



THE COLLEGE OF SCIENCE  
AND LIBERAL ARTS

THE DEPARTMENT OF MATHEMATICAL SCIENCES

## MATH 105-141: Elementary Probability and Statistics

### *Summer 2020 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 105-450	Professor R. Dandan

**Office Hours for All Math Instructors:** [Summer 2020 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 2020 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. Every class will include a recorded instruction, a Webex discussion and a short quiz on canvas at the end of the session.

**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	Week of June 15th, 2020; 6PM
Midterm Exam II	Week of July 6th, 2020 ; 6PM
Final Exam	July 13, 2020; 6PM

**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](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 2020 Hours](#))

**Accommodation of Disabilities:** Disability Support Services (DSS) 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 Disability Support Services at [973-596-5417](tel:973-596-5417) or via email at [lyles@njit.edu](mailto:lyles@njit.edu). The office is located in Fenster Hall Room 260. For further information regarding self identification, the submission of medical documentation and additional support services provided please visit the Disability Support Services (DSS) website at:

- <https://www.njit.edu/studentsuccess/accessibility/>

Important Dates (See: [Summer 2020 Academic Calendar](#), Registrar)

Date	Event
May 18, 2020	First Day of Classes
May 18, 2020	Last Day to Add/Drop Classes for <b>FIRST, MIDDLE, AND FULL</b>
May 25, 2020	University Closed for Memorial Day
June 22, 2020	Last Day of <b>FIRST SUMMER SESSION</b>
June 29, 2020	First Day of <b>FTF AND SECOND SUMMER SESSION</b>
July 4, 2020	University Closed for Independence Day
July 13, 2020	Last Day of <b>MIDDLE SUMMER SESSION</b>
August 3, 2020	Last Day of <b>FULL AND SECOND SUMMER SESSIONS</b>
August 12, 2020	Last Day of <b>FTF SUMMER SESSIONS</b>

## Course Outline

Day	Date	Section #	Topics
1	Mon, May 18	1.1 - 1.3 2.1 - 2.3	Statistics and Sampling Techniques Organizing Data
2	Wed, May 20	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	Wed, May 27	4.1	Quiz #1 (1/2 hour) - Chapter 3 Scatter plot Linear Coefficient of Correlation
4	Mon, June 01	4.2	Regression Equation Coefficient of Determination
5	Wed, June 03	5.1 - 5.2	Elementary Probability Theory
6	Mon, June 08	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	Wed, June 10	6.2 - 6.3	Binomial distribution Mean and variance of binomial distribution
8	Mon, June 15		<b>MID TERM TEST 1</b> (Chapters 4, 5 and 6)
9	Wed, June 17	7.1 - 7.3	Normal distribution
10	Mon, June 22	7.4 - 7.5	Sampling Distribution Central Limit Theorem
11	Wed, June 24	7.5 - 7.6	Central Limit Theorem (Continued) Normal Approximation to Binomial
12	Mon, June 29	8.1 - 8.2	Estimating Mean, Estimating Proportions (aka. confidence interval estimate of one population mean)

13	Wed, July 01	8.3	Confidence interval estimate of one population proportion
14	Mon, July 06	9.1 -9.2	<b>MID TERM TEST 2</b> (Chapters 7 and 8 ONLY) Hypothesis Testing of One Population mean (when $\sigma$ is known and when $\sigma$ is unknown)
15	Wed, July 08	9.3	Hypothesis Testing of Population Proportion Final Exam Review Session
16	Mon, July 13		<b>FINAL EXAM</b> is cumulative (Ch. 1.1 thru 9.3)

*Updated by Professor R. Dandan - 5/1/2020*  
*Department of Mathematical Sciences Course Syllabus, Summer 2020*

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