

QUANTITATIVE METHODS

JULY 7 - AUGUST 13: M-TH 1:00-3:20

BECK HALL 221

INSTRUCTOR: JULIE PHELAN

EMAIL: JEPHELAN@EDEN.RUTGERS.EDU

OFFICE: TILLET HALL 615

WEBSITE: WWW.JEPHELAN.COM/QUANT

OFFICE HOURS: AFTER CLASS OR BY APPOINTMENT

Course Description:

The objective of this course is to provide an introduction to many of the statistics used in current psychological research. Most statistical procedures are conducted using sophisticated computer programs; however it is important to understand what calculations are actually being performed. Therefore, this course will give you the knowledge to calculate these procedures by hand, teach you how to determine what statistical procedure is the most appropriate for different types of data and will help you to critically evaluate statistical results published in the scientific literature.

Statistics are everywhere. News stations report medical findings, consumer magazines compare products, and politicians proclaim polling numbers. Being able to interpret this material is valuable because it affects many of the important decisions that we make. One of the goals of this course is to show you how the information that we'll cover applies to the real world. Therefore, even if you are not planning to pursue a career that requires statistical knowledge, this course should still be useful.

A common misconception is that a person's math ability directly relates to how well they will do in quantitative methods. This is not the case. However, quantitative methods is a difficult course, and it requires a strong commitment from you in order to succeed. Please take responsibility for your performance. I am always willing to stop during class to answer questions, and I purposefully set time aside at the end of class to meet with students individually.

Textbook:

Gravetter, F. J., & Wallnau, L. B. *Statistics for the behavioral sciences, 6th Edition*. Belmont: Thomas Wadsworth. ISBN:

Calculator:

You will need to bring a calculator to **every class**. Any scientific calculator will work (it must have square and square-root keys).

Grading:

Your final grade will be based on four things:

- Exams: 60%
- Problem Sets: 20%
- Workshops: 15%
- Participation: 5%

Exams: There will be three in-class exams (two midterms and a final), which will consist of multiple choice, true-false, calculations and some essay questions. Grades from all three

exams will be averaged to create an overall exam grade worth 60% of your total grade (i.e., each exam is worth 20% of your grade). There are no make-up exams. Any absence on an exam day will be an unexcused absence and result in a zero for that exam.

Workshops: I will frequently assign problems to be completed in groups in class. The best way to learn statistics is to actually compute statistics. There is only so much lecturing that can be absorbed. The workshops will be graded, but not harshly. As long as you participate in your group and turn in your paper at the end of class, this should be an easy way to boost your grade.

Problem Sets: One to two problem sets will be given each week to be completed at home. The due dates for the problem sets will be listed on the assignment and on the course website. The problem sets are designed to give you practice working with the concepts covered in class, and they will be graded. These problems may be challenging, but you may use your class notes as well as the textbook to assist you in completing the problems assigned. Late assignments will be assessed a penalty.

Participation: Attendance is required. This course is additive, meaning that the information we cover one week will build on the information covered previously. Therefore it is imperative that students attend all classes. Attendance will be taken at the beginning of class. All students will be given one “free” missed class. Additional absences will result in a decreased participation grade. Students requiring excused absences (illness, family reasons) must contact me prior to class, and a doctor’s note is required in the case of illness.

Participation also includes arriving to class prepared (having completed the reading), awake (coffee is allowed), and respectful of other students (absolutely NO cell phones – that includes texting). I strongly urge you to **do the reading**, I will know if you have not, and your participation grade will suffer. In addition, I suggest that you take notes on the reading, as this will be extremely useful when you are completing the problem sets or studying for exams.

Plagiarism:

All work that you turn in must be your own work. Do not collaborate without prior approval. Any outside sources (including help from other people) must be referenced in all written work. Turning in someone else’s work as your own is completely unacceptable, you will fail the course. More severe consequences (e.g., expulsion) are also possible.

Course Schedule:

The following is a tentative schedule. Any changes will be announced in class and posted on the course website.

Date	Topic	Readings (before class)
7/7	Introductions, Course overview	
7/8	Frequency distributions	Chapters 1 & 2
7/9	Central tendency, variability	Chapters 3 & 4

7/10	Standardized Scores, Normal Distribution	Chapter 5
7/14	Probability	Chapter 6
7/15	Catch up / Exam Review	
7/16	EXAM 1	
7/17	Distribution of sample means	Chapter 7
7/21	NO CLASS	
7/22	Hypothesis testing	Chapter 8
7/23	One sample t-test	Chapter 9
7/24	Independent samples t-test	Chapter 10
7/25	Meet in Tillett Hall	
7/28	Dependent samples t-test, t-test review	Chapter 11
7/29	Estimation	Chapter 12
7/30	Catch up / Exam Review	
7/31	EXAM 2	
8/4	One-way ANOVA	Chapter 13
8/5	Repeated Measures ANOVA	Chapter 14
8/6	Bivariate Correlation & Regression	Chapter 15
8/7	Meet in Tillett	
8/11	Categorical data	Chapter 16
8/12	Catch up / Exam Review	
8/13	FINAL EXAM	