PSYC 220 - 003 & 004 Research Design & Statistics I
Mondays & Wednesdays, 10:00am - 11:50am
Alumni Hall 0302 | Spring Term 2025

Instructor: David Fisher, Ph.D.
E-Mail: davfish@siue.edu
Office Hours: Mondays & Wednesdays, 12:00pm - 1:00pm (please email if you plan to attend)

Section 003 Additional Info
Lab Meetings: Fridays 10:00am - 11:50am
Lab Location: Alumni Hall 1203
Teaching Assistant (TA): Elizabeth Bruno
TA Email: ehackma@siue.edu
TA Office Hours: By appointment

Section 004 Additional Info
Lab Meetings: Fridays, 12:00pm - 1:50pm
Lab Location: Alumni Hall 1203
Teaching Assistant (TA): Samiratu Shaibu
TA Email: sshaibu@siue.edu
TA Office Hours: By appointment

COURSE DESCRIPTION AND LEARNING OUTCOMES

Welcome to Research Design & Statistics! The purpose of this course is to provide an introduction to methods for designing psychological studies and the statistics used to analyze and interpret the data, with a focus on non-experimental methods. This course covers various topics including (but not necessarily limited to): the scientific method, measuring variables, collection of data, descriptive statistics, correlation, and regression.

Student Learning Outcomes—upon completion of the course students should be able to:

- Demonstrate a basic understanding of concepts related to research methods and correlational research as evidenced in knowledge check quizzes and/or exams.
- Demonstrate a basic understanding of concepts related to descriptive statistics and correlation/regression as evidenced in knowledge check quizzes and/or exams.
- Conduct important components of the research process (e.g., literature search, data analysis, manuscript preparation) as evidenced in lab activities and the group project.
- Calculate statistics / analyze data (e.g., examining scale reliability, descriptive statistics, correlation analysis) as evidenced in lab activities and the group project.
- Convey the results of psychology research in written form as evidenced in the preparation of an APA-style research paper completed as part of the group project.

COURSE TEXTS, MATERIALS, AND TECHNOLOGY

- Gravetter & Forzano (2018). Research methods for the behavioral sciences (6th ed.). Cengage.
- Gravetter, Wallnau, Forzano, & Witnauer, J. E. (2021). Essentials of statistics for the behavioral sciences (10th ed.). Cengage.
- A calculator that does basic arithmetic functions, squares, and square roots.
- A flash/thumb drive or some equivalent data storage device (optional).
- Students will use Microsoft Word, Microsoft Excel, and SPSS statistics software; full technical requirements for students can be found here: https://kb.siue.edu/104656.
- All other course materials will be made available on Blackboard (see below).

SPECIAL NOTES / WARNINGS

- This course has a prerequisite of PSY 111, with a minimum grade of C.
- Students in the class must be a psychology major.
- You should be registered for at least 15 credit hours this semester if it is important that you remain a full-time student. Why? In the unfortunate event that you fail this course, you will drop PSY 221, which will reduce your credit hours. Thus, you must have 15 hours in order to be able to drop PSY 221 and still remain at full-time status (12 hours).
- 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.
- A grade of C or better is required to progress to PSY 221. If you earn a course grade of D or F in PSY 220, contact your academic advisor immediately to determine whether there is any possibility of getting enrolled in a section of this course next semester.

COURSE STRUCTURE AND EVALUATION

Class time will consist of lectures, lab sessions, activities, and assessments that will help you develop a better understanding of research methods and statistics. It is important that you complete the required readings before coming to class. Unless otherwise noted, all assignments are due on Sundays at 11:59pm during the week indicated in this syllabus. No late assignments will be accepted. Unless otherwise noted, all assignments, exams, and coursework will be submitted electronically via Blackboard. Your grade in this course will be based on the following:

- **Syllabus Check & Electronic Device Agreement (2 points combined).** During the first week of this course, students are required to complete a syllabus check assignment and sign an electronic device agreement. Failure to complete these two items will result in the student being dropped from the class.

- **Weekly Knowledge Checks (5 points each, 30 points combined).** There are six (6) knowledge check quizzes to be completed throughout this course. You are allowed to re-take the quizzes as many times as you want until the due date. The knowledge check quizzes are available via Blackboard.

- **Weekly Lab Activity (5 points each, 30 points combined).** There are six (6) lab activities to be completed throughout this course. Each activity will be completed during/after the associated lab session. Submission of the activity outcome/product is done via Blackboard. See 'Lab Meeting Overview' below for more information.

- **Exams (100 points each, 200 points combined).** There will be two (2) exams to be completed throughout this course. The exams consist of multiple-choice and calculation questions, and cover material only since the prior exam (i.e., non-cumulative). The exams are administered via Blackboard and are completed in-person during the class/lab session indicated in this syllabus.

