

## Experimental and Statistical Methods- Part II (Psych 212)

4 credits

Spring 2010 (Tuesday and Thursday 1:00- 2:15 p.m.)

Recitation (M 10:00-10:50 a.m.)

Instructor: Dr. Kerrie Baker  
Room: 120 Curtis Hall  
E-Mail: [kqbaker@cedarcrest.edu](mailto:kqbaker@cedarcrest.edu)

Office Hours: T & R 10:00 – 11:00  
& by appt.  
Phone: (610) 606-4666, ext. 3426

### Required:

#### ***Texts (same texts that were used for PSY 211):***

1. Gravetter & Forzano (2009). Research Methods for the Behavioral Sciences (3rd edition). Belmont, CA: Wadsworth/Thomson Learning.
2. Pyrczak, F. (2009). Success at Statistics (4th 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 (2009). *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. You must bring a calculator to every class.
4. SPSS (Statistical Package for the Social Sciences, Version 15.0 or later). You must have regular access to this program, either by using the campus labs or purchasing a student version.

Description: This course is a continuation of the exploration of the scientific field of psychology research and data analysis. Topics include: theory, computation, and application of various descriptive and inferential (nonparametric and parametric) statistics. The SPSS computer package will be used for each data analysis method, and data analyses will be tied to specific research designs and mini-field experiments. This course **MUST** be taken immediately after PSY 211. You must have obtained a passing grade in PSY 211 to take this course. This class is for declared Psychology majors only.

Course Objectives: To continue exploring the scientific fields of research, statistics and data analysis required for any field of psychology.

### Course Outcomes:

- At the end of the course, you will have the ability to differentiate between the uses of correlational and experimental methods of research
- You will be knowledgeable of the theory underlying probability and hypothesis testing
- You will be familiar with various types of descriptive and inferential statistics used in basic and applied research
- You will be able to calculate and interpret, by hand and by computer, several types of mean comparison methods and nonparametric statistics
- You will be able to read research articles, and understand and critique the reporting of statistical techniques and results
- You will identify the proper application of data analyses for specific research designs

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.* 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:** Due to the hands-on and applied nature of this course, a recitation session will serve as an extension to the class. The sessions will serve to aid students in understanding the lecture material (which may consist of, for example, current material review, assistance with experiment papers, 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. You must attend one of the scheduled two sessions per week. For this semester, you will be allowed up to TWO absences for any reason (although not recommended) from your scheduled recitation. Recitation attendance will constitute 28 points (4%) of the final grade. For each additional absence (over the two allowed), 1% (7 points) will be deducted from your total points, up to the maximum of 4% (28 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, free from distraction (e.g., late arrivals, early departures, inappropriate conversation), is expected. 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.

**Experiment Papers:** You will be expected to complete and write up several mini-experiments conducted last semester. With the data collected, you will be required to conduct the analyses, and report and discuss the results in APA format (worth up to 35 points). 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.

**Computer Exercises:** To fully understand and apply major concepts, you will need to complete five computer exercises using the SPSS statistical package. You will receive credit (up to 20 points) 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. You will be given time during class to work on the computer whenever possible, and may work at any computer lab on campus outside of class.

**Homework:** You will be expected to complete homework assignments involving mathematical computations and/or interpretations for every chapter. The assignments from the *Success at Statistics* workbook are worth 12 points for each chapter, while the assignments from the *Interpreting Basic Statistics* workbook are worth 10 points for each chapter. 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.

**Extra Credit:** You will be given several opportunities to complete extra credit exercises. 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). You may earn a maximum of 5 extra credit points and these points will be added to the total points achieved.

**Grading:** Your final grade will be based on 3 tests, experiment write-ups, computer exercises, homework, and recitation session attendance (and any extra credit). The grade will be calculated as a percentage of 687 possible points.

Tests	300 points
Experiment Write-ups	105 points
Computer Exercises	100 points
Homework	154 points
Attendance at Recitation Sessions	28 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.**

<i>DATE</i>	<i>TOPIC</i>	<i>Mini-Experiment Papers</i>  <i>MAX. 35 POINTS</i>	<i>SAS (Workbook)</i>  <i>MAX. 12 POINTS</i>	<i>IBS (Workbook)</i>  <i>MAX. 10 POINTS</i>
1/19, 1/21	Correlation		19-22	25
1/26, 1/28, 2/2	Regression <b>(computer exercise)</b>	Analysis & Results	25-26	28  EC-29
2/4, 2/9	Probability			
2/11	<b>TEST #1</b>			
2/16, 2/18, 2/23	<i>Go over test #1</i> Sampling Distributions Hypothesis Testing		33-36	21
2/25, 3/2 3/4	Introduction to the t Statistic t-Test for Two Independent Samples t-Test for Two Related Samples <b>(computer exercise)</b>	Analysis, Results & Discussion	37-40	37  EC-39
3/9 & 3/11	<b>NO CLASS- SPRING BREAK</b>			
3/16, 3/18, 3/23	Introduction to Analysis of Variance <b>(computer exercise)</b>		41-43	49  EC-50
3/25	SPSS Laboratory & Write-Ups			
3/30	<b>TEST #2</b>			
4/1, 4/8, 4/13, 4/15	<i>Go over test #2</i> Two-Variable Analysis of Variance <b>(computer exercise)</b>	Analysis, Results & Discussion	45	51
4/20, 4/22 4/27	Chi-Square Statistic <b>(computer exercise)</b>		48-51	55  EC-57
4/29	SPSS Laboratory & Write-Ups			
5/4	Review			
Final Exam Period	<b>TEST #3</b>			

Note: Exercise numbers following "EC" in IBS column denote **extra credit** opportunities (each worth up to 1 point). A maximum of 5 extra credit points can be acquired (including research subject participation).