

Research Design and Statistics I – PSYC 220-002

A course offered by
The Department of Psychology
Spring 2012

Meeting Time: Monday and Wednesday 12:00 – 1:15 p.m.
Room: Alumni Hall 0302
Instructor: Christopher B. Rosnick, Ph.D., MPH
Office Location: Alumni Hall 0132
Office Hours: Monday and Wednesday 11:00 – 12:00 p.m.
and by appointment
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TA: Kathryn Ringer
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Rented Textbooks:

Gravetter, F. J., & Wallnau, L. B. (2011). *Essentials of statistics for the behavioral sciences* (7th ed.). Belmont, CA: Wadsworth-Cengage Learning.
Gravetter, F. J., & Forzano, L. B. (2011). *Research methods for the behavioral sciences* (4th ed.). Belmont, CA: Wadsworth-Cengage Learning.
Concise Rules of APA Style (6th ed.; 2010). Washington, DC: American Psychological Association.

Required Equipment: Students must acquire a statistics calculator for both PSYC 220 and 221. This calculator must be capable of computing squares, square roots, sums of scores (Σx), sum of X squared (Σx^2), and standard deviations (σ). The professors teaching these courses are strongly recommending the Texas Instruments TI-30Xa calculator. We have chosen this calculator due to its affordability, functionality, and user-friendliness. Also, depending on the professor, demonstrations of the TI-30Xa may be given in class. **Please note that a graphics calculator is not permitted in either course.** It is the student's responsibility to understand the functionality of their calculator, thus we recommend having the instruction manual for your chosen calculator.

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.

Getting help and Succeeding: You are strongly encouraged to get help in this class, as you will only learn Statistics/Methods through practice. You will need to put time and effort into this class. ***Some of this time will have to be here on campus in the computer lab/ library. If you do not have the time to do so, you should consider taking this course another semester.***

Follow these steps to reach your potential:

1. **Read all assigned readings before class.** This is critical to success in this class because it will help you understand the topics covered in lecture.
2. Attend all classes and ***take notes!!!***
3. **Do NOT wait until the last minute to do your homework.** Do the homework for each section as we cover it.
4. Take advantage of the opportunity to get feedback on the drafts of your papers.
5. Look through your notes after class, before the next class. If anything is confusing, refer back to your text for clarification, or come in for help.
6. Come in for help at the first sign of trouble. Do not wait until you receive a poor grade to get help.
7. Invest in a 3-ring binder. Put syllabus, all handouts, notes, homeworks, etc., in an organized fashion in this binder. Keep the binder for use in subsequent courses (e.g., Capstone).

RDS Groups: You will be assigned into groups of no more than five students and you should sit with your team during class. If a team member is not pulling their weight, you must notify me as soon as there is a problem. Do not wait until the end of the semester to voice a complaint about a team member.

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 two exams will be worth 100 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 150 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 also post a study guide before each exam. That way you can be sure you are grasping the important concepts and can contact me if you are not (you can email, come to my office, or call). **If you miss an exam for any reason, 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 (at least 24 hours) if you intend to make up an exam during the final exam period. Only documented emergencies (e.g., medical, family) will be considered after this 24-hour window.** Note that this may not be the same exam taken during the regular class period, but will be of equal difficulty. 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.

You will also have 3 homework assignments to complete. The homeworks will serve to make sure you are learning the concepts in class as well as help you prepare for the test. Each

homework assignment will be worth 25 points for a total of 75 points. 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 12 pm 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 my or the TA's mailbox. 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.** The homework assignments will cover all of the class material for each exam (due dates can be found on the class schedule). Each assignment will be posted some time before the exam to give you enough time to complete by the due date. These homeworks will be posted under the "Assignment" link on Blackboard. **I strongly encourage you not to wait until right before the homework is due to begin working.** If you keep up with the homework as we go along, not only will you learn more efficiently, you will also avoid loads of work to do at the last minute. There will be a SPSS component to the last homework. I will give demonstrations in class before the homework is due. Most computer labs on campus have SPSS installed- non-availability of the labs, not owning SPSS, not owning a computer, and printer problems are not legitimate excuses for late work. **THE HOMEWORKS MUST BE TYPED OR VERY NEATLY WRITTEN AND STAPLED. IF WE CANNOT READ YOUR HOMEWORK, WE CANNOT ASSESS IT, AND THUS YOU WILL RECEIVE A "0".**

