

Research Design and Statistics I

PSYC 220-003 & 004 Fall 2025

Instructor	Dr. Marie Childers	Email	marichi@siue.edu
Office	AH 0133 or zoom	Class Info	MW 10-10:50am FH0116
Office Hours	Mon & Wed 11a-12p	003 Lab Time 004 Lab Time	Fri 10-10:50
Phone	618-650-2253		Engineering 1160 Fri 11-11:50 Engineering 1160

Grad Assistant	TBA	Grad Assistant	TBA
Office		Office	
Office Hours		Office Hours	
Email		Email	

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**

Course Objectives

In this course, students will learn to:

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

Required Materials

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

Research Methods 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, phones are allowed but only for the calculator, no googling!

Course Structure

PSYC220 will have the following structure:

- “Class” will be held every Mon and Wed from 10-10:50am in person in FH0116

- “Lab” is on Fridays in person
 - Section 003 will be 10-10:50am in the Engineering Building 1160
 - Section 004 will be 11-11:50pm in the Engineering Building 1160
- Attendance at each class and lab is expected; frequent absence will harm your grade
- 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. PSYC220 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	140 pts	23%	90% – 100% = A
Quizzes	60 pts	10%	80% – 89% = B
Survey project	230 pts	38%	70% – 79% = C
Lab Attendance	70 pts	12%	60% – 69% = D
Lecture Attendance	100 pts	17%	below 60% = F
Total points	600 pts	100%	

- **Exams [140 points]**. Exam 1 is worth 60 points and Exam 2 is worth 80 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 PSYC221 and your advanced psychology classes. Exam 2 is cumulative.
 - **Exam format.** Exams are completed in person. 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 for Exam 1 and 2.5 minutes for Exam 2 (during finals week); you must complete them in one sitting. Given the time limit and applied questions, you should study for exams.
- **Quizzes [60 points]**. You will have 6 quizzes worth 10 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 during lab and are open note/book, but *not* open-Google. You will have 25 minutes during lab to complete each quiz. Make-up quizzes will not be allowed without an excused absence.
- **Survey project [230 points].** You will complete a survey project that requires you to create a hypothesis, read research papers, design a survey, collect and analyze data, and understand your results. This project will culminate in a full APA-style report that is worth 100 points.
 - **Justification for assessment.** The survey project assesses your ability to apply the knowledge gained in class to your own project. Running your own survey project is “hands-on” – it allows you to learn by *doing* rather than just listening and reading.
- **Attendance [170 points total].** You will earn 5 points for attending AND participating in each lab and lecture. There are 15 planned labs; you are allowed to miss one lab without penalty. You must attend at least 20 lecture sessions to receive full lecture attendance points. Review sessions and workshops DURING LECTURE are optional (attendance not required).
 - **Justification for assessment.** Labs are designed for interactive work with your classmates, TAs, and professor. Everyone must work together on the group project. Lecture is where you will be presented with material, complete worksheets to help prep for exams, and ensure you are following along with material.

Course Calendar

Date	Topic	Reading	Assignment	Points
Week 1	Science & research	M-Ch1		
8/22 Lab 1	Intro to survey project		Lab 1 assignment	10
Week 2	Hypothesize & operationalize	M-Ch2&3		
8/29 Lab 2	Understanding research articles		Quiz 1	10
Week 3	NO CLASS MONDAY 9/1 Non-experimental Methods	M-Ch6		
9/5 Lab 3	Finding research articles		Lab 3 assignment	10
Week 4	Experimental and Observational	M-Ch13		
9/12 Lab 4	Writing Introductions	313-22; 334-39	Quiz 2	10
Week 5	Survey designs	M-Ch13		
9/19 Lab 5	Developing surveys	323-333	Sources worksheet	25
Week 6	Surveys and sampling	M-Ch5		
9/26 Lab 6	Surveys and writing Methods		Quiz 3	10
Week 7	Ethics and plagiarism	M-Ch4		
10/3 Lab 7	Introduction to SPSS		Intro & Method	25
Week 8	Review and Exam 1	--		
10/10 Lab 8	SPSS Cont.		Exam 1	60
Week 9	Frequency & central tendency	S-Ch1-3		
10/17 Lab 9	Analyzing data		Quiz 4	10
Week 10	Variability	S-Ch4		
10/24 Lab 10	Figures in SPSS		Data worksheet	25
Week 11	Correlation	S-Ch14		
10/31 Lab 11	Analyzing data		Quiz 5	10
Week 12	Z-scores & probability	--		
11/7 Lab 12	Writing Results		Results & Discussion	25
Week 13	Z-scores and Probability	S-Ch5&6		
11/14 Lab 13	Writing Discussions		Quiz 6	10
Week 14	Catch-up/review	--	--	--
11/21 Lab 14	Abstracts and revisions	--	Lab 14 assignment	--
Week 15	NO CLASS: THANKSGIVING	--	--	
11/24-11/27				
11/28	NO LAB: THANKSGIVING	--	--	10
Week 16	Revise paper & review	--		
12/5 Lab 15	Exam 2 review		Final Paper	100
Week 17	Finals week	--	Exam 2	80

