



PSYC 300: STATISTICS FOR PSYCHOLOGISTS, SPRING 2019

Lecture: MWF, 1:00 – 1:50, D216 Science

Section 3 Lab 1: Tuesdays, 1:00 – 2:50, A224 Science

Section 3 Lab 2: Tuesdays, 3:00 – 4:50, A224 Science

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Office Hours	MTWF, 9:30-11:00 am; MF, 2:00-3:00; And lots of other times BY APPOINTMENT!	MTWRF, 7:45-11:45 am MTWRF, 12:30-4:30 pm

Course Objectives and Teaching Philosophy

Course Description and Objectives

This course will introduce you to statistical reasoning and the application of basic statistical (descriptive and inferential) procedures. This course is intended to provide an understanding of why a particular statistic is appropriate for a given experimental design as well as the "inner workings" of each statistical test.

This is a basic statistics course that meets the requirements for the Psychology Major as well as several other majors on campus. This course also meets the Quantitative Literacy requirements for the General Education Program. Therefore, while completing this course, you will:

- Explain the logic and appropriate applications of statistical analyses for univariate or bivariate research designs, problems, or hypotheses.
- Calculate the statistics necessary to solve problems (both manually and via computer), including descriptive statistics, statistical significance tests, effect sizes, and confidence intervals.
- Communicate the meaning of statistical analyses in everyday language and professional formats (e.g., graphs, tables, and words).

It is expected that you have already accrued a basic understanding of the fields of mathematics and psychology. As such, it requires that you have completed PSYC 110 (Introduction to Psychology) or its equivalent and MATH 095 (College Algebra) or its equivalent. It is strongly recommended that you have also completed PSYC 200 (Research Methods in Psychology).

My Teaching Philosophy and Strategy

My job is to facilitate your achievement of these objectives. *Thus, I am going to do what my professional training and experience suggest helps your long-term learning of important and relevant content and skills.* To that end, I emphasize timely reading of course materials, in-class participation, out-of-class activities and homework, and thorough examinations. Overall, you should not think of your professors as lecturers or information deliverers, but rather as discussants, consultants, and guides in your education.

Additional descriptions of these learning outcomes and the course structure I use to meet them are available on the course Canvas site.

Course Grading

Evaluation of Performance

Evaluation of student performance will be based on homework assignments and in-class exams. An overview of the point values for each of the course assessments is given below.

Assessments of Objectives:	Points Earned:
<u>Collaborative Homework Assignments:</u>	
Assignment 1: Math and Methods Review	____ / 12 points
Assignment 2: Frequency Distributions	____ / 12 points
Assignment 3: Descriptive Statistics	____ / 12 points
Assignment 4: Standardized Distributions	____ / 12 points
Assignment 5: Statistical Relationships	____ / 12 points
Assignment 6: Sampling Distributions	____ / 12 points
Assignment 7: Point and Interval Estimation	____ / 12 points
Assignment 8: One Sample Statistics	____ / 12 points
Assignment 9: Two Sample Statistics	____ / 12 points
Assignment 10: Analysis of Variance	____ / 12 points
Assignment 11: Post Hoc Comparisons	____ / 12 points
Assignment 12: Repeated ANOVA	____ / 12 points
Assignment 13: Factorial ANOVA	____ / 12 points
<u>Individual Assignments and Exams:</u>	
Exam 1: Descriptive Statistics	____ / 40 points
Exam 1: Mandatory Redo	____ / 12 points
Exam 2: Basic Inferential Processes	____ / 40 points
Exam 2: Mandatory Redo	____ / 12 points
Exam 3: Multiple Group Differences	____ / 40 points
	____ / 300 points

NOTE: Extra credit will NOT be available in this course.

The weekly homework assignments are designed to provide you with opportunities to explore the main concepts and to apply the material. *You may confer with other students and the instructor if you have questions, but you must submit work that is your own.*

The in-class exams are a combination of multiple choice questions, short essay questions, and problem-based questions. *You will be permitted to use your notes during the exam.* The exams, as well as the “redo” portions of the exams, are to be done independently (without consulting with other students).

