MATH 664: Methods for Statistical Consulting
Spring 2021 Graduate 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: Communicating with scientists in other disciplines. Statistical tools for consulting. Using statistical software such as JMP, SAS, and S-plus. Case studies which illustrate using statistical methodology and tools are presented by the instructor and guest speakers from academia and industry. Assignments based on case studies with use of statistical software is required.

Number of Credits: 3

Prerequisites: Math 661, Regression analysis (such as Math 644), or departmental approval.

Course-Section and Instructors

Course-Section	Instructor
Math 664-102	Professor S. Subramanian

Office Hours for All Math Instructors: Spring 2021 Office Hours and Emails

Required Textbooks:

Title	*Problem Solving. A statistician's guide*
Author	Chris Chatfield
Edition	2nd
Publisher	CRC Press
ISBN #	978-0-4126-0630-4 (pbk)

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

COURSE GOALS

Course Objective: To focus on general principles involved in solving real-life statistical problems. To develop a range of skills such as data analysis, communication of statistical information, and specific statistical techniques including regression, linear models, ANOVA, categorical data, and survival data analysis.

Assessment: Based on homework, projects and 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	20%
Midterm Project	30%
Final Exam + Project	25% + 25%

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. This policy will be strictly enforced.

Homework Requirements: Homework problems will be assigned on Canvas.

Using LockDown Browser with Respondus Monitor for Online Exam:

If a Canvas exam requires that LockDown Browser with Respondus Monitor be used, you will not be able to take the exam with a standard web browser.

The webcam can be built into your computer or can be the type that plugs in with a USB cable. Watch this short video (Links to an external site) to get a basic understanding of LockDown Browser and the webcam feature. A student quick start guide is also available at https://web.respondus.com/wp-content/uploads/2019/08/RLDB-QuickStartGuide-Instructure-Student.pdf

Download and install LockDown Browser from this link: http://www.respondus.com/lockdown/download.php?id=264548414 (Links to an external site.

Lectures, Office Hours, Communication, and Technical support

Lectures: Lectures will be delivered online using conferencing tools such as WebEx during scheduled class times.

Office Hours: Office hours will be offered online using tools such as WebEx.

Communication: Communication with students will be maintained using emails and announcements on Canvas and through WebEx/Canvas Conference. Students need to frequently check their email for updates. Installing Canvas app for Students is recommended.

Technical Support: Students may also contact the IST Service Desk with any questions. Questions or problems can be submitted via web form by going to: https://servicedesk.njit.edu (Links to an external site.) and clicking

on the "Report your issue online" link.

You may also call the IST Service Desk with any questions at 973-596-2900.

Exams: There will be a midterm project during the semester and one online final exam plus project during the final exam week. The exam will be proctored using an online proctoring tool such as Lockdown Browser with Respondus Monitor and Webex. Students will join a Webex meeting from their phone with their cameras on and access the exam through LockDown Browser on a Mac or Windows PC with webcam. Students must follow all instructions related to environment checks and camera positioning. The format for the online exam will be announced before the exam. Use of Non-programmable/Non-graphing calculator is permitted during the exam. Exams will be held on the following days:

Midterm Project	Around week 10
Final Exam Period	May 7 – May 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: 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

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 Office of Accessibility Resources and Services at 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 Witdraw
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

Week	Lecture	Chapter	Topic
WEEK 1 1/21 (R)	1	Part 1	Introduction, problem formulation, data collection,
WEEK 2 1/28 (R)	2	Part 1	Analyzing the data 1: General strategy
WEEK 3 2/4 (R)	3	Part 1	Analyzing the data 2: The initial examination of data
WEEK 4 2/11 (R)	4	Part 1	Analyzing the data 3: The definitive analysis
WEEK 5 2/18 (R)	5	Part 1	Using resources, communication
WEEK 6 2/25 (R)	6	Part 2	Descriptive statistics
WEEK 7 3/4 (R)		Part 2	Exploring data
WEEK 8 3/11 (R)	8	Part 2	Correlation and regression
3/14 (S) to 3/21 (S)			**SPRING RECESS (NO CLASSES)**
WEEK 9 3/25 (R)	9		Analyzing complex large-scale data sets
WEEK 10 4/1 (R)	10		Analyzing more structured data
			(WITHDRAWAL DEADLINE MONDAY, APRIL 5, 2021)
WEEK 11 4/8 (R)	11		Analyzing categorical data
WEEK 12 4/15 (R)	12		Analyzing survival data
WEEK 13 4/22 (R)	13		Analyzing survival data
WEEK 14 4/29 (R)	14		15 minute project presentations
			Reading Day 5/5 and 5/6 (W & R)
5/7 - 5/13			**FINAL EXAM WEEK**

Changes or modifications, if any, will be announced in class