NJIT
New Jersey's Science &
Technology University

THE COLLEGE OF SCIENCE
AND LIBERAL ARTS

THE DEPARTMENT OF MATHEMATICAL SCIENCES

MATH 105-012: Elementary Probability and Statistics
Spring 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: 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 105-012	Professor C. Oton

Office Hours for All Math Instructors: Spring 2020 Office Hours and Emails

Required Textbook:

Title	*Understanding Basic Statistics*
Author	Brase and Brase
Edition	8th
Publisher	Cengage
ISBN #	978-1337888981

University-wide Withdrawal Date: The last day to withdraw with a **W** is **Monday, April 6, 2020**. 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 class participation, homework assignments, quizzes, 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 and Quizzes (each 10%)	10%
Presentation	10%
Midterm Exam I	25%
Midterm Exam II	25%
Final Exam	30%
Assignment	01%

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: Hand In Homework will be assigned every week at the completion of each topic and is to be handed in at the beginning of class when due. A weekly quiz will be given via Cengage/Webassign to make sure you are keeping up with the homework. See Additional Syllabus information posted on the Instructor's Canvas page for further details.

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

Midterm Exam I	Week 6
Midterm Exam II	Week 13

Final Exam Period	May 8 - 14, 2020

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 all class times.

ADDITIONAL RESOURCES

Math Tutoring Center: Located in the Central King Building, Lower Level, Rm. G11 (See: Spring 2020 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.

All students must familiarize themselves with and adhere to the Department of Mathematical Sciences Course Policies, in addition to official university-wide policies. The Department of Mathematical Sciences takes these policies very seriously and enforces them strictly.

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 Kupfrian Hall, Room 201. A Letter of Accommodation Eligibility from the Disability Support Services office 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 Disability Support Services (DSS) website at:

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

Important Dates (See: Spring 2020 Academic Calendar, Registrar)

Date	Day	Event
January 21, 2020	T	First Day of Classes
January 31, 2020	F	Last Day to Add/Drop Classes
March 15 - 22, 2020	Su-Su	Spring Recess: No Classes/ University Open
April 6, 2020	M	Last Day to Withdraw
April 10, 2020	F	Good Friday - University Closed
May 5, 2020	T	Friday Classes Meet - Last Day of Classes
May 6 & 7, 2020	W & R	Reading Days
May 8 - 14, 2020	F - R	Final Exam Period

Course Outline

Week #	Lecture #	Sections	Topics
1	1 (1/21)	1.1-1.3	Statistics and Sampling
	2 (1/24)	1.1-1.3	
2	3 (1/28)	2.1-2.3	Organizing Data
	4 (1/31)	2.1-2.3	
3	5 (2/4)	3.1-3.3	Averages and Variation
	6 (2/7)	3.1-3.3	
4	7 (2/11)	4.1-4.2	Correlation and Regression
	8 (2/14)	4.1-4.2	
5	9 (2/18)	5.1-5.3	Probability Theory
	10 (2/21)	5.1-5.3	
6	11 (2/25)		*MIDTERM 1 REVIEW*
	-- (2/28)		**MIDTERM #1**
7	12 (3/3)	6.1-6.3	Binomial Distribution
	13 (3/6)	6.1-6.3	
8	14 (3/10)	7.1	Normal Curves
	15 (3/13)	7.2	
9	--		SPRING RECESS — NO CLASS
	--		SPRING RECESS — NO CLASS
10	16 (3/24)	7.3	Normal Curves cont'd
	17 (3/27)	7.4	Sampling Distributions
11	18 (3/31)	7.5	Central Limit Theorem
	19 (4/3)	7.6	Normal Approximation to the Binomial Distribution
12	20 (4/7)		*MIDTERM 2 REVIEW*
	--		GOOD FRIDAY — NO CLASS
13	-- (4/14)		**MIDTERM #2**
	21 (4/17)	8.1-8.2	Estimating the Mean
14	22 (4/21)	8.3	Estimating Proportions
	23 (4/24)	9.1	Hypothesis Testing
15	24 (4/28)	9.2	Testing the Mean
	25 (5/1)	9.3	Testing a Proportion
16	26 (5/5)		*FINAL EXAM REVIEW*
EXAM WEEK	--	1.1-9.3	**FINAL EXAM (CUMULATIVE)**

Updated by Professor C. Oton - 1/20/2020

Department of Mathematical Sciences Course Syllabus, Spring 2020