SJSU SAN JOSÉ STATE UNIVERSITY

College of Social Sciences · Psychology

Advanced Research Methods in Psychology

PSYC 118

Spring 2026 Sections 20, 21, 22 In Person 3 Unit(s) 01/22/2026 to 05/11/2026 Modified 01/20/2026

Contact Information

- Instructor: Hyesang Chang, PhD
- Email: hyesang.chang@sjsu.edu
- Office hours: Wednesday 12:30-1:30pm in DMH 230 or by appointment

Course Information

Descriptive, correlational, quasi-experimental, and experimental approaches: design, methodology, and analysis. Experience designing, conducting, analyzing, and presenting (verbal and written) research findings. Topics include: hypothesis testing, validity, reliability, scales of measurement, questionnaire development, power, statistical significance, and effect size.

Prerequisite: Lower division GE complete; STAT 95, PSYC 18, PSYC 100W with a "C" or better (or departmental approval), Upper division standing, Psychology or Behavioral Science majors only.

- Class time and location:
  - Psyc 118-20 (lecture): Monday, Wednesday 9:00-9:50am in DMH 348
  - Psyc 118-21 (lab): Monday 10:15am-12:15pm in DMH 339
  - Psyc 118-22 (lab): Wednesday 10:15am-12:15pm in DMH 339

- Please attend the lecture and lab section that you are enrolled in. You can find the locations of the buildings from Campus map.
  - DMH: Dudley Moorhead Hall

Course Description and Requisites

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Letter Graded

Classroom Protocols

Course Format. In lectures, we will learn advanced research methods through course materials, presentations, and question-and-answer periods. During the laboratory section we will learn how to apply the principles of advanced research methods to a research project, conduct research, and prepare the write-up and presentation of the research project.

Participation. You are expected to attend the lecture and lab sections that you are enrolled in for the course. Regular attendance is critical for successful completion of this course. Many of the assignments are completed during class and lab periods. Students' participation in the group projects throughout the course is evaluated at the end of the course.

According to University Policy F15-12, "*Students are expected to attend all meetings for the courses in which they are enrolled as they are responsible for material discussed therein and active participation is frequently essential to ensure maximum benefit to all class members. In some cases, attendance is fundamental to course objectives; for example, students may be required to interact with others in the class. Attendance is the responsibility of the student. Participation may be used as a criterion for grading when the parameters and their evaluation are clearly defined in the course syllabus and the percentage of the overall grade is stated.*"

Credit Hour Definition. To be successful in courses at SJSU, it is expected that students will spend a minimum of forty-five hours for each unit of credit (a 3 unit class would be approximately 9 hours per week), including preparing for class, participating in course activities, completing assignments. More details about student workload can be found in University Policy (http://www.sjsu.edu/senate/docs/S12-3.pdf)

Classroom Environment. This class will be conducted in an atmosphere of mutual respect. I encourage your active participation and welcome respectful discourse. Your language and conduct during the class period must demonstrate respect for everyone's race, gender identity, or expression, sexuality, culture, beliefs, and abilities.

Students are expected to maintain a level of professional and courteous behavior at all times. You are required to put your cell phone and other distractions away before the beginning of class and closed-notes assessment. Cell phones or other electronic devices may be used during submission of class activity assignments.

Program Information

Program learning outcomes (PLOs) are skills and knowledge that students will have achieved upon completion of the Psychology BA degree. Each course in our curriculum contributes to one or more of these PLOs. The PLOs for the Psychology BA degree are:

1. Knowledge Base of Psychology. Students will be able to demonstrate familiarity with the major concepts, theoretical perspectives, empirical findings, and historical trends in psychology.
2. Research Methods in Psychology. Students will be able to design, implement, and communicate basic research methods in psychology, including research design, data analysis, and interpretations.
3. Critical Thinking Skills. Students will be able to use critical and creative thinking, skeptical inquiry, and a scientific approach to address issues related to behavior and mental processes.
4. Applications of Psychology. Students will be able to apply psychological principles to individual, interpersonal, group, and societal issues.
   Values in Psychology. Students will value empirical evidence, tolerate ambiguity, act ethically, and recognize their role and responsibility as a member of society.