The grading rubric and sample questions for the exams
are available on the course Canvas site.

Late Assignments and Make-Up Exams

Each assignment’s due date is clearly marked on this syllabus. If you know ahead of time that you will miss a due date for an assignment, you should submit the assignment before the due date.

Similarly, each exam will start promptly at the beginning of class on the scheduled exam day. Students who arrive late to an exam will only be allowed to take it if they arrive before the first student finishes and leaves the room. After that point, requests to take exams will be declined unless they are consistent with the make-up policy below.

For all unexpected absences (e.g., illnesses, etc.), I require notice no later than the morning of the due date or exam. Only students with instructor-validated documentation for the absence will be given an extension or a make-up exam; failure to follow this policy will result in an automatic zero for the assessment in question.

Unless you are taking an exam through the Disability and Assistive Technology Center, all make-up exams will be proctored through the Department of Psychology during one of the official times. I will notify you of available times, and you will be expected to schedule during one of these times. Under most conditions, make-up exams should be completed within one week of the original exam date.

Determination of Final Course Grades

Final course grades are determined by the percentage of possible points that you earn.

Grade:	Points Earned:	% of Total:	Grade:	Points Earned:	% of Total:
A	278 – 300	93%-100%	C+	230 – 238	77%-79%
A-	269 – 277	90%-92%	C	218 – 229	73%-76%
B+	260 – 268	87%-89%	C-	209 – 217	70%-72%
B	248 – 259	83%-86%	D+	200 – 208	67%-69%
B-	239 – 247	80%-82%	D	179 – 199	60%-66%

NOTE: Scores below 60% equate to a grade of F.

Final grades of “Incomplete” will be given only under extreme circumstances. An Incomplete is not an option for students who feel overwhelmed by academics, work schedules, or extracurricular activities. Typically, an Incomplete must be completed within one semester otherwise an “F” will result.

Course Materials

Required and Additional Readings

There one required textbook for this class and it is available at text rental. If you decide to purchase, borrow, or rent the book through another source, please be sure to get the correct edition. Note that we are using the “brief course” version.

Aron, A., Coups, E. J., & Aron, E. N. (2011). *Statistics for the behavioral and social sciences: A brief course* (5th ed.). Upper Saddle River, NJ: Prentice Hall.

At various points throughout the course, I may need to supplement the text with chapters and articles from other sources.

Online Materials

All homework assignments, exam study guides, course grades, and additional course materials will be posted online through Canvas. *Students should check this site regularly to get the updated courses materials.* First and foremost, you should be comfortable using online resources to learn.

If you need technical assistance at any time during the course or to report a problem with Canvas, you can visit with a Student Technology Tutor (Albertson Hall 018, 715-346-3568, tlctutor@uwsp.edu) or seek assistance from the HELP Desk (Albertson Hall 027, 715-346-HELP or 1-877-832-8977, techhelp@uwsp.edu). *Failure to report a problem in obtaining the course materials will be treated as a failure to complete the requirement.*

Optional readings, videos, and links providing useful advice for performing well in this course are posted on the course Canvas site.

Calculators and Computers

Calculators are highly recommended for the assignments and most in-class work; you will also be allowed to use calculators on the exams. However, do not use a calculator as a crutch. If you do not understand the math you are asking the calculator to do, you will not understand the concept that you need to learn.

Most of the later homework assignments will also include a significant amount of computer work involving the software package SPSS (Statistical Package for the Social Sciences). It is accessible in all computer labs on campus through the Network Menu. We will spend considerable time in class dedicated to helping you understand this program.

An online textbook for using and understanding statistical software is available on my website and accessible through the course Canvas site.

Classroom Conduct and Accommodations

UWSP values a safe, honest, respectful, and inviting learning environment and has developed guidelines to ensure that each student has the opportunity to succeed. *All students are expected to be familiar with and to abide by the university's Community Rights and Responsibilities document (see <https://www.uwsp.edu/dos/Documents/CommunityRights.pdf>).*

Attendance and Class Conduct

By university policy, regular attendance is required (see <http://www.uwsp.edu/regrec/Pages/Attendance-Policy.aspx>). Thus, I will not give points for attendance; you are simply expected to be in class, both in body and mind. If this expectation poses a problem for you, please consider taking the course in a different semester.