Finally, you will need to write an APA style paper. This project is designed to give you hands-on experience with the design of quantitative research studies 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 paper will be worth 150 points. To help you along with this project, you will need to do four 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. The same policy applies for late drafts and projects as for the late homeworks. **Also note that you must do an online certification for research with human subjects. This must be done before you can start your project. If you do not complete this certification, you will not be able to turn in your final paper as well as some of your drafts. USE G&F APPENDIX D and the SAMPLE PAPER posted in BB as resources for your paper**

TA Meetings: You will have, at least, three mandatory meetings with the TA for this course. These points are all or nothing- you must make all appointments to receive the points. The first meeting can simply be to introduce yourself. You must bring questions from the **BOOK** for the meetings after Exams 1 and 2 (if you do not bring questions, you will not receive the points). Do not wait until the last minute and expect the TA to accommodate meeting requests shortly before the next exam. You should schedule your meeting(s) with the TA the week after you receive your grade.

1. (5) You must meet with the TA during his/her office hours before the first exam.
2. (25) The grade you receive on Exam 1 will determine how many times you must meet with the TA prior to Exam 2: A-1; B,C-2; D,F- 3.
3. (25) The grade you receive on Exam 2 will determine how many times you must meet with the TA prior to Exam 3: A-1; B,C-2; D,F- 3.

Your grade will be based on the following (items may be added or deleted during the semester):

	Points
Exam 1	100
Exam 2	100
Exam 3	150
Final Paper	150
Project Drafts	70
Homework	75
TA meetings	55
TOTAL	700

The following is the grading scale to be used:

90% and above	A
80% to 89%	B
70% to 79%	C
60% to 69%	D
Below 60%	F

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).

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".**

Class attendance: You are expected to be on time and prepared for all classes and to stay the entire class period. Absence from class likely will affect your team participation points. If you miss class, you should be sure to find out what you missed from your teammates. 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 BB 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 fill in missing details from the notes in class. Absences **MUST** be accompanied by a documented excuse or must be explained well in advance to the professor. I will also help with notes if you have a documented excuse for being absent.

You may miss any exam for any reason. All missed exams will be made up during the final exam period WITH the final exam (i.e., you will take the final exam plus the make-up exam together, although you may need extra time). Make-up exams will be different exams than those given at the scheduled time. No early, late, or make-up final exams will be given, with the exception of students who properly follow the FINAL EXAM CONFLICT POLICY in the student handbook (3+ finals on one day, requires advance paperwork).

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 (at least once a day).**

Accommodations for Disabilities: Any student with a documented disability is encouraged to meet with me privately during the first week of class to discuss accommodations. If you are expecting accommodations at any time in this class, you must speak with 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 Course Evaluations: Students will not be eligible to take the final exam in this course unless they first complete a course evaluation. The procedure for completing the confidential, anonymous and brief course evaluation online will be described toward the end of the semester. The evaluation allows students to print a proof-of-completion page (after responses are electronically submitted) and this page should be presented to your professor before the final exam.

Academic Dishonesty: Cheating is defined as follows: (a) the unauthorized granting or receiving of aid during the prescribed period of a course-graded exercise: students may not consult written materials such as notes or books, may not look at the paper of other students not consult orally with any other student taking the same examination; (b) asking another person to take an examination in one's place; (c) taking an examination for or in place of another student; (d) stealing visual concepts, such as drawings, sketches, diagrams, graphs, maps, etc., and presenting them as one's own; (e) stealing, borrowing, buying, downloading from the internet, or disseminating tests answer keys, or other exam materials, except as officially authorized, as in the case of research papers, speeches, etc.; (f) stealing or copying of computer programs and

presenting them as one's own, which includes the use of another student's program as obtained from the magnetic media or interactive terminals or form cards, print-out papers, etc.

