

## MATH 225: Survey of Probability and Statistics

### *Spring 2022 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.

Please be sure you read and fully understand our [DMS Online Exam Policy](#).

### COURSE INFORMATION

**Course Description:** Topics include descriptive statistics, elements of probability, random variables and distributions; mean and variance; introduction to estimation and inference. This course satisfies the Mathematics GUR in probability and statistics. However, degree credit will not be granted for both **MATH 225** and any other upper level course in probability and/or statistics.

**Number of Credits:** 1

**Prerequisites:** **MATH 112** with a grade of C or better or **MATH 133** with a grade of C or better.

**Course-Section and Instructors:**

Course-Section	Instructor
Math 225	Professor R. Flores

**Office Hours for All Math Instructors:** [Spring 2022 Office Hours and Emails](#)

**Required Textbook:**

Title	<i>Engineering Statistics</i>
Author	Montgomery, Runger, and Hubele
Edition	5th
Publisher	John Wiley & Sons, Inc.
ISBN #	978-0470631478

**University-wide Withdrawal Date:** The last day to withdraw with a W is **Monday, April 4, 2022**. It will be strictly enforced.

## 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:

Class Participation, Homework, and Quizzes	10%
Midterm Exam I	25%
Midterm Exam II	25%
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.

Using Respondus LockDown Browser and a Webcam for Online Exams (This will only apply if things change to synchronous or converged online)

Respondus LockDown Browser is a locked browser for taking assessments or quizzes in Canvas. It prevents you from printing, copying, going to another URL, or accessing other applications during a quiz. If a Canvas quiz requires that LockDown Browser be used, you will not be able to take the assessment or quiz with a standard web browser. You may be required to use LockDown Browser with a webcam (Respondus Monitor), which will record you during an online exam.

**This course requires the use of Respondus LockDown Browser and/or Respondus Monitor with a webcam for online exams.** The webcam can be built into your computer or can be the type that plugs in with a USB cable. Watch this short video to get a basic understanding of LockDown Browser and the webcam feature. (This will only apply if things change to synchronous or converged online)

A student Quick Start Guide (PDF) is also available. Download and install LockDown Browser from this link: <http://www.respondus.com/lockdown/download.php?id=264548414>

1. Once your download has finished, locate the "LockDown Browser" shortcut on the desktop and double-click it. (For Mac users, launch "LockDown Browser" from the Applications folder.)
2. You will be brought to the Canvas login page within the LockDown Browser, click "Login with your UCID" to log in with your NJIT UCID and password and then click Login.

3. Under “My courses”, click on the course in which you have to take the exam that requires the LockDown Browser.
4. After you enter the course, find the exam and click on it.
5. A confirmation prompt will appear, click the “Start attempt” button. Once a quiz has been started with LockDown Browser, you cannot exit until the Submit all and finish button is clicked.
6. If you are required to use a webcam (Respondus Monitor), you will be prompted to complete a Webcam Check and other Startup Sequence steps.

**Homework and Quiz Policy:** Homework will be assigned at the completion of each topic. This homework will be collected and graded.

**Exams:** There will be two midterm exams held in class during the semester and one comprehensive final exam. Exam dates will be given in class while the final exam will take place during the following week:

Midterm Exam I	Week 5
Midterm Exam II	Week 10
Final Exam Period	May 6 - May 12, 2022

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 2022 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](#).

**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 Scott Janz, Associate Director of Disability Support Services at [973-596-5417](tel:973-596-5417) or via email at [scott.p.janz@njit.edu](mailto:scott.p.janz@njit.edu). The office is located in Kupfrian Hall, Room 201. A Letter of Accommodation Eligibility from the Office of Accessibility Resources and 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 Office of Accessibility Resources and Services (OARS) website at:

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

Important Dates (See: [Spring 2022 Academic Calendar](#), Registrar)

Date	Day	Event
January 18, 2022	Tuesday	First Day of Classes
January 22, 2022	Saturday	Saturday Classes Begin
January 24, 2022	Monday	Last Day to Add/Drop Classes
March 14, 2022	Monday	Spring Recess Begins
March 19, 2022	Saturday	Spring Recess Ends
April 4, 2022	Monday	Last Day to Withdraw
April 15, 2022	Friday	Good Friday - No Classes
April 17, 2022	Sunday	Easter Sunday - No Classes
May 3, 2022	Tuesday	Friday Classes Meet
May 3, 2022	Tuesday	Last Day of Classes
May 4 - May 5, 2022	Wednesday and Thursday	Reading Days
May 6 - May 12, 2022	Friday to Thursday	Final Exam Period

## Course Outline

Week	Sections	Topic
1	1.1 - 1.4, 2.1	Role of Statistics, Data Summary
2	2.2 - 2.5	Stem-and-Leaf Diagram, Histogram, Box Plot, Time Series Plot
3	3.1 - 3.3	Probability, Random Variables
4	3.7	Probability Mass Function, mean, variance
5		<b>MIDTERM 1</b>
6	3.8	Binomial Distribution
7	3.5.1	Normal Distribution
8	3.13	Central Limit Theorem
9	4.3	Statistical Hypotheses
10		<b>MIDTERM 2</b>

11	4.3	Statistical Hypotheses continued
12	4.4	Hypothesis Testing with Known Variance, Confidence Intervals
13	4.5	Hypothesis Testing with Unknown Variance, Confidence Intervals
14		Review for Final Exam
May 12-14,2022		<b>FINAL EXAM</b>

*Updated by Professor R. Flores - 1/6/2022*  
*Department of Mathematical Sciences Course Syllabus, Spring 2022*