Linguistics 507  
Statistical Analysis for Linguists  
Fall 2008

Professor: Natasha Warner

Class meets:  
8:00-9:15 AM, Tuesday Thursday  
ILC 129

Class website: http://d2l.arizona.edu

Office hours: 9:30-11:30 Tu., Douglass 320  
Phone: 626-5591  
Email: nwarner@u.arizona.edu (DO NOT USE d2l email to reach me, I don't read it.)

Books/materials:  

Readings on correlation and regression from the SPSS manual:  


Keppel is in the bookstore, and the other readings are on the course d2l site (d2l.arizona.edu). The bookstore shelves Keppel under Psych507, but you don't need all those other books Psych507 requires, just Keppel plus the ones on the d2l site.

General organization of the course:  
This course will focus on statistical methods that are used in linguistic research, with the most attention given to analysis of variance (ANOVA) and correlation and regression. While a large part of the class will be spent on basics of how to analyze quantitative data, another goal of the class is to examine the statistical analyses which appear in actual published linguistic literature, and to discuss how students’ current and future research might be analyzed statistically.

There will be three homework assignments, a midterm exam, an in-class presentation, and a short final paper (due Dec. 15). The presentation will be on the statistical analyses used in some published paper. The final paper will be on design and analysis of some piece your own research (either already completed, currently in progress, or hypothetical future research). You will also turn in a proposal of the topics for your presentation and paper.
Prerequisites:
The only math you will need will be addition, subtraction, multiplication, and division (just a whole lot of them!). No previous training in statistics is required. The only assumption about background is that you are currently or plan to eventually be involved with quantitative data in some linguistically related field. At this point, you may only be reading literature which uses statistical analyses, or you may already be collecting your own data and need to analyze it.

Requirements/grading:
Homework assignments: 30% (10% each)
Midterm exam: 25%
Topic proposal: 5%
Presentation: 10%
Term paper: 30%

Late policy: 10% reduction of the possible grade per day late, except for documented hospital, police, or similar level excuses.

Tentative schedule:

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Readings/requirements</th>
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<tbody>
<tr>
<td>Week 1</td>
<td>Introduction, why do experiments, why use statistics, areas of linguistics that use statistics, hypothesis testing</td>
<td>Read Keppel Ch. 1</td>
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<td>Week 2</td>
<td>1 factor ANOVA with 2 levels, with 3+ levels</td>
<td>Read Keppel Ch. 2-3</td>
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<td>Week 3</td>
<td>planned comparisons, assumptions of ANOVA</td>
<td>Read Keppel Ch. 4, 6, 7</td>
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<td>Week 4 (9/11 will be a lab day, CC 311)</td>
<td>correction for family-wise error, power, 2 factor ANOVA</td>
<td>Read Keppel Ch. 8, 10-11, Sedlmeier and Gigerenzer</td>
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<td>Week 5</td>
<td>interaction, follow-up tests, 3 factor ANOVA</td>
<td>Read Keppel Ch. 12-13 and 21, Assignment 1 due Sep. 18</td>
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<td>Week 6</td>
<td>3 factor ANOVA continued, higher designs, review</td>
<td>Read Keppel Ch. 22</td>
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<td>Week 7</td>
<td>midterm exam (10/7), ANCOVA</td>
<td>Read Keppel Ch. 15 (after midterm)</td>
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<td>Week 8 (10/16 will be a lab day, CC 311)</td>
<td>unequal sample sizes, within-subjects designs</td>
<td>Read Keppel Ch. 14, 16</td>
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<td>Week 9</td>
<td>interaction, follow-up tests</td>
<td>Read Keppel Ch. 17, 18; Assignment 2 due 10/23</td>
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<td>Week 10</td>
<td>Within-subjects continued, mixed designs</td>
<td>Read Keppel Ch. 19-20</td>
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<td>Week 11</td>
<td>mixed designs cont'd, random factors, counterbalancing</td>
<td>Read Keppel Ch. 23-24, 26</td>
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<td>Week 12 (Tu. 11/11 holiday)</td>
<td>by subjects and by items tests</td>
<td>Read Raaijmakers et al. Topic proposal due 11/13</td>
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Week 13 | correlation and regression | SPSS readings
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Week 14 (Th. 11/27 holiday) (11/25 will be a lab day, CC 311) | multiple regression, | SPSS readings
Week 15 | signal detection theory, non-parametric tests (Tu.); Student presentations (Th.) | Student presentations (Th. 12/4)
Week 16 (Tu. only) | | Student presentations (Tu. 12/9); Assignment 3 due 12/9
Dec. 15, by noon | | Paper due

Various statements:
Students with Disabilities:
If you anticipate issues related to the format or requirements of this course, please meet with me. I would like us to discuss ways to ensure your full participation in the course. If you determine that formal, disability-related accommodations are necessary, it is very important that you be registered with Disability Resources (621-3268; drc.arizona.edu) and notify me of your eligibility for reasonable accommodations. We can then plan how best to coordinate your accommodations.

Academic misconduct:
The university's policies about plagiarism, academic honesty, and academic conduct are at http://dos.web.arizona.edu/uapolicies/. The library’s website also provides extensive help with learning what constitutes plagiarism and how to avoid it. It is particularly important when doing the in-class presentation on a published paper to avoid using the exact words of the paper, except for technical statistical terms.

Potentially offensive/objectionable content:
The material in this course is primarily not political, but there may be some discussion of endangered languages, use of human subjects in research, dialects associated with various social groups, attitudes toward dialects, etc.

Conduct in class:
Please turn off cell phones and pagers when in class. Students are required to treat others in class with respect. Disruptive behavior is prohibited.