Research Methods II: Statistics in Psychology

PSYC 3020.1
FS 2016

Instructor: Sheldon

Coursepack for Research Methods II: Statistics in Psychology

Psychology 3020

Instructor: Sheldon

Contents

$$\Sigma \quad r \quad \alpha \quad \beta \quad \chi^2 \quad t \quad F$$

Full Course Syllabus: Psychology 3020

Research Methods in Psychology II

Instructor: Meli Sheldon, PhD.
             Sheldonm@missouri.edu (BEST WAY TO REACH ME)

The course catalogue describes this course as follows:

Description	Continuation of Psychology 3010 and required for all further labs in psychology. Prerequisite: Psych 1000, Psych 3010, and Stat 1200 (or higher) with grade of C or better.

The goal of this course is to introduce you to the way that psychologists use the statistics that you learned about in your statistics prerequisite.

Required Texts:

Statistics for Psychology course packet (Mizzou Media)

Recommended Texts:
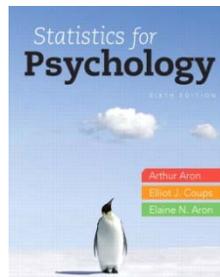
Statistics for the Behavioral & Social Sciences, any Edition
     Arthur Aron, Elliot Coups, & Elaine Aron edited the (2013) 6th edition.
ANY edition will work for this course, including older Aron & Aron editions.

Optional Texts:

APA Publication Manual - we are now on the 6th Edition
        The sections on describing results and reporting statistics are both quite useful for this class. This manual can be found online.

Materials

Obviously, you should get yourself this coursepack. Almost every lecture will use a "handout", and you should make sure you have the relevant material with you in class. **BRING YOUR COURSEPACK TO CLASS**. You do not need a text in class.

You will be turning in assignments weekly and getting them back, and it may be helpful to punch holes in them and use the coursepack binder to organize everything. Lab tests are OPEN-MATERIALS, meaning you can use books and notes, etc.

One of my students complained on a past evaluation that I did not emphasize the importance of organizing papers enough at the beginning of the course: SO PLEASE NOTE: **YOU WILL FIND IT HELPFUL TO ORGANIZE YOUR PAPERS FROM THIS CLASS**. Please consider that point emphasized.

Engineering paper or Quad-ruled paper makes doing math easier for some students, and that is why engineers and math majors use it. Sometimes students find it more difficult to use this kind of paper. (This is not a requirement, but rather a tip).

You will need a calculator for this course. A basic one will do as long as it has a square root key. If you are the kind of person who will teach yourself to use a specific function, I recommend a calculator that has a summation key (Σ). If you take the extra time to learn how to compute means and variances on it fluidly, it may save you time on the second and third exams. (I was required to use those functions as a first year grad student.) **You will find it helpful to bring your calculator to lectures**.

Course Structure, Grading, & Assignments

This course has class sessions (MW) and lab sessions (F). Both will cover material that will count toward the grade you will earn, and the two types of sessions should flow seamlessly into each other. That is, I'll be preparing you for lab during the class sessions, and we'll be discussing lab output during class sessions, and both class and lab material appear on problem sets and tests.

Testing/Exams.
You will have three (3) exams on class content and three (3) lab exams.

Class content exams will be mixtures of problems to work and short answer questions. You will not be permitted to use notes or the book, and you *will need your calculator*. Most formulas will be provided on the exam and all provided formulas are indicated on the problem set assignments. I will provide you with a review sheet and a practice test, because I hope to grade you on what you learned, not how well you can guess what my tests are like. I will not collect and grade the reviews, but I encourage you to use them as practice for the exams.

Lab exams will ask you to analyze data on the computer. You will be able to use notes, problem sets, books, etc. on the lab exams, but you may not work with another student during the exam. Lab exams are designed to be very straightforward, but if you have not done the labs on the problem sets, you will struggle to complete the lab exam in the class time.

Note: You will have BOTH tests during a testing week (see schedule).

Problem Sets. Each content week corresponds to a **Problem Set**. Typically each problem set will include reading responses, paper-and-pencil problems to work, pre-lab readings and questions, a lab assignment, and a post-lab practice set which may include outside computer work as well as computations and/or questions on lab output. Due times are designated in **bold** on the course schedule, and typically occur on the Wednesday after we finish all material relevant to the Problem Set. *Warning*: we do not grade these problem sets for accuracy, but they will be checked for *completeness* and *general understanding*. *It is your responsibility to check your solutions to insure your understanding.* Solved problems are available in the text and on the course Blackboard site after the sets are returned. There are 10 problem sets, and each is worth 20 points. You are encouraged to work together, but each student should complete and submit his/her own solved problems and lab write-up in her/his own words.

