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.]*

   Math 201. ELEMENTARY STATISTICS (3)
   Three-hour lecture/laboratory per week.
   Prerequisite: A passing score on the Entry Level Mathematics Exam (ELM) or Math 105 or Math 101.
   Critical reasoning using a quantitative and statistical problem-solving approach to solveing real-world problems. Topics include: probability and statistics, 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 to analyze real world and simulated data.

   GenEd: B3

2. **Mode of Instruction.**

	Units	Hours per Unit	Benchmark Enrollment
Lecture	3	1	20
Seminar			
Laboratory			
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 course for non-science majors, supporting Math Concentration for Liberal Studies students.

   Through this course, students will be able to:

   1. apply quantitative problem-solving skills to various 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 statistical analysis of real-world and simulated data; and,
   6. organize and express ideas clearly and convincingly in oral and written form.

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

A (English Language, Communication, Critical Thinking)	**A3**
B (Mathematics & Sciences)	**B3**
C (Fine Arts, Literature, Languages & Cultures)	
D (Social Perspectives)	
E (Human Psychological and Physiological Perspectives)	

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

Need for quantitative methods in various settings
Stastical 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 sampliong 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 data using computer software

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

McClave, J., Sincich, T. (2003) *A First Course in Statistics* (8th ed.) Prentice Hall.

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

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

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

7. List Faculty Qualified to Teach This Course.

Mathematics 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

Existing PC lab

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.

_____ Ivona Grzegorczyk _____1/8/03_____
Proposer of Course Date