

Research Design and Statistics II

PSYC 221 Spring 2025

Instructor	Dr. Marie Childers	Email	marichi@siue.edu
Office	AH 0133	Class Info	MW 10-10:50 FH 0306
Office Hours	Mondays 11-12 Tuesdays 2-3	001 Lab Time	Fri 10-10:50
Phone	618-650-2253	002 Lab Time	Fri 11-11:50
Lab Room			AH 1314
Grad Assistant	Danielle Rice	Grad Assistant	Hope Grawitch
Office	TBA	Office	TBA
Office Hours	TBA	Office Hours	TBA
Email	danrice@siue.edu	Email	hgrawit@siue.edu

Course Description

Psychology is a science. PSYC220 and PSYC221 introduce students to the common research designs and statistics used in psychology and other behavioral sciences. PSYC220 focuses on nonexperimental research designs and descriptive statistics. PSYC221 focuses on experimental research designs and inferential statistics. These classes will prepare you to critically engage with research in all areas of psychology and develop your scientific skepticism as a consumer of research. **Prerequisite: C or better in PSYC 111 and PSYC 220**

Course Objectives

In this course, students will learn to:

- Understand experimental research designs and their appropriate statistical analyses
- Compute inferential statistics by hand and use SPSS (statistics software) to analyze data
- Design and conduct experimental studies and write research reports in APA style

Required Materials

Research Methods textbook: Gravetter, F. J., Wallnau, L. B., Forzano, L. B., & Witnauer, J. E. (2018). *Essentials of statistics for the behavioral sciences* (9th ed.). Cengage.

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

SPSS software: Version 26 <https://www.siue.edu/its/labsclassrooms/vlab/spss.shtml>

Calculator: Simple calculator, such as TI-30Xa (not your phone or a graphing calculator)

Course Structure

PSYC221 will have the following structure:

- “Class” will be held every Mon and Wed from 9-9:50am in person in AH1203
- “Lab” is on Fridays in person in AH 1314
 - Section 001 will be 9-9:50am; Section 002 will be 10-10:50pm
- All assignments for class and lab will be submitted online and due Saturdays at midnight

For typical face-to-face classes, university policy expects that you will spend TWO HOURS outside class for every ONE HOUR inside class. PSYC221 is a 3-credit class, so that means I expect you to work NINE HOURS per week on this class. I will provide a weekly to do list with approximate time commitments for each task, but keep in mind these are estimated averages. If you do not have this time now, you should consider taking this course another semester.

How to Do Well and Stress Less in This Course

- **Understand course expectations** – read syllabus, ask questions, read weekly to do lists
- **Complete weekly material** –read textbook, listen to lectures, take notes, study
- **Attend and get help** – attend class and lab, communicate with lab team, professor, TAs
- **Submit assignments** – assignments are due on Blackboard Saturdays at midnight

Course Requirements and Grading

<u>Assessment</u>	<u>Point Total</u>	<u>Percent of Grade</u>	<u>Grade Breakdown</u>
Exams	135 pts	20%	90% – 100% = A
Quizzes	120 pts	17.5%	80% – 89% = B
Lab project	245 pts	36%	70% – 79% = C
Attendance	100 pts	14.5%	60% – 69% = D
Lab Attendance	85 pts	12%	below 60% = F
Total points	685 pts	100%	

- **Exams [135 points]**. Exam 1 is worth 60 points and Exam 2 is worth 75 points.
 - **Justification for assessment.** In order for you to earn a psychology degree, you need to understand basic research design and statistics. Exams encourage you to study the course material and store it in long-term memory so you can retrieve it later to learn in your advanced psychology classes. Exam 2 is cumulative.
 - **Exam format.** Exams are completed in person according to the schedule below and open book/open notes, but *not* open-Google. Exams will cover material from the textbook, lectures, and class discussions. Exams will include factual and conceptual questions, problems, and questions that require you to think about the concepts and apply them to a new topic.
 - **Exam timing.** Exams will be available for a given time window. You will have 50 minutes (one class period) for Exam 1 and 2 hours for Exam 2 (completed during finals week; you must complete them in one sitting. Given the time limit and applied questions, you should study for exams.
- **Quizzes [120 points]**. You will have 6 online quizzes worth 20 points each.
 - **Justification for assessment.** A basic learning principle in cognitive psychology is the *testing effect* – that material is learned better if it is retrieved from memory through frequent testing. Quizzes require you to retrieve information from memory, which helps you understand your knowledge. Quizzes also prepare you for exams.
 - **Quiz timing and format.** Quizzes are completed on Blackboard and are open-book, but *not* open-Google. You will have 30 minutes to complete the quizzes and they must be completed in one session.
- **Lab project [245 points]**. You will complete an experiment that requires you to create a hypothesis, read research papers, design an experiment, collect and analyze data, and understand results. This project will culminate in an APA-style report worth 100 points. Students will also present their findings in lab and draft a poster in preparation for Capstone.
 - **Justification for assessment.** The lab project assesses your ability to apply the knowledge gained in class to your own project. Running your own experiment is “hands-on” – it allows you to learn by *doing* rather than just listening and reading.
 - **Assignment timing and format.** Worksheets and paper drafts help you develop your project. They are 15 or 25 points each and due on Blackboard.

