



**OTRP** online

Office of Teaching Resources in Psychology

**Statistics and Research Methods in Psychology**  
**ROWAN UNIVERSITY**

Fall 2005

**2007-210-04**  
 MW 1:45-4:30  
 Robinson 102

**2007-210-03**  
 MW 4:45-7:15  
 Robinson 102

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Office hours: sign up on my door  
 or make appointment

**Course goals:**

Psychology is a science. Thus, to attain high-quality answers to questions about human behavior and mental processes, it is essential to use high-quality research design, methodology, and statistical analyses. In this course, you will acquire the tools to understand and conduct research studies and statistical analyses.

In this course, my goals for you are:

- To become conversant in the terminology related to psychological research.
- To develop the ability to distinguish good from bad research, and to identify *why*.
- To learn what data represent statistically and conceptually.
- To learn to summarize and describe data.
- To learn to choose and conduct appropriate statistical tests.
- To learn to critically evaluate the results of statistical analyses and to draw appropriate conclusions.
- To learn to conduct analyses of psychological data using computer software (SPSS).

**Required Text:**

Heiman, G. W. (2001). Understanding research methods and statistics: An integrated introduction for psychology (2nd ed.). Boston: Houghton Mifflin Company.

**Other Requirements:**

- All students must bring a calculator with statistical functions to class each day. It is the student's responsibility to understand how to use his or her own calculator. I recommend the Texas Instruments TI-83.
- All students must have a University email account and check it regularly. You will be responsible for any course information I email to you. Additionally, you must have a Rowan account to access SPSS.
- The pre-requisite for this course is an Introductory Psychology course. If you have not taken one, you may not take this course.
- It is assumed that students have basic algebra skills. If you find the mathematics

background test difficult and/or get more than 3 or 4 problems incorrect you should drop this course and take an algebra course before attempting this course.

- This course may not be taken P/NC.

**Attendance, Homework, and Effort:** It is EXTREMELY IMPORTANT that you attend all class meetings and complete all readings and homework assignments on time. All parts of the course material are cumulative -- that is, you must understand the earlier material in order to understand the later material. If you fall behind, it will be very difficult for you to catch up. If you work diligently in this course, making sure you understand each chapter and concept at the time we are covering it in class and completing all assignments on time, you will probably do well in the course. If you miss class, procrastinate, and avoid seeking help until you have no idea what is going on, you most assuredly will not do well in the course. We will often review homework in class but I will not normally collect and grade it.

Remember that no one can "teach" you anything -- the material in this course as presented by the instructor, the textbook, and assignments create opportunities for you to learn, but you have to work actively to do so. If you have erratic attendance, I will schedule a conference with you to determine why. You are responsible for all material covered during class regardless of the reason for your absence.

**Academic Dishonesty:** Academic dishonesty (cheating) will not be tolerated. Any individual caught cheating or aiding another student cheating will receive an automatic F in the course and his/her name will be forwarded to the Dean of Students for further possible action (i.e., suspension or expulsion). All work must be exclusively your own unless the instructor explicitly states that collaboration is permitted. If you find yourself even considering cheating, see it as a sign that you need assistance learning the course material and come see me.

**Students with Disabilities:** Your academic success is important. If you have a documented disability that may have an impact upon your work in this class, please contact me. Students must provide documentation of their disability to the Academic Success Center in order to receive official University services and accommodations. The Academic Success Center can be reached at 856-256-4234. The Center is located on the third floor of Savitz Hall. The staff is available to answer questions regarding accommodations or to assist you in your pursuit of your accommodations. We look forward to working with you to achieve your learning goals.

### **Evaluation:**

**Exams:** There will be two exams during the term and a cumulative final exam. The format of the exams will be any combination of multiple choice, short answer, essay, and calculation questions, and will cover material from the textbook as well as from class lectures and activities, discussions, and assignments.

**Quizzes:** There will be approximately 10 quizzes throughout the semester, on each Monday of a week in which there is no exam, beginning in Week 3. Together they comprise only 10% of your grade, so their main purpose is not to "test" you per se but to encourage you to attend class, to be well-prepared for class, and to serve as "checkpoints" for both the students and instructor to see how your learning is progressing. The two lowest quiz grades will be dropped (this includes quizzes missed for any reason). If more than two quizzes are missed for excused reasons (the student provides documentation of an illness, family emergency, etc.), the additional missed quizzes will be excused. Additional quizzes missed due to an unexcused absence will receive a zero.

**Reflection Cards:** For each Wednesday (unless there is an exam), you will prepare an index card on which you have recorded your name, one idea/concept from the previous week that is/was difficult for you to learn and one idea/concept from the previous week of which you feel you have a good understanding. Material on cards will not be graded; either you do them or you don't. These will be reviewed in class and handed in.

**Data Collection and Analysis Project:** To meet the course goals of achieving competence in using various data collection methods and in using a statistical software package, the class will participate in national research project on school spirit. See the handout for more information. In total, the project will be worth 15% of your final grade, with most of that due to the final paper and the rest due to your completion of the needed steps along the way.

