

Research Design and Statistics I
Psychology 220-005 and 220-006 Syllabus
Fall 2021

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Office: Alumni Hall, Rm. 0133
Office Hours: In Person: Wed (8:30-11:30 AM); Online: By Appointment

Regular Class Time and Location: Online-Asynchronous
Lab Time and Location (Section 005): Fridays, 8-9:50 AM; Founders Hall, RM 3208
Lab Time and Location (Section 006): Fridays, 10-11:50 AM; Engineering Building, RM 2150

Graduate TA Section 005: Dylan Zimmeran **Office:** In-Person: TBD; Online:
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Graduate TA Section 006: Kendra Clark **Office:** In-Person: TBD
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Required Materials:

Gravetter, Gravetter, F. J., & Forzano, L. B. (2018). Research methods for the behavioral sciences (6th ed.). Belmont, CA: Wadsworth.

Gravetter, F. J. & Wallnau, L. B. (2018). Essentials of statistics for the behavioral sciences (10thed.). Belmont, CA: Wadsworth

Overview. Over the course of two classes (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 class (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 class (220). During the second class, you will learn about inferential statistics which allow us to test hypotheses about the subjects that interest us. These two classes are critical for further study in the social sciences. By the end of these two classes, 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 TAs.

Special notes about 220/221: You should be registered for at least 15 credit hours this semester if it is important that you remain a full-time student. Why? In the unfortunate event that you fail this course, you will have to drop PSYC 221, which will reduce your credit hours. Thus, you must be at 15 hours in order to drop PSYC 221 and still remain at full-time status (12 hours).

Psychology majors must earn a grade of at least C in this required psychology course to count toward the major. If this is your first time taking this course and you receive a course grade of D or F it is your

responsibility to contact your advisor immediately to determine whether there is any possibility of getting enrolled in a section of this course next semester.

This, and your other required psychology courses, have a “2 attempt” rule—you may only attempt the course (including W, WF, WP, and an earned grade below a C) two times. After two unsuccessful attempts, you will be dropped from the major.

Course learning objectives:

1. Understand the specific research designs we discuss in class, how they are different, and how they are implemented.
2. Learn the different types of statistical analyses we do in class including when to use them and their computations.
3. Know how to effectively use SPSS to execute the types of statistical analyses that we will cover.
4. Learn the skills needed to communicate your research results (i.e., effectively writing APA research reports).
5. Be prepared to transition from Psyc 220 to Psyc 221.

Expectations and advice: 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. If you do not have the time to put effort into this class, you should consider taking this course another semester. University policy suggests you spend at least 2 hours outside class for every hour inside class, which means you can anticipate spending at least 11 hours outside of class per week on this course. 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. 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.
4. Please look over your drafts and use that feedback to improve your final paper.
5. Come in for help at the first sign of trouble. Do not wait until you receive a poor grade to get help.
6. Invest in a 3-ring binder. Put syllabus, all handouts, notes, etc., in an organized fashion in this binder. Keep the binder for use in subsequent courses.

Notes. For the online-asynchronous sessions, I will post a lecture video on Blackboard the day of the scheduled lecture (one on Mondays, one on Wednesdays). Each lecture will cover the listed material and will be approximately 1 hour and 50 minutes long. I will post an outline for the notes beforehand. You can use that to help guide your notes that you take while watching lecture. When I lecture, I will fill in the outline as I go. I will also post the filled-in lecture notes after the given class period. However, it is not wise to just rely on these without actively taking notes while watching the lecture video. My best advice for studying is to skim the assigned textbook readings and outline material before watching each video, take active and thoughtful notes during lecture video using the outline, and then use all this material with the posted notes and lecture concept check to study for the exams and quizzes. Please note that the outlines posted before class may need to be modified based on various possible scenarios. If this occurs, I will make sure to announce the changes to the class.

Formal requirements and grading. There will be two exams (the dates can be found on the class schedule). These exams will be given during the in-person lab session. The first exam (midterm) will count 20.00% of your grade (200 points). The last exam (final) will cover new material and will have a small cumulative component. The final exam will be worth 22.50% of your grade (225 points). These exams will be both conceptual and computational. 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 will open a Blackboard Discussion Board for review questions. I will also keep a running study guide that I will update shortly after each class. 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.

There will also be six online quizzes during the course of the semester which will cover previous lectures and readings (the dates and material covered for each quiz can be found on the class schedule). The quizzes will be open-book and open-notes, and will be due at 11:59 PM on the date listed on the course schedule. These quizzes will help you in two key ways. First, it will help motivate you not to wait until the last minute to begin studying. Second, research in memory has demonstrated that taking frequent quizzes is a better strategy than study alone (McDaniel, Andersen, Derbish, & Morrisette, 2007). Each quiz will be worth 25 points each for a total of 150 points (15% of your final grade).