Note: Each problem set includes a recommendation to do optional readings about the weekly topic. My course was originally based on the 3rd edition of the recommended textbook. That 3rd edition is long out of print; the current edition (6th?) is very expensive and presents the statistics in a different order than the 3rd edition that I continue to follow. Previous editions should still be widely available. If you need to review your understanding of the material, or want additional reading to supplement your understanding, you can track down any edition of that text and read the chapter that covers the statistic we are studying. Their equations will look exactly like the equations we use in the problem sets. In fact, you can use any statistics book you can locate to read about statistics, including the one you bought for your pre-requisite to this course. No matter who presents the material, a mean is a mean, a correlation is a correlation, and a p-value is a p-value in every book you pick up. In other words, the main ideas of this course have not changed in a hundred years. You will find variation in the symbols that are used in the formulas, and variations in the steps used to calculate the statistics, but every method should arrive at the same numbers given the same set of data.

Summary of Grading

You will earn points as follows:

10 Problem sets at 20 points each	=	200 points
3 Class content Exams @ 100 points each	=	300
3 Lab exams @ 35 points each	=	105
Extra credit assignments/test Q's	=	>20
Total	=	+ 605 points

Tentative Grade Rubric:

Points	Grade	Points	Grade
590+	A+	472+	C+
563+	A	442+	C
544+	A-	423+	C-
532+	B+	390+	D
502+	B	Below 390	Fail
484+	B-		

First, notice that it is possible to make more than 605 points (that clearly earns an A+).

The table above indicates the grade that is *guaranteed* by earning those points. I often adjust the grading scale in your favor if a test turns out to be harder than I anticipate, but I will not adjust it against you. Please note that adjusting these total point cutoffs is the only way I "curve" grades. For example, if a test has a low mean, then I might move the "A" cutoff (563) down a few points (say… 558), which would move the A- cutoff down at least that same amount, and so on. In past years, the "A" cutoff has been pretty stably around 560. However, the "B" and "C" cutoffs have been lowered significantly.

Policies

Attendance. Your attendance at lecture and lab is ALWAYS optional. We do not keep track, in any way, of your attendance. Attendance is strongly encouraged for students who find math and statistics difficult (note: if you did not easily earn an "A" in your stat prerequisite, come to class!)

Late Assignments. Problem sets comprise 1/3rd of your grade, and those that are not turned in *on the due date* will be penalized 5 points (out of 20 – ouch!), those not turned in by 4PM the following day will be penalized 10 points, and those not turned in by the next class time will not be accepted for points. You should still do the problem set and then check that you get the correct answers, but you cannot earn points toward your grade if you are more than 2 days late.

Please note, this policy is not to punish you or treat you like a child. The TA's and grader are EXTREMELY busy people who have to grade around 150 problem sets that have multiple parts. They would go insane keeping track of assignments or parts-of-assignments trickling in over the semester. For this reason, I will not excuse a late assignment for any reason – it will burden my TA's. **Don't wait until Tuesday night to do your problem set**, **and then you won't ever have a late problem set**.

Missed Section Exams. *There are no make-ups for missed class content exams*. The **final exam** is cumulative, is optional (100 points), and *is the make-up exam*. If you have three exam grades, you may use the final as a do-over for a poor exam score. In other words, the final can replace a low grade if you had a rough week and bombed an earlier exam (I will count only your 3 highest exam scores toward your grade, so it cannot hurt you).

Missed Lab Exams can be made up on the Friday following the missed exam, in any laboratory session. The TA's will have make-up tests for you to take. If you miss both the lab test and the lab make-up the next week, you will have an opportunity to make up the missed lab test at the end of the semester.

About Section Exam Make-ups…

If you asked me about a make-up section test, I reminded you to read this:

If you missed the in-class exam, you can only make it up at the final exam time. I do not have another test to give you. Students keep their previous tests, so every previous test is in the public domain, and I only make one version of each semester's test, which is handed back two days after it is taken. If any student takes that version either early or late, it compromises the integrity of the test. In addition, these tests are long and difficult to grade. Grading alternate versions is too time-consuming to be considered. There are no circumstances or excuses that change this reality. There are no make-ups for exams.

A Note about Labs

In Friday lab, we will use SPSS Windows -- a software package used for analyzing data.

For the majority of students, most lab assignments cannot be fully completed in the allotted lab time. Our goal is to teach you what you need to know to complete your lab assignment at your own pace.