**Late Assignment/Missed Exam Policy:** Please note that except for health or family emergencies, all exams must be taken and all work must be turned in on the dates listed here (unless explicitly changed by the instructor). Except for genuine and documented emergencies, make-up tests will not be given and late assignments will not be accepted (or will receive significant grade penalties). This requirement is central to maintaining fairness for each student in the course. Any student missing an exam for any reason must contact me within 24 hours.

**The final grade will be computed as follows:**

	<u>Date</u>	<u>Weight</u>
Quizzes	most Mondays	10%
Reflection Cards	Wednesdays	5%
Exam 1	October 3	20%
Exam 2	November 7	25%
Final Exam (cumulative)	December 14	25%
Data Project	December 19	<u>15%</u>
		100%

- A 93-100%
- A- 90-92.9%
- B+ 87-89.9%
- B 83-86.9%
- B- 80-82.9%
- C+ 77-79.9%
- C 73-76.9%
- C- 70-72.9%
- D+ 67-69.9%
- D 63-66.9%
- D- 60-62.9%
- F 59.9% or below

Please note: This syllabus represents the instructor's best estimate of course procedures and schedules; however, it is subject to change at the instructor's discretion, with notification to the class.

## Expected Class Schedule

IT IS EXTREMELY IMPORTANT THAT YOU COMPLETE ALL READING PRIOR TO CLASS!!!

WEEK	DAY	DATE	TOPIC	READING
1	W	9/7	Intro to course; Background quiz; Philosophy of Science	
2	M	9/12	Issues in Designing and Interpreting Research	Chapter 2
2	W	9/14	Issues in Designing and Interpreting Research	Chapter 2
3	M	9/19	Understanding Reliability & Validity (quiz 1)	Chapter 3
3	W	9/21	Understanding Reliability & Validity	Chapter 3
4	M	9/26	Designing Experiments (quiz 2)	Chapter 4
4	W	9/28	Practice and Application	Chapter 4
5	M	10/3	Exam 1	2,3,4
5	W	10/5	Descriptive Statistics: Frequency Distributions	Chapter 6
6	M	10/10	Descriptive Statistics: Measures of Central Tendency (quiz 3)	Chapter 7
6	W	10/12	Descriptive Statistics: Measures of Variability	Chapter 8
7	M	10/17	Descriptive Statistics: Measures of Variability (quiz 4)	Chapter 8
7	W	10/19	Descriptive Statistics: z-scores	Chapter 9
8	M	10/24	z-scores & Probability (quiz 5)	Chapter 12
8	W	10/26	Hypothesis Testing (do not miss this class!)	Chapter 13
9	M	10/31	Hypothesis Testing continued (quiz 6)	
9	W	11/2	SPSS; Practice and Application	
10	M	11/7	Exam 2	Ch 6,7,8,9,12,13
10	W	11/9	Single-sample t-test	Chapter 14
11	M	11/14	Independent-samples t-test (quiz 7)	Chapter 15
11	W	11/16	Dependent-samples t-test	Chapter 16
12	M	11/21	Introduction to ANOVA (quiz 8)	Chapter 17
12	W	11/23	One-way ANOVA	Chapter 17
13	M	11/28	Two-way ANOVA (quiz 9)	Chapter 18
13	W	11/30	ANOVA continued; Review and Application	
14	M	12/5	Correlation (quiz 10)	Chapter 10
14	W	12/7	SPSS for inferential statistics	
15	M	12/12	Ethics in Research (quiz 11)	Ch 4 (portion)
15	W	12/14	FINAL EXAM	Ch 10,14,15,16,17,18
16	M	12/19	Data Analysis Project Due	

**Statistics and Research Methods in Psychology  
Professor McElwee**

**Fall 2005**

**Data Collection and Analysis Project**

Our class will participate in the SCHOOL SPIRIT project, in which students in research methods/statistics courses from around the country collect data at their institutions regarding school spirit. The project is run by Dr. Alan Reifman of Texas Tech University; Rowan will be one of at least 37 participating institutions. Attached is a journal article describing the initial study, with data collection in 2000; we are participating in the 5-year follow-up study.

As part of this course, each student will collect data about school spirit at Rowan using various methodologies. I will compile the data from the class and transmit it to Dr. Reifman to be combined with data from the other institutions; we will later receive a data file from the complete national project. This project serves multiple goals in this course, including providing opportunities for you to gain experience using observational, survey, and archival data collection methods. It will also provide us with a large data set on which you can apply your knowledge of analyzing data using SPSS and writing an APA-style results section.

The measures include:

Observations in student parking lots of the percentage of cars with school decals, bumper stickers, license plate frames, etc.

Observations of the percentage of students in classes or other settings wearing school apparel.

Alumni donation rate.

Attitude surveys. Students on campus can be asked to fill out the Luhtanen & Crocker Collective Self-Esteem Scale and Tropp & Wright visual closeness measure, with respect to respondents' strength of identity with their school.

We will form data collection teams within the class; each team will be responsible for collecting a portion of the data. Due dates for data collection and entry will be announced in class.