Course Learning Outcomes (CLOs)

Upon successful completion of this course, students will be able to:

- CLO1. Understand how scientific methods are used in psychological research
- CLO2. Summarize the differences between different types of research designs used in psychological research
- CLO3. Determine advantages and disadvantages of specific research methods for different situations
- CLO4. Evaluate whether research participants are treated ethically and understand the importance of ethical treatment of participants
- CLO5. Identify potential factors that can affect the ability to address a research question and how to reduce or eliminate these factors
- CLO6. Use statistical analyses appropriately and interpret the results
- CLO7. Provide strengths and limitations of research studies and draw appropriate conclusions from research findings
- CLO8. Design and carry out a research study from beginning to end (including writing a research report)

Course Materials

Required Text:

- Research Methods in Psychology, 4th edition, by Jhangiani, Chiang, Cuttler, & Leighton. This book is available at no cost from online (Research Methods in Psychology (https://kpu.pressbooks.pub/psychmethods4e)). If students would like a printed copy, it can be purchased on Amazon.com.

- Any other readings will be made available through Canvas.

Course Requirements and Assignments

Technology Requirements. Students will need access to the internet and Canvas site to submit assignments. Submission of assignments may occur during class periods with an electronic device that can access the Canvas site (phone, tablet, or laptop). Students will have access to a computer during lab periods. If you do not have a laptop but would like one, you may borrow one from the Student Computing Center in the SJSU library. We will be using Microsoft (https://www.sjsu.edu/it/services/applications/office.php) Word and Excel, Qualtrics (https://www.sjsu.edu/cfeti/software/research/qualtrics/index.php), and SPSS (https://www.sjsu.edu/it/services/support/desktop/instructions.php) for data collection, management, and analysis and writing. Microsoft Powerpoint or Google Slides can be used for poster presentations. You may need a PDF viewer (Preview or Adobe Acrobat) to view PDF files.

Assignments. The primary methods of assessment for this course will be class and lab activities, quizzes, a poster presentation, a research report, a final exam, and research project participation. Each assignment is designed to prepare you to successfully complete your research proposal, study, and report write-up for your research project. Additional instructions will be available on Canvas.

Course information activities. Students will complete a total of four course information activities. In the first week of the course, students will complete a course information quiz to become familiar with course requirements. Questions will cover information included the syllabus and course website. Students will also complete research partner interview and literature search worksheet to help create research groups and identify potential research projects. In the last week of the course, students will submit a group contribution evaluation to assess their group members' (including their own) contribution to research projects. Course information activities are worth 4.5% of the grade.

Class activities (CLOs 1-7). Students will participate in various class activities and submit their responses on Canvas to enhance their learning throughout the course. A total of six class activity assignments will be graded as complete or incomplete and one (lowest) grade will be dropped. Class activities are worth 2.5% of the grade.

Lab activities (CLOs 1-7). Students will collaborate with their research group and complete a total of five lab activity assignments, each worth 5% of the grade (25% total). Lab activity assignments will include literature review and design summary (CLOs 1-3), research proposal (CLOs 1-5), and preliminary data summary (CLOs 6-7). Completion of lab activities is integral to the preparation of poster presentation and research report.

Quizzes (CLOs 1-7). There will be a total of four quizzes, each worth 2% of the grade (8% total). Questions will include multiple-choice and short answers. Quizzes will be open-notes and there will be 30 minutes to complete each quiz on Canvas. Each quiz will cover several topics in the course. The first quiz will include scientific research methods and ethical considerations (CLOs 1-4). The second quiz will include non-experimental and experimental research designs (CLOs 2,3,5,7). The third quiz will include factorial designs, single-subject research, presenting research, and descriptive statistics (CLOs 2,3,6,7). The fourth quiz will include inferential statistics and topics in data analysis (CLOs 6-7).

Poster presentation (CLOs 4-7). Students will create a poster that outlines the research study design and findings. Posters will be presented through presentation slideshow during scheduled times in class. Submission and presentation of the poster is worth 10% of the grade. During poster presentation sessions,

students will participate as peer reviewers for other groups' presentations and submit peer review forms. Completion of peer review forms will count towards extra credit (5% of the grade) at the end of the course.

