Quantitative Methods – Summer 2008

01:830:200:B6 ■ Lucy Stone Hall B105 ■ MWF 6-9:30pm

Instructor: Jessica Good
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Office Hours: by appointment
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Textbook:

Gravetter, F. J., & Wallnau, L. B. (2005). *Essentials of Statistics for the Behavioral Sciences,* 6*th edition,* Wadsworth.

The text is available in the ___ bookstore. Please bring your book to every class.

Calculator:

You will need a calculator for this class. Any scientific one should do (it must have square and square-root keys), so there is no need to buy anything extravagant. Please bring a calculator to every class.

Website:

http://sakai.rutgers.edu (log in with netID and password, click on Membership)
Lecture slides, assignments, and the most-up-to-date syllabus can be found here. Please check the website frequently for any announcements regarding syllabus changes, class cancellations, etc.

Course Description:

This course is designed to give you a comprehensive introduction to many of the statistical methods used in psychological research. Most statistical procedures are conducted using sophisticated software programs; however it is important to understand what calculations are actually being performed. Therefore this course will give you the knowledge to calculate statistical tests by hand as well as critically evaluate statistical results published in the scientific literature.

Quantitative methods is a difficult course, and requires a strong commitment from you in order to succeed. The material presented is unique in that it combines mathematical concepts with philosophical concepts and applies them to a psychological context. Some students grasp the topics right away, and other students do not.

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.

Course Goals:

- Understand the basic statistical method used in psychological research
- Become familiar with determining which procedures should be employed with different types of data sets and different research questions.
- Gain the ability to understand and evaluate statistics published in the psychological literature
- Utilize the statistics you learn in class to test your own research hypothesis

Grading:

Grades will be based on exams, homework, the final project, and participation. The breakdown will be as follows:

Exams	50%
Homework	15%
Final Project	30%
Participation	5%

Exams: There will be two in-class exams (midterm and final) which will consist of multiple choice, true-false, some calculations, and short essay questions. Grades from both exams will be averaged to create an overall exam grade worth 50% of your total grade.

Homework: Homework assignments will be given at the end of every class, due at the beginning of the following class unless otherwise specified. You may use your class notes as well as the textbook to assist you in completing the problems assigned. Groups of students may work together, however each student must turn in their own assignment. Homework assignments will be designed to give you practice working with the concepts covered in class. They are not meant to be horribly difficult; as long as you seriously attempt and ***show your work*** on each problem, you should receive full credit on all homework. Late homework will be assessed a penalty.

Final Project: Students will work in groups to come up with a research hypothesis and appropriately test the hypothesis in SPSS using a provided dataset. You will write up your hypothesis, statistical results, and conclusions using APA style. Details about the final project will be provided on a separate sheet.

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 by passing around the roster. 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.

Students arriving late to class must sign in on the roster at the end of class. 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).

Extra Credit: One or two extra credit problems will be given as part of each homework assignment. Each problem answered correctly will equal 1 point added on to that day's homework grade. Extra credit will also be given for participating in any studies taking place at Rutgers. Please bring me proof of your participation in writing (copy of informed consent, debriefing form, etc.). Each study you participate in will add 1 point onto your homework grade.

Cheating/ Plagiarism: Cheating and plagiarism will not be tolerated. Students should familiarize themselves with the University's academic integrity policy (http://ctaar.rutgers.edu/integrity/policy.html). If I suspect a student of cheating, I will report him or her to the Disciplinary Panel. I take cheating very seriously and I suggest you do the same.

To help clarify the situation, I have provided specific details about what is and what is not cheating:

You May:

- Consult the textbook and other students when completing homework assignments.
- Use the internet to help with homework assignments, look up study guides, or to research your final project.
- Study for exams with other students
- Ask me for extra help with a concept

You May Not:

- Use your notes or "cheat sheet" on an exam
- Turn in another student's work as your own
- Represent someone else's idea as your own
- Contact anyone during an exam – cell phones OFF

YOU MUST:

- Cite your sources in all written work and provide complete references

Office Hours:

Students are encouraged to ask questions during class or meet with me directly after class. I am happy to arrange appointments to meet with students individually for extra help. However, I will not "make up" a lecture for students who missed a class for an unexcused reason. Office hours are not a substitute for coming to class.

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)	Final Project
Week 1				
	May 28th	Course Introduction, Basic Concepts/ Statistical Notation,	Chap. 1	
	May 30th	Frequency Distribution, Central Tendency	Chap. 2, 3	
Week 2				
	June 2nd	Variability/ Measures of Dispersion	Chap. 4	
	June 4th	Standardized Scores, Normal Distribution	Chap. 5	
	June 6th	Probability	Chap. 6	
Week 3				
	June 9th	Distribution of Sample Means, Exam Review	Chap. 7	
	June 11th	**MIDTERM**		
	June 13th	Inferential Statistics, Hypothesis Testing,	Chap. 8	Final Project – Part 1
Week 4				
6:10 ARC 118	June 16th	T-test - One sample cases, Two sample cases (Independent)	Chap. 9, 10	Feedback Part 1, Computer Lab – Part 2
6:10 ARC 118	June 18th	Two sample cases (Related), Estimation	Chap. 11, 12	Feedback Part 2, Computer Lab Part 3
	June 20th	One-way ANOVA	Chap. 13	
Week 5				

6:10 ARC 118	June 23rd	Repeated Measures ANOVA	Chap. 14	Feedback Part 3, Computer Lab – Part 4
6:10 **ARC 116**	June 25th	Bivariate Correlation & Regression	Chap. 15	Feedback Part 4, Computer Lab – Part 5
	June 27th	Categorical data, Nonparametric tests	Chap. 16	
Week 6				
	June 30th	Final Project Poster Session, Exam Review		Project Presentation
	July 2nd	**FINAL EXAM**		