NJIT New Jersey's Science & Technology University

THE COLLEGE OF SCIENCE AND LIBERAL ARTS

THE DEPARTMENT OF MATHEMATICAL SCIENCES

MATH 660: Introduction to statistical Computing with SAS and R
Fall 2018 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: 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: Basic knowledge in statistical concepts or instructor approval.

Course-Section and Instructors

Course-Section	Instructor
Math 660-101	Professor Y. Fang

Office Hours for All Math Instructors: Fall 2018 Office Hours and Emails

Recommended Textbooks:

	BOOK 1	BOOK 2
Title	*The R book*	*The Little SAS Book: A Primer*
Author	M.J. Crawley	Delwiche & Slaughter
Edition	2nd	5th
Publisher	Prentice Hall	SAS Institute Inc.
ISBN #	9780470973929	978-1612903439

University-wide Withdrawal Date:The last day to withdraw with a **W** is **Monday, November 12, 2018**. 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:

Assignments	30%
Midterm Exam	30%
Final Exam	40%

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.

Exams: There will be one midterm exam (in-class part plus take-home part) during the semester and one comprehensive final exam (in-class part plus take-home part). Exams are held on the following days:

Midterm Exam	October 18, 2018
Final Exam Period	December 15 - 21, 2018

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: Disability Support Services (DSS) 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 Disability Support Services at 973-596-5417 or via email at lyles@njit.edu. The office is located in Fenster Hall, Room 260. A Letter of Accommodation Eligibility from the Disability Support 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 Disability Support Services (DSS) website at:

- http://www5.njit.edu/studentsuccess/disability-support-services/

Important Dates (See: Fall 2018 Academic Calendar, Registrar)

Date	Day	Event

September 4, 2018	T	First Day of Classes
September 10, 2018	M	Last Day to Add/Drop Classes
November 12, 2018	M	Last Day to Withdraw
November 20, 2018	T	Thursday Classes Meet
November 21, 2018	W	Friday Classes Meet
November 22 - 25, 2018	R - Su	Thanksgiving Recess
December 12, 2018	W	Last Day of Classes
December 13 & 14, 2018	R & F	Reading Days
December 15 - 21, 2018	Sa - F	Final Exam Period

Course Outline

Week	Date	Lecture	Topic	Notes
1	Sep 06	1	Introduction to SAS and R	
2	Sep 13	2	SAS tutorials I	
3	Sep 20	3	SAS tutorials II	
4	Sep 27	4	SAS tutorials III	
5	Oct 04	5	R tutorials I	
6	Oct 11	6	R tutorials II	
7	Oct 18*		**MIDTERM EXAM**	In-class part
8	Oct 25	7	Programing	
9	Nov 01	8	Graphics	
10	Nov 08	9	Exploratory data analysis	
11	Nov 15	10	Simple tests	
12	Nov 20*	11	Regression analysis	Th classes meet on T
13	Nov 30	12	Machine learning	
14	Dec 06		**FINAL EXAM REVIEW**	
15	Dec 13*		**READING DAY**	Final begins Dec 15

Updated by Professor Y. Fang - 8/31/2018
Department of Mathematical Sciences Course Syllabus, Fall 2018