Syllabus – STOR 455

Fall 2018 (August 21 – December 8)
Section 002, TuTh 2:00-3:15p
Hanes 120

Instructor:	Jan Hannig	**Phone:**	(919) 962-7511
Office:	330 Hanes	**E-mail:**	jan.hannig@unc.edu
Office Hours:	MW 1:30 – 3:00 PM and by appointment	**Course home page on**	http://www.unc.edu/~hannig/STOR455
Teaching Assistant:	Siqi Xiang	**E-mail:**	xsiqi@live.unc.edu
TA Office:	B1 Hanes	**TA Office Hour:**	TBA

Required Text:

- Graybill and Iyer, REGRESSION ANALYSIS: Concepts and Applications. Available for free at http://www.stat.colostate.edu/%7Ehari/regression_book/index.html

Optional Text:

- Michael H. Kutner, Christopher J. Nachtsheim & John Neter, Applied Linear Regression Models, McGraw-Hill.

Course Outline: This course presents regression analysis and related techniques, and is recommended for students throughout the natural and social sciences who are interested in applying regression analysis in their research and/or understanding the statistical concepts underlying the methodology. The topics include simple and multiple linear regression, matrix representation of the regression model, statistical inferences for regression model, diagnostics and remedies for multicollinearity, outlier and influential cases, polynomial regression and interaction regression models, model selection, weighted least square procedure for unequal error variances, and ANOVA model and test. Statistical software R will be used throughout the course to demonstrate how to apply the techniques on real data. The main purpose of this course is to let students know how to use regression methods properly in data analysis and lay the foundation for more advanced studies in statistics.

Prerequisites: STOR 155 or equivalent. Some familiarity with matrix algebra recommended, but not required.

Course Format: Traditional lecture

Assessment: Your grade will be based on two midterm exams (40% of the grade) a project (10% of the grade), a final exam (30% of the grade), and homework sets (20% of the grade).

Important dates:

Final Exam: see the published university schedule

Midterm exam:	Thursday, October 4
	Thursday, November 1
Homework:	Homework sets will be usually assigned every Thursday and due next week at the beginning of the class. Late/missed homeworks will receive a grade of zero.

Exams: Exams will be multiple choice and entirely closed book, closed notes. Missed exams will receive a grade of zero. Any student needing to be excused from the final exam due to the 3 Final Exams in 24 hour period rule must bring a written Dean's Excuse and discuss the situation with the instructor at least 3 weeks prior the end of the semester.

Homework: Problems will be posted on my website and will be due in a week at the start of the class. **No late homework will be accepted.** You are allowed to work with other students on the homework problems; however, verbatim copying of homework is absolutely forbidden and constitutes a violation of the Honor Code. Therefore, each student must ultimately produce his or her own homework to be turned in and graded. You are also encouraged to ask me for help on homework problems after attempting to solve the problems on your own.

Computing: The course includes an extensive practical computing component. The main software package I will use in this course is R. It is your responsibility to download the software and to familiarize yourself with its basic features, but I will help you to get started.

Note: The Honor Code will be observed at all times in this course. This course will participate in the Carolina Course Evaluation. Each student should feel comfortable approaching the Instructor with any concerns he/she has with the course. If there is a concern which cannot be resolved with the Instructor or with which the student does not feel comfortable approaching the Instructor, you may confidentially contact the Director of Undergraduate Studies at the STOR Department: Prof. Zia, 356 Hanes Hall, (919) 843-6022, ziya@email.unc.edu . For all questions on registration, contact Christine Keat, 321 Hanes Hall, (919) 962-2307, keat@unc.edu .

The instructor reserves the right to make any changes he considers academically advisable. It is your responsibility to attend classes and keep track of the proceedings.