



Research Design & Statistics I

online, asynchronous

PSY-220-D01

Spring 2024

Jan 8th – Mar 1st

“Psychological science is the antidote to the pitfalls of unaided intuition” (Myers, 1997; pp. 111)

About the Instructor

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About the Graduate TA

Name: Parker Kent

Email: pkent@siue.edu

Office Hours: T & TH: 12 – 1PM

Required Textbooks

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

Gravetter, F. J., Wallnau, L. B., Forzano, L. B., & Witnauer, J. E. (2018). *Essentials of statistics for the behavioral sciences* (10th ed.). Cengage.

Undergraduate students can rent textbooks from SIUE. Please visit the [Textbook Service website](#) for more information. For off-campus classes, the textbook may be shipped to you. Look for the option “Off-Campus Classes have special instructions, click here for these.” Note: shipping time may take up to two weeks.

Required Software/Tools

Access to R and R Studio via [Posit Cloud](#) is required for statistical analyses. More information about R, RStudio and Posit Cloud is available in the Course Tools section of the syllabus.

Note: R is a free, open-source program. Mac users may need to install additional programs to use R Markdown locally

Syllabus and course schedule are subject to change at the instructor’s discretion

Welcome to Research Design and Statistics!

Course Overview

TL/DR: You will learn how to do science! And to think critically about research!

Have you ever heard that “absence makes the heart grow fonder?” Maybe you’ve heard “Out of sight-out of mind.” Both sayings seem quite intuitive, and probably we’ve all stated both with varying degrees of conviction some time in our past, so which saying is correct? People rarely recognize that we often act on intuition, folk-wisdom, proverbs, and sayings—even if we are totally wrong! If so many people base decisions on advice that is contradictory or even wrong, how can you know what to trust, particularly when it comes to human behavior? The answer is...psychological science!

Psychology is the science of mind and behavior. Science is a way of knowing. In Research Design and Statistics, you will learn how psychological science is done. The main purpose of this course is to help you learn to think like a psychological researcher. This means, by the end Research Design and Statistics, you will have the tools necessary to become critical consumers AND generators of the research information found throughout all other psychological courses. To accomplish this purpose, students will be exposed to the philosophy of science, methods for designing research, strategies for making sense of data (e.g., statistics), guidelines for presenting results, and ethical constraints that we all must abide by as members of the psychological community. You will be able to:

- read, understand, and critically evaluate published research
- generate empirically testable hypotheses
- design a research study and collect data
- select and calculate appropriate statistics
- understand the major concepts of statistics
- analyze and interpret data
- effectively communicate research results to your peers
- write a research paper in APA style

What about the statistics part?

The mere mention of the word “*statistics*” makes many students feel slightly overwhelmed or even extreme dread. *This is very normal.* Statistics is just a way to make numbers meaningful. Do. Not. Panic. I believe you can succeed in this course, even if you feel apprehensive about statistics in the beginning. For me to help you succeed, *it is important that you ask questions or seek help whenever something does not make sense.* I am not omniscient, but I am compassionate. I will help you to understand the material, provided you let me know when something is not clear. I *expect* you to have questions about this stuff; it would be atypical not to have questions. Asking questions is a sign of curiosity and desire to learn so please ask questions! Your TA and I are here to help!

A word to the wise...

This accelerated course will require sustained dedication, time, and effort. THIS COURSE SHOULD BE YOUR HIGHEST PRIORITY.

Research Design and Statistics is a critical course for psychology majors, and it is at the heart of psychological science.

It is NOT intuitive, and not something you can learn last minute.

This version of the course is CONDENSED so it moves FAST. It's 16 weeks crammed down into 8 weeks. DON'T PROCRASTINATE.

The number one reason students don't pass this class is falling behind and not turning everything in. But if you stay on top of everything each week, put in the time and effort, and take advantage of help from me and our graduate teaching assistant, you can do this 😊!

Special notes about PSYC 220/221

1. If you need to remain a full-time student (e.g., for financial aid), you should be registered for at least 15 credit hours this semester. Why? In the unfortunate event that you fail this course (PSYC220), you will be dropped from PSYC221, which will reduce your credit hours. Thus, you should have 15 hours in order to be able to drop PSYC221 and still remain at full-time status (12 hours).
2. This course has a “2 attempt” rule—you may only attempt the course (including W, WF, WP) two times. After two unsuccessful attempts, you will be dropped from the major.
3. ***A grade of C or better in PSYC220 is required to progress to PSYC221.*** If you earn a course grade of D or F in PSYC220, contact your academic advisor immediately to determine whether there is any possibility of getting enrolled in a section of this course next semester.