- **Group Project (120 points).** Students will work in teams of approximately four individuals to analyze data and write an APA style paper focusing on the relationship between two variables assigned by the instructor. The project will include several phases: **(1)** researching and defining the variables; **(2)** writing a draft of the Introduction section; **(3)** writing a draft of the Method section; **(4)** reporting descriptive statistics in the Results section; **(5)** reporting correlation (and *possibly regression*) analyses in the

Results section; and **(6)** submitting the final paper. Following each project phase, students are strongly encouraged to think ahead about upcoming phases to keep up with the fast pace of the project. During the last week of the course, each group will give a **presentation** of their study. Groups will only submit one copy of all required submissions and all members will receive the same grade. However, all group members will evaluate each other, and every member will receive an individual **group member evaluation** grade. See 'Group Project Overview' below for more information.

- **Professionalism (18 points).** Students are expected to behave in a professional manner. This includes, among other things, attending class and lab sessions, coming to class on time, attentively listening to lectures, being polite in communications with others, being respectful of others' comments and contributions, and contributing a fair share to the group project. This also includes not being distracted, operating a cell phone, or using your computer for non-class related purposes (for example, surfing the Web, checking email, using Facebook, etc.).

- **Extra Credit (5 points):** An extra credit assignment will be made available to students and will be due by the last day of class. The extra credit assignment will require you to summarize in writing a research article related to psychology. Depending on the quality of the summary, students can receive extra credit toward their final grade.

SUMMARY OF POINTS

Graded Item	**Points**	**Percent**
Syllabus Check & Device Agreement	2	0.50%
Weekly Knowledge Checks x6	30	7.50%
Weekly Lab Activities x6	30	7.50%
Exams x2	200	50.00%
Group Project Items	120	30.00%
Professionalism	18	4.50%
Extra Credit	5	1.25%
Total Points (w/out Extra Credit):	**400**	**100.00%**
Total Points (w/ Extra Credit):	**405**	**101.25%**

FINAL GRADES

Percent in Course	**Letter Grade**
90-100%.....	**A**
80-89.99%.....	**B**
70-79.99%.....	**C**
60-69.99%.....	**D**
0-59.99%.....	**F**

CLASS POLICIES AND OTHER INFORMATION

Blackboard/Paperless Class

All course announcements, assignments, and other postings will be done through Blackboard. To the extent possible, all documents will be provided electronically, as opposed to being printed out. Likewise, all assignments should be submitted electronically, as opposed to printed out. Blackboard will also serve as your primary means of communicating with your fellow students and me. It is your responsibility to ensure that the e-mail account that you have listed with the University is a valid and working account so that we can communicate effectively. Otherwise, you will be responsible for the lack of communication. Additional information and resources can be found at https://www.siue.edu/its/bb/students/tutorials.shtml.

Respect for Intellectual Property and NO Recording

Faculty recordings of lectures and/or other course materials are meant to facilitate student learning and to help facilitate a student catching up who has missed class due to illness or quarantine. As such, students are reminded that the recording, as well as replicating or sharing of any course content and/or course materials without the express permission of the instructor of record, is not permitted, and may be considered a violation of the University's Student Conduct Code (3C1), linked here: https://www.siue.edu/policies/3c1.shtml.

Changes to Syllabus and Class

The instructor reserves the right to make changes to this syllabus as currently presented, in order to accommodate the learning pace of students, and if such changes help achieve the learning objectives of this course. This includes the possibility of switching to online learning if circumstances make this necessary or prudent.

Emergency Situations

Under extreme circumstances, students will be allowed to submit assignments late without a penalty or reschedule an exam date. Such circumstances must be unforeseen, unavoidable, and of a serious nature (for example, car accidents, serious medical emergencies, deaths in the family, documented COVID diagnosis). In other words, printer jams, planned appointments, and similar excuses do not count. In all cases, written and verifiable documentation must be presented. I reserve final judgment with respect to whether a situation constitutes an extreme circumstance or not.

Academic Integrity/Plagiarism/Misconduct

This course adheres to the SIUE's policies and procedures related to academic misconduct. Plagiarism and cheating will not be tolerated and may lead to failure on an assignment in the class, or dismissal from the University, per the SIUE academic dishonesty policy (http://www.siue.edu/policies/1i6.shtml). Students are responsible for complying with University policies about academic honesty as stated in the University's Student Academic Conduct Code (http://www.siue.edu/policies/3c2.shtml). Students are responsible for being familiar with these policies and procedures. The use of artificial intelligence (AI) tools and applications (including ChatGPT, DALL-E, and others) to produce content for course assignments and assessments is a violation of SIUE's academic policy and is prohibited. This course may utilize 'Turn It In' plagiarism and AI detection software (https://www.siue.edu/its/turnitin/).

