



THE COLLEGE OF SCIENCE
AND LIBERAL ARTS

THE DEPARTMENT OF MATHEMATICAL SCIENCES

MATH 661: Applied Statistics

Summer 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: Role and purpose of applied statistics. Data visualization and use of statistical software used in course. Descriptive statistics, summary measures for quantitative and qualitative data, data displays. Modeling random behavior: elementary probability and some simple probability distribution models. Normal distribution. Computational statistical inference: confidence intervals and tests for means, variances, and proportions. Linear regression analysis and inference. Control charts for statistical quality control. Introduction to design of experiments and ANOVA, simple factorial design and their analysis.

Number of Credits: 3

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 661-850	Professor A. Pole

Office Hours for All Math Instructors: [Summer 2021 Office Hours and Emails](#)

Required Textbook:

Title	<i>Introduction to the Practice of Statistics</i>
Author	Edition. D.S. Moore, G.P. McCabe and B. Craig
Edition	9th
Publisher	MacMillan Learning
ISBN #	978-1319055967 (e-book) 978-1319013622 (looseleaf)

Withdrawal Date: Please see the [Summer 2021 Academic Calendar](#) for the last day to withdraw based on the summer session you are registered for.

COURSE GOALS

Course Objectives

- This course will acquaint students with statistical techniques, with emphasis on applications: Turning data into information.

Course Outcomes

On successful completion of this course, the student will be able to:

- Demonstrate understanding and application of statistical methods for displaying, summarizing and describing data
- Demonstrate knowledge and use of basic probability and inference
- Demonstrate conceptual understanding and practical application of sampling distributions and the central limit theorem
- Perform statistical analysis including estimation, hypothesis testing, and analysis of variance.

Course Assessment

- Assessment of objectives is achieved through homework assignments and two examinations: a midterm exam and a 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 Assignments	40%
Midterm Exam	30%
Final Exam	30%

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

A	90 - 100	C+	75 - 79
B+	85 - 89	C	60 - 74
B	80 - 84	F	0 - 59

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**.

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.

- Download and install LockDown Browser from this link: <http://www.respondus.com/lockdown/download.php?id=264548414>

- 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.)
- 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.
- Under “My courses”, click on the course in which you have to take the exam that requires the LockDown Browser.
- After you enter the course, find the exam and click on it.
- 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.
- If you are required to use a webcam (Respondus Monitor), you will be prompted to complete a Webcam Check and other Startup Sequence steps.

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

Midterm Exam	Week 5
Final Exam	Week 10

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

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 (See: [Summer 2021 Hours](#))

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: [Summer 2021 Academic Calendar](#), [Registrar](#))

Date	Event
May 24, 2021	First Day of Classes for FIRST, MIDDLE, AND FULL SUMMER SESSIONS
May 26, 2021	Last Day to Add/Drop Classes for FIRST SUMMER SESSION
May 28, 2021	Last Day to Add/Drop Classes for MIDDLE SUMMER SESSION
May 31, 2021	Last Day to Add/Drop Classes for FULL SUMMER SESSION
May 31, 2021	University Closed for Memorial Day

June 28, 2021	Last Day of FIRST SUMMER SESSION
July 4, 2021	University Closed for Independence Day
July 5, 2021	University Closed for Independence Day
July 7, 2021	First Day of FTF SUMMER SESSION
July 19, 2021	Last Day of MIDDLE SUMMER SESSION
August 2, 2021	Last Day of FULL SUMMER SESSION
August 16, 2021	Last Day of FTF SUMMER SESSION

Course Outline

Week	Chapters
Week 1	Chapter 1. Looking at Data Distributions/Chapter 2. Looking at Data Relationships
Week 2 and 3	Chapter 4. Probability: The Study of Randomness
Week 3 and 4	Chapter 5. Sampling Distributions
Week 5	MIDTERM EXAM
Week 6	Chapter 6. Introduction to Inference
Week 7	Chapter 7. Inference for Means
Week 8	Chapter 8. Inference for Proportions
Week 9	Chapter 9. Inference for Categorical Data/Chapter 12. One Way Analysis of Variance
Week 10	FINAL EXAM

*Updated by Professor A. Pole - 5/19/2021
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