PSYC 220 (005 & 006): Accelerated Research Design & Statistics I, Fall 2024

Lecture: MW 10:00 am to 11:55 am, AH 0302
Lab-005: F 10:00 am to 11:50, AH 1201
Lab-006: F Noon to 1:50 pm, AH 1203
Note: you MUST attend the lab section you are registered for.

Instructor: Dr. Jonathan Pettibone   **Email:** jpettib@siue.edu   **Phone:** 618-650-3346
Office Hours: Monday & Wednesday from 1 to 2 pm (AH 0119)

GTA (005): Elizabeth Bruno	**Email:** ehackma@siue.edu	**Office Hours: TBD**
GTA (006): Shaibu Samiratu	**Email:** sshaibu@siue.edu	**Office Hours: TBD**
UGTA: Kylie Arroyo	**Email:** ktolent@siue.edu	**Office Hours: TBD**

Rented Texts:
Gravetter, F. J., Wallnau, L. B., Forzano, L. B., & Witnauer J. E. (2021). *Essentials of Statistics for the Behavioral Sciences (10th ed.).* Belmont, CA: Wadsworth-Thompson Learning.
Gravetter, F. J., & Forzano, L. B. (2018). *Research Methods for the Behavioral Sciences (6th ed.).* Belmont, CA: Wadsworth-Thompson Learning.
Note: Both textbooks are available online through Cengage

Recommended Purchased Texts
Publication Manual of the American Psychological Association (7th ed.). (2020). Washington, DC: American Psychological Association.

Recommended Equipment
You need a calculator with at least a square and a square root function. A calculator with statistical functions would be better, such as the TI-30Xa or the TI-30 XIIS. These cost around $10 at most stores and will make your life much easier. These are the calculators I know- you can buy others, but I can give you the most help with these. Not having a calculator at all will make life difficult and far more painful than it needs to be. **Graphing calculators, PDAs, and phone calculators (yes, even your iPhone) may not be used** in class or on exams.

Course Description
Psychology is a science. This means that we use empirical data to test hypotheses that we have about behavior. The goal of this course sequence is to teach you the research methods needed to collect valid and reliable measurements of behavior and the statistics needed to organize and understand those measurements. PSYC220 (1st 8 weeks) and PSYC221 (2nd 8 weeks) introduce students to the common research designs and statistics used in psychology and other behavioral sciences. PSYC220 focuses on correlational & observational 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.   In this accelerated section, you can take both classes in two 8 week, back to back semesters.

Course Objectives for PSYC 220

In this course, students will learn to:

- Understand the use of quantitative research designs for the exploration of relationships between variables and constructs of interest to behavioral researchers
- Understand correlational research designs and their appropriate statistical analyses
- Compute descriptive statistics & correlation by hand and use SPSS (statistics software) to analyze data and explore correlational relationships
- Lay the foundation for understanding frequentist inferential statistics for the indication of statistical significance in relationships between variables
- Design and conduct survey studies and write research reports in APA style 7th edition.

Course Objectives for PSYC 221

In this course, students will learn to:

- Understand experimental research designs and their appropriate statistical analyses
- Use descriptive statistics to understand the effect of experimental manipulations on behavior
- Use Inferential statistics, such as t-tests and ANOVAs, to identify statistically significant results from experiments, both by hand and using SPSS
- Design and conduct experimental studies and write research reports in APA style 7th edition.

Class Format

This class will be divided up lecture and lab sections, both in person. The lecture will focus on teaching the class material and preparing you for the lab and the class project. The Lab will focus on hands on exercises to reinforce the material learned during the lecture and will provide time for group project and individual assignment work.

Lecture:

Lecture slides, textbook readings, and quizzes for all the week's class content will be made available on Blackboard by the weekend prior to that week. There will be a quiz for each week class period (remember, in an accelerated class, one day is equal to one week) administered on blackboard. To succeed at the quizzes, you should 1) attend the lecture 2) review the slides and your notes and 3) read the textbook prior to your first attempt. This is where we will be covering general material on research methods and statistics.

