**STAT 2332: Probability and Data Analysis**

**Summer Semester 2024**

**Instructor – Joe DeMaio**

**CATALOG COURSE DESCRIPTION**

***Prerequisite:*** A grade of “C” or better in [MATH 1190](http://catalog.kennesaw.edu/preview_course_nopop.php?catoid=54&coid=85047)
This course is a foundational, calculus-based introduction to statistics and probability. The following conceptual themes will be developed through the process of statistical investigation: exploratory data analysis (univariate and bivariate), fundamentals of experiment design and sampling, planning and conducting a study, exploring random phenomenon using probability and simulation, and the fundamentals of statistical inference. Technology is integrated into each theme, and the statistical software package used will be chosen by the instructor.

**Expected Learning Outcomes**:

1. Students will be able to use statistical vocabulary and notation appropriately.
2. Students will be able to identify appropriate methods for collecting data.
3. Students will be able to distinguish the difference between qualitative and quantitative data and recognize when each is appropriate.
4. Students will be able to describe and graphically represent statistical data
5. Students will be able to correctly interpret statistical graphical displays.
6. Students will be able to identify measures of center and variation and use them appropriately to describe distributions.
7. Students will be able to compute basic probabilities and correctly use computations for application. Do various computations for random phenomenon that follow binomial, hypergeometric, geometric, and Poisson experiments.
8. Apply the Central Limit Theorem to applications involving sampling distributions of means and sample proportions.
9. Students will be able to build confidence intervals to estimate population parameters such as means and proportions from statistical data.
10. Students will be able to perform hypothesis tests for population parameters and appropriately interpret the results.
11. Students will be able to successfully use technology to describe, analyze, and perform inferential statistics.
12. Discuss the relationship between two quantitative variables (scatter plot) or the association between two-categorical variables (contingency table).
13. Students will be able to apply statistical concepts to real-life scenarios.

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**Required Technology:**  ALEKS online system for videos, homework and tests and (R studio or TI-84) for computing; AI may be used for learning material but may not be used on tests

**Required Textbook: Elementary Statistics 4th edition** Navidi/Monk (Day One Access-**Don’t opt out**)

**Grading**

There will be three tests and a final each. Each counts 25% towards your final grade. Letter grades will be assessed on a 10-point scale. However, tests will have more than 100 possible points available so extra points are available to be earned. Tests are open book and notes. Assistance in any other form will not be allowed. The final exam will be cumulative. Cheating may result in the grade of an 'F' for the course! I do not report grades to students over the phone or through e-mail. I will not give your test to a friend. You must come to class or my office to pick up a test if you are not in class when I return it.

**I do not drop nor do I replace any grades!
I do not give make-up tests! (Unless there is a good reason and you must contact me prior to 48 hours after the test)
There are no extra credit projects!
I do not make deals at the end of the semester for grades!
All testing will be done via ALEKS.**

**Homework**

There will be homework problems for each section covered. This homework will not be taken up and graded. It is to give you a point of reference from which to work. Test problems are often slight variations of homework problems if not the exact problem. The only way to succeed in this class is by doing all of the assigned homework! Merely, attending class will not be enough. A student will encounter a large number of techniques and examples in this course. It is vital to know and understand these new concepts. Successive lectures will assume the knowledge of previously stated techniques and examples. One must keep up with this material on a day-to-day basis! Because homework problems are not graded, you are allowed and strongly encouraged to work together on homework problems. I believe that it is very beneficial to regularly work problems in small groups of two to four people. This will decrease your chances of getting stuck on a problem and give you someone, other than your instructor, with whom to discuss homework problems. Obviously, however, you must also be able to work problems without guidance for testing situations.

**Homework is mandatory (if you want a good grade) despite the fact that there is no homework grade!

Attendance**Every mathematics class is a building process from day one (actually, even from grade one). A student who misses classes has seriously compromised his or her knowledge of the material and will begin to feel an effect on their final grade. Attendance and class participation are important elements to incorporate into your study habits. I will distribute a sign-in sheet to document attendance at the beginning of each class. During the summer term I may, from time to time, distribute a second sign-in sheet after the break. Signing for another student will be treated as an honor code violation.

A student who misses a class is responsible for all material missed. Due to time constraints your instructor cannot re-present the lecture in a one-on-one setting. If circumstances dictate that a student will miss numerous class meetings, perhaps now is not the semester to take this course. **Attendance is mandatory (if you want a good grade) despite the fact that there is no attendance grade.**

STAT 2332 is part of a textbook program called Day One Access. After enrolling in the course, you should receive an e-mail from KSU University Stores with instructions on how to access the course content. The purpose of Day One Access is to make sure that you have access to the digital course materials on or before the first day of class at a highly competitive rate. Everyone enrolled will automatically have access to the digital course materials through drop/add date deadline. Those who have not opted-out or dropped the class by drop/add date deadline, will receive a charge from the bookstore on their student account. You have the ability to Opt-Out through (drop/add date deadline) via the link in the email sent to you by University Stores. Don’t opt out! **All testing will be done via ALEKS.**

If you would like to know more about Day One Access, please visit https://ksustore.kennesaw.edu/textbooks/day\_one\_access.php. Questions or concerns can be directed to dayone@kennesaw.edu.

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Live website with general KSU required syllabus information: [Required Syllabus Information - Curriculum, Instruction, Assessment (kennesaw.edu)](https://cia.kennesaw.edu/instructional-resources/syllabus-policy.php)