Although I encourage collaboration on homework and group projects, your final product must be written alone. Please get together to work out problems and design your studies but write the answers yourself. The only assignment that you will be graded on as a group is the survey draft. All other work must be constructed from your own thoughts and words. It is **never** appropriate to turn in a photocopy of another student's work as your own.

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.

CLASS POLICIES

E-mail: Please use appropriate salutations when you e-mail me. Also, be sure to "sign" the e-mail so I know who I am speaking with. If you leave out either one of these, I will not respond.

Final Grades: Your final grade is your FINAL grade. If you are unhappy with your final grade but agree that it has been calculated correctly as described above, please do not ask to meet with

me to discuss what you can do for a better grade, or extra opportunities to make a better grade. The answer to such unfair requests must always be "no".

Course Materials: Materials used in this class, including papers, exams, and grading materials will be retained only through Dec. 15, 2012, after which they will be destroyed.

Class Environment: It is important to recognize that the classroom is an environment that requires respect for all participants. Therefore, students are expected to conduct themselves in a considerate manner. This means: being on time, turning off cell phones (if I **SEE** them out, I will ask you to leave), pagers, iPods, and headphones, avoiding extraneous talking and chat, refraining from reading non-class materials, closing laptops (except for note taking purposes), and eating in class.

General Comments

1. Read all assigned readings before class. Take notes while you read—it is much easier to review your text notes before an exam than to re-read all the chapters. If you have *a few* questions, bring them to class. If you have *a lot* of questions, come in for help before class. **I will assume you have read and have a basic understanding of all text material before class.**
2. Attend all classes and take notes. **Taking notes is MORE than just copying down what's on the powerpoint slides.** You should copy what's on the powerpoint slide and then add additional information, examples, etc. Stay with the class at all times.
3. Do not be misled by the amount of points homework is worth—students who neglect homework in this class almost always fail. Similarly, take advantage of the opportunity to get feedback on your drafts of your papers. They are worth just a few points, but are vitally important.
4. Look through your notes after class, before the next class. Rewrite any confusing parts, and refer back to your text for clarification, or come in for help.
5. Come in for help at the first sign of trouble. Do not wait until you receive a poor grade to get help. You may never have gone to see a professor/TA for help in a class before this one, but do not let that keep you from doing so.
6. Keep up—it is very difficult to catch up. Also, put in your 6 hours of work/week outside class.
7. Participate in class – ask questions and join in discussion (It will help you remember the material better).
8. **The syllabus is tentative and will be used as a guide; so, be prepared if we get ahead or behind schedule.**
9. Invest in a 3-ring binder. Put syllabus, all handouts, notes, homeworks, etc., in an organized fashion in this binder. Keep the binder for use in subsequent courses.
10. You are strongly encouraged to get help in this class, as you will only learn Statistics/Methods through practice. University policy suggests you spend 2 hours outside class for every hour inside class, which means you can anticipate spending 6 hours outside of class per week on this course. **Some of this time will have to be here on campus in the computer lab. If you do not have the time to do so, you should consider taking this course another semester.**

