MATH 7759-8759: Categorical Data Analysis
Spring, 2019
Tu, Th 2:40pm-4:05pm Rm: DH 231
Lih-Yuan Deng (DH219, 678-3134)

## Course Contents:

MATH 7759-8759. Categorical Data Analysis. (3). Exponential family of distributions and generalized linear models; binary variables and logistic regression; contingency tables and log-linear models; quasi-likelihood functions; estimating functions. PREREQUISITES: MATH 7643 and MATH 7654.

1. Distributions and Inference for Categorical Data
2. Describing Contingency Tables
3. Inference Contingency Tables
4. Introduction to Generalized Linear Models
5. Logisitic Regression
6. Building and Applying Logisitic Regression Models
7. Logit Models for Multinomial Responses
8. Loglinear Models for Contingency Tables
9. Building and Extending Loglinear/Logit Models
10. Models for Matched Pairs
11. Analyzing Repeated Categorical Response Data

## Textbook Used:

"*Categorical Data Analysis*, Third Edition ", by Alan Agressti, 2012, John Wiley, ISBN-10: 0470463635, ISBN-13: 978-0470463635 .

## Software Used:

The use of R (or S-Plus) is required for this course. Other packages such as SAS or MAPLE could be useful. The followings are useful links over the internet:

1. `http://www.stat.ufl.edu/~aa/cda/cda.html` (textbook author's website)
2. `https://home.comcast.net/~lthompson221/#CDA` (Summary of each chapter in the textbook and discussion of R/S-Plus programs for the second edition of this textbook)

## Office Hours:

10am-11:30am Tu, Th or by appointment.

## Grading:

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|---|---|
| Midterm exam 1 | 30% |
| Midterm exam 2 or Class Project | 30% |
| Class Participation | 10% |
| Final Exam or Project | 30% |