

CALIFORNIA STATE UNIVERSITY CHANNEL ISLANDS

**NEW COURSE PROPOSAL**

PROGRAM AREA \_\_\_\_\_

**1. Catalog Description of the Course.** *[Include the course prefix, number, full title, and units. Provide a course narrative including prerequisites and corequisites. If any of the following apply, include in the description: Repeatability (May be repeated to a maximum of \_\_\_ units); time distribution (Lecture \_\_\_ hours, laboratory \_\_\_ hours); non-traditional grading system (Graded CR/NC, ABC/NC). Follow accepted catalog format.]*

**Psy 202. Introduction to Psychological Statistics (3)**

Weekly three-hour lecture/laboratory instruction and exercise.

Prerequisite: A passing score on the Entry Level Mathematics Exam (ELM) or credit for Math 105 (or equivalent).

Critical reasoning using a quantitative and statistical problem-solving approach to solve real-world problems. Uses probability and statistics to describe and analyze biological data collected from laboratory or field experiments. Course will cover descriptions of sample data, probability and empirical data distributions, sampling techniques, estimation and hypothesis testing, ANOVA, and correlation and regression analysis. Students will use standard statistical software (SPSS) to analyze real world and simulated data.

Same as Math 202 and Bio 202.

GenEd: B3, B4

**2. Mode of Instruction.**

	Units	Hours per Unit	Benchmark Enrollment
Lecture	<u>  2  </u>	<u>  1  </u>	<u> 20 </u>
Seminar	_____	_____	_____
Laboratory	<u>  1  </u>	<u>  1  </u>	<u> 20 </u>
Activity	_____	_____	_____

**3. Justification and Learning Objectives for the Course.** (Indicate whether required or elective, and whether it meets University Writing, and/or Language requirements) *[Use as much space as necessary]*

This is a required course for Psychology majors because it introduces students to the type of critical reasoning used by psychologists working with empirical data. Utilizing the standard quantitative and statistical problem solving approach required of psychologists, students will gain experience with quantitative tools to test and advance psychological theories based on empirical data. Through this course, students will be able to:

1. apply quantitative problem-solving skills to psychological problems and issues;
2. select, apply and interpret descriptive statistics in an appropriate fashion;
3. select, apply and interpret hypothesis testing methods in an appropriate fashion;
4. reason both inductively and deductively with quantitative information and data;
5. use statistical software to conduct complex statistical analysis of real-world and simulated data; and,
6. write the results of a statistical study using APA format.

**4. Is this a General Education Course**       **YES**       **NO**  
 If Yes, indicate GE category:

<b>A (English Language, Communication, Critical Thinking)</b>	
<b>B (Mathematics &amp; Sciences)</b>	<b>B3, B4</b>
<b>C (Fine Arts, Literature, Languages &amp; Cultures)</b>	
<b>D (Social Perspectives)</b>	
<b>E (Human Psychological and Physiological Perspectives)</b>	

**5. Course Content in Outline Form.** [Be as brief as possible, but use as much space as necessary]

Need for quantitative methods in science in general and psychology in specific  
Statistical methods as ways to reason inductively and deductively in a quantitative framework  
Methods of graphical and numerical description  
Basic probability theory  
Normal curve methods in statistics  
Logic of sampling and sampling methods  
Logic of hypothesis testing and experimental design  
Logic of estimation  
Basic hypothesis testing of differences: *t*- and *z*- tests  
Advanced hypothesis testing: ANOVA models  
Basic hypothesis testing of similarities: correlation and association  
Advanced hypothesis testing of similarities: linear regression models  
Reasoning about proportions: Chi-squared and other nonparametric methods and models  
Simple spreadsheet methods for data description and analysis  
Computer analysis of complex psychological data using SPSS

**6. References.** [Provide 3 - 5 references on which this course is based and/or support it.]

George, D., & Mallery, P. (2002). *SPSS for Windows step by step: A simple guide and reference* (4<sup>th</sup> ed.). New York: Allyn & Bacon.

Jackson, S. L. (2003). *Research methods and statistics: A critical thinking approach*. Pacific Grove, CA: Thompson.

Sprinthall, R. C. (2003). *Basic statistical analysis* (6th ed.). Boston: Allyn and Bacon.

Walsh, A., & Ollenburger, J. C. (2001). *Essential statistics for the social and behavioral sciences: conceptual approach*. New Jersey: Prentice-Hall.

Westin, A. (1993). *A rulebook for arguments* (2<sup>nd</sup> ed.). Indianapolis: Hackett. [Also available online at: <http://www.hozien.com/mih/arg/rule.pdf>.

**7. List Faculty Qualified to Teach This Course.**

Psychology faculty

**8. Frequency.**

a. Projected semesters to be offered: Fall   X   Spring   X   Summer \_\_\_\_\_

**9. New Resources Required.**

- a. Computer (data processing), audio visual, broadcasting needs, other equipment
- b. Library needs
- c. Facility/space needs

**10. Consultation.**

Attach consultation sheet from all program areas, Library, and others (if necessary)

**11.** If this new course will alter any degree, credential, certificate, or minor in your program, attach a program modification.

Harley Baker                      05 January 2003  
Proposer of Course              Date