Communicating with the instructor

Please address me as Dr. Abraham, Professor Abraham, or Prof. Abraham. If you have questions, the best way to get in touch with me is MS Teams. Please post in the “Help Me!” channel unless your question is personal or very specific to you, in which case you can direct message me on Teams. Email is also an option, but I get bombarded by email everyday so I’m more likely to miss an email. I will do my best to respond within 24 hours on weekdays.

Technology requirements

1. A reliably working **computer** that runs Windows or Mac OS. Tablets and smart phones might work for some things in this course, but we can’t guarantee they will work for everything. Chromebook laptops are also problematic. If you do not have a working computer that runs Windows or Mac OS, contact Information Technology Services about borrowing a laptop from the university. There are also computers for student use in the library.
2. Reliable internet access on a regular basis.

Technology capabilities

Additional guidance for taking online courses can be found here, [Online at SIUE](#).

Students in an online course should be able to:

- Use a word processor, such as MS Word, to compose assignments, and be able to use [tracked changes](#) and [comments](#) from your instructor
- Use a slide presentation program such as MS PowerPoint
- Attach files to emails and upload them to Blackboard
- Give files meaningful names, and store them in meaningful folder structures on your computer (this will be very important in this course – make sure you know how to do it)
- Navigate websites and course materials
- Reach out to tech support staff when issues arise and troubleshoot to resolve problems

Submitting work

All work will be submitted via Blackboard. For writing assignments, be sure to upload a Microsoft Word document (not a PDF, .pages, shared document or any other format). We will be using tracked changes and comments in Word documents to give you feedback for your research papers.

Course Information

Prerequisite knowledge and credit hours

As a student in this course, it is expected that you:

- have a college level reading ability
- have a basic level of computer competency
- have a basic level of math competency (arithmetic, algebra)
- are a declared psychology major
- completed PSYC 111 with a grade of C or higher

Course goals and objectives

1. Describe and distinguish among various research methods
2. Explain the role of statistics in psychological research
3. Discover, read, and evaluate published research
4. Design and conduct research studies
5. Analyze & interpret data using descriptive & inferential statistics
6. Write a research paper in APA style

Course Tools

- **Blackboard**: Primarily a “classroom” space
 - Assignments
 - Course Material
 - Other resources
- **Microsoft Teams**: Primarily a communication space. I recommend downloading and installing the app on your computer instead of using the browser version
 - Ask questions here
 - Work on group projects
 - Office hours
- **Posit Cloud**: For statistical analysis. Posit Cloud provides free access to a cloud based version of the [R Statistical Computing Environment](#). It provides access to [RStudio](#), R packages (aka, add-ons) and other tools. We will use Posit Cloud because it will allow us to use these data analysis tools collaboratively. R, RStudio, and R packages are also freely available can all be downloaded and installed to your personal computer.
- **Microsoft Office**: download and install here, <https://www.siu.edu/its/office365/install.shtml>
- **Qualtrics**: For use in research. we’ll use this for running surveys and experiments. You must access Qualtrics through the SIUE Qualtrics link, <https://siue.qualtrics.com/>

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Recommended Texts and Resources

*Navarro, D. (2019). *Learning statistics with R: A tutorial for psychology students and other beginners* (6.1). Creative Commons. <https://learningstatisticswithr.com/book/index.html>.

APA (2019). *Publication Manual of the American Psychological Association* (7th ed.). Washington, DC: American Psychological Association.

APA Style and Grammar Guides <https://apastyle.apa.org/style-grammar-guidelines>

*Note: Navarro (2019) is an open-source text; you can use the provided link to access the text anytime.