Research report (CLOs 4-8). Students will develop a full research report in APA style. The report will include introduction of study background, description of study design and statistical analysis, interpretation of findings, and discussion of strengths and limitations of the study. It may take several drafts to finalize the report and many of class activities are designed to help you develop the report. It is expected that the sections of title page, abstract, and discussion are individually written. Introduction, methods, and results sections may be shared with group members with their contributions acknowledged. The final research report is worth 30% of the grade.

Research participation (CLOs 4-8). Students will participate in creating and conducting a research project in collaboration with research group members. Research groups will be created and meet during the lab section. Active participation with group members is essential for successful completion of the research project and is worth 10% of the grade. Participation in research projects throughout the course will be assessed by group contribution evaluations at the end of the semester.

Final exam (CLOs 1-7). There will be a cumulative final exam during scheduled final exam time at the end of the course, which is worth 10% of the grade. Questions will include multiple-choice and short answers, administered in class in a paper-and-pencil format. The final exam will be closed-notes and cover all topics learned in the course.

Attendance. Attendance is critical for success in this course. If you miss a class, you are responsible for the information from that class. It is vital that you complete all scheduled readings and assignments as listed in the Course Schedule. Please note that the Course Schedule is tentative and subject to change with fair notice, including assignment due dates. Attendance in lab sessions is particularly important to succeed in this course. You are expected to be present and participate in lab sessions to contribute to the development and completion of a research project. Students who do not attend lab sessions may not be able to pass this course. Please do not take this course if you are not able to consistently attend lab sessions.

Late work policy. Students should pay close attention to deadlines and start early on their assignments to avoid technical problems. Late assignments (lab activity, quiz, or research report) will be graded down 5% for each day that they are late until the assignments are available on Canvas. Further extension or extension of scheduled class activities or assessments (poster presentation or final exam) will not be allowed without a documented serious reason and instructor approval.

✔ Grading Information

Breakdown

Assignment	Frequency	Points per assignment	Total points

Course information activities	4	1-1.5	4.5
Class activities	5	0.5	2.5
Lab activities	5	5	25
Quizzes	4	2	8
Poster submission and presentation	1	10	10
Research report	1	30	30
Research project participation	1	10	10
Final exam	1	10	10
Total			100

Grade	Percent range
A	94-100
A minus	90-93
B plus	87-89
B	83-86
B minus	80-82

C plus	77-79
C	73-76
C minus	70-72
D plus	67-69
D	63-66
D minus	60-62
F	59 or below

Academic integrity

Your commitment, as a student, to learning is evidenced by your enrollment at San Jose State University. The Academic Integrity Policy (https://www.sjsu.edu/senate/docs/F15-7.pdf), requires you to be honest in all your academic course work. Faculty members are required to report all infractions to the office of Student Conduct and Ethical Development (http://www.sjsu.edu/studentconduct/).

A few examples of academic integrity in this course may include:
1. Students provide their original work and any inclusion of work by others is properly cited.
2. Each group member contributes to all aspects of their group project, with the exception of the final research report which includes individual work.
3. Students complete closed-notes assessment without referencing notes.

Plagiarism or cheating. San José State University defines plagiarism as the act of representing the work of another as one's own without giving appropriate credit, regardless of how that work was obtained, and submitting it to fulfill academic requirements. Cheating is defined as the act of obtaining credit, attempting to obtain credit, or assisting others to obtain credit for academic work through the use of any dishonest, deceptive, or fraudulent means. If students have any questions about an assignment they are preparing, they should ask their instructor for clarification rather than risk unintentional plagiarism.

Artificial Intelligence (AI). Completing the assignments in this course does not require the use of AI. It often leads to errors and citations of references that don't exist. Relying on AI tools can also interfere with your learning and development of critical thinking and communication skills. Developing strong competencies in these areas will better prepare you to critically evaluate and solve problems and effectively communicate in a professional workplace. The use of generative AI tools is not permitted in this course without my approval. In rare circumstances in which I approve the use of AI tools, it is important to use them cautiously and properly cite them – otherwise this will be considered

plagiarism. Any assignment that uses pre-approved AI tools must include an Appendix with (1) the entire AI interaction, highlighting key parts, (2) which AI tools you used and how, and (3) why you used the AI tools. Students should discuss any concerns about AI use with the instructor beforehand.

