ill and unable to attend an exam, a makeup can be arranged only if email me before the start of the exam, and if you get a doctor's note. Makeup exams may be more difficult than the original. If you are feeling ill, you may participate in class via Zoom.

Final:

There will be a cumulative final exam at the end of the semester. Final exams are scheduled for 12/9-12/16
***** PLEASE CONSIDER THESE DATES WHEN MAKING TRAVEL ARRANGEMENTS*****

Grading:

Homework = 5%
In-Class Work = 5% (lowest score will be dropped)
Quizzes = 10% (lowest quiz grade will be dropped)
Project = 5%
Exams = 50% (Note: The lowest exam grade will count for 9% of the final grade, with the remaining two test grades counting for 18% each)
Final = 25%

Grades will be calculated as below, round as usual:

Letter	A	A-	B+	B	B-	C+	C	C-	D+	D	F
Percent	93-100	90-92	87-89	83-86	80-82	77-79	73-76	70-72	67-69	63-66	<63

Tentative Schedule:

	Chapter covered	Assessments	Other
8/26	1		

8/29	2		
9/2	LABOR DAY - NO CLASS - FOLLOW MONDAY SCHEDULE		
9/5	3		
9/9	4		
9/12	5		
9/16	6		
9/19	7		
9/23	8		
9/26	-	Exam 1 (CH 1-7)	
9/30	10		
10/3	11		
10/7	FALL BREAK - CLASS NOT HELD		
10/10	12		
10/14	13		
10/17	14		
10/21	-	Exam 2 (CH 8-13)	
10/24	15		
10/28	16		Last day to withdraw with 'W'
10/31	17		
11/4	18		
11/7	19		
11/11	20		
11/14	21		
11/18	-	Exam 3 (CH 14-20)	
11/21	22		
11/25	23		
11/28	THANKSGIVING BREAK - CLASS NOT HELD		
12/2	24		
12/5	Presentations / Review		

Fourth Hour:

In this class, the deep learning outcomes associated with TCNJ's 4th hour are accomplished by a series of rigorous educational assignments and projects that extend beyond the typical scheduled class time. These include learning to use statistical analysis tools in Excel and group work on projects during the semester. In addition, it is expected that many students will require additional time with tutors during the semester to develop the skills needed to apply the statistical concepts learned. The course is expected to meet for the full time each class period and to the end of the semester.

Attendance:

All students are expected to attend all classes and are responsible for all information provided. A student who is absent for a test will not be permitted to make up the test unless prior arrangements with the instructor have been made. Approval for missing a test will only be permitted in exceptional circumstances. In the case of illness, a doctor's note will be required. Please view TCNJ's attendance policy at
Read the attendance policy

Academic Honesty:

Please make sure you are familiar with TCNJ's academic integrity policy. Any suspected violation of this policy will be confronted in the strict accordance with the policy: Read academic integrity policy

Americans with Disability Act Policy:

Read the ADA policy

Final Exam-Evaluation-Reading Days Policy:

Exams in the last week of class are limited to 15% of the total grade and the graded exams must be returned to the students by the first day of reading period to allow students to learn from any mistakes. The final exam must take place during the exam period, and students must be permitted to use the full 170 minutes of allotted exam time. The final exam should count for no more than 35% of the final grade. Read the final exam policy.

Commitment to Diversity, Equity, inclusion, Access, and Belonging:

The TCNJ community is composed of people with diverse backgrounds, perspectives, and experiences, and the college is committed to diversity, equity, inclusion, access and belonging. The college's Campus Diversity Statement can be viewed here: Read diversity statement

Classroom Environment and Commitment to Student Success, Safety, and Well-Being:

The TCNJ community is dedicated to the success, safety and well-being of each student. TCNJ strictly follows key policies that govern all TCNJ community members rights and responsibilities in and out of the classroom. In addition, TCNJ has established several student support offices that can provide the support and resources to help students achieve their personal and professional goals and to promote health and well-being. You can find more information about these policies and resources at the "TCNJ Student Support Resources and Classroom Policies" webpage here: view resources. Students who anticipate and/or experience barriers in this course are encouraged to contact the instructor as early in the semester as possible. The Accessibility Resource Center (ARC) is available to facilitate the removal of barriers and to ensure reasonable accommodations. For more information about ARC, please visit: https://arc.tcnj.edu/

Please note that this document is subject to change. Changes made will be infrequent and within reason and students will be notified promptly if they do occur.