Lab:

The lab will focus on hands-on aspects of statistics and research methods and will teach you the skills necessary to complete the assignments and your research project. Labs will be taught in person but assignments and exercises will be provided on teams. Attendance is expected each week. That said- you are all adults. If you can't make a session, you do not need to contact us- just try not to make it a habit. During a lab you will be free to ask questions and interact with the TA and instructor and we will try to leave some time for Q & A about the lecture material from the week. Note: If you have not completed the class material and the quizzes, the labs will not make any sense. You must keep up with the lecture portion of the class to make the synchronous portion work.

Guidance for Accelerated Stats Students

Due to the accelerated nature of these classes, **your daily attention and effort is required if you expect to pass.** This class moves fast- if you are not prepared, it will pass you by. There are serious consequences to your graduation date if you fail. Those consequences are outlined below. I am pointing them out not because I expect you to fail, but because the best way to avoid it is to understand the issues and approach them head on.

- A grade of C or better is required to progress into 221 in the second 8 weeks. Students who fail 220 will be dropped from 221. It is recommended that you are registered for 15 credits this semester, so that in case you are dropped from the 2nd 8 weeks you will remain a full-time student.
- If you earn a D or an F in 220 you should contact your advisor immediately to determine what your options are for the next semester. We have a department policy of admitting students who fail a stats class into another class as soon as possible, but you have to ask for this assistance.
- This class has a "2 strikes" rule. You many only fail the class (D, F, W, WF, WP) once. On the second fail you will be dropped from the Major.

Lab Attendance: Attendance is mandatory, but I understand that life gets in the way. We will take attendance at all Friday lab meetings. One point of EC will be awarded for each day that you attend. If you can't be there or you need to leave- no big deal, you just won't get the EC. Also, since this is EC, there will be no make-up credit. The idea is to reward you for coming to class rather than punish you for not being able to make it.

Required Technology

We will use Blackboard and Microsoft Teams 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 Teams is available by calling 618-650-5500, or by visiting http://www.siue.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)

You will need to use the following software on your computer to complete the class. Office, Teams, and SPSS can be installed to your computer or used as web apps. Qualtrics is only a web app. This software is free and is provided by SIUE:

- Microsoft Office 365, including Teams: https://www.siue.edu/its/office365/signin.shtml
- SPSS: https://www.siue.edu/its/labsclassrooms/vlab/spss.shtml
- Qualtrics: https://www.siue.edu/its/qualtrics/index.shtml
- Other useful software is available at http://www.siue.edu/its/software/index.shtml

Grading (374 Total Points):

Note: All work, unless otherwise noted, is due at 11:59 pm on Blackboard. **No late work will be accepted unless otherwise noted**. Final grades will be assigned on a percentage basis (i.e. 90% of available points is an A) and there will be no rounding of final grades.

Quizzes (7 @ 10 points each, 70 total points)

One a week, one for each day of lecture. Quizzes will be made available on the 1st day of the week and will be due at 11:59 pm on the Thursday of the same week. You can take each quiz up to three times and your highest score of your attempts will count as your grade. After each attempt you can identify which questions you missed- use that information to prepare for your next attempt. Quizzes will be timed (usually 20 minutes). Answers to quizzes will be posted immediately once all students have taken the quiz. No late quizzes will be accepted.

Lab Assignments (7 @ 12 points each, 84 total points)

One per week, reinforcing the lab topic and any calculation work from the week's topic. **Assignments will be due by 11:59 PM on the Tuesday after the Lab.** These assignments may include calculations or work to be completed in SPSS. You will receive half credit for anything turned in one day late, and no credit for two or more days late (but we will still provide feedback). These grades will be based on the accuracy of your responses. Please show ALL work in order to get the maximum amount of partial credit when possible.

