

MATH 105-141: Elementary Probability and Statistics

Summer 2019 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 105-141	Professor P. Narayanan

Office Hours for All Math Instructors: [Summer 2019 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 2019 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:

Homework	10%
Quizzes	10%
Midterm Exam I	20%
Midterm Exam II	20%
Final Exam	40%

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.

Homework and Quiz Policy: Homework is done via WebAssign ONLY. All students must purchase WebAssign through Cengage and Instructor will provide instructions for it. Homework must be completed by the deadline shown in the WebAssign. No request(s) for homework extension will be granted.

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	Monday, June 17, 2019; 6PM
Midterm Exam II	Monday, July 8, 2019 ; 6PM
Final Exam	Monday, July 16, 2018; 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

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 (Summer Hours: TBA)

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** or via email at 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:

- <http://www5.njit.edu/studentsuccess/disability-support-services/>

Important Dates (See: [Summer 2019 Academic Calendar](#), Registrar)

Date	Event
May 20, 2019	First Day of Classes
May 21, 2019	Last Day to Add/Drop Classes for FIRST, MIDDLE, AND FULL
May 27, 2019	University Closed for Memorial Day
June 24, 2019	Last Day of FIRST SUMMER SESSION
July 1, 2019	First Day of Second Summer Session
July 4-5, 2019	University Closed for Independence Day
July 15, 2019	Last Day of MIDDLE SUMMER SESSION
August 6, 2019	Last Day of FULL AND SECOND SUMMER SESSIONS

Course Outline

Day	Date	Section #	Topics	Practice Problems
1	Mon, May 20	1.1 - 1.3 2.1 - 2.3	Statistics and Sampling Techniques Organizing Data	
2	Wed, May 22	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 29	4.1	Quiz #1 (1/2 hour) - Chapter 3 Scatter plot Linear Coefficient of Correlation	
4	Mon, June 03	4.2	Regression Equation Coefficient of Determination	
5	Wed, June 05	5.1 - 5.2	Elementary Probability Theory	
6	Mon, June 10	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 12	6.2 - 6.3	Binomial distribution Mean and variance of binomial distribution	
8	Mon, June 17		MID TERM TEST 1 (Chapters 4, 5 and 6)	
9	Wed, June 19	7.1 - 7.3	Normal distribution	
10	Mon, June 24	7.4 - 7.5	Sampling Distribution Central Limit Theorem	

11	Wed, June 26	7.5 - 7.6	Central Limit Theorem (Continued) Normal Approximation to Binomial	
12	Mon, July 01	8.1 - 8.2	Estimating Mean, Estimating Proportions (aka. confidence interval estimate of one population mean)	
13	Wed, July 03	8.3	Confidence interval estimate of one population proportion	
14	Mon, July 08	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	Wed, July 10	9.3	Hypothesis Testing of Population Proportion Final Exam Review Session	
16	Mon, July 15		FINAL EXAM is cumulative (Ch. 1.1 thru 9.3)	

*Updated by Professor P. Narayanan - 5/21/2019
Department of Mathematical Sciences Course Syllabus, Summer 2019*