You will also write an APA style paper. I will provide a handout with more detail on this project. 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 **(PLEASE SEE THE PROJECT HANDOUT FOR WHAT CAN AND CANNOT BE DONE TOGETHER)**. The final project will be worth 22.50% of your grade (225 points). To help you along with this project, you will need to do two different drafts throughout the course of the semester (the due dates are on the class schedule). Your handout will provide more information on these drafts. Each draft will be worth 25 points for a total of 50 points (5%). The project and drafts will be due on Blackboard (uploaded through Turnitin) by 11:59 PM on the date listed on the syllabus. **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 your drafts. Please note the due date of this certification in the course schedule. You will upload this to Blackboard by 11:59 PM on the date listed on the course schedule.**

Finally, you will have six lab assignments to complete by the end of the lab period. These lab assignments will be used to ensure that you are actively participating in the lab activities, as well as accurately understanding the information that is being presented in lab. The lab assignments will generally be due by the end of each individual lab session. There will be six total lab assignments, each worth 25 points, for a total of 150 points (15% of your final grade).

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 the next day (24 hours later), when it will be docked 40%, etc. This includes weekends, but NOT official holidays.

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

The breakdown of grading is as follows:

Midterm	200 points	20.00%
Final	225 points	22.50%
APA Paper	225 points	22.50%
Quizzes	150 points	15.00%
Drafts	50 points	5.00%
<u>Lab Assignments</u>	<u>150 points</u>	<u>15.00%</u>
Total	1000 points	100.00%

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

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

Please note that a strict policy will be adopted regarding extensions, late papers, late drafts, 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 calculating your grade please let me know as soon as possible. Calculate 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 calculated 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".

Lab Attendance: Although I will not explicitly take attendance during lab, I strongly recommend coming to lab. The material you will receive in lab cannot easily be learned outside of class. In addition, you will not receive credit for lab assignments if you are absent from lab, without a valid/documented reason for your absence. Absences **MUST** be accompanied by a documented excuse or must be explained well in advance to the professor to avoid penalty for an assignment and /or to be allowed to make up an assignment.

Blackboard: I will utilize Blackboard for several different purposes. The syllabus will be posted as well as the relevant lecture material. I will also post assignments, study and review material, various discussion boards, and material related to the APA project. I will keep a running lecture concept check. This should serve two purposes. First, you can use it after each class period to make sure you understand the key concepts from that lecture. Second, you can use it as a study guide for each quiz and exam. The lecture concept sheet is only intended as a guide for the lecture material and will not cover all book material. In addition, I will post grades and any relevant announcements on Blackboard. **The bottom line is that you should check Blackboard frequently.**

Academic Honesty. ANY case of academic dishonesty (e.g., cheating on an exam or allowing others to cheat off of you, or other dishonest act *regardless of the point count*) will receive the recommended

university policy, failure of the course and reporting of the case to the Provost. You may not look at any other student's exam, and you may not copy any portion of your answer from internet or other sources (i.e., the words/ideas must be entirely your own).

The Psychology Department's Policy on Plagiarism: Plagiarism includes presenting someone else's words without quotation marks (even if you cite the source), presenting someone else's ideas without citing that source, or presenting one's own previous work as though it were new. When paraphrasing from another source or your own work, at the very least, the student should change the wording, sentence syntax, and order of ideas presented in the paper. Additionally, you should not submit a paper, or parts of a paper, written to fulfill the requirements of one class for the requirements in another class without prior approval of the current instructor and appropriate citation. 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>.

Department of Psychology Writing Policy: As a student in this course, you will be expected to display university-level writing, which includes completing course assignments that meet the following basic writing criteria. Specifically, all written assignments completed for this course should include: clear transitions from sentence to sentence and idea to idea (e.g., paper is organized/flows well); verb tense consistency; clear and unambiguous sentences and ideas; writing that is free of typos, spelling errors, and major grammatical errors; properly formatted citations and references (if relevant).

This is by no means an exhaustive list of basic writing skills, but will give you an idea of what we are looking for in our papers. If you feel you need help with your writing, you are encouraged to seek assistance from the writing center on campus (<http://www.siu.edu/is/writing>) or utilize one of the many online resources they have identified to help students (<http://www.siu.edu/is/writing/resources.shtml>). If your graded written assignments fail to meet the basic writing requirements listed above (and any others found to be appropriate by your instructor), the instructor will stop the grading process and return the paper to you (see below for the specific policy for this class).

