

PSYC 314L: Experimental Research Methods

Units: 4

Term—Day—Time: Spring 2021—Weds—8:30–9:50 pm +

Asynchronous learning Lab Sections Day—Time:

(Section 52516R) Thursday—10:00–11:50 am (Section 52517R) Friday—2:00–3:50 pm **Location:** Zoom (Links on Blackboard) **Lab Locations:** Zoom (Links on Blackboard)

Instructor: Hok Chio (Mark) Lai

Office: Home

Office Hours: Mon & Weds 10:00–11:00 am, and by appointment

Email: hokchiol@usc.edu

(will respond to all emails within 48 hours)

Teaching Assistant and Lab Instructor: Erin Ryan

Office: Home

Office Hours: Weds 10:00 am-12:00 pm

Email: erinryan@usc.edu

(will respond to all emails within 48 hours)

Blackboard Help: http://studentblackboardhelp.usc.edu/

Contact Info: blackboard@usc.edu, 213-740-5555

Course Description

You probably have learned a lot of fascinating findings from previous psychology courses, but how do we know those findings are true? Actually, the credibility of such findings is largely based on psychology being a science. Science requires specific methods that test, support, or disconfirm hypotheses to provide supporting or disconfirming evidence to theory. The experimental method, in particular, is at the core of the scientific methods used by psychologists. Therefore, the course you are about to take is one of the most important courses in psychology. Although this course is not content-specific, the knowledge and content of the course can be applied to any specific course in psychology and neuroscience. In this course, you will learn about the philosophy of science, the different components of psychological research, different experimental designs, the writing of a research proposal adhering to the Publication Manual of the American Psychological Association, and data analysis of experimental data, through lectures, class discussions, and lab exercises.

Learning Objectives

After the successful completion of this course, students will be able to . . .

1. Describe the scientific foundation of psychological research and the importance of experimental methods in psychology;

- 2. Critically evaluate reports of psychological studies in both scientific papers and popular media;
- 3. Perform scholarly activities in the research process, including peer review, data analysis, revision, etc.;
- 4. Design and carry out a rigorous psychological experiment;
- 5. Communicate their research in the forms of an academic research report and oral presentation.

Prerequisite(s): PSYC 100: Introduction to Psychology, PSYC 274: Statistics

Co-Requisite(s): None

Concurrent Enrollment: None

Recommended Preparation: Experience with statistical software (SPSS, R, etc.) and APA

style

Course Notes

This class will be using a hybrid/flipped class format, with both asynchronous and synchronous components. Specifically, students will be given pre-recorded lecture videos on the Monday of a given week, and you can watch them on your own time before the class meeting on Wednesday. That said, research on online learning generally suggested learning is best if you have a set schedule every week, so I highly encourage you to dedicate a specific time block to review the assigned reading, lecture videos, and other course materials. Lecture slides/notes will be posted on Blackboard before class meetings, but please note that the lecture slides only serve to guide class discussions and cannot replace the assigned readings.

For the synchronous component, students are expected to attend and participate in the live **Zoom session on Wednesdays at 8:30–9:50 am**. Before attending the synchronous sessions, you are expected to have reviewed the reading assignments and the posted lecture videos in order to participate in the class activities on Wednesdays.

For the lab Zoom sessions, the goal is for you to acquire the knowledge, skills, and tools to finish the lab assignments. The lab instructor will give demonstrations and short lectures to build your skills, and you will spend the remaining times to work on the assignments.

Communication

To promote independence and critical thinking, students are encouraged to work through the following process for obtaining answers to course-related questions:

- consult the course syllabus;
- consult a classmate or post your questions on Slack;
- meet with the instructors during Zoom office hours;
- ask your questions during the synchronous class session (Wednesday 8:30-9:50) or the lab session; and
- for personal questions, email Mark (hokchiol@usc.edu) and/or Erin (erinryan@usc.edu). We will respond to all emails within 48 hours.

Technological Proficiency and Hardware/Software Required

Zoom

The Zoom link for the class and the lab session can be found on Blackboard (see "USC Zoom Pro Meeting" on the left navigation pane).

Blackboard

This course requires the use of Blackboard for accessing lecture materials and additional readings, taking quizzes, and submitting assignments. Please make sure you have stable Internet speed when taking quizzes. The course site is https://blackboard.usc.edu/ (20211_psyc_314_52515).

