

# Experimental and Statistical Methods- Part I (Psych 211)

4 credits

Fall 2009 Class (Tuesday & Thursday 1:00- 2:15 p.m.)

Recitation (Monday 10:00-10:50)

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Office Hours: Thursday 2:15 – 3:15  
& by appt.  
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## Required Texts (same texts will also be used for PSY 212):

1. Gravetter & Forzano (2009). Research Methods for the Behavioral Sciences (3rd edition). Belmont, CA: Wadsworth/Thomson Learning.
2. Pyrczak, F. (2009). Success at Statistics (4<sup>th</sup> edition). Los Angeles, CA: Pyrczak Publishing.
3. Holcomb, Z. (2007). Interpreting Basic Statistics (5<sup>th</sup> edition). Los Angeles, CA: Pyrczak Publishing.
4. American Psychological Association (2010). *Publication Manual of the American Psychological Association* (6<sup>th</sup> edition). Washington, DC: APA.

## **Materials:**

1. Regular access to eCollege. eCollege enables me to post handouts and assignments to the course space, which you can then access and print. It is your responsibility to regularly check the course space for materials BEFORE coming to class. You should review the materials (and print and bring them with you).
2. Turning Point Clicker. You must bring this to every class.
3. Calculator. Starting 10/15, you must bring a calculator to every class.
4. SPSS (Statistical Package for the Social Sciences, Version 15.0 or later). Starting 10/15, you must have regular access to this program, either by using the campus labs or purchasing a student version.

Description: An introduction to the scientific field of research and data analysis that is required for working in any area of psychology. Topics include: qualitative and quantitative experimental methods, selection of subjects, validity and ethical considerations, literature searches, and composing APA-style documents. The SPSS computer package will be introduced along with descriptive statistics, and mini-field experiments will be conducted. This course MUST be taken immediately before PSY 212. PSY 100 is a prerequisite for this course.

Course Objectives: To provide an introduction into the scientific field of research and data analysis that is required for working in and exploring any area of psychology.

## Course Outcomes:

- At the completion of the course, you will be knowledgeable of the various types of research methodologies (both qualitative and quantitative)
- You will be able to recognize what qualities a scientific topic must possess to be a true science
- You will have the ability to design a valid and ethical research study, taking into consideration relevant subject and study factors
- You will be familiar with paper and on-line procedures for conducting a proper literature review and composing APA-style documents
- You will gain experience conducting mini-field research experiments

- You will gain experience using a computerized statistical package, SPSS
- You will be able to conduct and interpret descriptive data analyses (by hand and computer), and transform raw scores to standard scores for the normal distribution

Teaching Format: The course will consist of lecture, discussion, in-class activities, and exercises to be completed outside of class. You should read the assigned material **before** coming to class, so that you can be an active participant and keep current with the material.

Psychology Department Attendance Policy: The Psychology Department is committed to the principle that regular and punctual class attendance is essential to the students' optimum learning and successful academic achievement. Regular class attendance is a student obligation, and students are responsible for all work, tests and written assignments. Therefore, students are expected to be present for all class sessions. The Psychology Department's attendance policy recognizes that there will be times when attendance at class is not possible. You may think of the policy as being similar to the type used in the corporate world where each employee is given a certain number of "personal/sick days." Based on the number of regularly scheduled class meetings, you will be allowed a certain number of absences (see below) with no consequences, no questions asked. In other words, there is no distinction between excused and unexcused absences. You are of course responsible for anything covered during those missed classes, and for submitting assignments on time, regardless of whether or not you attend. Beyond the allowable number of absences, there are consequences that will adversely impact your grade, much as missing too many days of work can adversely impact your employment status. Above all else, you should carefully consider each decision to not attend class, as once your allotted absences have been used, they are gone. *It is important that students arrive for class on time. Late arrivals are very distracting, not only to the instructor, but also to fellow students. Repeated late arrivals are not acceptable and will be addressed on an individual basis.* It is each student's responsibility to understand this policy and to keep track of absences throughout the semester.