The penalty for unacceptable writing in this class is as follows: Your assignment will not be graded. It will be returned to you and you will be asked to edit the document and turn it in within 24 hours. You will receive a 25% deduction if this occurs.

Accommodations for Disabilities: It is the policy and practice of the Southern Illinois University Edwardsville to create inclusive learning environments. If there are aspects of the instruction or design of this course that result in barriers to your inclusion or to accurate assessment of achievement—such as time-limited exams, inaccessible web content, or the use of non-captioned videos—please notify the instructor as soon as possible. Students are also encouraged to contact office for Accessible Campus Community and Equitable Student Support (ACCESS). The ACCESS office is located in the Student Success Center, Room 1270. You can also reach the office by e-mail at myaccess@siue.edu or by calling 618.650.3726. For more information on policies, procedures, or necessary forms, please visit the ACCESS website at www.siu.edu/access. If any student would like to develop a written evacuation plan for this class, please contact the instructor.

Department of Psychology Policy on Incomplete Grades, Pass-No Credit Option, and Withdrawal:

All withdrawals must be completed by the end of the 13th week of classes during 16-week semesters, and by a similarly late date (i.e., before 82% of class meetings have occurred) in any shorter semester. Grades that apply to students who initiate a withdrawal and grades that apply when a student fails to officially withdraw within established deadlines are determined by university policy (see <http://www.siu.edu/policies/1j1.shtml>). The granting of a grade of I (Incomplete) is not automatic. It is available only in cases when a student has completed most of the work required for a class but is prevented by a medical or similar emergency from completing a small portion of the coursework before the deadline for grade submission. An I must be approved by the instructor with appropriate documentation provided by the student. If an instructor agrees to give a student an I, the instructor will fill out a Memorandum of Incomplete Grade to be kept with the student's records. If the work is not completed by the time specified on the Memorandum, the student's grade will be changed from I to F.

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 listed at the top of the syllabus. However, if you cannot meet at that time, simply email 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.

COVID-19 Pandemic Policies Related to Classroom Instruction (Fall 2021)**Health and Safety**

The measures outlined below are required and any student who does not comply may be in violation of the *COVID-19 People-Focused Health and Safety Policy*, as well as the University's *Student Code of Conduct*. The full text of the *COVID-19 People-Focused Health and Safety Policy* can be found here: <https://www.siu.edu/policies/Covid.shtml>

Classrooms, Labs, Studios, and Other Academic Spaces

While in the classroom, lab, studio, or other academic spaces, students (regardless of vaccination status) shall wear face coverings that fully cover the nose and mouth and practice physical distancing measures

to the extent practicable based on the specific classroom capacity and pedagogy. Classroom furniture should not be rearranged, and furniture that has been taped off or covered should not be used.

Students who forget to wear a face covering will be reminded of their obligation to comply with SIUE's *COVID-19 People-Focused Health and Safety Policy* and temporarily asked to leave the class until they are able to conform to the policy. Students who forget or lose their face coverings may be able to obtain replacements from a friend, a faculty member, or a nearby departmental office. Face coverings are also available for purchase in the Cougar Store (MUC).

Students who refuse to wear a face covering will be asked to leave the classroom and referred to the Dean of Students for non-compliance with community health and safety protocols. Repeated non-compliance may result in disciplinary actions, including the student being administratively dropped from an on-ground/face-to-face course or courses without refund if no alternative course format is available.

If a student has a documented health condition which makes wearing a face covering medically intolerable, that student should contact ACCESS to explore options with the understanding that ACCESS will not grant accommodations which excuse the need for a face covering while on campus or in the classroom. ACCESS will work with qualifying individuals to find reasonable alternatives, whenever such solutions are available. Please call or contact the ACCESS Office via email to schedule an online appointment to discuss potential alternatives. ACCESS office (Student Success Center, Room 1203, 618-650-3726, and myaccess@siue.edu).

General Health Measures

At all times, students should engage in recommended health and safety measures, which include:

- Conducting a daily health assessment. If you have [COVID-19 symptoms](#), but not yet tested positive, have had COVID-19 close contact exposure, or are COVID-19 diagnosed as presumptive or confirmed positive, stay home and contact your health provider or SIUE Health Service at cougarcare@siue.edu or 618-650-2842. More information on reporting procedures is available [here](#).
- Frequent washing or disinfecting of hands.
- Physical distancing.
- Face masks or face coverings that cover the nose and mouth are required in indoor public spaces regardless of the ability to maintain physical distance. Indoor public spaces include common spaces or community settings that anyone can access, such as reception areas with walk-in access, restrooms, hallways, classrooms, teaching and research laboratories, as well as common spaces in residence halls, conference rooms, lobbies, and break rooms.
- If present, adhere to directional signs and traffic flow patterns in buildings and offices. In many spaces, doors for entering and exiting buildings are designated.