Statistical Software

You will need to use SPSS, R, or Jamovi to complete some of the lab assignments.

Other Software

Microsoft Word, PDF reading program, etc.

USC Technology Support Links

Zoom information for students

Slack information for students

Blackboard help for students

Software available to USC Campus

Required Readings and Supplementary Materials

Goodwin, K. A., & Goodwin, C. J. (2016). *Research in Psychology: Methods and Design* (8th ed.). Hoboken, NJ: Wiley.

Other required and supplemental readings will be provided weekly on Blackboard.

Description and Assessment of Assignments

Weekly Quizzes (10%) [For learning objectives #1, #4]

To ensure you complete the reading assignments for each week, starting from week 2, every week you will complete a quiz on Blackboard, except for the two weeks of exams. There will be a total of 12 quizzes. Each quiz typically consists of 4 to 8 multiple choice questions drawn from the assigned readings.

To accommodate any technical issues and to facilitate your learning, for each quiz you can have <u>two attempts</u>, and only the one of a higher score counts towards your final grade. **The two lowest scoring quiz will be dropped**.

All quizzes are due the day before the class meetings on Wednesday (i.e., **11:59 pm Pacific Time on Tuesday**), with the exception of Quiz 1 (due Friday).

Participation (Class + Lab, 10%) [For learning objectives #1, #2, #4]

As a record of active participation and attendance, during the Wednesday Zoom sessions students will complete Breakout room exercises. No points if given if you attend less than

50 minutes of the Wednesday Zoom session. Lab participation will be graded based on the completion of a specific lab assignment or demonstration that will take place in each lab, as determined by the lab instructor.

If students miss a session for any reasons (including time zone differences), they can complete an alternative assignment within 24 hours after the synchronous session (i.e., Thursday 10:00 am, Pacific Time) to get credits.

Open-Book Examinations (10% × 2) [For learning objective #1]

There will be two online exams to test your understanding of the course materials. The first exam will cover materials from Week 1-4 and the second exam will cover materials from Week 5-9. The exams will consist of multiple choices and short answer questions based on the lecture material, textbook, class discussions, and lab assignments. You may be tested on materials from the readings that I do not cover in lecture. Like quizzes, you can use any course material during the exams, but your responses have to be your own work, and copying other classmates' responses is considered a form of academic dishonesty.

The exam dates are **February 17 and March 17**. Each exam will be available on Blackboard from 8:00 am to 11:59 pm Pacific time on the exam date. The exam is timed; once you start the exam, you will have **120 minutes** to complete it.

If you haven't taken a Blackboard exam, read the "Advicefor StudentsTaking a Blackboard Test" here:

https://blackboardhelp.usc.edu/files/2012/03/Tests Avoiding Issues BB91.pdf

Lab Assignments (30%) [For learning objectives #2, #3, #4, #5]

For each lab session, there will be an assignment designed to equip yourself with the necessary knowledge, skills, and tools to complete your research proposal and final research paper. Each lab assignment typically targets a specific component of psychological research methods, such as literature search, ethical analyses, and data analysis. Some lab assignments will be individual work while others will be completed by the same groups as for the final research paper and the presentation.

Each lab assignment should be submitted through Blackboard before the next lab session (i.e., **Thurs 9:59 am or Fri 1:59 pm** Pacific Time depending on the sessions). Detailed instructions for completing each lab assignment will be provided during the lab session, and it is your responsibility to read them carefully and follow the instructions.

Individual Research Proposal (5%) [For learning objectives #2, #4, #5]

A major assignment of this course is the completion of an individual research report. You will work in groups of 4 people to complete the research project, but you will write the proposal and final paper individually. The group will work collaboratively throughout the semester on some lab assignments, data collection, as well as the research presentation;

however, each student should have different research questions with the same data. Your proposed experiment has to employ a factorial design and includes two independent variables. In your research proposal, you should clearly state the research problem, review key literature in the broader theoretical framework, explain how your proposed study builds on the existing literature, specify your research questions and hypotheses, report your proposed research design and measurement of variables, formulate a plan for data analysis, and discuss any limitations. Your proposal should adhere to the Publication Manual of the American Psychological Association (APA 6th ed., 2010), and be 5 to 12 pages long (double-spaced, excluding title page, abstract, references, tables and figures, footnotes, appendices, and any other supplemental materials).

