Psychology 343
Statistical Methods in Behavioral Science
Spring 2022
CRN 33132

Instructor: Julie J. Chen, Ph.D	Email: jchen10@uic.edu
Office: BSB 1056B	Phone: (312) 996 -2231

Student Drop-in hour: W 9 – 10am @ Zoom
https://uic.zoom.us/j/9886337102?pwd=Z1pyaU9uWS91TWJ5U29ka2VQWm5Ldz09

Lecture time: TR 12:30 – 1:45pm @ BSB 140

Format of class:
In Spring 2022, Psch 343 is scheduled to meet in-person for both the lecture portion and the discussion portion. However, the pandemic makes the situation very fluid and we might need to make adjustments from time to time. If anything changes, I will email the class as soon as I'm notified. Please check your email frequently to be kept up-to-date. We will closely monitor the situation and observe the UIC protocols.

In–person classes Covid-related protocols:
• Vaccination is required for all on-campus classes. Individuals who have a vaccination exemption will be required to participate in the Covid-19 saliva testing program;
• Indoor masking is required for everyone regardless of your vaccination status;
• All are required to take a re-entry Covid test before returning to campus;
• All are required to obtain a vaccine booster when they are eligible;
Please read the full UIC Covid guidance carefully before you resume in-person classes: https://dos.uic.edu/community-standards/uic-covid-19-guidance/ https://today.uic.edu/spring-semester-online-start-and-testing-updates https://today.uic.edu/return-to-campus-reminders-and-booster-shot-requirement
• Students who test positive for Covid-19 or who are exposed to infection should follow the UIC isolation and quarantine protocol https://today.uic.edu/isolation-and-quarantine
Missed attendance/assignments/exam due to Covid-related isolation and quarantine will be accommodated. Please discuss the details with your TA or your Professor.

Teaching assistants

	Friday discussion sections	Office hour
Sarah Opolka sopolk2@uic.edu	CRN 33134, F 4pm @BSB 161	By appointment
Rebecca Denson rdenso3@uic.edu	CRN 34398, F 8am @ Lincoln Hall 107	By appointment
Mackenzie Jaekel mjaekel2@uic.edu	CRN 35026, F 12pm @ Taft Hall 304 CRN 34400, F 5pm @ BSB 133	By appointment

Overview:

    This course is designed to introduce you to statistics and to the ways in which statistical methods are used in psychological research. The goal of this course is to help you: 1) use statistical procedures to describe data, display data, and test hypotheses about data; 2) understand the ways in which psychologists use statistics as a tool in answering research questions; 3) critically evaluate statistically based information, allowing you to be a judicious consumer of scientific information;

Required Material:

Aron, A., Aron, E. N., & Coups, E. J. (2012). *Statistics for Psychology* (6th Edition). Upper Saddle River, NJ: Prentice Hall.

A hand-held calculator is necessary for classes, homework and exams. Although you can use your cellphone for in-class and at-home calculations, only a traditional calculator is allowed for exams – no cellphones, ipads, etc. The functions of your calculator should include: addition, subtraction, multiplication, division, square, & square-root. A $10 calculator from a grocery store will most likely be sufficient.

No electronic devices other than your calculator is allowed during exams.

Class Attendance

Class attendance is very important, and can significantly affect your course grade. For this course particularly, it is VERY IMPORTANT to attend every single class! In many other courses, it's possible for you to make up missing lectures by self study – this class is NOT. Psych.343 strictly follows a "building-block" model – concepts presented early in the semester are essential building blocks that are needed to understand concepts later on, and each lecture builds on those that have gone before. It is very important that you be an active listener in class, try to understand the new concepts and resolve your confusion immediately or shortly afterwards. I do not penalize students for missing lectures, because they already penalize themselves.

Please do not hesitate to raise your hand when you do not understand something and would like me to explain further. When you assume the silence of other students means they all understand, maybe they are simply assuming the same thing – I find this to be more true in this class than any other class I teach.

Assessments:

Your final grade will be derived from your performance as follows:

Weekly Homework assignments (24%)

Homework assignments will be given on a weekly basis during lectures. Please show your work on your homework. Homework assignments are always due on Blackboard by 11:59pm on Fridays. No late homework is accepted.

