MATH 225: Survey of Probability and Statistics
Fall 2023 Course Syllabus

NJIT Academic Integrity Code: All Students should be aware that the Department of Mathematical Sciences takes the University Code on Academic Integrity at NJIT very seriously and enforces it strictly. This means that there must not be any forms of plagiarism, i.e., copying of homework, class projects, or lab assignments, or any form of cheating in quizzes and exams. Under the University Code on Academic Integrity, students are obligated to report any such activities to the Instructor.

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	Professor B. Mafarjeh

Office Hours for All Math Instructors: Fall 2023 Office Hours and Emails

Required Textbook:

Title	*Engineering Statistics*
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 13, 2023**. 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	15%
Quizzes	20%
Midterm Exam	30%
Final Exam	35%

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.

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 17 - December 23, 2023

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 2023 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 2023 Academic Calendar, Registrar)

Date	Day	Event
September 4, 2023	Monday	Labor Day
September 5, 2023	Tuesday	First Day of Classes
September 11, 2023	Monday	Last Day to Add/Drop Classes
November 13, 2023	Monday	Last Day to Withdraw
November 21, 2023	Tuesday	Thursday Classes Meet
November 22, 2023	Wednesday	Friday Classes Meet
November 23 to November 26, 2023	Thursday and Saturday	Thanksgiving Recess - Closed
December 13, 2023	Wednesday	Last Day of Classes
December 14, 2023	Thursday	Reading Day 1
December 15, 2023	Friday	Reading Day 2
December 17 to December 23, 2023	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	3.4	Continuous Random Variables	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**		