

# Psychology 310

## Research Methods

**Professor:** Andrew Brandt, PhD  
**Office:** 52-E Phillips Hall  
**Office hour:** Monday 12:00 – 1:00

**Teaching Assistant:** Brooke Hall  
**Open Tutoring:** Tuesday 12:00 – 1:00  
and Thursday 12:00 – 1:00  
**Location:** 16 Phillips Hall

### Course Materials

1. [\*Research Methods for the Behavioral Sciences 6<sup>th</sup> ed.\*](#) by Gravetter & Forzano
2. Course website: <http://go.owu.edu/~aebrandt/Documents.html>
3. Shared Drive: <https://drive.google.com/drive/folders/>
4. Blackboard course: <https://bb.owu.edu/>

**Prerequisite skills:** Students should know arithmetic operations and [basic algebra](#).

**Description:** The course introduces the fundamental methods of quantitative research in psychology. Students will learn how to design a research study, collect data from human participants, organize and analyze data using RStudio, and disseminate research results.

### Objectives adapted from the American Psychological Association

1. Describe the major research designs; articulate strengths and limitations
2. Complete a research project from development to dissemination
3. Become proficient in the use of a statistical software package
4. Follow APA Code of Ethics in the treatment of human participants
5. Recognize that theoretical and sociocultural contexts as well as personal biases may shape research questions, research designs, and data interpretation

### Organization

- Class periods with assigned textbook or tutorial material will be used to present and discuss key points; complete the assigned reading or tutorial prior to class
- Class periods for project topics will be used to develop students' research skills
- The research project will be completed in several phases: literature review, project development and proposal, data analysis, and APA-style report and presentation
- Exams may cover any course material, including the textbook, lectures, and tutorials

Coursework	
Reading Homework	5%
RMD Stats Reports	15%
Exams	30%
Research Project	50%

Grading Scale			
97% ≤ A+	87% ≤ B+ < 90%	77% ≤ C+ < 80%	67% ≤ D+ < 70%
93% ≤ A < 97%	83% ≤ B < 87%	73% ≤ C < 77%	63% ≤ D < 67%
90% ≤ A- < 93%	80% ≤ B- < 83%	70% ≤ C- < 73%	60% ≤ D- < 63%

## Course Schedule

Week	Day	Assigned Materials	Other Topics and Tasks
Week 1 Jan 10 - 14	Thur	Ch. 1 Introduction, Acquiring Knowledge, and the Scientific Method*	Project Guide: Developing a research replication project
Week 2 Jan 17 - 21	Tues	R Tutorial 0: Getting started with R and RStudio	R Markdown Stats Report 0 [In-class practice assignment]
	Thur	Ch. 2 Research Ideas and Hypotheses*	Project Guide: Lit. review
Week 3 Jan 24 - 28	Tues	Ch. 3 Defining and Measuring Variables* <a href="#">Types of qualitative and quantitative variables</a>	
	Thur	Ch. 4 Ethics in Research*	Project Guide: Developing a psychological research survey
Week 4 Jan 31 – Feb 4	Tues	Ch. 15 Statistical Evaluation of Data*	
	Thur	RT1: Import Your Data RT2: Wrangle and Explore Your Data	
Week 5 Feb 7 - 11	Tues		R Markdown Stats Report 1-2 [In-class assignment] Project Conferences
	Thur	Ch. 16 Writing an APA-Style Research Report* SUBMIT literature review, conceptual definitions and hypotheses, operational definitions and hypotheses, and references	Project Guide: APA-style research proposals and reports Project Guide: Generating and reporting projected results
Week 6 Feb 14 - 18	Tues	Ch. 6 Research Strategies and Validity*	
	Thur	RT3: Visualize the Relationships in Your Data RT4: Build Behavioral Models from Your Data Read: <a href="#">Simple Linear Regression</a> Read: <a href="#">Multiple Linear Regression</a>	
Week 7 Feb 21 - 25	Tues		R Markdown Stats Report 3-4 [In-class assignment] Project Conferences
	Thur	Ch. 7 The Experimental Research Strategy* SUBMIT survey items in Qualtrics format SUBMIT projected results in RMD report PRESENT project proposal (10 min)	Open online survey
Week 8 Feb 28 – Mar 4	Tues	<b>Exam 1</b>	
	Thur	Open Conferences	
Spring Break			

