

THE DEPARTMENT OF MATHEMATICAL SCIENCES

MATH 225: Survey of Probability and Statistics

Fall 2025 Course Syllabus

NJIT Academic Integrity Code: Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is strictly prohibited and devalues the degree that you are working on. As a member of the NJIT community, it is your responsibility to protect your educational investment by knowing and following the academic code of integrity policy that is found at: [NJIT Academic Integrity Code](#).

Please note that it is my professional obligation and responsibility to report any academic misconduct to the Dean of Students Office. Any student found in violation of the code by cheating, plagiarizing or using any online software inappropriately will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university. If you have any questions about the code of Academic Integrity, please contact the Dean of Students Office at dos@njit.edu

Please be sure you read and fully understand our [DMS Online Exam Policy](#).

COURSE INFORMATION

Course Description: Topics include descriptive statistics, elements of probability, random variables and distributions; mean and variance; introduction to estimation and inference. This course satisfies the Mathematics GUR in probability and statistics. However, degree credit will not be granted for both **MATH 225** and any other upper level course in probability and/or statistics.

Number of Credits: 1

Prerequisites: **MATH 112** with a grade of C or better or **MATH 133** with a grade of C or better.

Course-Section and Instructors:

Course-Section	Instructor
Math 225-001	Professor J. DeGroot

Office Hours for All Math Instructors: [Fall 2025 Office Hours and Emails](#)

Required Textbook:

Title	<i>Engineering Statistics</i>
Author	Montgomery, Runger, and Hubele
Edition	5th
Publisher	John Wiley & Sons, Inc.
ISBN #	978-0470631478

University-wide Withdrawal Date: The last day to withdraw with a W is **Monday, November 10, 2025**. It will be strictly enforced.

POLICIES

DMS Course Policies: All DMS students must familiarize themselves with, and adhere to, the **Department of Mathematical Sciences Course Policies**, in addition to official **university-wide policies**. DMS takes these policies very seriously and enforces them strictly.

Grading Policy: The final grade in this course will be determined as follows:

Homework	25%
Quizzes/Labs	25%
Midterm Exam	20%
Final Exam	30%

Your final letter grade will be based on the following tentative curve.

A	90 - 100	C	65 - 74
B+	85 - 89	D	55 - 64
B	80 - 84	F	0 - 54
C+	75 - 79		

Attendance Policy: Attendance at all classes will be recorded and is **mandatory**. Please make sure you read and fully understand the **Math Department's Attendance Policy**. This policy will be strictly enforced.

Religious Observance: NJIT is committed to supporting students observing religious holidays. Students must notify their instructors in writing of any conflicts between course requirements and religious observances, ideally by the end of the second week of classes and no later than two weeks before the anticipated absence.

Homework and Quizzes: Homework problems will be collected every class meeting; all problems should be completed to build understanding, however only those problems marked with an asterisk (*) are required and graded. A short quiz based on the homework will be given at the beginning of every class meeting. There are no make-up quizzes. Late homework and absent homework will be accepted no more than 6 days late (no penalty for absent homework, half credit for late homework).

Exams: There will be one midterm exam held in class during the semester and one comprehensive final exam. Exam dates will be given in class while the final exam will take place during the following week:

Midterm Exam	Week 7
Final Exam Period	December 14 - December 20, 2025

The final exam will test your knowledge of all the course material taught in the entire course. Make sure you read and fully understand the **Math Department's Examination Policy**. This policy will be strictly enforced.

Makeup Exam Policy: There will be **NO MAKE-UP QUIZZES OR EXAMS** during the semester. In the event an exam is not taken under rare circumstances where the student has a legitimate reason for missing the exam, the student should contact the Dean of Students office and present written verifiable proof of the reason for missing the exam, e.g., a doctor's note, police report, court notice, etc. clearly stating the date AND time of the mitigating problem. The student must also notify the Math Department Office/Instructor that the exam will be missed.

Cellular Phones: All cellular phones and other electronic devices must be switched off during all class times.

ADDITIONAL RESOURCES

Math Tutoring Center: Located in the Central King Building, Lower Level, Rm. G11 (See: **Fall 2025 Hours**)

Further Assistance: For further questions, students should contact their instructor. All instructors have regular office hours during the week. These office hours are listed on the Math Department's webpage for **Instructor Office Hours and Emails**.

Accommodation of Disabilities: The Office of Accessibility Resources and Services (OARS) offers long term and temporary accommodations for undergraduate, graduate and visiting students at NJIT.

If you need an accommodation due to a disability, please contact the Office of Accessibility Resources and Services at oars@njit.edu, or visit Kupfrian Hall 201 to discuss your specific needs. A Letter of Accommodation Eligibility from the office authorizing student accommodations is required.

For further information regarding self identification, the submission of medical documentation and additional support services provided please visit the Office of Accessibility Resources and Services (OARS) website at:

<https://www.njit.edu/accessibility/>

Important Dates (See: **Fall 2025 Academic Calendar, Registrar**)

Date	Day	Event
September 1, 2025	Monday	Labor Day
September 2, 2025	Tuesday	First Day of Classes

September 8, 2025	Monday	Last Day to Add/Drop Classes
November 10, 2025	Monday	Last Day to Withdraw
November 25, 2025	Tuesday	Thursday Classes Meet
November 26, 2025	Wednesday	Friday Classes Meet
November 27 to November 30, 2025	Thursday to Sunday	Thanksgiving Recess - Closed
December 11, 2025	Thursday	Last Day of Classes
December 12, 2025	Friday	Reading Day 1
December 13, 2025	Saturday	Saturday Classes Meet
December 14 to December 20, 2025	Sunday to Saturday	Final Exam Period

Course Outline

Week	Sections	Topic	Homework
1	2.1, 2.2, 2.4	Histogram, Box Plot	TBD
2	3.1 - 3.3	Probability, Random Variables	TBD
3	3.7	Probability Mass Function, mean, variance	TBD
4	3.8	Binomial Distribution	TBD
5	3.12	Correlation and Regression	TBD
6		Catch Up and Review	
7	Midterm Exam		
8	3.5.1	Normal Distribution	TBD
9	3.13	Central Limit Theorem	TBD
10	4.4.5, 4.5.3	Confidence Intervals, Choice of Sample Size	TBD
11	4.3	Statistical Hypotheses - Errors	TBD
12	4.4	Hypothesis Testing with Known Variance, Confidence Intervals	TBD

13	4.5	Hypothesis Testing with Unknown Variance, Confidence Intervals	TBD
14		Catch Up and Review	
December 17 - December 23, 2023		FINAL EXAM	

*Updated by Professor Jack DeGroot - 2025
Department of Mathematical Sciences Course Syllabus, Fall 2025*