



THE COLLEGE OF SCIENCE
AND LIBERAL ARTS

THE DEPARTMENT OF MATHEMATICAL SCIENCES

MATH 105: Elementary Probability and Statistics

Summer 2021 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 technique involving two variables for a given data set.

Number of Credits: 3

Prerequisites: None.

Course-Section and Instructors

Course-Section	Instructor
Math 105-140	Professor D. Hussein

Office Hours for All Math Instructors: [Summer 2021 Office Hours and Emails](#)

Required Textbook:

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

Withdrawal Date: Please see the [Summer 2021 Academic Calendar](#) for the last day to withdraw based on the summer session you are registered for.

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%
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.

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	July 19, 2021

Makeup Exam Policy: To properly report your absence from a midterm or final exam, please review and follow the required steps under the DMS Examination Policy found here:

- http://math.njit.edu/students/policies_exam.php

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.

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, Room G11 (See: **Summer 2021 Hours**)

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 are in need of accommodations due to a disability please contact Chantonette Lyles, Associate Director of the Office of Accessibility Resources and Services at **973-596-5417** or via email at lyles@njit.edu. The office is located in Kupfrian Hall, Room 201. A Letter of Accommodation Eligibility from the Office of Accessibility Resources and Services 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/studentsuccess/accessibility/>

Important Dates (See: [Summer 2021 Academic Calendar](#), Registrar)

Date	Event
May 24, 2021	First Day of Classes for FIRST, MIDDLE, AND FULL SUMMER SESSIONS
May 26, 2021	Last Day to Add/Drop Classes for FIRST SUMMER SESSION
May 28, 2021	Last Day to Add/Drop Classes for MIDDLE SUMMER SESSION
May 31, 2021	Last Day to Add/Drop Classes for FULL SUMMER SESSION
May 31, 2021	University Closed for Memorial Day
June 28, 2021	Last Day of FIRST SUMMER SESSION
July 4, 2021	University Closed for Independence Day
July 5, 2021	University Closed for Independence Day
July 7, 2021	First Day of FTF SUMMER SESSION
July 19, 2021	Last Day of MIDDLE SUMMER SESSION
August 2, 2021	Last Day of FULL SUMMER SESSION
August 16, 2021	Last Day of FTF SUMMER SESSION

Course Outline

Day	Section #	Topics
1	1.1 - 1.3 2.1 - 2.3	Statistics and Sampling Techniques Organizing Data
2	3.1 - 3.3	Mean, mode, median, and variation of a data set. Organizing dot plot and box-n-whisker plot of a given data set.
3	4.1	Quiz #1 (1/2 hour) - Chapter 3 Scatter plot Linear Coefficient of Correlation
4	4.2	Regression Equation Coefficient of Determination
5	5.1 - 5.2	Elementary Probability Theory
6	5.2 - 5.3 6.1	Probability rules - compound events Decision tree and counting techniques Expected value (mean) and variance of Discrete Random Variable
7	6.2 - 6.3	Binomial distribution Mean and variance of binomial distribution
8		MID TERM TEST 1 (Chapters 4, 5 and 6)
9	7.1 - 7.3	Normal distribution
10	7.4 - 7.5	Sampling Distribution Central Limit Theorem

11	7.5 - 7.6	Central Limit Theorem (Continued) Normal Approximation to Binomial
12	8.1 - 8.2	Estimating Mean, Estimating Proportions (aka. confidence interval estimate of one population mean)
13	8.3	Confidence interval estimate of one population proportion
14	9.1 -9.2	MID TERM TEST 2 (Chapters 7 and 8 ONLY) Hypothesis Testing of One Population mean (when σ is known and when σ is unknown)
15	9.3	Hypothesis Testing of Population Proportion Final Exam Review Session
16		FINAL EXAM is cumulative (Ch. 1.1 thru 9.3)

Updated by Professor H.Daoud - 5/10/2021
Department of Mathematical Sciences Course Syllabus, Summer 2021
