

Research Design and Statistics I
Psychology 220-003

**Syllabus
Fall 2009**

Location: Alumni Hall, Rm. 0302

Time: 12:00-1:15; M & W

Instructor: Dr. Thad Meeks

Office: Alumni Hall, Rm. 0122

Office Hours: M-Th, 3:30-4:30 and by appointment

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Graduate Teaching Assistant: Andrea Somers

Office: Alumni Hall, Rm. 0318

Office Hours: M & W, 11-12, Tues, 12-2

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Required Texts: (Note: Heavy highlighting may result in you having to purchase the book).

Gravetter, F. J., & Wallnau, L. B. (2005). *Essentials of statistics for the behavioral sciences* (6th ed). Pacific Grove, CA: Wadsworth-Thompson Learning.

Cozby, P. C. (2008). *Methods in Behavioral Research* (10th ed.). McGraw Hill.

Publication Manual of the American Psychological Association (5th ed.). (2001). Washington, DC: American Psychological Association.

Required Equipment: You need a calculator with at least a square and a square root function. A calculator with statistical functions would be better, such as the TI-30Xa or the TI-30 XIIS. These are not that expensive (around \$10) and will make things easier. But not possessing any calculator will make things extremely difficult for you. Graphing calculators, PDAs, and phone calculators may not be used in class or on exams. Please bring your calculator to every class as you will need it often.

Overview. Over the course of two semesters (220 and 221), you will be introduced to basic statistical concepts and methodological research designs that are used in the behavioral sciences. Methodology relates to the manner in which an experiment is designed whereas statistics allow us to understand the results from these designs. Concerning methodology, the first semester (220) will focus on nonexperimental designs, and the second (221) will focus on experimental designs. Regarding statistics, we will cover descriptive statistics in the first semester (220). During the second semester, you will learn about inferential statistics which allow us to test hypotheses about the subjects that interest us. These two courses are critical for further study in the social sciences. By the end of these two semesters, you should reach a greater understanding about how researchers develop and reach their conclusions, and learn to apply these techniques to your chosen career path. You will also get hands-on experience with statistics. This includes calculating basic statistics by hand as well as using statistical software (SPSS) to compute statistics. The purpose of this is to help you overcome the intimidation that often comes with using statistics. Please, if you have questions, do not hesitate to contact me or your TA.

Formal requirements and grading. There will be three closed-book, closed-note exams (the dates can be found on the class schedule below). The first three exams will count 19% apiece

(190 points each) and will cover only new material. The last exam will cover new material and will have a small cumulative component. The final exam will be worth 22% (220 points). These exams will be both conceptual and computational depending on the subjects being tested. The exams will also be of mixed-format (e.g., some multiple-choice, short answer). I will announce these details in class. The exams will cover material presented in lectures and in the book. Note that some material will come from both book and lecture, but some will come from lecture only and some will come from book only. I will announce this distribution in class. I generally try to have a review before each test and I will announce the date and time of these in class. I will also provide you with study material for the test. If you miss an exam, your opportunity to make up the missed exam will be during the final exam session at the end of the semester (immediately after you complete the last exam). However, you must inform me in advance if you intend to make up an exam during the final exam period. If you miss the last exam for any reason not previously approved, you will earn a zero on the final. Please note that the last exam will be given on the date scheduled by the university for final exams, and you may not take the last exam at any other time without a pre-approved excuse. I will also let you use a 3 x 5 card for parts of your last two tests. I will discuss the details of this in class.