- **Individual and group work.** You will work with a group on your lab project, but all submitted work should be completed by you.

Course Calendar

Date	Topic	Reading	Assignment due Sat at 11:59pm	Points
Week 1	220 review and 221 preview			
1/17 Lab 1	Overview of Lab Project	220 Chs	Quiz 1	20
Week 2	NO CLASS MONDAY 1/15 Experiments			
1/24 Lab 2	Lit Review	M-Ch7	Article worksheet	15
Week 3	Between-groups experiments			
1/31 Lab 3	Study Design	M-Ch8	Quiz 2	20
Week 4	Catch-up and review			
2/7 Lab 4	Study design	--	Design worksheet	15
Week 5	Sampling distributions			
2/14 Lab 5	Writing Lab	S-Ch7	Sources worksheet	25
Week 6	Hypothesis testing			
2/21 Lab 6	Programming study	S-Ch8	Quiz 3	20
Week 7	One-sample <i>t</i> -tests			
2/28 Lab 7	Programming study	S-Ch9	Intro & Method	25
Week 8	Review and Exam 1			
3/7 Lab 8	SPSS Lab	--	Exam 1	60
3/4 – 3/11	Spring Break – NO CLASS			
3/14 Lab	Spring Break – NO LAB	--	--	--
Week 9	Independent samples <i>t</i> -tests			
3/21 Lab 9	SPSS lab	S-Ch10	Quiz 4	20
Week 10	Independent samples <i>t</i> -tests			
3/28 Lab 10	SPSS lab	--	Quiz 5	20
Week 11	Within-groups experiments		NO CLASS 4/2	
4/4 Lab 11	Writing lab	M-Ch9	Data worksheet	25
Week 12	Repeated measures <i>t</i> -tests		NO CLASS 4/9	
4/11 Lab 12	Writing lab	S-Ch11	Quiz 6	20
Week 13	ANOVA			
4/18 Lab 13	Writing lab	S-Ch12	Results & Discussion	25
Week 14	Factorial designs			
4/25 Lab 14	Making Posters	M-Ch11	Poster draft	15
Week 15	Catch-up and Review			
5/2 Lab 15	Group presentations	--	Final Paper	100
Week 16	Finals week – Exam 2	--	Exam 2	75

Course Policies and Expectations (students are responsible for knowing these)

- **Late policy.** Any assignment, quiz, or exam can be completed up to 48 hours late with a 20% late penalty. No need to request an extension – just complete your work within that period.
 - **NOTE.** If you are having personal struggles that prevent you from completing your work regularly, please come to office hours or schedule a time for us to talk.
- **Illness policy.** If you have any illness symptoms that cannot be explained by a chronic condition you have, PLEASE stay home.
- **Attendance policy.** I expect you to attend most classes in person (say, 90%). If you miss, you should make up the work and attend the next class. If you make up your work when you miss and engage while you're in class, occasional absences should not tank your grade.
 - **NOTE.** If you miss class regularly, I will begin to wonder if you have the time and motivation to complete PSYC221 right now and begin to pester you (this is no fun for either of us). This is a serious class that requires you to work hard and get help.
- **Open door.** My office is AH0133. If my door is open, you're welcome to drop in for help. If my door is closed, please do not disturb me unless we have a set appointment.
- **MY SIUE email.** I do my best to respond to email within a day or two. I am much better reached in person than by email. Stop by my office or see me before or after class.
- **Check your SIUE email BEFORE class.** In case of illness, exposure, and childcare issues, I may need to move class online. Please check your email before leaving home for class.
- **Blackboard.** We will use Blackboard for course materials and submitting assignments.
- **Submitting your work using Turn It In.** Your papers and assignments will be submitted electronically through Turn It In, a plagiarism detection service to which the University subscribes. You should save your TurnItIn receipt as proof that you submitted your work on time. If you have issues with TurnItIn, you can also email me your paper for a timestamp.
- **Blackboard maintenance.** Please note that there are scheduled maintenance times for Blackboard. It is essential that you be aware of those times and make sure that you have submitted any work in progress (e.g. tests, assignments, posts to journal, wikis or discussion boards) prior to the systems being shut down for maintenance. Any work in progress will be lost when the servers go down for maintenance. Visit the Blackboard Maintenance Times (<http://www.siue.edu/its/bb/maintenance.shtml>) web site for specifics times.
- **Grades.** Student grades will be posted regularly on Blackboard. If you believe there is a discrepancy in the grade posted and the grade you received on an assignment, it is your responsibility to provide me with the graded assignment to justify any grade changes.
- **Extra credit.** Extra credit will be offered to the entire class, and not to individual students.
- **Academic honesty.** If you are involved in any case of academic dishonesty, you will earn an F on the assignment and will be reported to the Provost's office. A repeat offense will result in failing the class and additional reporting. Academic dishonesty cases may involve:
 - **Plagiarism.** Do not plagiarize. See department policy below.
 - **Cheating.** You are encouraged to study for exams with classmates and brainstorm research ideas or discuss course content. You will also work together on your survey projects in lab. It is acceptable to ask questions of your labmates and check answers in SPSS, but you should do all of your own work. You SHOULD NOT work together on your papers outside of class time.
 - **Use of AI.** Use of any AI on any assignments is strictly prohibited.

