

# Scientific Thinking in Psychology (PSY 301)

## Course Syllabus

Summer 2019, University of Oregon

Location: 232 LIL

10:00-11:50am

Monday-Thursday



*Summer Session III (Four Weeks from August 19 – September 15)*

### Instructors:

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Lecture Weeks 1 & 2

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Lecture Weeks 3 & 4

All office hours are by appointments.

**\*Note: this class has two instructors**

### Table of Contents

Course Schedule.....	2
Orientation to Course Mindset.....	3
Learning Outcomes.....	3
Course Materials.....	4
Assignments.....	4
Assignment Details.....	5
Reading Assignments.....	5
Attendance/Participation.....	5
In-Class Activity Assignments.....	5
Exams.....	5
Research Consumer Papers .....	6
Extra Credit .....	6
Grades.....	7
Course Expectations.....	7
Student Workload.....	7
Special Accommodations.....	7
Accessible Education Center.....	8
Students for whom English is a second language.....	8
Academic Integrity.....	8
Classroom Etiquette.....	8

**COURSE SCHEDULE \* Schedule is subject to change at any point\***

Week	Date	Topic	Reading To Do Before Class	In-Class Activity
1	M 8/19	Course Overview, Thinking Like a Scientist	Ch. 1	Orientation and Overview  Research Consumer Paper 1 Introduced
1	T 8/20	Why Do Research?	Ch. 2  Roediger & Gallo	AA1, Using Databases
1	W 8/21	Overall Framework: Three Claims, Four Validities	Ch. 3  WaPo Rich People Study & Bike Helmet Study	AA2
1	T 8/22	Measurement and Reliability	Ch. 5 Iacoboni et al.	<b>EXAM 1</b>
<i>Research Consumer Paper 1 Due on Canvas Sunday 8/25 @ 11:59pm</i>				
2	M 8/26	Surveys and Observations	Ch. 6 Article TBD	
2	T 8/27	Sampling and Bivariate Correlation	Ch. 7 & 8	AA3
2	W 8/28	Multivariate Correlation	Ch. 9	
2	R 8/29	Review Day and Exam		<b>EXAM 2</b>
3	M 9/2	Experimental Designs	Ch. 10	Research Consumer Paper 2 Introduced
3	T 9/3	Confounds and Other Problems	Ch. 11	AA4
3	W 9/4	Complex Designs, Factorial Variations	Ch. 12	AA5
3	R 9/5	Review and Exam	--	<b>EXAM 3</b>

<i>Research Consumer Paper 2 Due on Canvas Sunday 9/8 @ 11:59pm</i>				
4	M 9/9	Sampling & Ethics	Ch. 4	AA6
4	T 9/10	Quasi-Experimental Designs, Field Studies	Ch. 13 Caildini (2009)	Field Study Activity
4	W 9/11	Replicability and Generalization	Ch. 14	John Oliver Segment
4	R 9/12	Wrap-up and Exam	--	<b>EXAM 4</b>

**\*Note Exam 5 (a cumulative final) will be offered via Canvas during finals week, exact time TBD.**

AA - In-class activity assignment that counts for points.

### **ORIENTATION TO COURSE MINDSET**

"Follow the data" is a core principle in all sciences. In this course, you will learn how to "follow the data" to make sense of human behavior and think like a psychologist. You will acquire the fundamentals of how to evaluate new knowledge about human behavior by carefully considering the properties of data collected from human beings. We will consider all aspects of an empirical endeavor, from formulating a testable scientific hypothesis, to collecting relevant and valid data, to analyzing and communicating these data, to asking what's next. Making sense of how and why people feel, think and act the way they do is something we all do everyday -- in this course, we will learn how to give ourselves the best shot at making conclusions that are true. Whether we read about others' discoveries or make our own, we should follow the data.

PSY 301 meets the criteria of a Group-Satisfying Science (SC) course by introducing you to the fundamental methods that are used in psychological science and demonstrating the way knowledge is created in the field. The course emphasizes the critical thinking skills that are essential for informative scientific endeavors. The course addresses upper division science group criteria by encouraging the specific application of general scientific principles and skills; for example, by requiring you to evaluate claims about human behavior that appear in scientific articles as well as in the media. The evaluation methods used in this course will measure a high level of understanding by expecting you to continually practice and apply sophisticated empirical thinking skills.

This course is the first course in the PSY 301-303 sequence for psychology majors. Majors will be building critical thinking skills and an understanding of how knowledge is generated in psychological research in preparation for acquiring data analysis skills in PSY 302. In PSY 303 you will be using the skills you gained in PSY 301 and PSY 302 to design, implement, analyze, draw conclusions from, write up, and present scientific research in psychology.