Consequences of Academic Dishonesty. Plagiarism or cheating is not tolerated in this course. In cases of violation of academic integrity, the instructor may issue a failing grade ("F") or "0" for the assignment in question and refer the student to the Office of Student Conduct and Ethical Development (SCED) for disciplinary action.

University Policies

Per University Policy S16-9 (PDF) (http://www.sjsu.edu/senate/docs/S16-9.pdf), relevant university policy concerning all courses, such as student responsibilities, academic integrity, accommodations, dropping and adding, consent for recording of class, etc. and available student services (e.g. learning assistance, counseling, and other resources) are listed on the Syllabus Information (https://www.sjsu.edu/curriculum/courses/syllabus-info.php) web page. Make sure to visit this page to review and be aware of these university policies and resources.

Course Schedule

Week	Topics (readings) / Class activity		Assignments *due end of lab (M/W 12:15pm) **due Thursday 11:59pm
1: 1/26-28	Lecture	Course Introduction Science of Psychology (Chapter 1)	Course Information Activity: 1: Course Information Quiz** 2: Research Partner Interview*
	Lab	Lab Session 1: Lab Introduction; Literature Search	
2: 2/2-4	Lecture	Overview of Scientific Method (Chapter 2 pt1: 7-10); Class Activity 1 Overview of Scientific Method (Chapter 2 pt2: 11-14)	Course Information Activity 3: Literature Search Worksheet*
	Lab	Lab Session 2: Literature Review	

3: 2/9-11	Lecture	Research Ethics (Chapter 3) Baumeister et al. (2007)	Lab Activity 1: Literature Review* Quiz 1: Chapters 1-3**
	Lab	Lab Session 3: Sampling and Measures	
4: 2/16-18	Lecture	Psychological Measurement (Chapter 4); Class Activity 2 Non-Experimental Research (Chapter 6)	Lab Activity 2: Design Summary*
	Lab	Lab Session 4: Study Design	
5: 2/23-25	Lecture	Survey Research (Chapter 7) Experimental Research (Chapter 5)	Lab Activity 3: Research Proposal First Draft*
	Lab	Lab Session 5: Research Proposal Preparation	
6: 3/2-4	Lecture	Quasi-Experimental Research (Chapter 8); Class Activity 3 Factorial Designs (Chapter 9)	Quiz 2: Chapters 4-8**
	Lab	Lab Session 6: Study Material Preparation	
7: 3/9-11	Lecture	Roediger & Karpicke (2006) Boot et al. (2013)	Lab Activity 4: Full Research Proposal*
	Lab	Lab Session 7: Data Collection Preparation	
8: 3/16-18	Lecture	Single-Subject Research (Chapter 10); Class Activity 4 Presenting Research (Chapter 11)	
	Lab	Lab Session 8: Descriptive Statistics and Correlations	

9: 3/23-25	Lecture	Descriptive Statistics (Chapter 12) Data Summary	Quiz 3: Chapters 9-12**
	Lab	Lab Session 9: Inferential Statistics: t-tests and ANOVA	
Spring Break (Week of 3/30)			
10: 4/6-8	Lecture	Inferential Statistics (Chapter 13; pt1: 57); Class Activity 5 Inferential Statistics (Chapter 13; pt2: 58)	Lab Activity 5: Preliminary Data Summary*
	Lab	Lab Session 10: Inferential Statistics: Linear Regression and More	
11: 4/13-15	Lecture	Presentation Preparation Inferential Statistics (Chapter 13; pt3: 59-61)	Quiz 4: Chapter 13**
	Lab	Lab Session 11: Presentation Preparation	
12: 4/20-22	Lecture	Tackett et al. (2017); Class Activity 6 Research Report Preparation	Poster**
	Lab	Lab Session 12: Presentation Preparation	
13: 4/27-29	Lecture	Poster Presentations Peer Review Form	
	Lab	Lab Session 13: Research Report Preparation	
14: 5/4-6	Lecture	Course Review (I, II)	Research Report** Course Information Activity 4: Group Contribution Evaluation**
	Lab	Lab Session 14: Research Report Preparation	

15: 5/11	Lecture	Course Review (III)	
	Lab	No Lab Session	
16: 5/15	Lecture	Final Exam: Friday, May 15, 8:30-10:30am	