Student Support and Accommodations

Students needing accommodations because of medical diagnosis, major life impairment, or other life circumstances will need to register with Accessible Campus Community & Equitable Student Support (ACCESS) and complete an intake process before accommodations will be given. Students who believe they have a diagnosis, but do not have documentation, should contact ACCESS for assistance and/or appropriate referral. The ACCESS office is located in the Student Success Center, Room 1203. You can also reach the office by emailing to myaccess@siue.edu or by calling 618-650-3726. Students who qualify for accommodations should inform the instructor as soon as possible to arrange for their needs and obtain support for the class. In addition, students have access to counseling services on campus (https://www.siue.edu/counseling/). You can make an appointment by calling 618-650-2842.

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. The Hub (https://www.siue.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.

COURSE SCHEDULE

DATE	TOPIC	READINGS (Due Before Class) Methods[1]	Statistics[2]	ASSIGNMENTS (Due Sundays by 11:59pm)
Week 01, 1/13	Introduction to the Class Project Overview / Teams	—	—	Syllabus Check Device Agreement
Week 01, 1/15	Scientific Method / Research Project: Introduction to Variables	Ch. 1 Ch. 2	—	Wk. 1 Knowledge Check
Week 01, 1/17 (LAB)	Finding & Reading Articles Project Phase 1	—	—	Wk. 1 Lab Activity Project Phase 1
Week 02, 1/20	No Class	Ch. 13 pp. 322-333	—	—
Week 02, 1/22	Measuring Variables Project: Variable Details	Ch. 3	—	Wk. 2 Knowledge Check
Week 02, 1/24 (LAB)	APA Style / Writing an Intro Project Phase 2	Ch 16	—	Wk. 2 Lab Activity Project Phase 2
Week 03, 1/27	Ethics in Research Project: Procedure Details	Ch. 4	—	—
Week 03, 1/29	Research Participants Project: Participant Details	Ch. 5	—	Wk. 3 Knowledge Check
Week 03, 1/31 (LAB)	Writing a Method Section Project Phase 3	—	—	Wk. 3 Lab Activity Project Phase 3
Week 04, 2/3	Research Strategies Project: Discussion if Needed	Ch. 6	—	—
Week 04, 2/5	Introduction to Statistics Catch-up / Review	—	Ch. 1	—
Week 04, 2/7 (LAB)	Exam 1 (Methods[1] Ch. 1-6)	—	—	—
Week 05, 2/10	Frequency Distributions Project: Discussion if Needed	—	Ch. 2	—
Week 05, 2/12	Central Tendency Project: Discussion if Needed	—	Ch. 3	Wk. 5 Knowledge Check
Week 05, 2/14 (LAB)	Calculations Practice Project Phase 4	—	—	Wk. 5 Lab Activity Project Phase 4
Week 06, 2/17	Variability Project: Discussion if Needed	—	Ch. 4	—
Week 06, 2/19	Correlation and Regression Project: Discussion if Needed	—	Ch. 14	Wk. 6 Knowledge Check
Week 06, 2/21 (LAB)	Calculations Practice Project Phase 5	—	—	Wk. 6 Lab Activity Project Phase 5
Week 07, 2/24	Z-Scores Project: Discussion if Needed	—	Ch. 5	—
Week 07, 2/26	Probability Project: Discussion if Needed	—	Ch. 6	Wk. 7 Knowledge Check
Week 07, 2/28 (LAB)	Calculations Practice Project Phase 6	—	—	Wk. 7 Lab Activity Project Phase 6
Week 08, 3/3	Catch-Up / Review Project Presentations	—	—	—
Week 08, 3/5	Group Member / TA Evaluations Project Presentations	—	—	Extra Credit due *today* by 11:59pm
Week 08, 3/7 (LAB)	Exam 2 (Statistics[2] Ch. 1-6, 14)	—	—	—

[1] Gravetter & Forzano (2018). Research methods for the behavioral sciences (6th ed.). Cengage.
[2] Gravetter et al. (2021). Essentials of statistics for the behavioral sciences (10th ed.). Cengage.

LAB MEETING OVERVIEW

There will be six lab meetings throughout the eight weeks of this course. The meetings will always be on Fridays (see Course Schedule for specific dates). Also note that there are two different sections for the lab meetings, which will hold meetings at different times. *Students must make sure they are aware of which section they are enrolled in so that they show up to the correct lab meeting at the correct time* (see first page of Syllabus for lab section meeting times).

