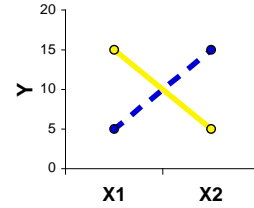


PSYCHOLOGY 391
FALL 2006
Advanced Data Analysis
Mondays & Wednesdays 2:30-3:50
DC 1350



Instructor: Dr. Jonathan Fugelsang
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Office Hour: Monday 4:30 - 5:30
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Teaching Assistants:

Karl Borgman
Office: PAS 4044
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Tutorial: 105 (Thursday 8:30 - 9:20)

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Kelly Malcolmson
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Tutorial: 104 (Wednesday 4:30 - 5:20)

Jennifer Tomaszczyk
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Tutorial: 103 (Thursday 5:30 - 6:20)

Szymon Wartak
Office: PAS 4049
Office Hour: Tuesday 10:30 - 11:30
Email: swartak@artsmail.uwaterloo.ca
Tutorial: 102 (Wednesday 5:30 - 6:20)

Texts:



Howell, D. C. (2004). *Fundamental Statistics for the Behavioral Sciences*. Thomson.
(Probably would be quite helpful)

Howell, D.C. (2007). *Statistical Methods for Psychology (Chapters 11-14)*. Thompson
(Probably most necessary)

Kirkpatrick, L. A. & Feeney, B. C. (2006). *A simple guide to SPSS for Windows*. Wadsworth.
(Probably would be quite helpful)

Course Objectives:

This course builds from the material covered in Psychology 292. Topics that will be covered include: ANOVA, factorial ANOVA, repeated measures and mixed designs, and multiple comparisons associated with those designs. The primary goal of the course is to provide students with a solid understanding of both the logic and computations underlying many of the advanced statistical procedures that psychologists use when analyzing data collected from experiments. An additional goal for this course is that students will learn to perform these statistical analyses using SPSS.

Course Requirements:

Requirement	Date	Value
Test #1	October 11 th	25%
Test #2	November 8 th	25%
Test #3	December 4 th	25%
Graded Labs (N=3)	Oct 4 th (5%), Nov 6 th (10%) and 29 th (10%)	25%
Research Participation (or assignment)		2%

Tests (75%):

In total, there will be three tests in this course. The dates for these tests can be found on the course outline. All three tests will be held during regular class period. The content of the tests will be a combination of multiple choice, short answer, and long answer, and will involve both conceptual and computational material.

Labs (25%):

There will be three lab assignments in this course. The first lab will be worth 5%, and the remaining two will be worth 10% of your final grade each. As with all work in this course, you are to complete the assignments on your own. It is important that you show all of your work for each assignment (i.e., all calculations). All assignments will be due at the start of class and all late assignments will be penalized. Any assignments handed in after the start of the class in which it is due will be penalized as if it was one class late. For every class that an assignment is late, 25% will be deducted from your assignment grade. For example, if you received 100% on assignment 1 but handed it in one class late you would receive 75% on the assignment.

Research Participation or Assignments (bonus 2%)

In order to familiarize you with different types of research being conducted in Psychology, you will have the opportunity to participate in actual psychology experiments. A representative from the Research Experiences Group (REG) will visit the class within the first couple weeks of the term in order to inform you of the procedure for signing up for research participation. **You will be given 1% for each 1 hour of participation in an experiment, up to a maximum of 2%.** If you do not wish to participate in experiments, or cannot find an available experiment, you can complete assignments instead. The assignment is to write a **1 page summary**, in your own words, of a statistics related article. I have provided a few articles on UW-ACE that you may wish to use. You will be given a grade of 1% for each summary. You can combine Participation and Assignments, or chose to do one or the other.

Tutorials:

Each student should be registered in a tutorial section. Tutorials are intended to provide students with an opportunity to work through the mechanics of the statistical procedures with a TA in a smaller group setting, as well as give hands on experience with SPSS. For the most part, we will spend class time discussing the logic and rationale behind the statistical procedures covered in this course. The tentative tutorial schedule is posted on the final page of this outline.

Nexus Accounts:

Because you will be required to complete portions of your lab assignments with SPSS, it is important that you obtain a NEXUS account. A NEXUS account will give you access to e-mail, the internet, and a host of different software packages (including SPSS which you will need for the lab assignments). The only cost incurred with a NEXUS account is printing. You can purchase printing at PAS 1080 using your WATCARD. It is strongly recommended that you activate your NEXUS account, find the SPSS statistical package, and become familiar with it.

You can obtain a NEXUS account by: (a) going to a NEXUS computer (e.g., one located in PAS 1237), (b) clicking on the link in the bottom-left corner of the login browser, and (c) following the instructions as they are given on the screen. Alternatively, in the past many students have purchased their own version of the SPSS software. If you are interested in this option you can go to the CHIP help desk (MC 1052) and purchase SPSS.

Note for students with disabilities:

The Office for Persons with Disabilities (OPD), located in Needles Hall, Room 1132, collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodations to lessen the impact of your disability, please register with the OPD at the beginning of each academic term.

