MATH 660: Introduction to Statistical Computing with SAS and R
Spring 2025 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: This course will study SAS and R programming and emphasize the SAS and R data steps including getting data into the SAS and R environments, working and combining data using control flows, merge and subsets, etc. as well as learning to export data and to generate high resolution graphics. Several SAS and R statistical procedures or functions will also be discussed and illustrated. Finally, interactive statistical software JMP and Minitab are briefly introduced.

Number of Credits: 3

Prerequisites: A first course in statistics. Knowledge in probability and programming (the class uses R and Python). When in doubt, please seek instructor approval.

Course-Section and Instructors:

Course-Section	Instructor
Math 660-102	Professor C. Jin

Office Hours for All Math Instructors: Spring 2025 Office Hours and Emails

Required Textbook:

	Book
Title	*Introduction to Data Science: Data Analysis and Prediction Algorithms with R*
Author	Rafael A. Irizarry
Edition	2019
Publisher	Chapman and Hall/CRC Press

ISBN #	*Hardcover*: 9780367357986 *eText*: 9781000708035

University-wide Withdrawal Date: The last day to withdraw with a **W** is **Monday, April 7, 2025**. 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:

Quiz	15%
Homework	15%
Project	20%
Midterm Exam	20%
Final Exam	30%

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

A	90 - 100	C+	70 - 79
B+	85 - 89	**C**	60 - 70
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. This policy will be strictly enforced. Class attendance and participation can contribute up to 5% of the grade at the instructor's discretion.

Quiz: There will be quizzes in each lecture.

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

Midterm Exam	TBA
Final Exam Period	May 10 - May 16, 2025

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.

Acceptable Use of AI: We encourage students to reach out to fellow students and the teacher for any help first.Students can use AI to help them learn the topics. However, all Homework and Project submissions must be primarily human effort.

ADDITIONAL RESOURCES

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 If you need an accommodation due to a disability please contact the Office of Accessibility Resources and Services at oars@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/accessibility/

Important Dates (See: Spring 2025 Academic Calendar, Registrar)

Date	Day	Event
January 21, 2025	Tuesday	First Day of Classes
January 27, 2025	Monday	Last Day to Add/Drop Classes
March 16, 2025	Sunday	Spring Recess Begins
March 22, 2025	Saturday	Spring Recess Ends
April 3, 2025	Thursday	Wellness day
April 7, 2025	Monday	Last Day to Withdraw
April 18, 2025	Friday	Good Friday - No Classes
April 20, 2025	Sunday	Easter Sunday - No Classes Scheduled

May 6, 2025	Tuesday	Thursday Classes Meet
May 7, 2025	Wednesday	Friday Classes Meet
May 7, 2025	Wednesday	Last Day of Classes
May 8, 2025	Thursday	Reading Day 1
May 9, 2025	Friday	Reading Day 2
May 10 - May 16, 2025	Friday to Thursday	Final Exam Period

Course Outline

Course Outline: The course outline may be modified at the discretion of the instructor. Students will be notified of any changes.

Lecture #	Date	Subject Topic
1	1/22/2025	Basic R Programming
2	1/29/2025	Data Structures in R
3	2/5/2025	Data Wrangling using tidyverse
4	2/12/2025	Project Topics
5	2/19/2025	Visualization using ggplot2
6	2/26/2025	Statistical Inference
7	3/5/2025	Regression Strategies (I)
	3/12/2025	**Midterm**

	3/19/2025	Spring Break – No Class
8	3/26/2025	Regression Strategies (II)
9	4/2/2025	High Performance Computing
	4/7/2025	Last day to withdraw with a W
10	4/9/2025	Examples of Statistical Learning
11	4/16/2025	Introduction to Python Programming
12	4/23/2025	Examples of Deep Learning
13	4/30/2025	Project Presentations
	TBD	**Final Exam**