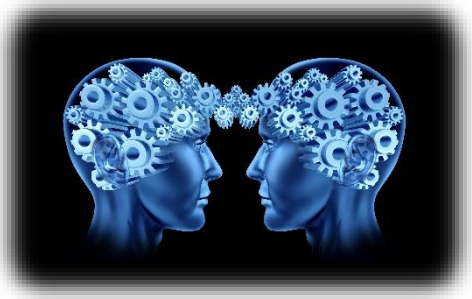
Quantitative Methods

830:200:H6



Basic Course Information

Instructor: Meghan C. McLean, Ph.D. Candidate, M.S., B.A.
Course location: LSH-A142, Livingston Campus
Time: Monday, Wednesday, Friday, 6:00-9:25pm

My Contact Information

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Office: Tillett 615
Office hours: Monday 3:00-5:40pm in Tillett 615 (or 605 if there is a large group of students)

Course Overview

The purpose of this course is to introduce you to statistics for psychology. Although many of you are only taking this course to fulfill a requirement for your major, I hope that you will find statistics more understandable. This course will require you to complete math problems, but you won't have to solve anything that requires skills beyond middle school arithmetic and basic algebra. If you can multiply, divide, and can read a mathematical formula, you should have all of the required skills to excel.

I hope that by the end of this course, you will be more familiar with underlying concepts in descriptive and inferential statistics. I also hope that you become a more knowledgeable consumer of behavioral research and the peer-reviewed journal articles you will be exposed to as you continue your studies in psychology. Finally, I hope you develop the skills to more critically process the research findings you hear on a daily basis.

Textbook: There is no required textbook for the course, but the recommended text is:
Title: Statistics for Psychology
Edition: At least the 3rd
Authors: Arthur Aron and Elaine N. Aron

Calculator: You will need to bring a calculator to every class. Only scientific and four function calculators can be used during an exam (see this website for more information about calculators acceptable on exam day: https://collegereadiness.collegeboard.org/sat/taking-the-test/calculator-policy)

Course Evaluation

Attendance and in-class exercises: Attendance is essential to succeeding in this course. Summer courses are fast-paced and intensive. Missing a class can set you behind and it may be difficult to catch up. There will also be several in-class exercises throughout the session that will be included in your grade. There are no make-up

assignments for missed in-class work. However, I will drop your lowest score, so if you absolutely must miss a class, you will not be penalized. Please make sure that you get the lecture notes from a classmate if you cannot come to class.

Exams: There will be 4 in-class tests over the summer session consisting of multiple choice and a few short answer responses. They will be administered at the beginning of class. Because there are so many, each exam will be worth about the same number of points and will only include material covered between exams (not cumulative). This will allow students to review fewer topics in between exams and make it easier to recover from a low test score. The exams will cover only the material covered in class. Make-up exams are not permitted without advance permission. Permission will be granted only for unavoidable circumstances (e.g., serious illness, family emergency).

In-class presentation: Each student will present a study once this semester. This assignment will consist of a 10-15 minute Powerpoint presentation on an article complementing recently discussed statistical topics. There should be at least one slide for each section of the paper (excluding the Abstract, e.g., a slide for the Introduction, a slide for the Methods, Results, etc.). Be sure to highlight the statistical procedures. Open the In-class Presentation Instructions ppt I uploaded to the Presentation Articles folder for instructions relating to each slide.

Grading: Grades will be based on participation, in-class exercises, homework assignments, an in-class presentation, your midterm exam, and your final paper and presentation. Extra credit points will be directly added to your midterm exam grade and can be earned by participating in social psychology research outside of the classroom. You will earn 4 points (out of 100 possible points) to your midterm grade for participating. A description of the extra credit opportunity will be discussed in the second class.

Projected Grade Breakdown *(subject to minor changes)*

Participation: 2%
In-class exercises: 10%
Homework assignments: 15%
In-class presentation: 10%
Exams: 63%

Cheating/plagiarism: Hopefully you are all here to learn, not just get a good grade. Cheating on exams or attempting to pass off other people's work as your own not only undermines the goals of the course and your fellow students, but it is a serious offense. If you are not familiar with the University's academic integrity policy, you can find more information here: http://academicintegrity.rutgers.edu/. If I suspect someone of cheating, I will have to report that student to the disciplinary panel. If you have any questions about what qualifies as cheating or plagiarism, please ask me or refer to the academic integrity website.

Students with disabilities: Students who need accommodation for a physical or learning disability must submit a letter from Disability Services by the 3rd class. You may email me, come to my office hours, or wait until after class to give me the letter. To get a letter to request accommodations, students should contact the Office of Disability Services at 848-445-6800, or visit the office in Lucy Stone Hall, Suite A145. More about Rutgers' policy here: https://ods.rutgers.edu/.

Schedule of Topics and Reading Assignments

(subject to slight changes)

Mon 7/11 Intro to the course & Chapter 1:
Displaying the order in a group of numbers using tables and graphs

Wed 7/13 Chapter 1-2:
Central tendency and variability

Fri 7/15 Chapter 3 and review of 1-3:
Some key ingredients for inferential statistics: Z scores, the normal curve, sample vs. population, and probability

Mon 7/18 **Test (ch 1-3)!** Start Chapter 4:
Introduction to hypothesis testing

Wed 7/20 Chapter 4-5:
Hypothesis testing with means of samples

Fri 7/22 Chapter 6:
Making sense of statistical significance: Decision errors, effect size, and statistical power

Mon 7/25 Review Chapters 4-6

Wed 7/27 **Test (ch 4-6)!** Start Chapter 7:
Introduction to *t* tests: Single sample and dependent means

Fri 7/29 Chapter 7-8:
The *t* test for independent means
PRESENTATION: Dependent *t* test. Boothby, Clark, & Bargh (2014): Shared experience are amplified

Mon 8/01 Chapter 9:
Introduction to the analysis of variance
PRESENTATION: Independent *t* test. Norton, Mochon, & Ariely (2012): The IKEA effect

Wed 8/03 Review chapters 7-9

PRESENTATION: One-way ANOVA. Bernstein et al (2008): Adaptive responses to social exclusion

Fri 8/05 **Test (7-9)!** Start Chapter 10:
Factorial analysis of variance

Mon 8/08 Chapter 10-11:
Correlation
PRESENTATION: Factorial ANOVA. Cheryan et al. (2009): Ambient belonging

Wed 8/10 Chapter 12:
Prediction
PRESENTATION 1: Correlation and one sample *t*. Dovidio et al (2002): Implicit and explicit prejudice
PRESENTATION 2: Correlation and one sample *t*. Rudman & Heppen (2003): Implicit romantic fantasies and women's interest in personal power

Fri 8/12 Chapter 13:
Chi-square tests

Mon 8/15 Review chapter 10-13
PRESENTATION: Chi square and dependent *t*. Joel et al. (2014): People overestimate their willingness to reject potential romantic partners

Wed 8/17 **Final Quiz on chapters 10-13**