ST 590-003: Applied Categorical Data Analysis

Fall, 2016

Textbook (required)	**An introduction to Categorical Data Analysis**, by A. Agresti, 2nd Ed., Wiley. ISBN: 978-0-471-22618-5 We will cover most materials in the book except Chapter 7. Slides used for the course can be downloaded from the course website on moodle. Other information such as homework assignments, your homework grades, exam grades etc will also be available on moodle.
Prerequisite	ST 512 "Experimental Statistics For Biological Sciences II" or ST514 "Statistics for Management and Social Sciences II" or ST515 "Expermental Statistics for Engineers I"
Class Hours	Tuesday & Thursday, 11:45AM - 1:00PM
Location	Room 00371, Daniels Hall
Instructor	Dr. Daowen Zhang 5122 SAS Hall Tel: 515-1933 Email: zhang@stat.ncsu.edu
Office Hours	3:00-4:00PM MW or by appointment
Teaching Assistant	Rui Zhu Email: rzhu4@ncsu.edu
TA Office Hours	8:30-10:00AM TH
Grading	Based on the weighted average score of the following: **Homework**: 12 homeworks are scheduled to assign with each 10 points. At the end, your 10 best HW grades will be taken. **Total HW = 100 points**. **Mid-terms**: In class, closed book, notes & HW. Time: 9/29 & 11/3, Thursday, 11:40-1:20PM. Students are allowed to bring a one-page note. **Midterm points = 200**. **Final**: In class, closed book, notes & HW, comprehensive. Time: 12/6, Tuesday, 8:00-11:00AM. Students are allowed to bring a three-page note. **Final points = 200**. **Total points = 500**

Grading chart

$97 \leq score \leq 100$	A^+
$94 \leq score \leq 96$	A
$90 \leq score \leq 93$	A^-
$87 \leq score \leq 89$	B^+
$84 \leq score \leq 86$	B
$80 \leq score \leq 83$	B^-
$77 \leq score \leq 79$	C^+
$74 \leq score \leq 76$	C
$70 \leq score \leq 73$	C^-
$67 \leq score \leq 69$	D^+
$64 \leq score \leq 66$	D
$60 \leq score \leq 63$	D^-
$0 \leq score \leq 59$	F

Audit Students auditing the class should earn at least 50% of the homework score to get an **AU** grade (exams not required). Otherwise an **IN** will be assigned.

Course Description This course focuses on the concepts, methods and models used to analyze categorical data, particularly contingency tables, count data and binary/binomial type of data. The topics covered will include Pearson Chi-squared independence test for contingency tables, measures of marginal and conditional associations, small-sample inference, logistic regression models for independent binary/binomial data and many extended models for correlated binary/binomial data including matched data and longitudinal data. The course will emphasize the implementation of methods/models using SAS and the interpretation of the results from the output.

Course objective Students in this class will be able to recognize different types of categorical data and use appropriate methods/models for them. They will also be able to conduct statistical analysis using existing software and properly interpret the computer output.

Expectations:

- Students are expected to attend every class. However, not all details will be covered in class. So please read the book and ask questions whenever you have questions. If you decide to come to the class, please come on time. Your instructor and fellow students will appreciate it if their class is not interrupted.
- Homework will be assigned almost every week. Homework assignment should be turned in on the due day in class. Late assignment will only be accepted for some emergency (e.g., medical) cases or with the instructor's permission. Students are encouraged to work together, but copying homework directly from others is strictly prohibited.
- Academic integrity: It is understood that a student's signature on any test or assignment indicates that the student neither gave nor received any unauthorized aid from anyone. More details can be found in the following website:
`http://www.ncsu.edu/policies/student_services/student_discipline/POL11.35.1.php`