STAT J770/BIOS 805 SYLLABUS
Fall 2019

John M. Grego 200F Leconte
MW 12:00-1:15 Wardlaw 116
Office Hrs: TR 11-12:30, W 3:30-5 grego@stat.sc.edu

Text *Categorical Data Analysis, Third Edition* by Alan Agresti

Disabilities If you qualify for accommodations because of a disability, please submit a letter to me from the Student Disability Resource Center in a timely manner so that your needs can be addressed. The Student Disability Resource Center determines accommodations based on documented disabilities. Contact: 777-6142, LeConte 112A; sadrc@mailbox.sc.edu; (`sc.edu/about/offices_and_divisions/student_disability_resource_center/`)

Learning Outcomes Students should be able to

- identify designs of contingency tables and recommend appropriate measures of association and statistical tests.
- develop models for binary, polytomous and multivariate categorical responses, interpret results regardless of model parameterization, and diagnose model fits.
- interpret and communicate categorical data methods to a technical audience.
- critique categorical data designs, including randomization and power analysis.
- analyze dependent categorical data models using both classical approaches and mixed effects models.

Grading Grades will be weighted in the following way:

Take-home Mid-term Exam	100 points
Homework/Classwork	100 points
Project	100 points
Take-home Final Exam	100 points
Total	400 points

The grading scale will be:

90 to 100	A
85 to 90-	B+
80 to 85-	B
75 to 80-	C+
70 to 75-	C
65 to 70-	D+
60 to 65-	D
0 to 60-	F

The project will be a data analysis or methodology project that can be undertaken with a partner (or partners) and will consist of computer work (25%), final draft (50%) and oral presentation (25%). I use the project to enhance (or reinforce) several skills you will need in your future (or current) career: written and oral communication, practical problem-solving

and teamwork. The oral presentation should provide useful practice for academic as well as professional presentations.

You are encouraged to discuss homework and class assignments with your classmates and me, but all such assignments must be written independently. Do not copy any part of another student's work or computer code. You are not allowed to discuss take-home exams with your classmates–please consult me if you have any questions. Incidences of cheating and academic dishonesty will be punished to the full extent allowed under university regulations.

For portions of the course in which the text is exemplary (and that's much of the class), we will have exercises that emphasize active learning. You will come to class having thoroughly read the day's material, and prepared answers to a set of exercise questions. Grades on these exercises will be based mostly on participation level and engagement.

Computers I will maintain a class web page that will be used to post the syllabus, lecture notes, homework assignments, tests and other course-related materials. The URL for the class web page is `http://people.stat.sc.edu/grego/courses/stat770`. Grading will be entirely electronic and handled through Blackboard.

I will use the computer/LCD projection system extensively in class for demonstrations and introduction of computer software. We will also occasionally have computer exercises instead of class sessions; the computer work will include data analysis and stochastic simulations.

We will be using two computer packages throughout the course. I tend to like to use the best available package for the job at hand and thus SAS and R will be used appropriately. Agresti has a tremendous amount of code available through his home page (`http://users.stat.ufl.edu/~aa/cda/cda.html`, but additional code will appear on my home page.

Course Delivery Technology For J706: Course viewing information is available on Blackboard. The course can be watched live via Breeze/Adobe Connect (enter as a guest), or streamed/downloaded within 24 hours. Instructions for login are posted under Announcements in Blackboard. Links to the lectures will automatically be posted to Blackboard under the Course Lectures Playlist (e.g., it appears in the upper left-hand frame of my version of Blackboard). I will use the computer extensively in class for demonstrations and introduction of computer software; all computing done by me in class will also be posted on the webpage. SAS is available on the PCs in Gambrell's basement (use your Blackboard login userid and password), as well as 3 computers (Computers 1-3) in the Cooper Technology Lounge on Level 5 of Thomas Cooper Library. But students may consider copies for laptop use, since limited access to labs can affect course success. SAS licenses are available for student use for $100 from USC (accessed via the Purchase Computer Software tab in Self Service Carolina); the licenses are in effect from 7/1/2019 to 6/30/2020. SAS Studio, an online version of SAS, is available for free through SAS OnDemand; course enrollment information is included in Blackboard under Course Documents. Another free version of SAS Software, SAS University Edition, has recently become available; this link is included in Blackboard under Course Documents as well.

R is available for free download from the CRAN (Comprehensive R Archive Network) website (`cran.r-project.org`). I will be using RStudio, since so many students prefer RStudio IDE (integrated development environment) as a better-integrated development platform than standard R; a free version can be downloaded (`www.rstudio.com`).

Date	Assignment/Topic	Graded Work
8/26	Intro, 1.1-1.2	
8/28	1.3	
9/2	Labor Day (no class)	
9/4	1.4-1.5	Section 1.2 exercise
9/9	1.4-1.5, 2.1-2.2	
9/11	2.2-2.3	Section 1.3-1.4 computer exercise
9/16	2.3-2.4	Section 1.5 exercise
9/18	3.1-3.3	Chapter 2 exercise
9/23	3.4-3.5	Section 3.1-3.3 exercise
9/25	3.5, 4.1-4.3	HW 1
9/30	4.3-4.4, 5.1	Chapter 3 computer exercise
10/2	5.1-5.3	
10/7	5.3-5.4	Chapter 4 computer exercise
10/9	5.5-6.1	HW 2
10/14	6.1-6.3	Section 5.3 computer exercise
10/16	6.4-6.5	Section 5.4 exercise
10/21	6.6-7.1	Section 6.2 exercise
10/23	7.1-7.4	HW 3
10/28	8.1-8.2	Section 7.1 exercise
10/30	8.3	Midterm distributed
11/4	9	
11/6	10	Midterm due
11/11	11.1-11.2	Project Proposal due
11/13	11.3-11.5	HW 4
11/18	12.2	
11/20	12.2, 12.5	
11/25	13.1-13.3	Project Draft
11/27	Thanksgiving (no class)	
12/2	13.4-13.6	
12/4		Project presentations

The final exam will be due Friday, December 13.