Final Exam (100 points)

One exam, cumulative, covering all the material from the semester. The exam will have a multiple-choice section with some questions drawn from the quizzes, some new questions covering the same material, plus a computation section involving the hand calculation and interpretation of the statistics covered in the class.

Project Assignments (50 points)

Across the course of the semester, you will work in small groups to design a survey-based research study in which you will collect and analyze real data. This project is designed to give hands on experience with the design of quantitative research studies, data collection, and data analysis. As a group, you will determine your hypothesis, design a survey to evaluate it, and collect data from human participants. As an individual you will write your introduction and methods section, analyze the data, and write up your results and discussion in an APA format paper. Drafts of the paper are required. All writing must be your own in both the drafts and the final paper (except for the survey). This is to ensure that each group member understands how to write all sections of the project. You may not share any actual written work (other than the survey & the data) between group members. For individual project assignments, you will receive half credit for anything turned in one day late, and no credit for two or more days late (but we will still provide feedback). Group assignments may not be turned in late Drafts and the final paper will be turned in on Blackboard. These grades will largely be based on effort- did you do a credible job of doing the work necessary for the assignment.

> Group Assignments: Research Topic, Draft Survey, Final Qualtrics Survey (10 pts each)
> Individual Drafts: Intro and TP, Methods, Results & Discussion (5 pts. each)
> Ethics Certification (5 pts.)

Final Paper (70 points, Individual)

The final paper will be in APA format with a title page, introduction, methods, results, discussion, references, and any figures and/or tables necessary. Each student will write their own paper using the group data from their project. This paper is generally around 10 pages long, with a minimum of 5 citations of peer-reviewed research articles (i.e. no magazines). A rubric will be provided on Blackboard.

	Lecture Period		Lab	Project Assignments
Week	**Monday**	**Wednesday**	**Friday**	
1 (8/19-8/23)	Intro to Behavioral Research/Research Project & Scientific Method (M Ch 1.)	Research Ideas & Hypotheses (M Ch. 2) Defining and Measuring Variables (M Ch. 3)	Reading & Finding Research Articles	
2 (8/26-8/30)	Intro to Statistics (S Ch. 1) Ethics (M Ch. 4)	Research Designs and Validity (M Ch. 6)	Writing Introductions & References	**G: Research Project Topic (9/1)**
3 (9/2-9/6)	*Labor Day (No School)*	Descriptive Research Designs (M Ch. 13)	Writing Methods Sections	**I: Ethics Certification (9/6)** **I: Draft of Title Page, Intro, & References (9/8)**
4 (9/9-9/13)	Survey Designs (M Ch. 13)	Sampling (M Ch. 5)	Designing Surveys in Qualtrics	**G: Draft Survey Questions (9/15)**
5 (9/16-9/20)	Basic Distributions and Central Tendency (S: Ch. 2 & 4)	Variability (S: Ch. 5)	Central Tendency and Variability (SPSS)	**G: Final Survey Questions in Qualtrics (9/22)**
6 (9/23-9/27)	Z Scores, Probability, and Advanced Distributions (S: Ch. 5 & 6)	Correlation and Bivariate Regression (S: Ch. 14)	Z-Scores & Correlation (SPSS) Writing results and discussion sections	**I: Draft of Methods (9/25)**
7 (9/30 – 10/4)	Sampling Distributions of M and r (Ch. 7)	Chi-Square (S: Ch. 15)	Chi-Square (SPSS)	**I: Draft of Participants, Results & Discussion (10/2)**
8 (10/7 – 10/11)	Flex Time	Review/Final Exam	Final Exam	**Final Paper (10/9)**

Note: **M** is the Methods Text (Gravetter & Forzano) & **S** is the Statistics Text (Gravetter, Wallnau, Forzano, & Witnauer). Items marked **G** are group assignments. Items marked **I** are individual assignments.

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.siue.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.siue.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.siue.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. Pettibone 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.