Application to this Class: Formal attendance will be taken during all class sessions. This class meets twice per week (28 class meetings). You may miss **3 classes** without penalty. If you miss **4 classes**, your final grade (cumulative percentage of points) will be lowered by 5%. That means that if you have earned 84% of the available points in the class, which is a B grade, you would be lowered to 79%, which is a C+. Likewise, if you have earned 77% of the points available, the penalty would take you down to 72%, which is a C-. As a reminder, a C grade (73%) is required in all Psychology courses. If you miss **5 classes**, you will be docked an additional 5% points off of your final grade (for a total of 10%). If you miss **6 classes**, you will receive a failing grade for the course. If you miss six classes, you have missed approximately 25% of the class meetings.

Recitation Session Attendance: The recitation session will serve as an extension to the class. The sessions will serve to aid students in understanding the lecture material (e.g., current material review, assistance with mini-experiments, hands-on design and data collection practice, and/or a question-and-answer period for homework assignments). This recitation class will provide structure to the lab component of the course and enable you to receive focused assistance on content that often warrants additional instruction for many students. Therefore, attendance at your scheduled recitation session is required. For this semester, you will be allowed up to TWO absences (for any reason) from your scheduled recitation. Arriving more than 5 minutes late will count as an absence for that day. Recitation attendance will constitute 24 points (4%) of the final grade. For each additional absence (over the two allowed), 1% (6 points) will be deducted from your total points, up to the maximum of 4% (24 points).

## Academic Conduct

**Plagiarism and Cheating:** All Cedar Crest College students are expected to be familiar with and fully supportive of the college's policy regarding the honor code and academic integrity (e.g., cheating on tests, copying other students' work, plagiarism). These rules apply to the completion of any type of homework, feedback on homework progress, and completion of exams. Any violation will be officially reported to the Provost's Office for inclusion in the student's record and will have the appropriate penalties applied.

**Classroom Environment:** Appropriate classroom behavior is expected and should be free from distraction (e.g., late arrivals, early departures, inappropriate conversation, cell phone use). Use of computers at times and in manners other than those authorized (e.g., checking e-mail, playing games, web surfing, using printers) is very distracting to others and will NOT be tolerated. Care must be taken to protect the rights of all students and faculty to enjoy a courteous, respectful classroom environment. See CCC's Student Guide for more information regarding the enforcement of these policies.

**Disabilities:** Students with documented disabilities who may need academic accommodations should discuss these needs with me during the first two weeks of class. Students with disabilities who wish to request accommodations should contact the Advising Center.

## Student Evaluation:

**Tests:** Three exams will be given, each worth 100 points. Tests include multiple-choice, short-answer, and computational questions designed to measure your knowledge, understanding, and application of textbook, lecture, exercise and computer material. Make-up exams will be given ONLY with documentation of an excused absence (as approved by the Dean) - NO exceptions. Advanced notice should be given whenever feasible. Documentation must be presented and the make-up exam scheduled as soon as possible.

**Computer Exercises:** To fully understand and apply major concepts, you will need to complete computer exercises using the SPSS statistical package. You will receive credit for each exercise that you complete no later than the class period on the due date. All assignments must be printed, fully assembled (with clip or staple) and ready to be turned in at the start of the class period. Otherwise, five points will be deducted, and will continue to be deducted for each successive day that an assignment is late. Late assignments will be penalized 5 points for each day elapsing after the due date. You may be given time during class to work on the computer, and may work at any computer lab on campus outside of class.

**Papers, Mini- Experiments and Homework Assignments:** You will also work on several mini-experiments. These experiments will require you to review the psychological literature, collect data, and write up the introduction of a report and/or methodology using the APA writing style. You must turn in each paper no later than the class period on the due date. All papers must be printed, fully assembled (with clip or staple) and ready to be turned in at the start of the class period. Otherwise, ten points will be deducted, and will continue to be deducted for each successive day that an assignment is late.

You will also be expected to complete several homework assignments relevant to the material being discussed. You must turn in completed homework no later than the class period on the due date. All assignments must be completed, fully assembled (with clip or

staple) and ready to be turned in at the start of the class period. Otherwise, five points will be deducted, and will continue to be deducted for each successive day that an assignment is late.