Under federal and state laws, and university guidelines, I am required to report acts of a criminal or offensive nature that occur both within and outside of class. This includes acts of sexual harassment and assault, bias and hate crimes, illicit drug use, and acts of violence. Any disclosure or description of these incidents – both current and in the past – may be reported to the Dean of Students office (<http://www.uwsp.edu/dos/>) or the local authorities.

Academic Misconduct

Academic misconduct (i.e., cheating) will result in an automatic zero on that exam or assignment for all people involved. I will follow up on all cases in the manner described in Community Rights and Responsibilities document.

Representation of another person's work as your own (i.e., plagiarism) will result in an immediate rejection of the work. Any student who engages in plagiarism will be given the opportunity to repeat the work and have it graded appropriately. Consistent with university policy, a written reprimand will be placed in the student's disciplinary file. "Accidental plagiarism" – naiveté about what constitutes plagiarism – will not be accepted as a legitimate excuse.

To maintain the integrity of in-class exams, the use of electronic devices will not be permitted during exams without prior documented approval from the Disability Services office or other pertinent offices on campus. This includes, but is not limited to, requests to use cellular or wireless network-enabled mobile devices for foreign language translation assistance. Students who are found using these devices will be dismissed and receive a zero for their exams.

Accommodations and Disabilities

If there are factors creating difficulties for you in this course that are recognized disabilities under the Americans with Disabilities Act, please provide me with appropriate notification from the Disability and Assistive Technology Center (103 Student Services Center, 715-346-3365, or at <http://www.uwsp.edu/disability/>). *I will follow all recommendations made by the Disability and Assistive Technology Center.*

If you are having difficulties of a personal (not academic) nature, I will refer you to the UWSP Counseling Center (Third Floor Delzell Hall, 715-346-3553, or at counsel@uwsp.edu). *Appropriate accommodations may be made for due dates, testing procedures, etc. at the instructor's discretion.*

Extra Assistance and Tutoring

If you would like extra assistance related to course materials or have any questions related to your performance in the course, please come by my office hours or set up an appointment. This should always be your first step in getting assistance, as most questions and concerns can be best addressed this way.

However, if you would prefer help from a student beyond your instructor or colleagues in this class, you should contact the UWSP Tutoring-Learning Center (<http://www.uwsp.edu/tlc/>, 018 LRC, 715-346-3568).

Tentative Course Schedule

This section offers a tentative schedule for the semester. Any changes in reading assignments, course schedule, or other aspects of the class will be announced in class and posted on Canvas. *You are responsible for all announcements of changes regardless of whether you are present in class.*

Additionally, please pay attention to the university calendar and associated policies. Specifically, I will strictly adhere to the university calendar, including drop/add dates and the final exam schedule. See <http://www.uwsp.edu/regrec/Pages/calendars.aspx> for more details.

DATE	Preparatory Readings	Topic for Class	Homework
Week 1 1-22	Overview of the Course: What is Statistics for Psychologists All About? Landrum (2002)	Introduction to the Course	
Part I: Basic Measurement and Descriptive Statistics			
Week 2 1-23 1-25 1-28 1-29	Frequency Distributions: How Do We Describe and Represent What We Measure? Aron et al. (2011, Ch. 1)	Understanding Variables and Scores Understanding Research Design Calculating Frequencies and Percentiles Lab on Frequency Distributions	Assignment 1 Due
Week 3 1-30 2-1 2-4 2-5	Descriptive Statistics: How Do We Best Summarize a Distribution? Aron et al. (2011, Ch. 2)	Understanding Distribution Characteristics Calculating Central Tendency Calculating Variability Lab on Descriptive Statistics	Assignment 2 Due
Week 4 2-6 2-8 2-11 2-12	Standardized Scores: How Do We Use Transformations to Communicate Relative Standing?	Understanding Standardized Scores Calculating Percentiles with z Scores Calculating Probability with Scores Lab on Standardized Scores	Assignment 3 Due
Week 5 2-13 2-15 2-18 2-19	Correlations: How Do We Measure the Relationship Between Variables? Aron et al. (2011, Ch. 3)	Understanding Statistical Relationships Calculating Correlations Calculating Shared Variance Lab on Correlations	Assignment 4 Due
Week 6 2-20 2-22 2-25 2-26	Integration: How Can We Integrate What We Know About Measurement and Description?	Exam Preview Conceptual Integration Integration Problems Exam 1	Assignment 5 Due