Acceptable Format of homework:

1) You are welcome to **type up** your homework.
2) You could also **write out** your homework on paper and then scan or photograph it. If this is your preferred way of submission, please convert your homework file into **pdf** before submitting it. Please keep your handwriting as neat and legible as possible. Keep the pages right side up. If there are multiple pages, please add page numbers.

Homework grading:

- Full mark (2%): You are eligible to earn full mark on a homework when it satisfies all the following criteria
    o Complete: you have completed all the assigned problems in the required format;
    o Show your work: you have displayed all the necessary steps to complete a problem. For example, when a problem involves applying a formula, the minimum amount of work you are expected to display includes: 1) cite the proper formula, 2) expand the formula by plugging in the numbers, 3) final answer.
    o Your answers are correct or with minor errors: minor errors refer to minor computational

errors/typos that don't affect your conclusion. Using a wrong formula, or expanding a formula incorrectly doesn't count as a minor error.
- Partial credit (anywhere between 0% and 2%): When you have submitted your homework, but did not meet the criteria for full credit, you will receive partial credit. Your TA will assign the proper amount of partial credit depending on the quality of your work.
- Zero: missed homework assignments receive zero point. As long as you turn in your homework, you will receive some partial credit to reward your effort.

Discussion attendance (12%)

You are required to attend the TA-led lab discussions. The labs are valuable opportunities for you to practice the knowledge and skills you learned in lectures. In a smaller group, the TA will be better able to help you with any questions or confusions that you didn't have a chance to resolve during the lectures.

There are a total of 14 labs offered this semester. You are required to attend at least 12. Every lab attendance is worth 1% of your final grade. You are responsible to sign in on the attendance sheet your TA provides (for in-person sessions). You are expected to attend the whole lab to earn the attendance credit. If you arrive late or leave early, you will not be able to get credit for that session. If you attend more than 12 labs, you will earn the additional one/s as extra credit points.

Two midterm exams (18% X2 = 36%)

The two midterm exams are non-cumulative. The format will include multiple choice questions, true/false questions, fill in the blank questions, short answer questions, and statistical problems that you will complete by hand.

Cumulative Final Exam (25%)

The final exam is cumulative. The format of the final is the same as the midterm exams.

Pop Quizzes (5%)

At random points during the semester, pop quizzes will be administered IN-CLASS. For in-person classes, pop quizzes will be collected on the spot. For synchronous on-line classes, pop quizzes will be collected on Blackboard in real-time. You will need to be in class (either physically or streaming online) to earn the pop quiz credits. All pop quizzes will add up to 5% of the final point.

Towards the end of the semester, make-up opportunities for pop quizzes will be offered to students who can present a dated documentation for a legitimate absence (the date needs to match the pop-quiz date), or who miss an in-person class due to Covid related isolation and quarantine.

Total points:

24% + 12% + 36% + 25% + 5% = 102%

Since more than 100% of points is offered (plus extra credit opportunity from discussion attendance), no other extra-credit opportunity will be offered to the class or to individual students.

Formula sheet

For each exam, you are allowed to bring one cheat-sheet. It has to be hand-written on a letter sized paper (back and forth allowed). For the second exam, you are allowed to bring a new sheet plus the one you made for the first exam. For the final exam, you are allowed to bring a new sheet plus the previous two.

Although you are allowed to write as much as you can on your cheat-sheet, you are not allowed to manipulate the paper to create more writing space. For example, you are not allowed to attach small sheets of paper on your cheat sheet to create more space.

Also, don't over rely on the cheat-sheet. Make sure you understand and know how to apply the materials you write on it.

Final Grade

Your final grade will be calculated according to this scale.

A	Above 90%	C	70 – 79%	F	59% and below
B	80 – 89%	D	60 – 69%		

Makeup exam policy

Makeup exams can be considered when there is a conflict exam, documented medical or family emergency. In case of these situations, you must contact me IN ADVANCE.

Blackboard

We will use Blackboard for course materials distribution, announcements, and grade posting, etc.. Please do not use blackboard for non-course related purposes, such as advertising for services, merchandise, etc.