Academic Integrity

Students are reminded that the expectations and academic standards outlined in the Student Academic Code (3C2) apply to all courses, field experiences and educational experiences at the University, regardless of modality or location. The full text of the policy can be found here:

<https://www.siue.edu/policies/3c2.shtml>.

Recordings of Class Content

Faculty recordings of lectures and/or other course materials are meant to facilitate student learning and to help facilitate a student catching up who has missed class due to illness or quarantine. As such, students are reminded that the recording, as well as replicating or sharing of any course content and/or course materials without the express permission of the instructor of record, is not permitted, and may be considered a violation of the University's Student Conduct Code (3C1), linked here:

<https://www.siue.edu/policies/3c1.shtml>.

Potential for Changes in Course Schedule or Modality

As the COVID-19 pandemic continues, there remains a possibility that planned classroom activities will need to be adjusted. Depending on circumstances and following state-issued recommendations, potential changes include changes in course modality (e.g., transition from face-to-face to online) or in course scheduled meetings. These changes would be implemented to ensure the successful completion of the course. In these cases, students will be provided with an addendum to the class syllabus that will supersede the original version.

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 23	Introduction to Class and the APA Project	Syllabus, Project Guidelines	
2	Aug 25	Acquiring Knowledge and the Scientific Method	G&F Ch. 1 G&F Ch. 2	
3	Aug 27	LAB: Finding, Reading, and Summarizing Articles/Group Work		Quiz #1 (Days 1-2) due by 11:59 PM
4	Aug 30	APA Project and Style/APA Introduction and Method	Blackboard Material, G&F Ch. 16, G&F Appendix D	
5	Sept 1	Defining and Measuring Variables, Ethics in Research	G&F Ch. 3, G&F CH. 4	Quiz #2 (Day 4) due by 11:59 PM
6	Sept 3	LAB: APA Formatting and Introduction Section/Plagiarism/Group Work		Online Ethics Certification due by 11:59 PM
	Sept 6	NO CLASS	NO CLASS	NO CLASS
7	Sept 8	Selecting Research Participants, Research	G&F Ch. 5, G&F CH. 6	
8	Sept 10	LAB: APA Method Section/Group Survey		Quiz #3 (Days 6-7) due by 11:59

9	Sept 13	The Descriptive Research Strategy, Introduction to	G&F, Ch. 13, G&W Ch. 1	
10	Sept 15	Frequency Distributions, Central Tendency	G&W Ch. 2, G&W Ch. 3	
11	Sept 17	Midterm (Days 1-10)	Midterm (Days 1-10)	
12	Sept 20	Variability, Correlational Design	G&W Ch. 4, G&F Ch. 12	Draft #1 due by 11:59 PM
13	Sept 22	Pearson's Correlation, SPSS preview	G&W Ch. 14 (pg. 450-471), G&F Appendix C	
14	Sept 24	LAB: SPSS/APA Results and Discussion	G&F Appendix C, Blackboard Material, G&F Appendix C, G&F Ch. 16, G&F Appendix D	Quiz #4 (Days 12-13) due by 11:59 PM
15	Sept 27	SPSS and APA Project Discussion	G&F Appendix C, Blackboard Material, G&F Appendix C, G&F Ch. 16, G&F Appendix D	
16	Sept 29	Other Correlations, Regression	G&W Ch. 14	Draft #2 Due by 11:59 PM
17	Oct 1	LAB: APA Paper Discussion		Quiz #5 (Days 14-16) Due by
18	Oct 4	z-scores and Standard Distribution, Probability	G&W Ch. 5, G&W Ch. 6	
19	Oct 6	Probability, Distribution of Sample Means	G&W Ch. 6, G&W Ch. 7	
20	Oct 8	LAB: Computational practice/APA Project Questions		Final Paper Due by 11:59 PM
21	Oct 11	Distribution of Sample Means, Hypothesis Testing	G&W Ch. 7, G&W Ch. 8	Quiz #6 (Days 17-20) Due by 11:59 PM
22	Oct 13	Hypothesis Testing, Review for Final	G&W Ch. 8	
23	Oct 15	Final Exam (Days 1-22)	Final Exam (Days 1-22)	Final Exam