PLEASE CHECK UW-ACE PERIODICALLY FOR COURSE ANNOUNCEMENTS AND SCHEDULE UPDATES

TENTATIVE COURSE SCHEDULE

Days	Topic	Readings
Sept 11	Introduction to course	
Sept 13	Review of Basic Concepts	Chap: H _a 1, 2, 4, 5, 6, 8
Sept 18	Hypothesis Testing, T-tests & begin 1-way ANOVA	Chap: H _a 12-14, 16.1-16.2, K&F 1-9
Sept 20	ANOVA	Chap: H _a 16.1-16.2
Sept 25	ANOVA (Handout L1)	Chap: H _a 16.1-16.3, K&F 10
Sept 27	ANOVA	Chap: H _a 16.3-16.4
Oct 2	ANOVA	Chap: H _a 16.6-16.11
Oct 4	ANOVA (L1 due)	
Oct 11	<u>Test # 1</u>	
Oct 16	Multiple Comparisons: Background	Chap: H _a 16.5, H _b 12, K&F 10
Oct 18	Multiple Comparisons: Planned comparisons	Chap: H _a 16.5, H _b 12
Oct 23	Multiple Comparisons: Post Hoc	Chap: H _a 16.5, H _b 12
Oct 25	Factorial ANOVA (Handout L2)	Chap: H _a 17.1-17.4, K&F 11
Oct 30	Factorial ANOVA	Chap: H _a 17.5-17.10
Nov 1	Factorial ANOVA	Chap: H _a 17.5-17.10
Nov 6	Factorial ANOVA (L2 due)	
Nov 8	<u>Test #2</u>	
Nov 13	Repeated Measures	Chap: H _a 18, H _b 14
Nov 15	Repeated Measures	Chap: H _a 18, H _b 14
Nov 20	Repeated Measures (Handout L3)	Chap: H _a 18, H _b 14, K&F 12
Nov 22	Mixed Designs & Factorial Repeated Measures	H _b 14, K&F 13
Nov 27	Mixed Designs & Factorial Repeated Measures	H _b 14
Nov 29	Mixed Designs & Factorial Repeated Measures (L3 due)	H _b 14
Dec 4	<u>Test #3</u>	

H_a - Refers to the Howell (2004) text entitled “*Fundamental Statistics for the Behavioral Sciences*”

H_b - Refers to the Howell’s (2007) supplement entitled “*Statistical methods for Psychology Ch 11-14*”.

K&F: Refer to chapters from the Kirkpatrick and Feeny book “*A Simple Guide to SPSS for Windows*”

L1-L3: Refers to the three lab assignments

TENTATIVE TUTORIAL/REVIEW SCHEDULE

Tutorial #	Date	Objective
No Tutorial	Week of Sept 11 th	----
Tutorial 1	Week of Sept 18 th	t-tests
Tutorial 2	Week of Sept 25 th	One-way ANOVA
No Tutorial	Week of Oct 2 nd	----
Review Session	Tuesday Oct 10 th	Available for questions the Tuesday before the first test (location TBA, 9-5)
No Tutorial	Week of Oct 9 th	----
Tutorial 3	Week of Oct 16 th	Multiple comparison techniques
Tutorial 4	Week of Oct 23 rd	More Post Hocs
Tutorial 5	Week of Oct 30 th	Factorial ANOVA
Review Session	Tuesday Nov 7 th	Available for questions on the Tuesday before the second midterm (location TBA, 9-5)
No Tutorial	Week of Nov 6 th	----
No Tutorial	Week of Nov 13 th	----
Tutorial 6	Week of Nov 20 th	Repeated measures ANOVA
Tutorial 7	Week of Nov 27 th	Mixed and factorial repeated measures designs
Review Session	Friday Dec. 1st	Location and time TBA, 9-5

NOTE: Please be aware of the following university policies

- All students registered in the courses of the Faculty of Arts are expected to know what constitutes an academic offence, to avoid committing academic offences, and to take responsibility for their academic actions. When the commission of an offence is established, disciplinary penalties will be imposed in accord with Policy #71 (Student Academic Discipline). For information on categories of offences and types of penalties, students are directed to consult the summary of Policy #71 which is supplied in the Undergraduate Calendar (section 1; on the Web at http://www.adm.uwaterloo.ca/infoucal/UW/policy_71.html). If you need help in learning how to avoid offences such as plagiarism, cheating, and double submission, or if you need clarification of aspects of the discipline policy, ask your TA or course instructor for guidance or consult “How to Avoid Plagiarism and Other Written Offences: A Guide for Students and Instructors” (<http://watarts.uwaterloo.ca/~sager/plagiarism.html>). Other resources regarding the discipline policy are your academic advisor and the Undergraduate Associate Dean.
- Students who believe that they have been wrongfully or unjustly penalized have the right to grieve. Please refer to Policy #70 (Student Grievance) at <http://www.adm.uwaterloo.ca/infosec/Policies/policy70.htm>.