Collaboration on daily work is permissible, but any work turned in for a grade must be **your own**. Violations of the college plagiarism policy will be taken very seriously and reported to the Provost, resulting in a grade of zero for the particular assignment or exam.

**Extra Credit:** You will be offered several opportunities throughout the semester to earn a maximum of 5 extra credit points. For any credit, exercises must be turned in no later than the class period on the due date. Late extra credit assignments will not be accepted. You are also encouraged to participate as a subject in a research experiment any time during the semester (you must provide proper documentation of participation to receive credit).

**Grading:** The grade for the course will be based on performance with respect to five items: tests, computer exercises, min-experiments and homework assignments, attendance at recitation sessions, and any extra credit that you might earn. The grade will be calculated as a percentage of 549 possible points.

Tests	300 points
Computer exercises	30 points
Mini-experiments and Homework Assignments	195 points
Attendance at Recitation Sessions	24 points

A	93.0-100%	C	73.0-76.6%
A-	90.0-92.9%	C-	70.0-72.9%
B+	86.7-89.9%	D+	67.0-69.9%
B	83.4-86.6%	D	66.9-60%
B-	80.0-83.3%	F	below 60%
C+	76.7-79.9%		

**Note:** You must get a grade of C or better in this course to have the course count for the Psychology major or minor.

The following is a schedule of the topics to be covered on approximate dates.

DATE(S)	TOPIC	RMBS (chapter)	Lab Topic (Experiment Or Computer)	Assignment (pts)	Extra Credit (pts)
8/25	Introduction, Acquiring Knowledge, and the Scientific Method	1	Observation (Driver Behavior)		
8/27	Research Ideas (at Library)	2		PsychInfo HW 20	
9/1	Ethics in Research	4	Correlation (Weather & Mood)		
9/3	Writing an APA-Style Research Report	16			
9/8, 9/10	Descriptive and Correlation Research Strategies	13, 12	Types of Research Design	Exp: Observ 25 Exp: Corr 25	Survey 2
9/15	<b>TEST #1</b>				
9/17	Defining and Measuring Variables	3	Psychometric Properties		
9/22	Selecting Research Participants	5			
	Research Strategies and Validity	6			
9/24, 9/29	Experimental Research Strategy	7	B/W Subjects (Anagrams)		
	Between-Subjects Design	8			
10/1, 10/6	Within-Subjects Design	9	W/In Subjects (Drinks) Factorial (Harassment)	Journal Article Evaluation 35	Designs 2
	Factorial Designs	11			
10/8	Quasi-Experimental Strategy	10	Single Subject (Own Selection)	Exp: Single Subject 20	
	<i>Single-Subject Research Designs</i>	14			
10/13	<b>FALL BREAK- NO CLASS</b>				
10/15, 10/20	Introduction to Statistics	15			
	Frequencies and Distributions				

<i>DATE(S)</i>	<i>TOPIC</i>	<i>SAS &amp; IBS exercises</i>	<i>Lab Topic (Experiment. Or Computer)</i>	<i>Assignment (pts)</i>	<i>Extra Credit (pts)</i>
10/22	<b>TEST #2</b>				
10/27	Introduction to SPSS Graphing Results: Tables and Graphs	SAS 7-8 IBS 7	SPSS Input and Frequencies	Computer 15	
10/29, 11/3	Measures of Central Tendency	SAS 10-11 IBS 11	SPSS Editing & Hand Computations		
11/5, 11/10, 11/12	Measures of Variability	SAS 13	SPSS Statistics & Hand Computations	Computer 15 Computations 35	IBS 15 1
11/17, 11/24	Z-Scores and Standard Distribution <b>11/19- NO class</b>	SAS 14, 15, 16, 18	SPSS Manipulations & Hand Computations		
11/26	<b>THANKSGIVING HOLIDAY- NO CLASS</b>				
12/1	Z-Scores and Standard Distribution		Review	Computations 35	IBS 16 1
12/3	Z-Scores and Standard Distribution and Review		Wrap-up		
<b>Final exam period</b>	<b>TEST #3</b>				

Note: You may participate as a subject in a research experiment on campus any time during the semester to earn extra credit. You must provide proper documentation of participation to receive credit.