Advanced Statistics in Psychology  
PSY 670B  
Spring 2011

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M 1-3  
T 11-1

Class Meetings

<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
<th>Topic</th>
<th>Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>T</td>
<td>9:00 a.m. – 9:50 a.m.</td>
<td>Lecture</td>
<td>LS 111</td>
</tr>
<tr>
<td>T</td>
<td>10:00 a.m. – 10:50 a.m.**</td>
<td>Lab</td>
<td>LS 117</td>
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<tr>
<td>Th</td>
<td>9:00 a.m. – 10:50 a.m.</td>
<td>Lecture</td>
<td>LS 111</td>
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** 1st lab: Tuesday, 2/1.

Goals/Expectations

→ Understand the conceptual underpinnings of statistics that are common to all research designs.
→ Discern the appropriate model comparison to answer the substantive research question at hand.
→ Run analyses by hand and on the computer.
→ Interpret statistical results…What do they really mean?

Text

Assignments

Exams. There will be two midterm exams and a cumulative final. Exams include 2 to 3 sections drawn from the following types of problems: writing out hypotheses/model comparisons to test substantive research questions, short answer/essays on the conceptual underpinnings of statistics, and output questions. You will be able to use a formula sheet I provide and a calculator. As the exams approach, I will post example tests from previous years to give you a better sense of what you can expect.

Homework. There will be homework assignments approximately weekly. HW assignments will be posted on Blackboard. We will work on assignments in the latter half of class on Tuesdays and they will be due the following Tuesday at the beginning of lecture. Although class time is allotted to HW this is largely to assist you with computer issues. Do not expect to finish your HW during class. You can drop 1 HW grade per term.

Course Grades

Exam 1  25%
Exam 2  25%
Final Exam  30%
Homework Average  20%
# Lecture Schedule  
**Spring 2011**

### Models with Categorical Predictors/IVs

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Methods</th>
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<tbody>
<tr>
<td>1/20 – 2/8</td>
<td>8. Models with single categorical predictors</td>
<td>Independent Samples t-test, One-way ANOVA, Tests of Planned Contrasts</td>
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<tr>
<td>2/10 – 2/22</td>
<td>9. Models with multiple categorical predictors</td>
<td>Two-way ANOVA, Factorial ANOVA</td>
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<td>2/24 – 3/3</td>
<td>10. Models with both continuous and categorical predictors, and their products</td>
<td>ANCOVA, Mediation, Separate Groups Regression, Moderated Regression</td>
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<td>3/8</td>
<td>Exam 1</td>
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### Violations of Assumptions about Error

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<tr>
<th>Date</th>
<th>Topic</th>
<th>Methods</th>
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<tbody>
<tr>
<td>4/19</td>
<td>Exam 2</td>
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<tr>
<td>4/21 – 5/3</td>
<td>12. Continuous Predictors with Nonindependent Observations</td>
<td>Within-Subject Regression, Hierarchical Linear Models (HLM), Multilevel Models (MLM)</td>
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<tr>
<td>5/5 – 5/10</td>
<td>13. Outliers and Ill-Mannered Error</td>
<td>Outlier Analysis</td>
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**Thursday, 5/19**  
8:00 – 10:00 a.m.  
**Final Exam**

*Note: On final exam schedule, our class is grouped with TTh classes that begin at 8.*