Student Drop-in hour and Appointments

During the hour listed on my syllabus for students to drop in, you are welcome to drop in without an

appointment. If you need to meet me outside of the scheduled office hours, please make an appointment with me in advance.

Email Policy

Please ALWAYS include "Psych. 343" in your email subject. This way I'll know it is a course-related issue, not a spam. And please sign your full name in your email if it's not already obvious in your email body.

Religious Holidays:

Religious holidays are respected. If you need accommodations for religious reasons please contact me ASAP. Arrangements can be made on individual basis.

Student Athletes:

Student athletes are required to provide the list of days that they will miss throughout the semester. Other accommodations such as exams on the road or paper extension may be arranged with the assistance of the Athletic Office.

Special Accommodations:

UIC is committed to full inclusion and participation of people with disabilities in all aspects of university life. Students who face or anticipate disability-related barriers while at UIC should connect with the Disability Resource Center (DRC) at drc.uic.edu, drc@uic.edu or at (312) 413-2183 to create a plan for reasonable accommodations. In order to receive accommodations, students must disclose disability to the DRC, complete an interactive registration process with the DRC, and provide their course instructor with a Letter of Accommodation (LOA). Course instructors in receipt of an LOA will work with the student and the DRC to implement approved accommodations.

Academic Integrity

No electronic devices is allowed during exams. Usage of them during a test will be considered cheating. It is every student's responsibility to observe academic integrity. Cheating and plagiarism will result in failure of assignments/exams to failure of the course.

Counseling services:

UIC and the Department of Psychology provide a variety of services for students who experience mental or psychological difficulties, if such need occurs, please refer to the following:

- Counseling center: http://www.uic.edu/depts/counseling/
- Office of Applied Psychological Services: http://portal.psch.uic.edu/Clinical/centers.aspx
- Campus Advocacy Network: http://www.uic.edu/depts/owa/advocacy.html

Course Schedule

Note: This is a tentative schedule for the lecture materials in this semester. If we make changes as we move along, I will send out an updated version to the class.

Note 2: <u>HWs</u> are always assigned during my lectures, and <u>due on Friday by the end of the day</u> (not the current week but one week after).

Date	Lecture	Friday discussion	Reading
1/11	Introduction to course	First meeting, meet your TA	--
1/13	Research methods		
1/18	Working with displaying data	Data display practices (no HW due)	Chapter 1
1/20			
1/25	Measures of central tendency & variability	Be familiar with formulae and applying the formulae (HW 1 due)	Chapter 2
1/27			
2/01	Z score; Normal distribution; Probability	Z score practices Z score to Normal distribution (HW 2 due)	Chapter 3
2/03			
2/08	Introduction to hypothesis testing	Hypothesis testing application (HW 3 due)	Chapter 4
2/10			
2/15	**First Exam**	Comparing hypothesis testing vs. hypothesis testing with means of samples (HW 4 due)	**Chapter 1 – 4;**
2/17	Hypothesis testing with means of samples		Chapter 5

2/22	Hypothesis testing with means of samples	Significance testing, effect size	
2/24	Statistical significance, power & effect size	(HW 5 due)	Chapter 6
3/01	T-tests: single & dependent sample	T test and dependent samples	Chapter 7
3/03		(HW 6 due)	
3/08	T-tests: independent sample	T test and independent samples	Chapter 8
3/10		(HW 7 due)	
3/15	Exam 2 Review	**No Discussion**	
3/17	**Second Exam**	(HW 8 due)	**Chapter 5, 6, 7, 8**
3/22	**Spring break, no class**		
3/24			
3/29	Exam 2 review; ANOVA	ANOVA (No homework due)	Chapter 9
3/31			
4/05	Correlation	Correlation (HW9 due)	Chapter 11
4/07			
4/12	Prediction	Prediction (HW10 due)	Chapter 12
4/14			
4/19	Chi-square test	Chi-square (HW 11 due)	Chapter 13
4/21			
4/26	SPSS demo (non-exam material)	Final review (HW 12 due)	
4/28	Final review & Wrap up		

5/02 (M) **10: 30 am–** **12:30pm**	**Final exam** **@ BSB 250**		**Cumulative**