SJSU SAN JOSÉ STATE UNIVERSITY

College of Social Sciences · Psychology

Advanced Research Methods in Psychology Section 40

PSYC 118

Spring 2025 In Person 3 Unit(s) 01/23/2025 to 05/12/2025 Modified 01/22/2025

Sections 40, 41, 42

Contact Information

- Instructor: Hyesang Chang, PhD
- Email: hyesang.chang@sjsu.edu
- Office hours: Tuesday, Thursday 12:30-1:00pm in DMH 230 or by appointment

Course Information

- Class time and location:
  - Psyc 118-40 (lecture): Tuesday/Thursday 9:00-9:50am in DMH 355
  - Psyc 118-41 (lab): Tuesday 10:15am-12:15pm in DMH 236
  - Psyc 118-42 (lab): Thursday 10:15am-12:15pm in DMH 236

Course Description and Requisites

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.

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 all meetings for 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.

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 (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. 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 Excel and SPSS, available to SJSU students, for data management and analysis.

Assignments. The primary methods of assessment for this course will be quizzes, lab activities, a poster presentation, a research report, a final exam, and participation in the course. 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.

Quizzes (CLOs 1-7). There will be a total of 3 quizzes, each worth 5% of the grade. Questions will include multiple-choice and short answers, administered in class in a paper-and-pencil format. 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 data analysis (CLO 6).

Lab activities (CLOs 1-7). Students will complete a total of 5 lab activity assignments, each worth 5% of the grade. Lab activity assignments will include identifying research topic and list of literature (CLO 1), literature summary (CLOs 2-4), providing background and research question (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.

Poster presentation (CLOs 4-8). 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. Presentation of the poster is worth 10% of the grade.

Research report (CLOs 4-8). Students will complete a research report in APA style, including introduction, methods, results, and discussion of the research study. The report will include use of appropriate 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. The final research report is worth 35% of the grade.

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

Participation (CLO 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 required for successful completion of the research project and is worth 10% of the grade. Participation will be assessed by group evaluations at the end of the semester.

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 before each class. Please note that the Course Schedule is tentative and subject to change with fair notice, including assignment due dates.

Late work policy. Students should pay close attention to deadlines and start early on their assignments to avoid technical problems. Late assignments will be graded down 5% for each day that they are late. Students who miss a quiz due to circumstances beyond their control may make up the quiz within two days of the original time if they can provide a documented reason for the absence. Further extension will not be allowed without a serious reason and instructor approval.

✔ Grading Information

Breakdown

Assignment	Frequency	Points per assignment	Total points
Quiz	3	5	15
Lab activity	5	5	25

Poster presentation	1	10	10
Research report	1	35	35
Final exam	1	10	10
Participation	1	5	5
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/).

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 skills. 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 and readings	Assignments (due Friday 11:59pm)
1: 1/23	1/23: Course introduction and orientation	Orientation Quiz Beginning Semester Survey

2: 1/28-1/30	1/28: Science of Psychology (Chapter 1) 1/30: Overview of Scientific Method (Chapter 2 pt1: 7-10) Lab 1: Literature search	
3: 2/4-6	2/4: Overview of Scientific Method (Chapter 2 pt2: 11-14) 2/6: Research Ethics (Chapter 3) Lab 2: Literature review; identifying research questions	**Activity 1**: Research topic, list of literature
4: 2/11-13	2/11: **Quiz 1** (Chapters 1-3); Baumeister et al. (2007) 2/13: Psychological Measurement (Chapter 4) Lab 3: Sampling and measures	**Activity 2**: Literature summary
5: 2/18-20	2/18: Non-Experimental Research (Chapter 6) 2/20: Survey Research (Chapter 7) Lab 4: Study design; refining research questions	**Activity 3**: Background and research question
6: 2/25-27	2/25: Experimental Research (Chapter 5) 2/27: Quasi-Experimental Research (Chapter 8) Lab 5: Conducting experiments; research proposal	
7: 3/4-6	3/4: Factorial Designs (Chapter 9) 3/6: Roediger & Karpicke (2006) Lab 6: Interpreting research findings; research proposal	**Activity 4**: Research proposal
8: 3/11-13	3/11: **Quiz 2** (Chapters 4-9); Boot et al. (2013) 3/13: Single-subject Research (Chapter 10) Lab 7: Data collection	

9: 3/18-20	3/18: Tackett et al. (2017) 3/20: Presenting Research (Chapter 11) Lab 8: Data collection	
10: 3/25-27	3/25: Descriptive Statistics (Chapter 12) 3/27: Data Summary Lab 9: Descriptive statistics and correlations	
11: Spring Break		
12: 4/8-10	4/8: Inferential Statistics (Chapter 13) 4/10: Shrout & Rodgers (2018) Lab 10: t-tests, ANOVA	
13: 4/15-17	4/15: **Quiz 3** (Chapters 10-13) 4/17: Data Analysis Lab 11: Linear regression	**Activity 5**: Preliminary data summary
14: 4/22-24	Presentation preparation Lab 12: Q&A	**Poster**
15: 4/29-5/1	Poster presentations Lab 13: Research report preparation	
16: 5/6-8	Research report preparation Lab 14: Q&A	**Research report** Group contribution evaluation
17: 5/20	**Final exam** May 20, 8:30-10:30am	