



# SYLLABUS School of Data Science and Analytics

**STAT 2332: Probability and Data Analysis**

# Fall 2025

# Course Information

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Class meeting time: *N/A*

Modality and Location: Online and Asynchronous
*Syllabus is posted at* [*KSU | Faculty Web - MATH 2332*](https://facultyweb.kennesaw.edu/jdemaio/STAT_2332_prob_data.php)

# Instructor and Course Information

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**Professor:** Dr. Joe DeMaio
**Office:** Atrium aka J 3437

**Fall 2025 Office hours:** MW 12:00-1:20
**Phone:** N/A Send email or contact through TEAMS

**e-mail:** Do not email me through D2L (reply function does not work). Send email to me directly atjdemaio@kennesaw.edu
**Web Page:** http://facultyweb.kennesaw.edu/jdemaio/

**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 5th edition** Navidi/Monk (Day One Access-**Don’t opt out**)

# Course Description

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***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.

# Course Learning Outcomes

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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.

# Evaluation and Grading Policies

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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. Test dates and a study calendar of topics specific to this term are available at [*KSU | Faculty Web - MATH 2332*](https://facultyweb.kennesaw.edu/jdemaio/STAT_2332_prob_data.php)*.*

**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. A good reason includes uncontrollable and/or unforeseeable events beyond your control.
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**

Asynchronous, remote learning is not for everyone.  One needs to diligently self-schedule and adhere to study time. If you need an authority figure nagging you to study and remind you of test dates, this modality might not be for you.  To guide your self-study, I've prepared the following calendar of topics and test dates.

8/18/2025 Welcome; read syllabus and website; setup ALEKS; email any course questions you have to jdemaio@kennesaw.edu
8/20/2025 Chapter 1
8/25/2025 Chapter 2, Section 3.1
8/27/2025 Section 3.2
9/1/2025 Holiday
9/3/2025 Section 3.3
9/8/2025 Section 4.1, Section 4.2
**9/10/2025 Test 1 Easiest of the four tests; study hard and grab all the points you can**9/15/2025 Section 5.1 Basic Probability
9/17/2025 Section 5.2  Complements and the Addition Rule
9/22/2025 Section 5.3 Product Rule and Conditional Probability
9/24/2025 Section 5.3 Product Rule and Conditional Probability; not a typo; we need two sessions
9/29/2025 Section 6.2 Binomial Distribution
10/1/2025 Section 6.3 The Poisson Distribution
10/3/2025 Section 7.1 The Standard Normal Curve
10/8/2025 Section 7.2 Applications of the Normal Curve
**10/13/2025 Review 1st review day; it is very needed as test 2 is much harder than test 1; probability is hard!
10/15/2025 Test 2**
10/20/2025 Section 7.3 Central Limit Theorem for Means
10/22/2025 Section 7.4 Central Limit Theorem for Proportions
10/27/2025 Section 8.1 Confidence Intervals for means with known standard deviation;
10/29/2025 Section 8.2 Confidence Intervals for means with unknown standard deviation and/or small sample size
11/3/2025 Section 8.3 Confidence Intervals for Proportions
11/5/2025 Section 9.1 and 9.2 Hypothesis Testing for means with known standard deviation
11/10/2025 Section 9.3 Hypothesis Testing for small samples or unknown standard deviation
11/12/2025 Section 9.4 Hypothesis Testing for Proportions
**11/17/2025 Review; test 3 is easier than test 2 but harder than test 1
11/19/2025 Test 3**
11/24/2025-11/30/25 Break
12/1/2025 Two variable hypothesis testing
12/3/2025 Two variable hypothesis testing
12/8/2025 Review; final exam features a section on two variable testing and a cumulative overview of the course
**12/10/2025-12/12/2025 Final Exam**

# Course Policies

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Read all email from me. Email is the only way for me to communicate to students in an online, asynchronous course.

There will be homework problems for each section covered. ALEKS homework is not a graded portion of this course. 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 the assigned homework! Merely, watching videos 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. This course builds from day one. 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) even though there is no homework grade!**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. For a face-to-face class, I will distribute a sign-in sheet to document attendance at the beginning of each class. For an online class using ALEKS, I consider your time spent in ALEKS as your attendance.

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) even though 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.

**All testing will be done via ALEKS.**

**Instructional Continuity Plan**

Kennesaw State University (KSU) may decide to close campuses, operate on a delayed schedule, or transition to remote instruction for inclement weather or in case of emergency.

The University will announce campus closures, delayed schedules, or remote instruction through KSU Alerts sent to your cell number on file and to your university email account. In addition, announcements will be posted on KSU’s home page: www.kennesaw.edu.

Typical class continuity plans include:

1. Communication: Please check e-mail for necessary instructions.
2. Virtual Classes: If in-person classes are not possible, we may transition to virtual classes using MS Teams.
3. Assignments and Assessments: Deadlines for assignments and assessments may be adjusted to accommodate the emergency situation.

Given that this is an online, asynchronous course, treacherous road conditions will not slow us down. We’ll just stay safe inside and study.

I understand that emergencies create unique challenges. Individual emergencies will be handled on a case-by-case basis. Please reach out to me via e-mail as soon as is reasonably possible. The university also offers resources such as counseling and academic support, which can be accessed remotely.

**Policy on the Usage of Artificial Intelligence**

*AI Use Allowed, but Not Required:*

*In this class, you are welcome to use AI for homework and study. It can be a helpful tool. AI is not to be used as a calculator. Use R Studio or a TI-84. Also, you should note that all AI generative tools still tend to make up incorrect facts and fake citations, code generation models tend to produce inaccurate outputs, and image/art generation tools can produce copied work or offensive products. You will be responsible for any inaccurate, biased, offensive, or otherwise unethical content you submit regardless of whether it originally comes from you or an AI tool. You may not use AI on a test. The use of an AI tool without acknowledgement is cheating and constitutes a violation of the KSU Code of Academic Integrity.*

# Institutional Syllabus Policies, Procedures, and Resources

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[Federal, BOR, & KSU Required Syllabus Policies and Student Resources](https://www.kennesaw.edu/curriculum-instruction-assessment/academic-program-planning-development/resources/student-syllabus-resources.php)