We do not track attendance in labs. If your lab time is inconvenient for you, or you do not easily follow your lab instructor, you may attend any other lab session that works better for you. Labs are taught at 10, 11, and 12, so for most of you, if lab went by too fast and you can stay for a repeat, then you are welcome to do so. However, on lab test days you must attend your official lab section.

Most of the time, we will use data from a file that contains survey responses from current and former 3020 students. You have an opportunity to take this survey for extra credit at the beginning of the semester.   If you take the survey, 1) your responses will be confidential, 2) you will start out with a better understanding of the data file, 3) you will get ten points of extra credit, and 4) you will have to opportunity to compare your responses to the typical response of others in this class.

A Note about Working Together.

Early in the semester I will give you an opportunity to connect with other students in the class, and many students end up in regular study groups to work on problems and labs. I encourage you to connect with a study group or find a study partner if it helps you. Most semesters we have at least one official "Study Buddy". In your study groups you may work problems together, think through questions or lab assignments, even compare results and outcomes. It is especially helpful to work with another student in lab, where missing a single keystroke might send you off into a completely separate place in the SPSS program.

WARNING:

*In the past there has been confusion about what constitutes **Academic Dishonesty** on these problem sets.*

Each individual must work each problem that they turn in – no photocopies, duplicate printouts, or rote copying of another's work. *NEVER* share electronic files of essays or lab write-ups.   Because lab write-ups are done in formal APA style, they tend to be quite similar to one another, even when written by students who are not working together at all. However, there is a difference between two similar write-ups and two identical write-ups (that would be two printings of the same document with perhaps just the font and size changed). **EACH STUDENT SHOULD WRITE UP THE LAB IN HIS/HER OWN WORDS**.

Note for Students with Disabilities:

If you anticipate barriers related to the format or requirements of this course, if you need accommodations because of a disability, if you have emergency medical information to share with me, or if you need special arrangements in case the building must be evacuated, please inform me immediately. Please see me privately after class, or at my office.

PLEASE NOTE: *Most students who are eligible for extra time on tests will need that accommodation in this course.* If you are eligible for extra time on tests, do not wait until after you complete less than half of the first test to figure out that this is a class where you need to register. ASAP please register with the Office of Disability Services (*http://disabilityservices.missouri.edu*), S5 Memorial Union, 573- 882-4696, and then notify me of your eligibility for reasonable accommodations. For other MU resources for students with disabilities, click on "Disability Resources" on the MU homepage.

Note about Discrimination Experiences:

The University community welcomes intellectual diversity and does not tolerate discrimination on the basis of race, color, religion, national origin, ancestry, sex, age, disability, or status as a disabled veteran or veteran of the Vietnam era. In addition, equal treatment and opportunity shall be provided to all regardless of sexual orientation. Exposure to discrimination and/or insensitivity to cultural issues impairs the University's goals of facilitating the transmission of knowledge, pursuit of truth, and the development of students. If you feel that you have been exposed to discriminatory practices and/or insensitivity to cultural issues in this or any other setting affiliated with MU, you have the right to have your concerns addressed. **One way to begin addressing these concerns would be to meet with me privately after class or outside of class during office hours or by appointment.** Alternatively, you may want to speak to the Vice Provost for Minority Affairs, International Programs, and Faculty Development (MAIPFD). Office: 211 Jesse Hall; phone: 882-9061; email:mafd@missouri.edu). In addition, the Vice Provost can assist students with filing of informal/formal complaints and grievances. For more information about the rights of students who experience discriminatory practices and/or insensitivity to cultural issues, please see:

http://www.missouri.edu/~mafdwww/ (Office of the Vice Provost, MAIPFD)
http://web.missouri.edu/~mbookwww/NoticeofNondiscrimination.html

Students who have questions concerning the quality of instruction in this class should first address concerns to me, or to Dr. Dennis Miller, the director of undergraduate studies in Psychology (Millerd@missouri.edu). Concerns may also be directed to either the Departmental Chair or Divisional leader or Director of the Office of Students Rights and Responsibilities (http://osrr.missouri.edu/). All students will have the opportunity to submit an anonymous evaluation of the instructor(s) at the end of the course.

Academic integrity is fundamental to the activities and principles of a university. All members of the academic community must be confident that each person's work has been responsibly and honorably acquired, developed, and presented. Any effort to gain an advantage not given to all students is dishonest whether or not the effort is successful. The academic community regards breaches of the academic integrity rules as extremely serious matters. Sanctions for such a breach may include academic sanctions from the instructor, including failing the course for any violation, to disciplinary sanctions ranging from probation to expulsion. When in doubt about plagiarism, paraphrasing, quoting, collaboration, or any other form of cheating, please contact me.