Course Assessments

- **Pre-course Survey:** A self-report questionnaire to measure any pre-existing knowledge of research methods and statistics. Full credit just for completing it. A similar post-course questionnaire will be completed at the end of PSYC221.
- **CITI Research Ethics and Compliance Training**
- **Video Lectures & Activities:** There will be at least two lecture videos each week. These cover the main content of the course. Video lectures contain activities within them. Within them? Yes, within them! As you watch the video lecture, questions, comments and/or links will pop-up. You must answer these questions and/or do the linked activity to receive credit. All lecture assignments are due on Tuesdays @ 8:00am. New content will be made available on Tuesday mornings.
- **Lab Assignments:** These weekly assignments are more focused on developing and practicing skills. Assignments are due Tuesdays @ 8:00am. There is one lab per week, except Week 8, thus there are 7 total.
- **Weekly Comprehension Checks:** These are multiple choice questions based on the book chapter readings for that week. There will be 10 questions (5 from each chapter), drawn randomly from a question pool. These are due Tuesdays @ 8:00am. Before the deadline, you have unlimited time and an unlimited number of attempts. Each attempt will consist of another random drawing of questions. Your score each week will be the highest of all your attempts for that week. You may use your books and notes for the comprehension checks, but do not search the internet for

Assessments	Points
Pre-Course Questionnaire	20
CITI Research Ethics and Compliance Training	20
Lecture Worksheets (15pts x 14)	210
Lab Worksheets (25pts x 7)	175
Weekly Comprehension Checks (25pts x 7)	175
Group Research Project	200
Proposal v. 1: 20	
Proposal v. 2: 20	
Draft 1 (intro): 20	
Draft 2 (+method): 20	
Draft 3 (+results): 20	
Draft 4 (final paper): 50	
Final Group Presentation: 30	
Peer evaluation: 20	
Final exam	200
Total:	1000

answers, and do not work with anyone else.

- **Group Research Project:** You will be assigned to a group of approximately 4-5 students. You will work with your group to design and conduct a survey study. You will be given a group channel on MS Teams to facilitate working together. The project will be completed in stages with due dates throughout the 8-week course as you create a [professional APA style paper](#). Drafts will be submitted on Blackboard (which can automatically detect plagiarism).
Note: Group and individual evaluation: Your group will turn in Project Proposal version 1, and Project Proposal version 2, and everyone in the group will receive the same score on that. Likewise, you will create the final presentation as a group and everyone in the group will receive the same score. For all the other project components, you will complete your own individual version and receive your own individual score.
- **Final Exam:** The final exam will be cumulative, with a 4-hour time limit, and only one attempt allowed. It will be available on Blackboard for 48 hours and due by 11:59pm on the Friday of Week 8.
- **Hypothetical Extra Credit:** I reserve the right to *potentially* offer bonus assignments for extra credit. Any such assignments would be *equally available to all students*.

Late Policy

You have seven 'late days' to use at your discretion. Each 24-hour period after the due date counts as one 'late day.' So, if you submit an assignment within 24 after the due date, you have used one late day; submit it within 48 hours and you've used 2 late days. If you submit an assignment seven days after the due date, you have used all seven late days on this one assignment and will not be able to turn in any other late assignments without losing points. Said another way, you can be up to 24 hours late on 7 different assignments, 7 days late on one assignment, or you can spread your late days across a couple of assignments. As long as you have late days to use, you will not be penalized for late assignments. If you run out of late days, you will lose 50% of the total points for each day it is late, and no late assignments will be accepted more than 3 days past the due date.

Grading scale

Final letter grades will be based strictly on the following scale:

Point Range	Maximum Points	Final Grade
895 – 1000	1000	A
795 – 894	895	B
695 – 794	795	C
595 – 694	695	D
0 – 594	595	F

Note. 925 points is 92.5%, and so on. Fractional points will be handled as follows: a final score of 800.50 would be rounded up to 801, and a final score of 800.49 would be rounded down to 800.

Feedback and grading timeline

We will endeavor to grade and provide feedback within 1 week of submission. For written assignments using Microsoft Word, we will return a Word document to you with comments and tracked changes. You can find your graded work by clicking the My Grades link on the left menu of the Blackboard course.

Additional Course Policies

Diversity and Inclusion

SIUE is committed to respecting everyone's dignity at all times. In order to learn, exchange ideas, and support one another, our virtual and physical classrooms must be places where students and teachers feel safe and supported. Systems of oppression permeate our institutions and our classrooms. All students and faculty have the responsibility to co-create a classroom that affirms inclusion, equity, and social justice, where racism, sexism, classism, ableism, heterosexism, xenophobia, and other social pathologies are not tolerated. Violations of this policy will be enforced in line with the SIUE Student Conduct Code.