You will also have 6 homework assignments to complete. The homeworks will serve to make sure you are learning the concepts in class as well as help prepare you for the test. One of these homeworks is an online certification for research with human subjects. This **must** be done before you can collect any data for your project (a federal policy, not mine). If you do not complete this certification, you will not be able to collect data, and therefore you will not be able to turn in your final paper as well as some of your drafts. Each homework assignment will be worth 20 points apiece for a total of 120 points (12%). I will post these assignments on blackboard in addition to announcing them in class. You will receive full credit if you complete the assignment on time and I can tell you put forth an honest effort (the due dates are on the schedule below). **But please make an honest attempt at ALL of the problems. Points will be deducted for lack of effort or incompleteness.** Late assignments will have 20% deducted for each 24 hr increment they are late. In other words, after an assignment is collected, it will be docked 20% until 2:00 the next day (when it will be docked 40%, etc.). If you think you will be late in turning in your assignment, then you should have the department secretary or student worker date and sign it and put it in the TA's mailbox. You should also have it signed and dated before turning it in late. If you do not, we will assume it was turned in when we find it, and deduct accordingly. **NO WORK WILL BE ACCEPTED ELECTRONICALLY (i.e., via email) UNLESS INSTRUCTED OTHERWISE BY ME.**

Finally, you will need to write an APA style paper based on real data you will collect. This project is designed to give you hands on experience with the design of quantitative research studies, data collection and data analysis. Part of this project will involve group participation and part will be done on your own. I will provide a handout with more detail on this project. The final project will be worth 19% of your grade (190 points). To help you along with this project, you will need to do five different drafts throughout the course of the semester (the due dates are on the schedule below). Your handout will provide more information on these drafts. Each draft will be worth 18 points for a total of 90 points (9%). You will receive full credit if you complete the assignment on time and I can tell you put forth an honest effort (same principle as the homeworks). The same policy applies for late drafts and projects as for the late homeworks.

The breakdown of grading is as follows:

Exam 1	190 points	19%
Exam 2	190 points	19%

Exam 3 (Final)	220 points	22%
Homework	120 points	12%
Drafts	90 points	9%
Final Paper	190 points	19%
Total	1000 points	100%

The official letter grades will be assigned according to the following scale:

TOTAL: 1000 points (100%)

Letter Grade	Percentage Equivalent	Points Equivalent
A	90%-100%	896-1000
B	80%-89%	796-895
C	70%-79%	696-795
D	60%-69%	596-695
F	<60	0-595

Psychology majors must earn a grade of at least C in this required psychology course to count toward the major. Also, the policy of the psychology department is that you may only repeat this course once; if you do not pass it the second time, you will have to find a new major.

Please note that a strict policy will be adopted regarding extensions, late papers, late drafts and homeworks, missed exams, etc.: all will be penalized unless a clear and pressing case can be made for medical reasons. Moreover, you may not submit work for this course that has been submitted, or is to be submitted, for credit in another course (some exceptions to this rule exist and you should consult the instructor(s) if you have any doubt).

Extra Credit: There may be an opportunity for a *small amount* of extra credit class activity. If there is, please remember that extra credit is always optional, and is awarded in terms of points on top of your final point total. And please do not count on this to rescue you from a bad grade. The extra credit will only get you so far.

Grading problems: If you feel there has been an error in working out your grade please let me know as soon as possible. Work out your grade as described above and specify the reason for your concern when contacting me. I want you to get every point you have earned. If you are unhappy with your final grade but agree that it has been worked out correctly as described above, please don't ask for a better grade, or extra opportunities to make a better grade, as a "favor" at the end of the semester. The answer to such unfair requests must always be "no".

Attendance: Although I will not explicitly take attendance, I strongly recommend coming to class. There will often be material presented in class that is not presented equivalently in the book. I will also go into more detail than is presented in the notes. I will post notes on Blackboard but I suggest you do not rely on those because they are only meant to serve as an outline of what we have discussed in class. I will go into much more detail on the notes in class. Also, absences could result in deductions for your assignments. Absences **MUST** be accompanied by a documented excuse or must be explained well in advance to the professor to avoid penalty for an assignment.

