**Course Title:** Psychological Statistics  
**Term/Semester/Year:** Spring 2010  
**Course Catalog Number:** PSYC2201  
**Instructor:** Stephen Armeli

**Course Description:** The purpose of this course is twofold: (1) to prepare you to conduct research in the social and/or medical sciences and (2) to help you understand what research results mean, so that you yourself can make more informed decisions (not only in your job, but in your everyday life as well). Specifically, you will be learning about the basis for statistical decision-making, and the appropriate statistical tests for different types of data and questions of interest.

**Prerequisites (If any):** PSYC 1101

**Goals and Objectives:** After completion of this course, students should be able to demonstrate familiarity with:

- the strengths and weaknesses of correlation and experimental designs;
- using SPSS software;
- basic descriptive statistics and graphing procedures;
- the underlying principles (and strength and weaknesses) of null hypothesis significant testing;
- hypothesis testing with respect to group mean differences (2 or more groups);
- hypothesis testing with respect to associations among quantitative variables (correlation);
- hypothesis testing with respect to associations among qualitative variables (chi-square)

**Course Topics:**
- Variable measurement; overview of research methods
- SPSS (PASW) introduction
- Descriptive statistics central tendency, variability, graphing
- Correlation
- Z-scores and probability
- Basics of inferential statistics
- Inferences of mean differences (single groups): z-test single groups
- Effect size
- Inferences of mean differences (single and two groups): t-tests
- Inferences about mean differences (repeated measures): paired samples t-test
- Inferences about means, two or more independent variables (factors): One and Two-way ANOVA
- Significance testing for correlations
- Nominal level dependent variables & chi-square analysis