Statistics 553: Categorical Data Analysis

Fall, 2018  Section: 01  Index Number: 03989
Room: Hill 552 (Busch Campus)
Time: Wednesdays, 6:40 PM - 9:30 PM (7th and 8th periods)
Note: No class on Wednesday, November 21.

Instructor: Dr. David Tyler
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Web-site: www.rci.rutgers.edu/~dtyler

Office Hours: Tuesdays and Thursdays: 5:00 - 6:00 PM
Wednesdays: 9:30 - 10:00 PM (dependent on demand)
Other times by appointment.

Grading Policy

<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quiz</td>
<td>25</td>
</tr>
<tr>
<td>Midterm</td>
<td>100</td>
</tr>
<tr>
<td>Final</td>
<td>100-125</td>
</tr>
<tr>
<td>Total</td>
<td>225-250</td>
</tr>
</tbody>
</table>

Grading Scale

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>90% - 100%</td>
<td>A</td>
</tr>
<tr>
<td>80% - 90%</td>
<td>B</td>
</tr>
<tr>
<td>70% - 80%</td>
<td>C</td>
</tr>
<tr>
<td>60% - 70%</td>
<td>D</td>
</tr>
<tr>
<td>Under 60%</td>
<td>F</td>
</tr>
</tbody>
</table>

Quiz and exam policy:

- There will be one 30 minute in-class quiz worth 25 points. The quiz is closed book and closed notes.

- The midterm exam is 2.5 hours and will be given in class. The midterm is closed book but three pages of notes are allowed. A take-home project may be part of the midterm.

- The final exam is 3 hours and is semi-comprehensive. The final is closed book but five pages of notes are allowed. The location of the final exam will be announced at a later date. A take-home project may be part of the final exam. The final exam will count as either 100 or 125 points, depending on which scale results in a higher overall percentage.

- For the exams and quizzes, bring a calculator and pencils (not pens).

Homework policy: Unless otherwise stated, homework will not be collected. Students are responsible for doing the homework and can expect to find some homework problems on the quizzes and exams.

Tentative quiz and exam dates:

- Quiz: Wednesday, October 3, last 30 minutes of class.
- Midterm: Wednesday, October 24, full class.
- Final: Wednesday, December 19, 8 - 11 PM.
SYLLABUS (Tentative)

Statistics 553.01: Categorical Data Analysis

Course Text: *An Introduction to Categorical Data Analysis, 2nd edition*, by Alan Agresti (Publisher: Wiley, New York.)

Optional Reference Book: *Categorical Data Analysis*  
by Alan Agresti (Publisher: Wiley, New York.)  
This text is more advanced version of the course textbook.

TOPICS

1. Introduction and Review.  
The Binomial, Poisson and Multinomial Distributions.  
One-way Contingency Tables.  
Chapter 1: Sections 1.1 - 1.4, plus class notes.

2. Two and Three-way Contingency Tables.  

Chapter 3: Sections 3.1 - 3.4. Appendix A: Chapter 3.

4. Logistic Regression.  
Chapter 4: Sections 4.1 - 4.5. Appendix A: Chapter 4.

5. Loglinear Models for Contingency Tables.  
Chapter 7: Sections 7.1 - 7.5. Appendix A: Chapter 7.

6. Additional topics as time permits.

Reading assignments. There will be some discrepancies between the lecture notes and the reading assignments. Students are responsible for both the lecture notes and the reading assignments.

Statistical software. This course will utilize the statistical software packages **SAS** and **R**. It is presumed that students have some prior experience with either **SAS** or **R**.