

PSYC 225 & 225L - PSYCHOLOGICAL STATISTICS AND LAB
COURSE SYLLABUS – Fall 2011

Lecture-04: Tues 2:10PM - 4:40PM in CSCC 204

Lab 05: Thurs. 2:10- 4:40PM in CSCC 204

PROFESSOR: Dr. William B. King
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OFFICE HOURS: MWF 10:30-12:30 TTh 11:15-12:30
Other times by appointment

COURSE DESCRIPTION: This course provides an introduction to basic descriptive and inferential statistical procedures and concepts. Topics include measures of central tendency, variation, probability, hypothesis testing, correlation, regression, and chi square.

PREREQUISITES: The prerequisite for this course is **College Algebra** (Math 130 or equivalent). Students are expected to have a working knowledge of algebra. Students should be able to perform all the math procedures contained in the *Basic Mathematics Review* in Appendix A (pages 562-583) of the textbook.

CORE CURRICULUM STUDENT LEARNING OUTCOMES: Psychological Statistics is one of the courses that fulfills the requirements for Core Curriculum Goal 2: Knowledge of Mathematical Concepts. The Student Learning Outcomes for this goal are

- 1) Demonstrate knowledge of fundamental mathematical concepts.
- 2) Demonstrate the ability to use quantitative skills to solve problems.
- 3) Demonstrate the ability to understand and apply mathematical concepts.
- 4) Demonstrate the ability to use logical and abstract thought and reasoning for problem solving.

COURSE OBJECTIVES: The goal of PSYC 225 is to familiarize students with techniques used to analyze scientific data in psychology. This course will prepare students to

- 1) compute and interpret basic descriptive statistics.
- 2) compute and interpret basic inferential statistics.
- 3) report and interpret statistical findings using American Psychological Association (APA) publication style.

STUDENT LEARNING OUTCOMES: Upon completion of this course, students should be able to

- 1) compute and interpret measures of central tendency.
- 2) compute and interpret measures of variability.
- 3) compute and interpret single-sample z tests and single-sample t tests.
- 4) compute and interpret independent means t tests and dependent means t tests.
- 5) compute and interpret one-way analysis of variance.
- 6) compute and interpret bivariate correlation and regression.
- 7) compute and interpret chi square tests.
- 8) report and interpret statistical test results in APA style.

REQUIRED MATERIALS: Please bring a calculator to each lecture and lab session.

Text: Gravetter, F.J. and Wallnau, L.B. (2011). *Essentials of Statistics for the Behavioral Sciences* (7th ed.). Belmont, CA: Wadsworth, Cengage Learning.

Calculator: You will need a scientific calculator. A calculator that does two-variable statistics including linear correlation and regression would be very much to your advantage! **The TI-83 or the TI-84 calculator manufactured by Texas Instruments is highly recommended.** The use of the TI-83/TI-84 will be demonstrated in class. Students who have any other calculator will need to learn to operate it by reading the instruction manual for that specific calculator.

ATTENDANCE POLICY: The course consists of a lecture and a lab component. All students must be enrolled in both the lecture (PSYC 225, Section 04) and the lab (PSYC 225L, Section 05). The lab component is treated as a continuation of the lecture component. New material will be presented, problems will be worked, and review of

previous material will occur in both lecture and lab. Students are strongly encouraged to attend every class and lecture. You should not expect to do well in a statistics class that you do not attend! However, there is no formal attendance requirement other than on exam days (below). Students should obtain missed class notes and handouts from another student.

Attendance on exam dates is required. Any exam missed for any reason will be made up by taking the comprehensive final exam. No other make-up exams will be available.

EXAMS: Four exams will be given during the semester. Scores on these exams will be the entire basis for your grade in the course. There are no graded homework assignments, quizzes, or extra credit exercises. Each exam will be worth 50 points and will consist of a mixture of computational, objective, and short-answer items. You will need to bring your calculator to the exam. None will be supplied. The exam must be completed in class during the time allotted for it. You may not use a phone or leave the room during the exam. If after the fourth exam you are happy with your grade in the course, you do not need to take the final. If you want to try to improve your grade or need to make-up a missed exam, then the final exam is available for that purpose. The final exam will be 100 worth points.

Exam dates are:

Exam 1:

Exam 2:

Exam 3:

Exam 4:

Final Exam: Tuesday, December 13, 1:30-3:30 (for make-ups or optional grade improvement attempts)

GRADES: Final grades will be based on the total points earned on the four exams. **Students will receive the same letter grade for both the lecture section and lab section of the course.** Grades will be assigned as follows:

180 - 200 points = A	140 - 149 points = C
170 - 179 points = B+	130 - 139 points = D+
160 - 169 points = B	120 - 129 points = D
150 - 159 points = C+	Below 120 points = F

TOPICS COVERED IN THE COURSE: We will cover the following topics and progress through them at whatever rate the class permits. Exams will cover whatever we've made it through up to the exam date. Consider the chapters listed with the topics to be assigned readings.

Introduction to Statistics - Chapter 1 (very fast!)

Frequency Distributions - Chapter 2 (we won't spend much time here either)

Central Tendency - Chapter 3

Variability - Chapter 4 (most important topic in statistics -- we will cover it thoroughly)

z-Scores - Chapter 5

Probability - Chapter 6

Probability and Samples - Chapter 7

Introduction to Hypothesis Testing - Chapter 8

Introduction to the t Statistic - Chapter 9

The t Test for Two Independent Samples - Chapter 10

The t Test for Two Related Samples - Chapter 11

Estimation - Chapter 12 (we may skip this if time becomes a factor)

Introduction to Analysis of Variance - Chapter 13

---notice we are skipping chapter 14---

Correlation and Regression - Chapter 15

The Chi Square Statistic - Chapter 16

Note: The professor reserves the right to make changes to this syllabus should the need arise. Any changes will be announced in class.