MATH 105: Elementary Probability and Statistics
Spring 2025 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 homework, class projects, lab assignments, or cheating in quizzes and exams. Under the University Code on Academic Integrity, students are obligated to report any such activities to the Instructor.

COURSE INFORMATION

Course Description: This course introduces methods of summarizing and analyzing data. Descriptive statistics, graphs, plots, and diagrams are used to summarize the data. Elements of probability and discrete random variables with their distributions along with the mean and variance of a given data set are taught. All this knowledge is then used as a platform for covering how to do basic estimation and inference, including confidence intervals and hypothesis testing based on a single sample (univariate) data. Students will be taught basic simple regression techniques involving two variables for a given data set.

Number of Credits: 3

Prerequisites: None.

Course-Section and Instructors:

Course-Section	Instructor
Math 105-102	Professor R. Dandan

Office Hours for All Math Instructors: Spring 2025 Office Hours and Emails

Required Textbook:

Title	*Understanding Basic Statistics*
Author	Brase and Brase
Edition	8th
Publisher	Cengage
ISBN #	ISBN-13: 9781337888981 (Paper w/WebAssign) ISBN-13: 9781337683685 (EBook)

University-wide Withdrawal Date: The last day to withdraw with a **W** is **Monday, April 7, 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:

Quizzes	15%
Test I	25%
Test II	25%
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 ensure 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.

Worksheet: Grades will be assigned based on group performance, participation, and contribution.

Exams: Two midterm exams will be held during the semester and one comprehensive common final exam. Exams are held on the following days:

Test I	TBA
Test II	TBA
Final Exam Period	May 10 - May 16, 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.

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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: Spring 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 accommodations due to a disability please If you need an accommodation due to a disability contact the Office of Accessibility Resources and Services at oars@njit.edu. The office is located in Kupfrian Hall, Room 201. A Letter of Accommodation Eligibility from the Office of Accessibility Resources and Services office authorizing your accommodations will be 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: Spring 2025 Academic Calendar, Registrar)

Date	Day	Event
January 21, 2025	Tuesday	First Day of Classes
January 27, 2025	Monday	Last Day to Add/Drop Classes
March 16, 2025	Sunday	Spring Recess Begins
March 22, 2025	Saturday	Spring Recess Ends
April 3, 2025	Thursday	Wellness day - No Classes
April 7, 2025	Monday	Last Day to Withdraw
April 18, 2025	Friday	Good Friday - No Classes

April 20, 2025	Sunday	Easter Sunday - No Classes Scheduled
May 6, 2025	Tuesday	Thursday Classes Meet
May 7, 2025	Wednesday	Friday Classes Meet
May 7, 2025	Wednesday	Last Day of Classes
May 8, 2025	Thursday	Reading Day 1
May 9, 2025	Friday	Reading Day 2
May 10 - May 16, 2025	Friday to Thursday	Final Exam Period

Course Outline

Week #	Lecture #	Sections	Topics
1	1-2	1.1-1.3	Statistics and Sampling
2	3-4	2.1-2.3	Organizing Data
3	5-6	3.1-3.3	Averages and Variation
4	7-8	4.1-4.2	Correlation and Regression
5	9-10	5.1-5.3	Probability Theory
6	11-12	5.1-5.3	Probability Theory cont'd / Review for Midterm #1
7	13-14	6.1-6.2	**MIDTERM #1 (Ch 1.1-5.3)** / Discrete Variables
8	15-16	6.3 / 7.1	Binomial Distribution / Normal Curves
9	**NO**	**CLASS**	**SPRING RECESS**
10	17-18	7.2-7.3	Normal Curves cont'd

11	19-20	7.4-7.5	Sampling Distributions and the CLT / Review for Midterm #2
12	21		**MIDTERM #2 (Ch 6.1-7.5)**
13	22-23	8.1-8.2	Estimating the Mean
14	24-25	8.3 / 9.1-9.2	Estimating the Proportions / Testing the Mean
15	26-27	9.1-9.2 / 9.3	Testing the Mean cont'd / Testing a Proportion
16	28		Review for Final (Ch 1.1-9.3, Comprehensive)
EXAM WEEK			**FINAL EXAM (CUMULATIVE)**

Updated by Professor R. Dandan - 2025
Department of Mathematical Sciences Course Syllabus, Spring 2025