Blackboard: I will utilize Blackboard for several different purposes. The syllabus will be posted as well as the lecture outlines before the relevant class period. I will also post assignments, study and review material and material related to the project as well. In addition, I will post grades and any relevant announcements. **The bottom line is that you should check Blackboard frequently.**

Accommodations for Disabilities: Notify the professor immediately of any needed accommodations for documented disabilities at the beginning of the course. If you are expecting accommodations at any time in this class, you must speak Disability Support Services in the Student Success Center in Rm 1270 (650-3726) before you need accommodations. Also, According to SIUE safety and procedures policies, students with disabilities have the option of developing a written plan for evacuation in the unlikely event of an emergency that requires evacuation. If any student with a disability would like to develop a written evacuation plan for this class, please contact the instructor.

The Psychology Department's Policy on Incomplete Grades: It is the student's responsibility to officially withdraw from a course by the dates set by the University if the student is not intending to complete the course. Students who do not withdraw and have not completed the course will receive an F. Only under special circumstances a faculty member may agree to give a student an Incomplete (INC) grade in order to allow the student to complete the remaining work for the course not later than the end of the following semester. An INC is never automatic but must be approved by the professor. If a professor agrees to give a student an INC grade, the professor and the student will fill out a form (Memorandum of Incomplete Grade) indicating why an INC is being given. One copy of the completed form will be given to the student, one copy will be given to the professor, and the Department of Psychology secretary will keep one copy. If the work is not completed by the time specified on the Memorandum of Incomplete Grade form, the grade will be changed from INC to F.

The Psychology Department's Policy on Plagiarism: Plagiarism includes either presenting someone else's words without quotation marks (even if you cite the source) or presenting someone else's ideas without citing that source. If you plagiarize, your instructor cannot evaluate your understanding of the topic. When paraphrasing from another source, at the very least the student should change the wording, sentence syntax, and order of ideas presented in the paper. Ideally, the student will integrate ideas from multiple sources while providing critical commentary on the topic in a way that clearly identifies whether words and ideas are those of the student or are from another source. Plagiarism is one type of academic misconduct described in SIUE's Student Academic Code (<http://www.siu.edu/policies/3c2.shtml>). University policy states that "Normally a student who plagiarizes shall receive a grade of F in the course in which the act occurs. The offense shall also be reported to the Provost." (<http://www.siu.edu/policies/1i6.shtml>). The University policy discusses additional academic sanctions including suspension and expulsion from the University. To insure that you understand how to avoid plagiarism, we encourage you to review the information on plagiarism provided on the Department of Psychology web page at <http://www.siu.edu/education/psychology/plagiarism.shtml>.

SIUE Statement on Diversity: All societies and peoples have contributed to the rich mix of contemporary humanity. In order to achieve domestic and international peace, social justice, and the development of full human potential, we must build on this diversity. SIUE nurtures an open, harmonious, and hospitable climate that facilitates learning and work. Each member of the University is responsible for contributing to such a campus environment.

SIUE Nondiscrimination policy: Southern Illinois University Edwardsville (SIUE) is a public comprehensive University committed to creating and maintaining a diverse community in which students, faculty, and staff can learn and work together in an environment free of discrimination and free from any form of illegal harassment. Such actions violate the dignity of the individual and the integrity of the University as an institution of learning. SIUE prohibits discrimination against employees, applicants for employment and students on the basis of age, color, disability, marital status, national origin, race, religion, sex, sexual orientation, or veteran's status. Discrimination in any form will not be tolerated; management and supervisory personnel, at all levels, are responsible for taking reasonable and necessary action to prevent discrimination.

Office Hours: I have set office hours to be Monday through Thursday from 3:30 to 4:30. However, if you cannot meet at that time, simply e-mail or come talk to me and we can arrange another time.

Cell Phones: Please be respectful and turn them off or on silent. It is only annoying for everyone else and embarrassing for you. In general, please be courteous to everyone in class.

The course syllabus is a general plan for the course; deviations announced to the class by the instructors may be necessary.

