

Syllabus

Contact Information

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Course Information

Course title: Statistics for the Social Sciences
Course number: 340
Course discipline: Psychology

Course description: This course is designed to cover hypothesis testing in the behavioral sciences, building on concepts learned in PSY/ECO/GEO/POS 138. The logic, assumptions, computation, and interpretation of inferential statistics will be covered, including one-sample, related-samples, and independent-samples t-tests; one-way and two-way ANOVA; correlation and bivariate regression; and non-parametric procedures. In addition to the logic of hypothesis testing, PSY 340 will integrate the use of the software package SPSS as a tool for data management and hypothesis testing. Writing skills will also be developed through a research report and written exam questions.

Location: DeGarmo 13

Meeting day(s): MW

Meeting time(s): 8:30-9:45

Prerequisite(s): PSY 138 & MAT 120, 121, 144, or 145

Course Objectives

Course goals: As a result of taking PSY 340 students will have the opportunity to apply important quantitative reasoning skills as they relate to research in the behavioral sciences. Specifically, the course will help students develop the following skills and abilities:

1. Think critically about the use of hypothesis testing in the behavioral sciences.
2. Choose an appropriate statistical test for specific forms of data and hypotheses.
3. Understand the logic and mathematical basis for different inferential statistics.
4. Use computers and the software package SPSS as a tool for data management and hypothesis testing.
5. Draw valid conclusions about hypotheses from the results of different statistical tests.
6. Coherently describe conclusions from a hypothesis test in written form.

Department objectives

Evaluating Student Performance

Introduction: Your final course grade is determined by performance on a number of different required assignments. These are listed below.

Requirements: **Homework --- 30%**

The homework is essential to understanding concepts and practicing skills. Assignments are designed to assess students' knowledge of the specific statistical tests, the application of those tests to specific types of data, and the computation of those tests using SPSS. All homework is to be turned no later than the beginning of class on the due-date. Late work that does not comply with the above policies will still be graded, must still be turned in, but will be given 50% of the possible points at best. In all cases, written documentation may be requested.

Quizzes --- 5%

Students will take 10 quizzes during the semester. These quizzes will be administered using WebCT's quiz capabilities. The quizzes are intended to encourage reading of the textbook.

Exams --- 50%

Three in-class exams will test students' conceptual and mathematical understanding of hypothesis testing. Exams 1 and 2 are each worth 15%. The final exam is worth 20%. Exam questions will be short answer (including computational questions) in nature, and **each and every exam is implicitly and explicitly cumulative!** Exams will cover all material covered in lecture and in the textbook. Similar to the homework assignments, make-up exams will be administered only in grave circumstances (e.g., medically unable by doctors written orders, death in the immediate family) or with prior approval of the instructor. You must also contact the instructor as early as it is feasible to arrange an absence from an exam and obtain a make-up exam. If you have valid reason why you cannot take the exam but wait until after the exam, you may not be given a make-up exam if it would have been reasonably possible to contact the instructor earlier. This policy does not mean that you have to have an ambulance pull over to call the instructor if you have a car accident on your way to an exam. You should, however, contact the instructor as soon as it is feasible to do so. Voice-mail and email make doing so very convenient.

Research Project --- 15%

Each student will complete a research project during the semester. The research project involves: choosing a topic problem and data set from several different data sets available from the instructor, choosing an appropriate statistical test for hypothesis testing for the problem chosen, running the appropriate test(s) using SPSS, interpreting the SPSS output, and writing a paper (roughly five pages) describing the problem and the conclusions from the statistical test results. This project will test students' ability to apply and conduct an inferential statistic to a specific problem of interest. The research report will be written in APA style and laser-printed (or printed with an inkjet printer of similar quality). Blurred printing, smudged printing, or less-than-laser quality printing is unacceptable and will result in a grade of 0. The projects are due on the last day of class; late projects will not be accepted and will be assigned a grade of zero. Additionally, failing to run a spell-check on the assignment will result in losing 10% for each spelling error that would have been caught by a standard spell-checking program.

Optional Labs -- 0%:

On most lecture days, I have prepared a set of practice problems (and solutions). These are designed to give you additional practice (to help you with your homework and final project problems). They will not be collected for credit.

Extra-credit opportunities

Grading Scale

A weighted grade score will be calculated for each student in which the simple average of all assignments within each category are weighted according to the percentages above and added together:

$$\text{score} = 0.30 * (\text{homework average}) + 0.05 * (\text{quiz average}) + 0.50 * (\text{exam average}) + 0.15 * (\text{project})$$

The total score will be computed and available within the Mallard web page for each student throughout the semester. Grades will be assigned based on the following ranges:

Grade	Percentage Score Range
A	90 - 100
B	80 - 89.99
C	70 - 79.99
D	60 - 69.99
F	0 - 59.99

Academic Dishonesty

Active participation is the central requirement for the class. Students will be expected to participate in a variety of ways, including several written and oral presentations and discussions. If you are going to miss a class, then you will miss an opportunity for participation. So it is critically important that you notify me AS SOON AS YOU KNOW that you'll be absent and WHY. Call, e-mail, or talk to me in person.

Opportunity to make-up the missed work requires prior notification of the absence and an excused absence (that is one that you instructor accepts as reasonable and legitimate). How and when the work will be made up will be determined by the instructor.

To ensure a smooth flow of discussions, the following policies are established: Students are encouraged

to listen with an open mind, respect the contributions of others, and avoid personal attacks. Students will often be faced with alternative viewpoints from the professor or their peers. Thus, students should be prepared to defend their own positions with empirical data, obtained from the assigned readings, and reasoned argument.

You are expected to do your own work. Plagiarism and cheating of any sort will not be tolerated. Either behavior will result in a grade of "F". Note that plagiarism includes situations where you meet with other students for group discussions and are asked write a summary. Unless otherwise instructed, this means that each participant in the group must write their own summary. Making up false excuses for absences will also be considered cheating and may result in a grade of "F" for missed work.

And finally, if you have any questions regarding anything in the syllabus and or the course in general, please feel free to ask. Talk to me in class, via phone, or e-mail. Don't just assume that you know (or should know) the answer, I may not have been clear enough or may have forgotten to mention something.

Accommodations

: Illinois State University is an institution and a faculty concerned with helping all of our students feel welcome, and with helping all students learn and develop to their full potential. Any student needing to arrange a reasonable accommodation for a documented disability should contact Disability Concerns at 350 Fell Hall, 438-5853 (voice), 438-8620 (TDD).

Readings

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Required	Optional
	
Aron, A., Aron, E., & Coups, E. J. (2006). <i>Statistics for Psychology</i> , 4rd Ed. New York: Prentice Hall.	American Psychological Association. (2001). <i>Publication manual of the American Psychological Association</i> (5 th Edition.). Washington, DC: Author.
Textbook's website	