HRSP 371B, Research Design & Statistical Analysis
Course Syllabus, Spring, 2006

Instructor
Daniel H. Ashmead
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Office hours Thursday 1-3 or by appointment

Class meetings
Tuesday, Thursday 9:35-10:50 a.m., Classroom 4, Medical Center East, South Tower, 8th floor

Textbooks
Maxwell, S. E., & Delaney, H. D. (2004). *Designing experiments and analyzing data. A model comparison perspective.* (Second ed.). Mahwah, NJ: Lawerence Erlbaum Associates.
Howell, D. C. (2002). *Statistical methods for psychology* (Fifth ed.). Pacific Grove, CA: Duxbury. (Only parts of the Howell text will be used. This text was used Fall semester.)

Objectives
The principal objective of this class is to cover analysis of variance at a level suitable for doctoral students who are planning careers with a substantial emphasis on empirically based research. Specific topics include basic analysis of variance, procedures for follow-up analyses, polynomial trend analysis, factorial analysis of variance, analysis of covariance, within-subjects designs, mixed model designs, and hierarchical multilevel analyses. In addition to these topics, we will explore multiple regression, although principally as a generalization of analysis of variance.

Assignments and grading
The class will have frequent homework assignments and in-class data analysis work. There will be three take-home exams. Final course grades will be based on: class participation (10%), homework (40%), and exams (50%). Final letter grades will be based on A range (90%+), B range (80-89%), C range (70-79%), D range (60-69%), and F (<60%). Letter grades within a range (e.g., B vs. B+) will be at the instructor's discretion.

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Tuesdays	***Thursdays***
	Jan 13 Review of single factor, between subjects design. M&D Ch. 3 (88-98; 75-80)
Jan 18 More on single factor design. H Ch. 11 (336-338)	Jan 20 Comparisons among means by linear contrasts. M&D Ch. 4. H Ch. 12 (375-384)
Jan 25 Continue from Jan 20	Jan 27 Controlling family-wise error rate with multiple comparisons. M&D Ch. 4. H Ch. 12 (384-404)
Feb 1 Trend analysis as an approach to targeted effects. M&D Ch. 6. H Ch. 12 (408-416)	Feb 3 Continue from Feb 1 *Exam #1 handed out (due Feb. 10)*
Feb 8 Between subjects factorial design: The basic analysis. M&D Ch. 7 (275-297)	Feb 10 Between subjects factorial design: Follow-up testing. M&D Ch. 7 (297-317)
Feb 15 Continue from Feb 10	Feb 17 Between subjects designs with more than two factors. M&D Ch. 8
Feb 22 Multiple regression intro. H Ch. 15	Feb 24 Multiple regression – coding for analysis of variance
Mar 1 Analysis of covariance. M&D Ch. 9	Mar 3 Continue from Mar1
Mar 8 No class – spring break	Mar 10 No class – spring break
Mar 15 Single factor within subjects analysis of variance: basic design. M&D Ch. 11 *Exam #2 handed out (due Mar 22)*	Mar 17 Within subjects designs: Comparisons among means. M&D Ch. 11
Mar 22 Controlling for order effects in within subjects designs. M&D Ch. 11	Mar 24 Multiple factors in within subjects designs. M&D Ch. 12
Mar 29 Mixed model designs. M&D Ch. 12	Mar 31 Continue from Mar 29
Apr 5 Multivariate approach to within subjects designs. M&D Ch. 13	Apr 7 Continue from Apr 5
Apr 12 Within subjects designs: Multilevel approach. M&D Ch. 15	Apr 14 Continue from Apr 12
Apr 19 Multilevel mixed model designs. M&D Ch. 16	Apr 21 Continue from Apr 19
Apr 26 Review session on within subjects and mixed model designs *Exam #3 handed out (due May 3 at noon)*	