Day #	Date	Topic	Readings	Other Notes
1	Aug. 24 th	Introduction to Class		
2	Aug. 26 th	What is Science?	Cozby: Ch 1	
3	Aug. 31 st	Introduction to Research	Cozby Ch 2 through p. 18; Cozby Ch 4 p. 65-81	
4	Sept. 2 nd	Ethical Issues in Research	Cozby Ch 3	
	Sept. 7 th	No Class	No Class	No Class
5	Sept. 9 th	APA Project and Style/ Plagiarism and APA Citations and References	Project info on Blackboard/ Online Ethics certification program/ <u>Style:</u> Cozby (Appendix A, Style areas)/ <u>Citations:</u> APA 207-214/ <u>Reference section:</u> APA p.28 (References), p.215-231, Cozby p. 299-307	Due: HW #1 (Days 2, 3, 4)
6	Sept. 14 th	Reading and Summarizing Research Articles	Cozby Ch 2 p. 18-35	
7	Sept. 16 th	Finding Research Articles (Library Day)		We will meet in the Library
8	Sept. 21 st	Measurement Concepts in Research	Cozby Ch 5	Due: HW #2 (Online Ethics test printout)
9	Sept. 23 rd	APA Introduction Section	Cozby Appendix A (Introduction areas), APA 15-17, 36-39, 55-57, 104-108, 117-121, 283-288, 296-top300	
10	Sept. 28 th	Exam #1	Exam #1	Exam #1
11	Sept. 30 th	Observational Methods	Cozby Ch 6	

12	Oct. 5th	Survey Research	Cozby Ch 7	Due: Draft # 1
13	Oct. 7th	APA Methods Section and Construction of Your Survey	APA 17-20; 122-130 (<i>numbers</i>), 205 (<i>Appendices</i>)-top of 206, Cozby Appendix A (Methods Areas)	Due: HW #3 (Days 8, 11, 12)
14	Oct. 12th	Introduction to Statistics	G&W Ch 1	Due: Draft # 2
15	Oct. 14th	Frequency Distributions	G&W Ch 2	
16	Oct. 19th	Central Tendency	G&W Ch 3	Due: Draft #3
17	Oct. 21st	Variability	G&W Ch 4	Due: HW #4 (Days 14, 15, 16)
18	Oct. 26th	Exam #2	Exam #2	Exam #2
19	Oct. 28th	Pearson's Correlation	G&W Ch 15 (422-439, but skip Section on Hypothesis Testing and just read "In the Literature" on pg. 438-439)	
20	Nov. 2nd	SPSS Computer day	See information on Blackboard	Due: Draft #4
21	Nov. 4th	SPSS Computer day	See information on Blackboard	
22	Nov. 9 th	Writing APA Results/Discussion Sections	<u>Results</u> : Cozby Appendix A (Results Areas); APA 20-21, 138-143, 147-155, 176-177, 198-200, 301-302(through figs)/ <u>Discussion</u> : Cozby Appendix A (Discussion Areas) , APA 26-27	
23	Nov. 11 th	Correlation and Regression	G&W Ch 15 pp. 449-455 only	
24	Nov. 16th	Z-scores and Standard Distributions	G&W Ch 5	Due: HW #5 (Days 17, 19, 23)
25	Nov. 18th	Probability	G&W Ch 6	Due: Draft # 5
	Nov. 23rd	No Class		
	Nov. 25th	No Class		
26	Nov. 30th	Distribution of Sample Means	G&W Ch 7	
27	Dec. 2nd	Questions on APA paper and Abstracts	APA 12-15, Cozby Appendix A (Abstract Areas)	
28	Dec. 7th	Hypothesis Testing	G&W Ch 8	Due: HW #6 (Days 24, 25, 26)
29	Dec. 9th	Catch-up and Review for Final Exam		Complete Paper Due
30	Dec. 14th	Final Exam 10 am -11:40 am	Final Exam 10 am -11:40 am	Final Exam 10 am -11:40 am