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

- **Late policy.** Any assignment, quiz, or exam can be completed 1 – 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.
 - **Any assignment submitted more than 48 hours late will receive a 0 grade unless a documented excuse is provided, or an alternative plan is made with Dr. Childers ahead of time.**
- **Illness policy.** If you have any illness symptoms that cannot be explained by a chronic condition you have, PLEASE stay home.
- **Attendance policy.** Missing class regularly typically results in failing the class. Because lab has groupwork, five points are awarded for each lab attendance AND participation. If you miss class, you should make up the work and be sure to attend the next class period.
 - **NOTE.** If you miss class regularly, I will begin to wonder if you have the time and motivation to complete PSYC220 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. Stop by my office, see me before or after class, or email your TAs.
- **YOUR SIUE email - weekly.** I will email you announcements and reminders after class. It is very important that you read these emails, but fine to catch up on them every few days.
- **Blackboard.** We will use Blackboard for course materials and submitting assignments.
- **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.**
- **Role of the Teaching Assistant (TA)**
 - The primary role of the TA is to assist the instructor. Part of this role does include providing instruction and clarification of classroom content to students from time to time. That said, the teaching assistant should not be your first recourse should

you not understand class material. The provided materials (classroom lectures and the textbooks) as well as your fellow students should be your first resource. Should you require assistance, the TA may ask what you have done to help yourself. You should be prepared to answer this question, or better yet, put it in your email when you request help.

- The TA is not an on-demand service. If you require the assistance of the TA, the expectation is that you provide your full availability-not simply times that are convenient for you. The TA is not expected to work outside of normal business hours to meet your needs.

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

• Lovejoy Library Resources • Academic Success Sessions • Tutoring Resource Center • The Writing Center • Academic Advising	• 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. Hawkins 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.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 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.siue.edu/coronavirus) website (<https://www.siue.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.

Reasons to Become a PSYCHOLOGY MAJOR (or MINOR) at SIUE.

Meet Other Students: Social Events, Presentations, Volunteerism, Leadership

- Two Psychology Clubs (open to all students interested in psychology)
- Psi Chi Honors Society for majors with notable academic success

Conduct Research Studies (Psyc 491): Example topics...

- behavior problems, school difficulties, autism spectrum, parenting, delinquency
- weight management, physical health, stress, ethical issues, mental illness, aging
- consumer behavior, employee selection, prejudice, gender bias
- decision making, teaching of psychology, pseudoscience

Experience Field Study (Psyc 493): Example sites...

- SIUE Counseling; SIUE Human Resources; Local schools
- Juvenile Detention; Center for Autism; Madison County Probation

Find Great Jobs! Examples with a Bachelor's degree from SIUE...

- Facebook Recruiter; Case Manager at Centerstone; Human Resources

- Probation Officer at St. Clair County; Research Technician at Barnes Hospital
- Crisis Worker at Children's Home + Aide; Residential Counselor

Get Your Masters at SIUE:

- Industrial/Organizational Psychology (consult for businesses)
- Clinical Psychology (provide assessment & therapy)
- Clinical Child & School Psychology (help children & adolescents)

Get into PhD Programs: Examples admitting our students...

- DePaul University (industrial/organizational psychology)
- Florida State University (social psychology)
- Illinois State University (school psychology)
- St. Louis University (clinical psychology & family therapy)
- University of Nevada - Las Vegas (experimental psychology)

Find Great Jobs (PART 2): Examples with graduate degrees...

- Professor at SIUE; Researcher at Washington University
- Nestle Manager; VP of Human Resources at Ameren
- Clinician at Foundations for Change; Neuropsychologist at St. John's Mercy
- St. Jude Hospital Research Associate; School Psychologist at Edwardsville High

If not the Psychology MAJOR, consider the Psychology MINOR:

- All you need is: Introduction to Psychology (Psyc 111) and 6 more psych courses
- Most jobs are greatly enhanced by psychology knowledge and related skills!

Stay in Touch:

- siue.edu/education/psychology
- Facebook: SIUE Psychology
- X: @SIUEpsychology

APPLY TO ONE OF OUR PSYCHOLOGY GRADUATE PROGRAMS!

The SIUE Department of Psychology has three graduate programs:

- The **Clinical Child and School Psychology** graduate program has two tracks:
 - Clinical Child Psychology Track. Students in this track receive a Master's degree in Clinical Child and School Psychology. About half of these students choose to then apply to a Doctoral program, and the other half choose to find a job right away. Students are prepared to work with families in private practice, hospitals, or community organizations. Our students have a very high success rate of getting into doctoral programs and finding jobs.
 - School Psychology Track. Students in this track receive a Master's degree in Clinical Child and School Psychology, and then they typically stay at SIUE to receive a Specialist Degree in School Psychology. These students have a very high success rate of finding employment as school psychologists. In fact, there is a national shortage of school psychologists. Some students later choose to also pursue a Doctoral degree.
 - **See the VIDEO:** <https://www.youtube.com/watch?v=RQyRMRTYEDQ>
- The **Clinical Psychology** master's program "is one of the strongest clinical training programs in the St. Louis region. It prepares students for careers in mental health organizations or further graduate education in a clinical PsyD or PhD program, a counseling PhD program, or related doctoral study. Many graduates obtain positions in community mental health centers, state hospitals, research institutions, private hospitals, and other agencies that provide psychological services."
 - **See the VIDEO:** <https://www.youtube.com/watch?v=mQ3n6O7xaIE>
- The **Industrial/Organizational Psychology** master's program "offers a rare blend of the scientist-practitioner model, requiring students to complete both a research-based thesis and required field hours of practicum...Research experience is directed at conceptualizing and solving applied organizational problems. Required practica, which are available throughout the St. Louis area, are oriented toward giving students applied, realistic skills and experiences to develop viable and effective performance in an organizational context."
 - **See the VIDEO:** <https://www.youtube.com/watch?v=j5NfzF-b3K4>

You can learn more about all of these programs here:

<https://www.siu.edu/education/psychology/graduate/>