

MATH 225-002: Survey of Probability and Statistics

Spring 2021 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: 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 225-002	Professor K. Gilbert

Office Hours for All Math Instructors: [Spring 2021 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
Notes	Students will use Minitab and maybe ASPEN, both available from NJIT.

University-wide Withdrawal Date: The last day to withdraw with a **W** is **Monday, April 5, 2021**. It will be strictly enforced.

COURSE GOALS

Objectives:

- Learn the basis of standard statistical tools and how they are used for analyzing data from experiments and also development studies.
- How to differentiate between sets of data using tools such as the Student T-Test
- Introduction and use of probability distribution functions for predicting probability values
- Use of Statistical Quality Control tools in a manufacturing setting
- Use of Design of Experiments (DOE) software to optimize a multi-factor process

This syllabus may change based on material covered and other factors

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 Class Participation	25%
Midterm Exam or Midterm Project	20%
DOE Project	25%
Final Exam	30%

Your final letter grade will be based on the following tentative curve.

A	90 - 100	C	65 - 74
B+	85 - 89	D	60 - 69
B	80 - 84	F	0 - 59
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

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. A student **Quick Start Guide (PDF)** is also available.

1. Download and install LockDown Browser from this link:

<http://www.respondus.com/lockdown/download.php?id=264548414>

2. 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.)

3. 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.
4. Under “My courses”, click on the course in which you have to take the exam that requires the LockDown Browser.
5. After you enter the course, find the exam and click on it.
6. 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.
7. 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 using Canvas. If additional topics are covered in class, they may be on the homework.

Exams: There will be one midterm exam 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	Week 8 - March 10, 2021
Final Exam	May 7 - 13, 2021

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 2021 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: 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 Chantonette Lyles, Associate Director of the Office of Accessibility Resources and Services at [973-596-5417](tel: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 Office of Accessibility Resources and Services 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 2021 Academic Calendar](#), Registrar)

Date	Day	Event
January 19, 2021	T	First Day of Classes
January 23, 2021	S	Saturday Classes Begin
January 25, 2021	M	Last Day to Add/Drop Classes
March 14 - March 21, 2021	Su - Su	Spring Recess - No Classes
April, 2, 2021	F	Good Friday - No Classes
April 5, 2021	M	Last Day to Withdraw
May 4, 2021	T	Friday Classes Meet
May 4, 2021	T	Last Day of Classes
May 5 & May 6, 2021	W & R	Reading Days
May 7 - May 13, 2021	F - R	Final Exam Period

Course Outline

- DaWeek	Lecture	Homework Due Before Lecture
1 - 1/20	Chapter 1	
2 - 1/27	Chapter 1	
3 - 2/3	Chapter 2	Chapter 1
4 - 2/10	Chem Data Search	
5 - 2/17	Chapter 2	Chem Data Search
6 - 2/24	Chapter 3	Chapter 2
7 - 3/3	Chapter 3	
8 - 3/10	Mid-Term Exam	Chapter 3
9 - 3/24	Chapter 6	
10 - 3/31	Chapter 8	Chapter 6
11 - 4/7	Chapter 8	
12 - 4/14	Chapter 7	Chapter 8
13 - 4/21	DOE Project	Chapter 7
14 - 4/28	DOE Procekt	DOE Project due at 11:59 PM
MAY 7 - 13, 2021		FINAL EXAM - DAY TBD