Week 9 Mar 14 - 18	Tues	Ch. 8 Experimental Designs: Between-Subjects Design*	Project Guide: APA-style intro, method, and results
	Thur	RT5: Build Models with Interaction Effects Read: <a href="#">Interpret Regression Interactions</a>	Close online survey
Week 10 Mar 21 - 25	Tues		R Markdown Stats Report 5 [In-class assignment] Project Conferences
	Thur	Ch. 9 Experimental Designs: Within-Subjects Design*	Project Guide: Data analysis and interpretation
Week 11 Mar 28 – Apr 1	Tues	Ch. 11 Factorial Designs*	
	Thur	RT6: Model Comparisons Read: <a href="#">Regression Model Comparisons</a>	
Week 12 April 4 - 8	Tues	Ch. 10 The Nonexperimental and Quasi-Experimental Strategies*	Project Guide: Poster presentations
	Thur	Ch. 12 The Correlational Research Strategy* SUBMIT APA-style abstract, introduction (5 pages), method (1 page), results (1 page), figures, and references SUBMIT final R Markdown project report	Project Conferences
Week 13 April 11 - 15	Tues	Read and evaluate assigned project articles	
	Thur	Read and evaluate assigned project articles SUBMIT research poster draft	Project Conferences
Week 14 April 18 - 22	Tues	Read and evaluate assigned project articles	
	Thur	Read and evaluate assigned project articles SUBMIT final APA-style research poster	
Week 15 April 25 - 29	Tues	Exam 2	
Finals Week		PRESENT research poster Saturday, April 30 from 9:30 – 11:30 am	
<p>*Graded reading homework is assigned for each textbook reading assignment; students are encouraged to complete the homework prior to class, but the actual due date is shown in Blackboard</p> <p>SUBMIT means “Submit prior to class”</p> <p>PRESENT means “Present during class time”</p>			

**Course Grade:** A student's final grade will be determined by their academic performance and other factors (such as attendance, see below). Students may request that the professor review and reconsider the evaluation of their academic performance. Such requests may result in no grade change, a higher grade, or a lower grade. After receiving the results of a regrade request, a student who believes their grade still does not adequately reflect their academic performance should follow the steps described in the "Academic Grievance Policy" in the "Academic Regulations and Procedures" section of the OWU Course Catalog.

If any circumstance adversely affects a student's ability to complete any part of the coursework, it is the student's responsibility to promptly inform the professor and provide a justification. Coursework will not be accepted late without a justification approved by the professor.

**Attendance:** Regular attendance is required to pass this course. A student who accumulates five unexcused absences at any point during the semester and does not withdraw from the course will receive a final grade of "F" (also see the "Attendance" policy in the "Academic Regulations and Procedures" section of the OWU Course Catalog). One unexcused absence from a project presentation will also result in a final grade of "F" for this course.

When the need for an absence is documented in advance, students will be granted an excused absence for University-sanctioned events such as theatrical and musical performances, field trips associated with classes, and intercollegiate athletic contests as well as certain personal events such as scheduled medical procedures, jury duty, and funerals. In cases where advance notice is not possible, such as an unexpected illness, the student should consult student affairs and/or student health services to determine whether they are able to attend class. When it is determined that a student should not attend class, the student should request that the staff send notification to the instructor indicating the absence should be excused.

**Respect for the In-Class Experience:** Most students attend class because they wish to participate in the lecture and discussion, learn something new, and do well in the class. All students are expected to respect the right to a quality learning environment, which does not include talking, emailing, text messaging, checking social media, or disruptive behaviors while the instructor or another student has the floor. Any student who fails to respect this right will be asked to leave class. Repeated violations of this policy will result in a lowered course grade.

**Direct Instruction and Out-of-Class Work:** The usual 1-credit course spans 15 weeks with 3 to 4 hours of direct instruction delivered each week. Federal regulations require that students be responsible for an additional 6 hours of out-of-class work each week. Our compliance with the federal guidelines is monitored by our accreditation body, the Higher Learning Commission. [Code of Federal Regulations, Title 34, §668.8](#)

**Academic Honesty.** Students are responsible for understanding the policies and procedures in the OWU [Student Handbook](#), especially those related to academic honesty. **Ignorance of these policies will not be accepted as an excuse for academic dishonesty** so students are encouraged to carefully review the definitions provided in the handbook, which include cheating, fabricating,

facilitating, and plagiarizing. Students should consult their professor, academic advisor, or Dean of Academic Affairs if they are uncertain about any section of the academic honesty policy.

If the professor believes that a student has violated one or more academic honesty policies, the student may be penalized through a reduction in course grade. If a penalty is delivered to the student, the professor will send a report of the alleged violation with supporting evidence and a description of any penalty to the Dean of Academic Affairs. Multiple violations may result in a permanent record of academic dishonesty added to the student's official OWU transcript.

**Equal Opportunity in Education.** Your professor is committed to equal opportunity in education for all students, including those with documented physical or mental disabilities. The professor will meet with students individually or with other university staff to ensure that students receive the appropriate accommodations.