The proposal will be due before the **Week 9 lab session** (March 18/19) on Blackboard.

Individual Final Research Report (15%) [For learning objectives #2, #4, #5]

The final research report should expand on the research proposal and include reports of your data analyses and discussion of your findings. It should adhere to the Publication Manual of the American Psychological Association (APA 6th ed., 2010), and be 8 to 12 pages long (double-spaced, excluding title page, abstract, references, tables and figures, footnotes, appendices, and any other supplemental materials).

The final research report will be due on Blackboard on **Tuesday, May 10, 1:00 pm Pacific Time** (which is the designated final exam time for this course).

Group Research Presentation (10%) [For learning objectives #4, #5]

Each group will give a presentation of their research design and findings in a professional conference setting. You can choose to do your presentation live, or pre-record a presentation for the instructor to show during the Zoom sessions; however, you must be present during your assigned presentation time to answer questions. Also, you are required to listen to everyone's presentation and ask thoughtful questions. A grading rubric on the research presentation will be posted on Blackboard.

The presentation dates will be the last week of class, that is, **Monday April 26 and Wednesday April 28.**

Grading Breakdown

Assignment	% of Grade
Weekly Quizzes	10
Participation (Class + Lab)	10
Examinations	
Exam 1	10
Exam 2	10
Lab Assignments	30
Research Proposal	5
Final Research Report	15
Research Proposal Presentation	10
Total	100

Grading Scale

Course final grades will be determined using the following scale.

Α	93.5-100	B-	79.5-83	D+	66.5-69
A-	89.5-93	C+	76.5-79	D	63.5-66
B+	86.5-89	С	73.5-76	D-	59.5-63
В	83.5-86	C-	69.5-73	F	59.5 and below

Course-specific Policies (Assignment Submission, Grading Timeline, Late work, and Technology)

Assignment Submission

The lab assignments and research proposal drafts should be submitted through Blackboard.

Grading Timeline

Generally, all graded work will be returned no later than two weeks from the submission deadline.

Late work

In general, late work will not be accepted. In rare, exceptional circumstances (where appropriate documentation is provided), the exams or assignments may be accepted late at the sole discretion of the instructor. Please obtain prior, written consent if possible. Quizzes will never be accepted late; however, the lowest quiz score will be dropped to allow for unforeseen circumstances that may occasionally prevent timely submission.

Technology in the Zoom sessions

Students can use their phone or laptop/computer to connect to the Zoom session, but use of other devices for purposes not related to the course is prohibited.

Zoom ettiquette

Students are expected to actively participate in the exercises and discussions during the synchronous sessions. It is okay to join using your phone. Given the class size, students are required to mute their microphones when not speaking. It is okay to eat during the synchronous sessions (as long as you can still actively participate and not distracting the class). Students can use the chat box and the raise hand feature in Zoom to indicate their questions or other things they want to say. Students are encouraged to contact the instructor with questions or concerns about complying with a policy. On having cameras on

On having cameras on

To facilitate a sense of community for the class, students are encouraged to have their cameras on during the synchronous sessions, especially for the first few minutes when they can see their classmates and during the breakout sessions, if possible. Students are encouraged to use the virtual background function on Zoom for privacy concerns. However, it is understood that some students may find it challenging to have their cameras on, so this is not a strict requirement.

Synchronous session recording notice

Per USC's policy, the synchronous sessions will be recorded and provided to all students asynchronously.

Academic integrity

Cheating on course assignments, including quizzes, lab assignments, and examinations, will result in an F grade for the course. For individual assignments, each student is expected to complete their own work. For group assignments, each group member is expected to provide equal input.

Attendance

Students are encouraged to attend all class and lab sessions on time.

Classroom norms

- Listen actively and attentively without interrupting
- Respect each other's views
- Support critique with evidence, or speak from personal experience
- Don't dominate the discussion

Course evaluation

Student feedback is absolutely essential to the instructors and the Department to keep improving this course. Students are encouraged to share their feedback and suggestions in an early-term feedback survey on Blackboard around week 5, and respond to the standard USC course evaluation survey at the end of the semester.

