MATH 105: Elementary Probability and Statistics
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. Effective From: Fall 2011.

Number of Credits: 3

Prerequisites: None.

Course-Section and Instructors

Course-Section	Instructor
Math 105-002	Professor V. Barreto
Math 105-004	Professor M. Potocki-Dul
Math 105-010	Professor M. Michal
Math 105-102	Professor C. Silber
Math 104-104	Professor C. Mango

Required Textbook:

Title	*Understanding Basic Statistics*
Author	Brase and Brase
Edition	6th
Publisher	Cengage

ISBN #	978-1111827021

University-wide Withdrawal Date: Please note that the last day to withdraw with a W is March 30, 2015. 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

- 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 weekly homework assignments/quizzes, two mid-term exams, and a 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	25%
Midterm Exam I	20%
Midterm Exam II	20%
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.

Homework and Quiz Policy: Homework will be assigned every week. Either homework will be collected or a quiz will be given in class.

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

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 EXAMS during the semester. In the event the Final Exam is not taken, under rare circumstances where the student has a legitimate reason for missing the final exam, a makeup exam will be administered by the math department. In any case the student must notify the Math Department Office and the Instructor that the exam will be missed and present written verifiable proof of the reason for missing the exam, e.g., a doctors note, police report, court notice, etc., clearly stating the date AND time of the mitigating problem.

ADDITIONAL RESOURCES

Math Tutoring Center: Located in Cullimore, Room 214 (See: Spring 2015 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.

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Important Dates (See: Spring 2015 Academic Calendar, Registrar)

Date	Day	Event
January 20, 2015	T	First Day of Classes
Jnuary 26, 2015	M	End of Add/Drop Period
March 15 - 22, 2015	S - S	Spring Recess
March 30, 2015	M	Last Day to Withdraw

April 3, 2015	F	Good Friday - University Closed
May 5, 2015	T	Last Day of Classes
May 6 & 7, 2015	W & R	Reading Days
May 8 - 14, 2015	F - R	Final Exam Period

Course Outline

Week #	Lecture #	Sections	Topics
1	1	1.1-1.3	Statistics and Sampling
	2	1.1-1.3	
2	3	2.1-2.3	Organizing Data
	4	2.1-2.3	
3	5	3.1-3.3	Averages and Variation
	6	3.1-3.3	
4	7	4.1-4.2	Correlation and Regression
	8	4.1-4.2	
5	9	5.1-5.3	Probability Theory
	10	5.1-5.3	
6	11	Ch. 1.1- 5.3	Midterm 1 Review
	-----	Ch. 1.1- 5.3	**MIDTERM 1**
7	12	6.1-6.3	Binomial Distribution
	13	6.1-6.3	
8	14	7.1-7.3	Normal Curves
	15	7.1-7.3	
9	16	7.4-7.5	Sampling Distribution
	17	7.4-7.5	
10	18	Ch. 1.1- 7.5	Midterm 2 Review
	-----	Ch. 1.1- 7.5	**MIDTERM 2**
11	19	7.6	Normal Approximation
	20	8.1-8.2	Estimating Mean
12	21	8.3	Estimating Proportions
	22	9.1	Hypothesis Testing
13	23	9.2	Testing the Mean
	24	9.3	Testing a Proportion
14	25-26	Ch. 1.1- 9.3	Final Exam Review

| Exam Week | ----- | Ch. 1.1- 9.3 | **CUMULATIVE FINAL EXAM** |