## LEARNING OUTCOMES

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You will develop many skills in this course. By the end of this course you should be able to:

- ♦ **Think.** Think like a scientist when you read science headlines – you will become a sharper consumer of scientific discoveries. Follow the data by searching for evidence, rather than just accepting claims you encounter.
- ♦ **Find.** Find key ideas and evidence in scientific literature and media reports. Identify research questions, hypotheses, research design, and evidence in scientific articles and news articles.
- ♦ **Show.** Show how evidence does or does not support an interesting hypothesis about human behavior. Critically evaluate research designs and the quality of evidence presented in scientific articles.
- ♦ **Tell.** Communicate clearly and effectively about psychological research, including methodological and ethical issues in psychology, based on an understanding of both the strengths and limitations of empirical evidence.

## COURSE MATERIALS

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♦ **Textbook:** Morling, B. (2018). *Research Methods in Psychology: Evaluating a World of Information* (2<sup>nd</sup> or 3<sup>rd</sup> ed.). New York: Norton. The textbook has a website with supplemental materials that may be helpful for your studying:  
<http://wwnorton.com/college/psych/research-methods-in-psychology/>

♦ **PDF files on Canvas:** Additional readings and materials will be posted on our Canvas site. See reading list at the end of the syllabus for full references.

♦ **Smartphone/Laptop/Tablet:** We will use an online tool (Polleverywhere) for attendance and in-class questions and activities. Make sure to bring your smartphone! (or laptop/tablet if you don't have a smartphone) If accessing one is an issue for you, please contact us.

## ASSIGNMENTS

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Assignment	Detail	Grade %
Participation/Attendance	Polleverywhere Questions, Participation	7% (Polling/Attendance) 3% (Participation)
In-Class Activities	Activity Assignments	10%
Exams	In-Class, Multiple Choice and sometimes Short Answer (4 required, 5 offered)	60% - 15% each
Consumer Research Papers	Critical reviews papers (2)	20% - 10% each
<b>Total</b>		<b>100%</b>

## ASSIGNMENT DETAILS

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### Readings

You should complete the assigned reading *before* coming to class. The textbook is accessible and engaging. Although the reading load will be relatively demanding, it should be fun and rewarding to do. Material from the readings will be tested via exams, and you will also apply principles from the readings to your activity assignments.

### Attendance/Participation

You will be asked to participate in class exercises using your iClicker to get credit for each day you attend lecture. While you will have some free “miss” days/points, you shouldn’t use them unless absolutely necessary; if you skip class, you will miss important information. **Important note on iClickers: You are required to have an iClicker and register it on Canvas during the first day or two of class, or you may begin to lose attendance points.**

### In-Class Activity Assignments

These are a fun way to work through the material as we go, and also serve to break up the monotony of lecture. You will be expected to build your skills consistently throughout the term. These activity assignments (or AAs) are designed to help students learn to grapple with the empirical process – they are hands-on exercises that involve critically evaluating empirical claims and connecting these claims to data. You will receive specific written instructions for each assignment. These assignments, administered in class, will help you practice the kinds of questions that will later be asked on exams.

Your best bet is to attend lectures every week as this will help you build skills with your instructor and fellow student colleagues. These activities are meant to be fun and engaging, and a little challenging.

### **Exams**

There will be five exams offered throughout the term. You only need to take four (your four highest scores will count). These will consist of conceptual and applied multiple-choice questions and sometimes one or two short-answer questions, similar to the exercises we work on in class. The exams will cover all material from class and the readings since the previous quiz.

### **Research Consumer Papers**

A key objective of this course is to learn how to be an informed consumer of psychological research. You will gain practice critically evaluating empirical claims, connecting these claims to data, and communicating about psychological research by completing two paper assignments. The first paper assignment will require you to read and summarize empirical research, identify the claim the scientists are trying to make, and critically evaluate media coverage of that research. For the second paper assignment, you will critically evaluate empirical research using the skills and knowledge you have acquired in the course. *See the course schedule for more details.* You will receive specific written instructions for each paper assignment.

Research consumer papers must be submitted on Canvas by the due date. Late papers will be penalized by appx 50% regardless of when they are submitted, and no papers will be accepted more than 1 week late without some documented medical or family emergency.

### **Extra Credit**

You can earn extra credit in this course by serving as a participant in the Psychology Human Subjects Pool. If you decide to participate in psychological research, you will earn 1% of extra credit toward your final grade in the course for each hour you participate, up to a maximum of 2% (credits beyond the maximum of 2 will not be counted). For example, 2 hours of credit would increase a final grade of 79% up to an 81%, giving you a B- for the course instead of a C+. To participate, follow the guidelines for the Human Subject Pool posted at <https://psychology.uoregon.edu/research/human-subjects-pool/>. Students who prefer not to participate in the Psychology Human Subjects Pool can instead collect extra credit by writing a short paper. If this is your preference, please see me to discuss the details of the requirement. Again, the maximum amount of extra credit that can be earned in the course is 2%. All extra credit work must be completed by Friday, September 13th.