Course Schedule: A Weekly Breakdown (Class)

	Topics/Daily Activities	Readings	Deliverable/ Due Dates
Week 1 Jan 20	Course overview Psychology as a science	Syllabus Goodwin chapter 1	• Quiz 1 (due <u>Jan 22</u>)
Week 2 Jan 27	Ethics in psychological research	Goodwin chapter 2	• Quiz 2 (due Jan 26)
Week 3 Feb 3	Developing research ideasReading psychological research reports	Goodwin chapter 3	• Quiz 3 (due Feb 2)
Week 4 Feb 10	 Introduction to Experimental Research Methods Threats to internal validity 	• Goodwin chapter 5 (pp. 130141, 149158)	• Quiz 4 (due Feb 9)
Week 5 Feb 17	Validity of psychological studiesReview week 1-4	• Goodwin chapter 5 (pp. 141149)	• Exam 1 (Feb 17)
Week 6 Feb 24	Measurement and construct validityDescriptive statistics	• Goodwin chapter 4 (pp. 96117)	• Quiz 5 (due Feb 23)
Week 7 Mar 3	Between-subjects designsWithin-subject designs	Goodwin chapter 6	• Quiz 6 (due Mar 2)
Week 8 Mar 10	Factorial designs (basic)Interaction effects	• Goodwin chapter 8 (pp. 219235)	• Quiz 7 (due Mar 9)
Week 9 Mar 17	Factorial designs (varieties)Review week 5-8	• Goodwin chapter 8 (pp. 235251)	• Exam 2 (Mar 17)
Week 10 Mar 24	 Open science and false positive psychology Effect size and sample size planning 	Simmons et al. (2011)Supplemental notes	• Quiz 8 (due Mar 23)
Week 11 Mar 31	ANOVA and inferential data analysis	Goodwin chapter 4 (pp. 117126)Goodwin chapter 7	• Quiz 9 (due Mar 30)
Week 12 Apr 7 (Wellnes day)	Reporting psychological research findings	Goodwin Appendix ASupplemental readings	• Quiz 10 (due Apr 6)
Week 13 Apr 14	Quasi-experimental and observational research	Goodwin chapter 11 (pp. 313331)Goodwin chapter 9	• Quiz 11 (due Apr 13)
Week 14 Apr 21	Giving oral presentations	• Kline (2009)	• Quiz 12 (due Apr 20)
Week 15 Apr 26 & 28	 Group research presentations (Monday and Wednesday) 		
FINAL			 Final Individual Research Report (due May 10, 1:00 pm) No written exam

Tentative Lab Schedule: A Weekly Breakdown

	Topics	Readings and Homework	Homework/ Due Dates
Week 1 Jan 21/22	APA StyleGet to know each other and think about forming groups	Lab Assgn 1 (Individual)	Jan 28/29 before lab
Week 2 Jan 28/29	Ethics in psychological researchEvaluating an article	Lab Assgn 2 (Individual)Bein & Bein (2012) chapter	Feb 4/5 before lab
Week 3 Feb 4/5	 Literature search Evaluating and summarizing an article Brainstorming research ideas 	Lab Assgn 3 (Individual)Bein & Bein (2012) chapterList of group members	Feb 11/12 before lab
Week 4 Feb 11/12	More literature searchWriting literature reviewSelecting variables for your study	• Lab Assgn 4 (Group)	Feb 18/19 before lab
Week 5 Feb 18/19	Writing the introductionFinalizing research topic	 Lab Assgn 5/Intro (Individual) 	Feb 25/26 before lab
Week 6 Feb 25/26	 Operationalizing your measurement PsycTESTS Designing experimental conditions 	Lab Assgn 6 (Individual)	Mar 4/5 before lab
Week 7 Mar 4/5	Writing the Method section	• Lab Assgn 7/Method section (Group)	Mar 18/19 before lab
Week 8	No lab (Wellness day on March 12);	work on proposal	
Week 9 Mar 18/19	Writing an abstractFinalizing the research proposal	 Research proposal (Individual) 	Mar 25/26 before lab
Week 10 Mar 25/26	Peer reviewInformed consent/Information SheetData collection	• Lab Assgn 8 (Individual/Group)	Apr 1/2 before lab
Week 11 Apr 1/2	Data collection (cont'd)Data managementData analysis	Lab Assgn 9 (Individual)	Apr 8/9 before lab
Week 12 Apr 8/Apr 9	Writing the Results section	Lab Assgn 10 (Individual)	Apr 15/16 before lab
Week 13 Apr 15/Apr 16	Writing the Discussion	Lab Assgn 11 (Individual)	Apr 23 before lab
Week 14/15 Apr 23/Apr 29	 Continue to work on the final research report No lab on Apr 22 and Apr 30 due to wellness days 		

The instructor reserves the right to change the schedule of topics and readings if necessary. Notice of such changes will be communicated to you via e-mails.

