MATH 105: Elementary 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

COURSE INFORMATION

Course Description: Consider notions of probability. Topics include the binomial and normal distributions, expected value, and variance. The notions of sampling, hypothesis testing, and confidence intervals are applied to elementary situations.

Number of Credits: 3

Prerequisites: None.

Course-Section and Instructors:

Course-Section	Instructor
Math 105-003	Professor C. Salters

Office Hours for All Math Instructors: Fall 2025 Office Hours and Emails **Prof. Salters Office Hours are Tuesday and Fridays from 5:35 to 6:35 p.m.**

Required Textbook with access code for Webassign:

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, November 10, 2025**. It will be strictly enforced.

COURSE GOALS

Course Objectives

The objective of this course is to acquaint students with basic concepts and methods in statistics and probability and demonstrate real world applications using examples drawn from various fields. Topics to be covered include sampling, descriptive statistics, correlation and regression, notions of probability, binomial and normal distributions, estimation and hypothesis testing.

Course Outcomes: *Upon successful completion of this course, the student will be able to -*

- Demonstrate their understanding of various statistical terms, types of data, and data collection methods
- Efficiently summarize, organize, and present data
- Effectively compute measures of central tendency, position, and variation and interpret the results
- Demonstrate their understanding of notions of probability and distributions
- Perform statistical analysis, such as estimation, hypothesis testing, correlation and regression and draw conclusions
- Apply statistical reasoning to real world problems and make informed decisions

Course Assessment: The assessment tools used will include in-class quizzes, Cengage/Webassign online quizzes and homework, two midterm exams, and a cumulative/comprehensive final exam.

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	15%
Midterm Exam I	20%
Midterm Exam II	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 is **mandatory,** and will be recorded. Please make sure you read and fully understand the Math Department's Attendance Policy. This policy will be strictly enforced.

Homework Policy: Homework is a requirement for this course, and will be assigned after each topic. All homework problems must be completed online via WEBASSIGN, in *Canvas*. To aid in your comprehension please read/study the applicable chapter of the text, before and after each lecture.

Quiz Policy: Quizzes will be given throughout the semester. These will be based on the lectures, homework, and in-class discussions. There will be 6 - 8 quizzes at least four of which will be given during the class meeting times. In addition, some quizzes will be completed via Cengage/Webassign There are **NO make-up Quizzes**.

Exams: There will be two midterm exams during the semester and a cumulative final exam during the final exam week with the following tentative dates:

	Schedule on Course Outline below.
Midterm Exam I	Week 7
Midterm Exam II	Week 11
Final Exam Period	12/14/25 - 12/20/25

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 class.

Additional Information: Additional information pertaining to assignments and assessments times and due dates will be posted in Canvas, regularly.

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. Professor Salter's office hours are Tuesday and Fridays from 5:35 to 6:35 p.m.

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 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 #	Lecture #	Sections	Topics
1	1	1.1-1.3	Statistics and Sampling
	2	1.1-1.3	Statistics and Sampling cont'd
2	3	2.1-2.3	Organizing Data
	4	2.1-2.3	Organizing Data cont'd
3	5	3.1-3.3	Averages and Variation
	6	3.1-3.3	Averages and Variation cont'd
4	7	4.1-4.2	Correlation and Regression
	8	4.1-4.2	Correlation and Regression cont'd
5	9	5.1	Probability Theory
	10	5.2	Probability Theory cont'd
6	11	5.3	Probability Theory cont'd
	12		***MIDTERM 1 REVIEW***
7	---		**MIDTERM #1**
	13	6.1	Binomial Distribution
8	14	6.2-6.3	Binomial Distribution cont'd
	15	7.1	Normal Curves
9	16	7.2	Normal Curves cont'd
	17	7.3	Normal Curves cont'd
10	18	7.4, 7.6	Sampling Distributions / Sampling Distribution for Proportions /
	19	7.5	Central Limit Theorem /
11	20		***MIDTERM 2 REVIEW***
			MIDTERM #2
12	21	8.1	Estimating the Mean Part 1

	22	8.2	Estimating the Mean Part 2
13	23	8.3	Estimating the Proportion
	24	9.1	Hypothesis Testing Part 1
14	25	9.2	Hypothesis Testing Part 2
	26	9.3	Hypothesis Testing Part 3
15	27	1.1-9.3	***FINAL EXAM REVIEW***
Exam Week 12/16 to 12/22			**FINAL EXAM (CUMULATIVE)**

Updated by Professor C. Salters - 2025
Department of Mathematical Sciences Course Syllabus, Fall 2025