The Hub <https://www.siu.edu/csdi> is an excellent resource for students for support and community. Any person who believes they have experienced or witnessed discrimination or harassment can contact Ms. Jamie Ball, Director in the Office of Equal Opportunity, Access and Title IX Coordination at (618) 650-2333 or jball@siue.edu. There is also an online form for reporting bias incidents at https://cm.maxient.com/reportingform.php?SIUEdwardsville&layout_id=10.

Pregnancy and Newly Parenting Policy

This policy and procedure are established to ensure the protection and equal treatment of pregnant students, students with pregnancy-related medical conditions including as a result of the termination of pregnancy, and students who become new parents including parents adopting or fostering to adopt for the first 12 weeks a child is in the home, in accordance with Federal and State guidelines and regulations. "New Parents" refers to a parent who has recently welcomed a newborn or adopted a child or is fostering to adopt a child and needs support to mitigate the disruption in academic progress within the first 12 weeks of parenting or a parent that needs support due to medical necessity attributed to pregnancy or delivery of a child; care of newborn; or lactation within the first year of child's life or legal adoption/fostering. Visit [Policies & Procedures - Student Rights and Conduct - Newly Parenting Policy - 3C15](#) to view the full policy and learn how to request accommodations through the Office of Equal Opportunity, Access, and Title IX Coordination (EOA).

Regular and Substantive Interaction

Regular and substantive interaction (RSI) is required as part of new U.S. Department of Education regulations for distance (online) education and it supports student learning in all learning environments (online, face-to-face, hybrid, hyflex, etc.). SIUE faculty participate in RSI by initiating frequent and timely opportunities to engage with students. Because there are several ways to implement RSI, such as facilitating online discussions, scheduling a Zoom conference with a student, or holding regularly scheduled review sessions before tests, RSI may look different in every class. To learn more about RSI, use the Online Tips links for Faculty and Students in your Blackboard course websites or visit the [Faculty Resources for Regular and Substantive Interaction webpage](#).

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>.

Technology Privacy Information

We will be using Blackboard in this course. View the [Anthology Blackboard Privacy Statement](#) to review how your data is being used and stored.

Additional Student Support

Services for Students Needing Accommodations

It is the policy and practice of 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 contact Accessible Campus Community and Equitable Student Support (ACCESS) as soon as possible. In order to properly determine reasonable accommodations, students must register with ACCESS either online at siue.edu/access or in person in the Student Success Center, Room 1203. You can also reach the office by emailing us at myaccess@siue.edu or by calling [618-650-3726](tel:618-650-3726).

If you feel you would need additional help in the event of an emergency situation, please notify your instructor to be shown the evacuation route and discuss specific needs for assistance.

Academic and Other Student Services

As an enrolled SIUE student, you have a variety of support available to you, including:

- [Lovejoy Library Resources](#)
- [Academic Success Sessions](#)
- [Tutoring Resource Center](#)
- [The Writing Center](#)
- [Academic Advising](#)
- [Financial Aid](#)
- [Campus Events](#)
- [Counseling Services](#)

If you find that you need additional support, please reach out to me and let me know.

Cougar Care

Dealing with the fast-paced life of a college student can be challenging, and I always support a student's decisions to prioritize mental health. Students have access to counseling services on campus (Student Success Center, 0222). Make an appointment by visiting cougarcare.siu.edu or by calling [618-650-2842](tel:618-650-2842).

Student Success Coaches

[Student success coaches](#) work across campus to serve the SIUE student population with the tools and resources to adjust to and meet the demands of the college experience. Success coaches provide direct services such as time management support and referrals to campus resources. If you find yourself in need of academic or personal support, or in a situation that is preventing you from being successful in the classroom, please utilize [Starfish](#) to connect with a coach as soon as possible. The sooner you

engage, the sooner you can access the information or tools you need that may help you get back on track.

Technical Support

Since this is an online course, you are expected to have reliable Internet access on a regular basis. It is your responsibility to address any computer problems that might occur. Such problems are not an excuse for delays in meeting expectations or for missing course deadlines.

Contact ITS at [618-650-5500](tel:618-650-5500) or at help@siue.edu with any technical concerns. You can also check the functionality of University systems, including Blackboard, at the [ITS System Status page](#), or search the [ITS Knowledge Base](#) for various how-to and troubleshooting guides.

Tips for taking online assessments:

- Set up a wired (Ethernet) Internet connection on your computer
- Do not use a mobile device, such as a phone or tablet
- Read the instructions and directions carefully
- Be prepared to complete the assessment in the allotted time