Statement on Academic Accommodations

Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to the instructor as early in the semester as possible. DSP is located in STU 301 and is open 8:30 a.m.—5:00 p.m., Monday through Friday. Website for DSP and contact information: (213) 740-0776 (Phone), (213) 740-6948 (TDD only), (213) 740-8216 (FAX) ability@usc.edu.

Statement on Academic Conduct and Support Systems

Academic Conduct:

USC seeks to maintain an optimal learning environment. General principles of academic honesty include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one's own academic work from misuse by others as well as to avoid using another's work as one's own. All students are expected to understand and abide by these principles. SCampus, the Student Guidebook, contains the University Student Conduct Code (see University Governance, Section 11.00), while the recommended sanctions are located in Appendix A.

Plagiarism – presenting someone else's ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in *SCampus* in Part B, Section 11, "Behavior Violating University Standards" policy.usc.edu/scampus-part-b. Other forms of academic dishonesty are equally unacceptable. See additional information in *SCampus* and university policies on scientific misconduct, https://policy.usc.edu/scientific-misconduct.

Discrimination, sexual assault, and harassment are not tolerated by the university. You are encouraged to report any incidents to the Office of Equity and Diversity https://equity.usc.edu/ or to the Department of Public Safety http://capsnet.usc.edu/department/department-public-safety/online-forms/contact-us. This is important for the safety whole USC community. Another member of the university community - such as a friend, classmate, advisor, or faculty member - can help initiate the report, or can initiate the report on behalf of another person. The USC Title IX website https://titleix.usc.edu/ describes reporting options and other resources.

Emergency Preparedness/Course Continuity in a Crisis:

In case of a declared emergency if travel to campus is not feasible, USC executive leadership will announce an electronic way for instructors to teach students in their residence halls or homes using a combination of Blackboard, teleconferencing, and other technologies. See the university's site on Campus Safety and Emergency Preparedness.

Support Systems:

Student Counseling Services (SCS) – (213) 740-7711 – 24/7 on call

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention. engemannshc.usc.edu/counseling

National Suicide Prevention Lifeline – 1 (800) 273-8255

Provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week. www.suicidepreventionlifeline.org

Relationship and Sexual Violence Prevention Services (RSVP) - (213) 740-4900 - 24/7 on call Free and confidential therapy services, workshops, and training for situations related to gender-based harm. engemannshc.usc.edu/rsvp

Sexual Assault Resource Center

For more information about how to get help or help a survivor, rights, reporting options, and additional resources, visit the website: sarc.usc.edu

Office of Equity and Diversity (OED)/Title IX Compliance – (213) 740-5086

Works with faculty, staff, visitors, applicants, and students around issues of protected class. equity.usc.edu

Bias Assessment Response and Support

Incidents of bias, hate crimes and microaggressions need to be reported allowing for appropriate investigation and response. studentaffairs.usc.edu/bias-assessment-response-support

The Office of Disability Services and Programs

Provides certification for students with disabilities and helps arrange relevant accommodations. dsp.usc.edu

Student Support and Advocacy – (213) 821-4710

Assists students and families in resolving complex issues adversely affecting their success as a student EX: personal, financial, and academic. studentaffairs.usc.edu/ssa

Diversity at USC

Information on events, programs and training, the Diversity Task Force (including representatives for each school), chronology, participation, and various resources for students. diversity.usc.edu

USC Emergency Information

Provides safety and other updates, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible. emergency.usc.edu

USC Department of Public Safety – UPC: (213) 740-4321 – HSC: (323) 442-1000 – 24-hour emergency or to report a crime.

Provides overall safety to USC community. dps.usc.edu