TENTATIVE Course Schedule

DATE	TOPIC	Required readings before class
Jan. 9	Introduction to the class, syllabus, etc.	
Jan. 11	Group assignments/ Literature Searches	
Jan. 16	NO CLASS- Martin Luther King, Jr. HOLIDAY	
Jan. 18	Lecture 1: Introduction to research	G&F- Ch 1, 2, & 3 (71-92)
Jan. 23	Lecture 2: Research ethics	G&F- Ch 4 www.citiprogram.org
Jan. 25	Lecture 3: Reading psychological literature, using PsycINFO, APA Style citations and references, summarizing and plagiarizing	ONLINE ETHICS CERTIFICATION DUE APA Manual pgs. 7-43, 171-206 G&F- Ch 2 (46-68) & 16 (487-494)
Jan. 30	Lecture 3: Reading psychological literature, using PsycINFO, APA Style citations and references, summarizing and plagiarizing	Construct DUE/ FINALIZED with number of possible resources
Feb. 1	Lecture 4: APA Style Introduction writing, general APA Style writing	G&F- Ch 16 (focusing on where they discuss Introductions, general writing/grammar/style)
Feb. 6	Lecture 5: Survey methods, reliability and validity	G&F- Ch 3 (77-102), Ch 6 & Ch 13
Feb. 8	Lecture 5: Survey methods, reliability and validity HW1 DUE	G&F- Ch 3 (77-102), Ch 6 & Ch 13 Draft 1 due on Fri., Feb. 10 by noon in TA's mailbox
Feb. 13	Lecture 6: Methods, Design your survey day	APA Manual 85-104 G&F- Ch 16 (Methods areas)
Feb. 15	Exam #1	
Feb. 20	Group meetings to go over surveys	
Feb. 22	Lecture 7- Introduction to statistics	G&W- Ch 1 Draft 2 due on Fri., Feb. 24 by noon: Intro in TA's mailbox Survey e-mailed to Dr. Rosnick
Feb. 27	Lecture 8- Frequency distributions	G&F- Ch 15 (434-437) G&W- Ch 2
Feb. 29	Lecture 9- Central Tendency	G&F- Ch 15 (437-439) G&W- Ch 3 Draft 3 (Methods) due on Fri., Mar. 2 by noon in TA's mailbox
Mar. 5	NO CLASS- SPRING BREAK	
Mar. 7	NO CLASS- SPRING BREAK	

Mar. 12	Lecture 10- Variability	G&F- Ch 15 (439-441) G&W- Ch 4
Mar. 14	Lecture 11- Pearson's Correlation and regression	<u>Correlation/ Regression Module</u> "Analysis Reading" through pg. 69 G&F- Ch 12 & Ch 15 (475-477) G&W- Ch 15 (Skip 486-497)
Mar. 19	Lecture 11- Pearson's Correlation and regression	
Mar. 21	NO CLASS- Data Collection HW2 Due	
Mar. 26	Review for Exam #2	
Mar. 28	Exam #2	
Apr. 2	Computer day – Intro to SPSS, data entry	
Apr. 4	Computer day – analyzing your data	
Apr. 9	Lecture 12- Writing Results, Discussion, and Abstract, Tables, Figures	APA Manual p. 105-161 G&F- Ch 16 (Results and Discussion areas)
Apr. 11	z-scores and standard distributions	G&W- Chapter 5 Draft 4 (Results and Discussion) due on Fri., Apr. 13 by NOON in TA's mailbox
Apr. 16	Probability, distribution of sample means	G&W- Chapter 6
Apr. 18	NO CLASS- CAC CONFERENCE	
Apr. 23	Distribution of sample means HW 3 DUE	G&W- Chapter 7
Apr. 25	Review for final exam	Complete paper due on Fri., Apr. 27 by noon in TA's mailbox
May 3	TR 10:00-11:40- FINAL EXAM	

KEY DATES

Jan. 20th- Last day to drop a class without receiving a grade/ Last day for a full refund of tuition and fees

Feb. 3rd- Last day to drop a class and receive a partial refund when withdrawing from all classes
* no refunds will be given after this date*

March 23rd- Last day to withdraw from a class or school without permission of an adviser/instructor

April 13th- Last day to withdraw from a class with permission of an adviser/instructor

REGISTRATION DATES

Jan. 9th- Students can start making appointments for Summer/Fall 2012 registration. Please sign up in the main Psychology office (AH 0118) with a student worker.

March 12th- Registration for students with 90+ hours start on the web

March 19th- Registration for students with 60-89 hours start on the web

March 26th- Registration for students with 30-59 hours start on the web

April 2nd- Registration for students with 0-29 hours start on the web

REMINDER: Students are asked to bring a potential schedule to their advising Session; students who fail to do so will be asked to reschedule their advising appointment.