Required Technology

We will use Blackboard and SPSS in this course. It is your responsibility to address any computer or internet problems that might occur. Such problems are not an excuse for delays in meeting expectations or for missing course deadlines. Support for using Blackboard and SPSS is available by calling 618-650-5500, or by visiting <http://www.siu.edu/its/bb/> At a minimum, you will need the following software/hardware to participate in this course:

- computer with an updated operating system (e.g. Windows, Mac, Linux)
- updated Internet browser (Apple Safari, Internet Explorer, Google Chrome, Mozilla Firefox)
- DSL or Cable Internet connection or a connection speed no less than 6 Mbps. A secure, encrypted Wifi (requiring a login and password) is acceptable. Note that some Blackboard components will not work properly on free wifi from places like Starbucks or McDonalds.
- Microsoft Office, including Word (SIUE students get Free Office 365)
- Other useful software is available at <http://www.siu.edu/its/software/index.shtml>
- SPSS on your home computer or you can use computers on campus

Student Services

<ul style="list-style-type: none"> • Lovejoy Library Resources • Academic Success Sessions • Tutoring Resource Center • The Writing Center • Academic Advising 	<ul style="list-style-type: none"> • Financial Aid • Campus Events • Counseling Services • Cougar Cupboard (food pantry) • ITS (tech and Blackboard help)
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University and Psychology Department Policies

- **Psychology Department 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>.
 - We will cover how to properly read and cite sources in class. You are responsible for understanding what plagiarism is; if you have any questions at all, you should discuss them with Dr. Childers BEFORE you turn in a plagiarized paper. A lack of knowledge of appropriate citation and referencing format will not excuse you from point deductions from written assignments or disciplinary action in the case of plagiarism.
- **Psychology Department policy on Incomplete Grades, Pass-No Credit Option, and Withdrawal.** It is the student’s responsibility to officially withdraw from a course through

the Enrollment Office 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 Unauthorized Withdrawal (UW). Only under special circumstances may a faculty member agree to give the student an Incomplete (INC) grade in order to allow the student to complete the remaining work for the course no later than the end of the following semester. An INC is never automatic but must be approved by the instructor. If an instructor agrees to give a student an INC grade, the instructor and 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 instructor, and one copy will be kept by the Department of Psychology secretary. If the work is not completed by the specified time, the grade will be changed from INC to F.

- **Psychology Department 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.siue.edu/is/writing>) or utilize one of the many online resources they have identified to help students (<http://www.siue.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 with the grade of 0. You will have 48 hours to return the assignment in an acceptable form; if it still fails to meet the basic writing criteria, the grade of 0 will remain.

- **SIUE Statement on disabilities.** Students needing accommodations because of medical diagnosis or major life impairment will need to register with Accessible Campus Community & Equitable Student Support (ACCESS) and complete an intake process before accommodations will be given. 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.siue.edu/access.
- **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.

COVID-19 Pandemic Policies Related to Classroom Instruction (Fall 2022)

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.siue.edu/policies/Covid.shtml>

Classrooms, Labs, Studios, and Other Academic Spaces

Under current University policy, SIUE will only require masking in campus healthcare settings. See, <https://www.siue.edu/about/announcements/coronavirus/safety-guidelines-support/index.shtml>.

Individual faculty of record may determine that masking will be required in their classrooms and are asked to communicate accordingly with students. Face masks may be required in other campus sites following guidance from governing regulatory agencies.

- Students who forget to wear a face covering when masking is required 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 when masking is required 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 when masking is required 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

Students and employees are expected to review the [siue.edu/coronavirus](https://www.siu.edu/coronavirus) website (<https://www.siu.edu/about/announcements/coronavirus/>) to better understand prevention strategies and safety expectations.

- Students and employees are expected to maintain healthy hygiene practices.
- Students and employees are expected to follow COVID-related guidelines and directions.
- Students and employees are expected to conduct a daily health self-assessment and isolate themselves if COVID-related symptoms are present. COVID-related symptoms include:
 - o Fever (100.4 degrees or above) or chills
 - o Cough
 - o Shortness of breath or difficulty breathing
 - o Fatigue
 - o Muscle or body aches
 - o Headache
 - o New loss of taste or smell
 - o Sore throat
 - o Congestion or runny nose
 - o Nausea or vomiting
 - o Diarrhea

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.siu.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.siu.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 alterations to distancing requirements, course modality (e.g., transition from face-to-face to online, hybrid, or hy-flex, mask wearing, in-course activities, etc). These changes would be implemented to ensure the successful completion of the course while preserving health and safety. In these cases, students may be provided with an addendum to the class syllabus that will supersede the original version. If the course schedule or modifications significantly alter expectations, a new syllabus will be issued.