## Grades

Grades will be distributed as follows:

A		B		C		D		F
A+	99-100%	B+	87-89.99%	C+	77-79.99%	D+	67-69.99%	0-59%
A	93-98.99%	B	83-86.99%	C	73-76.99%	D	63-66.9%	
A-	90-92.99%	B-	80-82.99%	C-	70-72.99%	D-	60-62.99%	

Please see the psychology department guidelines for a description of the type of achievement that each grade signifies:

<http://psychology.uoregon.edu/courses/departments-grading-standards/>

## COURSE EXPECTATIONS

**Class attendance is essential to your success in this course.** Attendance will be tracked using iClickers. Class sessions will focus on developing your skills as consumers of psychological research, but they will also provide you with tools necessary for being producers of research. This course promotes active learning through discussion, in-class exercises and activity assignments. When in class, you should stay engaged with the material rather than just going through the motions. Do the in-class exercises. Ask questions. Take notes. Go to office hours. Come to class **prepared**. Read the assigned readings prior to class, think about what you read, and bring questions if you have them. You will not do well on exams and assignments if you do not keep up with the reading.

## STUDENT WORKLOAD

When you complete this course, you will earn 4 credits toward your degree. Four credits is the equivalent of 120 hours of work across the term, or 30 hours per week for 4 weeks. You will spend about 8 hours in class each week. The other 22 hours will be spent doing a combination of the following: completing readings (about 1-2 hours per class), working on assignments (most importantly the papers, which should take up the bulk of your outside-of-class time), and studying for the exams. The workload will be relatively steady throughout the term, as we build skills through regular assignments and consolidate knowledge through regular exams and assignments.

## SPECIAL ACCOMMODATIONS

### Accessible Education Center (AEC)

If you have a documented disability and anticipate needing accommodations in this course, please notify me as soon as possible. Also, please request that a counselor at the Accessible Education Center ([uoaec@uoregon.edu](mailto:uoaec@uoregon.edu), 541-346-1155) send a letter verifying the type of accommodation that is appropriate. For a list of resources provided by the Accessible Education Center, please see <http://aec.uoregon.edu>.

### **Students for Whom English is a Second Language**

If you are a non-native English speaker and think you may have trouble in this course due to language difficulties, please see us as soon as possible to make any necessary special arrangements.

### **ACADEMIC INTEGRITY**

We take academic integrity seriously. **All work submitted in this course must be your own.** Cheating includes providing or accepting information on an exam or assignment, or allowing someone else to copy your work. In addition, lying to try to get points (e.g., lying about having turned in an assignment on time) is considered academic dishonesty and will be treated as cheating. Plagiarism means copying someone's written work without proper citation (this includes your classmate's work, scholarly articles, Wikipedia, or other websites).

All instances of cheating and plagiarism will have serious consequences. You will receive a zero on the assignment and be reported to UO's student conduct coordinator. If the offense is serious, you will receive an F in the course.

Simply put: **Don't cheat and don't plagiarize.** You will be mad at us, and (hopefully) disappointed in yourself. It's not worth it. If you have any questions about what constitutes academic dishonesty, please ask us.

For more information, see the UO website regarding academic honesty at:

<http://uodos.uoregon.edu/StudentConductandCommunityStandards/AcademicMisconduct.aspx>

### **CLASSROOM ETIQUETTE**

As a courtesy to your instructor and to your fellow classmates, please arrive on time for class and stay for the duration of the class period. Getting up in the middle of class is very disruptive. Please turn off cell phones and any electronic devices that might be distracting to others at the beginning of class. Treat your fellow students and your instructor with respect.

### **Resources and Respect**

#### Prohibited Discrimination and Harassment Reporting

Any student who has experienced sexual assault, relationship violence, sex or gender-based bullying, stalking, and/or sexual harassment may seek resources and help at [safe.uoregon.edu](http://safe.uoregon.edu). To get help by phone, a student can also call either the UO's 24-hour hotline at 541-346-7244 [SAFE], or the non-confidential Title IX Coordinator at 541-346-8136. From the SAFE website, students may also connect to Callisto, a confidential, third-party reporting site that is not a part of the university.

Students experiencing any other form of prohibited discrimination or harassment can find information at [respect.uoregon.edu](http://respect.uoregon.edu) or [aaeo.uoregon.edu](http://aaeo.uoregon.edu) or contact the non-confidential AAEO office at 541-346-3123 or the Dean of Students Office at 541-346-3216 for help.

As UO policy has different reporting requirements based on the nature of the reported harassment or discrimination, additional information about reporting requirements for



discrimination or harassment unrelated to sexual assault, relationship violence, sex or gender based bullying, stalking, and/or sexual harassment is available at [http://aaeo.uoregon.edu/content/discrimination-harassment\(link is external\)](http://aaeo.uoregon.edu/content/discrimination-harassment(link is external)). Specific details about confidentiality of information and reporting obligations of employees can be found at [https://titleix.uoregon.edu\(link is external\)](https://titleix.uoregon.edu(link is external)).

#### Mandatory Reporting of Child Abuse

UO employees, including faculty, staff, and GEs, are mandatory reporters of child abuse. This statement is to advise you that that your disclosure of information about child abuse to a UO employee may trigger the UO employee's duty to report that information to the designated authorities. Please refer to the following links for detailed information about mandatory reporting: <https://hr.uoregon.edu/policies-leaves/general-information/mandatory-reporting-child-abuse-and-neglect/presidents-message>