Part II: One and Two Sample Estimation and Inferences			
Week 7	Sampling Distributions: How Do We Determine the Likelihood of a Statistic?		
2-27	Aron et al. (2011, Ch. 4)	Exam Review and Applied Probability	
3-1		Understanding Sampling Processes	
3-4		Calculating the Probability of a Statistic	Exam 1 Redo Due
3-5		Lab on Sampling Distributions	
Week 8	Point and Interval Estimation: How Do We Make Inferences about an Unknown Population Mean?		
3-6	Aron et al. (2011, Ch. 6)	Understanding Estimation	
3-8		Calculating Probability Using a <i>t</i> Distribution	
3-11		Calculating Confidence Intervals	Assignment 6 Due
3-12		Lab on Point and Interval Estimation	
Week 9	One Sample Statistics: How Do We Use Probability to Make Decisions about a Mean?		
3-13	Aron et al. (2011, Ch. 5)	Understanding Statistical Significance	
3-15	Aron et al. (2011, Ch. 8)	Calculating a One Sample <i>t</i> Test	
3-25		Calculating Supplemental Statistics	Assignment 7 Due
3-26		Lab on One Sample Statistics	
Week 10	Independent Samples: How Do We Determine Whether Two Groups are Different?		
3-27	Aron et al. (2011, Ch. 9)	Understanding Independent Sample Designs	
3-29		Calculating Independent Sample Statistics	
4-1	Aron et al. (2011, Ch. 7)	Calculating Statistical Power	Assignment 8 Due
4-2		Lab on Independent Sample Statistics	
Week 11	Integration: How Can We Integrate What We Know About Sampling and Inferences?		
4-3		Exam Preview	
4-5		Conceptual Integration	
4-8		Integration Problems	Assignment 9 Due
4-9		Exam 2	
Part III: Multiple Sample Estimation and Inferences			
Week 12	One-Way Analysis of Variance: How Do We Determine Whether Multiple Groups are Different?		
4-10	Aron et al. (2011, pp. 314-333)	Understanding Multiple Group Designs	
4-12		Calculating Sources of Variability	
4-15		Calculating an Analysis of Variance	Exam 2 Redo Due
4-16		Lab on One Way ANOVA	
Week 13	Post Hoc Comparisons: How Do We Best Make Multiple Comparisons Among Samples?		
4-17	Aron et al. (2011, pp. 333-338)	Understanding Pairwise Comparisons	
4-19		Calculating Pairwise Comparisons	
4-22		Calculating Post Hoc Statistics	Assignment 10 Due
4-23		Lab on Post Hoc Comparisons	
Week 14	Repeated Measures ANOVA: How Do We Test Differences in Within Subjects Designs?		
4-24	Aron et al. (2009, Ch. W02)	Understanding Within Subjects Designs	
4-26		Calculating a Repeated Measures ANOVA	
4-29		Calculating Repeated Measures Statistics	Assignment 11 Due
4-30		Lab on Repeated Measures ANOVA	
Week 15	Factorial ANOVA: How Do We Test Differences in a Multiple Factor Design?		
5-1	Aron et al. (2011, pp. 338-364)	Understanding Factorial Designs	
5-3		Calculating a Factorial ANOVA	
5-6		Calculating Factorial Statistics	Assignment 12 Due
5-7		Lab on Factorial ANOVA	
Week 16	Integration: How Can We Integrate What We Know About Multi-Group Analyses?		
5-8	Aron et al. (2011, Ch. 12)	Conceptual Integration	
5-10		Integration Problems	
5-13		Exam 3 (10:15-12:15)	Assignment 13 Due