Lab Week 1—Main Objectives/Activities

- Open dataset and basic introduction to SPSS
- Methods for finding research articles (students to get two articles to start with)
- Strategies for reading research articles
- *Lab Activity Submission:* Complete practice exam / pretest (due Sunday, 11:59pm)
- *Group Project Work:* Phase 1 (due Sunday, 11:59pm)

Lab Week 2—Main Objectives/Activities

- Demonstrate use of syntax in SPSS / calculate scale reliability / compute scale scores
- Introduction and discussion of APA style
- Discuss Introduction section outline
- *Lab Activity Submission:* Identify key paragraphs of a paper intro (due Sunday, 11:59pm)
- *Group Project Work:* Phase 2 (due Sunday, 11:59pm)

Lab Week 3—Main Objectives/Activities

- Examine demographic information in SPSS (and scale reliability again, if needed)
- Discuss Method section outline
- Look at example Method sections
- *Lab Activity Submission:* CITI Training (due Sunday, 11:59pm)
- *Group Project Work:* Phase 3 (due Sunday, 11:59pm)

Lab Week 5—Main Objectives/Activities

- Practice calculations of descriptive statistics (central tendency)
- Look at example Results sections and tables
- Calculate descriptive statistics in SPSS
- *Lab Activity Submission:* Hand calculation problems (due Sunday, 11:59pm)
- *Group Project Work:* Phase 4 (due Sunday, 11:59pm)

Lab Week 6—Main Objectives/Activities

- Practice calculations of descriptive statistics (variability) and correlation/regression
- Look at example Results sections and tables
- Conduct correlation/regression analyses in SPSS
- *Lab Activity Submission:* Hand calculation problems (due Sunday, 11:59pm)
- *Group Project Work:* Phase 5 (due Sunday, 11:59pm)

Lab Week 7—Main Objectives/Activities

- Practice calculations of Z-scores and probability
- SPSS review / catch-up if needed
- Look at example Discussion sections
- *Lab Activity Submission:* Posttest (due Sunday, 11:59pm)
- *Group Project Work:* Phase 6 (due Sunday, 11:59pm)

GROUP PROJECT OVERVIEW

Phase 1: Researching and defining the variables [2 points]. Groups will find and examine research articles that will help them to (A) define the variables they are examining and (B) develop arguments for how and why the variables might be related to one another. *Due Sunday by 11:59pm following Week 1.*

Phase 2: Writing a draft of the Introduction section [3 points]. Groups will write a draft of their Introduction section including (A) an overview of the purpose of the paper, (B) an introduction to and definition/explanation of the variables examined, and (C) an argument for how and why the variables are expected to be related, ending with a formally stated hypothesis. *Due Sunday by 11:59pm following Week 2.*

Phase 3: Writing a draft of the Method section [3 points]. Groups will write a draft of their Method section including (A) a description of participants, (B) an articulation of the procedure, and (C) an explanation of the measures. *Due Sunday by 11:59pm following Week 3.*

Phase 4: Reporting descriptive statistics in the Results section [3 points]. Groups will write a draft of the subsection within the Results section that reports descriptive statistics for the variables being examined including (A) inclusion of means and standard deviations for the two focal variables in a table, (B) mention of those means and standard deviation in-text, and (C) the addition of the age variable into the table. *Due Sunday by 11:59pm following Week 5.*

Phase 5: Reporting correlation analyses in the Results section [3 points]. Groups will write a draft of the subsection within the Results section that reports correlation analyses for the variables being examined including (A) a correlation table with the two focal variables along with age, (B) a written description of the correlation results for two focal variables in-text, and (C) a formal statement of whether the hypothesis was supported or not. *Due Sunday by 11:59pm following Week 6.*

Phase 6: The final paper [85 points]. Groups will submit the final draft of their paper with a newly added Discussion section that (A) discusses implications of the findings, (B) notes at least one strength and one limitation of the research design, and (C) mentions at least two future directions. *Due Sunday by 11:59pm following Week 7.*

Group presentation [15 points]. During the last week of the course, each group will give a presentation of their study.

Group member evaluation [6 points]. During the last week of the course, each group member will complete an evaluation form for all their teammates.

TIPS FOR SUCCEEDING IN THIS COURSE

1) **Read.** Read each chapter before class. Although you might not understand the material the first time, it will be helpful to have some exposure to it before we discuss it in class.

2) **Attend.** Students that attend class do MUCH better than those that do not. Learning about topics in class helps reinforce the information.

3) **Notes.** Take notes during class lectures. Just reading the text or passively listening to lectures is not as useful as active note-taking.

4) **Ask.** Don't be afraid to ask questions if you don't understand something. If you do not understand the material, it's likely that someone else doesn't either.

APPLY TO ONE OF OUR PSYCHOLOGY GRADUATE PROGRAMS!

Applications are due January 15th

- 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.siue.edu/education/psychology/graduate/

By providing your name, signature, and date below, you certify that you have read and understand all policies and information in this syllabus. If you have questions, please contact the instructor immediately.

Print name: _____

Signature: _____

Date: _____