

Fall 2023

MATH 105-003, Fall 2023: Elementary Probability and Statistics

Chulmin Kim

Follow this and additional works at: <https://digitalcommons.njit.edu/math-syllabi>

Recommended Citation

Kim, Chulmin, "MATH 105-003, Fall 2023: Elementary Probability and Statistics" (2023). *Mathematical Sciences Syllabi*. 177.

<https://digitalcommons.njit.edu/math-syllabi/177>

This Syllabus is brought to you for free and open access by the NJIT Syllabi at Digital Commons @ NJIT. It has been accepted for inclusion in Mathematical Sciences Syllabi by an authorized administrator of Digital Commons @ NJIT. For more information, please contact digitalcommons@njit.edu.

MATH 105: Elementary 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.

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 variable with its distributions along with mean and variance of a given data set are taught. All this knowledge is then used as a platform towards 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 105-003	Professor C. Kim
Math 105-007	Professor C. Kim

Office Hours for All Math Instructors: [Fall 2023 Office Hours and Emails](#)

Required Textbook:

Title	<i>Understanding Basic Statistics</i>
Author	Brase and Brase
Edition	8th
Publisher	Cengage
ISBN #	9781337888981

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:

Worksheet	15%
Midterm Exam I	25%
Midterm Exam 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 make sure you read and fully understand the [Math Department's Attendance Policy](#). This policy will be strictly enforced.

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

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

Midterm Exam I	TBA
Midterm Exam II	TBA
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 WORKSHEETS 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 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 #	Lecture #	Sections	Topics
1 (9/5)	1-2	1.1-1.3	Statistics and Sampling
2 (9/12)	3-4	2.1-2.3	Organizing Data
3 (9/19)	5-6	3.1-3.3	Averages and Variation
4 (9/26)	7-8	4.1-4.2	Correlation and Regression
5 (10/3)	9-10	5.1-5.3	Probability Theory
6 (10/10)	11-12	5.1-5.3	Probability Theory cont'd / Review for Midterm #1
7 (10/17)	13-14	6.1-6.2	MIDTERM #1 (Ch 1.1-5.3) / Discrete Variables
8 (10/24)	15-16	6.3 / 7.1	Binomial Distribution / Normal Curves
9 (10/31)	17-18	7.2-7.3	Normal Curves cont'd
10 (11/7)	19-20	7.4-7.5	Sampling Distributions and the CLT / Review for Midterm #2
11 (11/14)	21-22	8.1	MIDTERM #2 (Ch 6.1-7.5) / Estimating the Mean
12 (11/21)	23	8.2	Estimating the Mean
13 (11/28)	24-25	8.3 / 9.1-9.2	Estimating the Proportions / Testing the Mean
14 (12/5)	26-27	9.1-9.2 / 9.3	Testing the Mean cont'd / Testing a Proportion
15 (12/12)	28		Review for Final (Ch 1.1-9.3, Comprehensive)
EXAM WEEK			FINAL EXAM (CUMULATIVE)

*Updated by Professor C. Kim - 8/29/2023
Department of Mathematical Sciences Course Syllabus, Fall 2023*