PALOMAR COLLEGE
COURSE OUTLINE OF RECORD FOR
DEGREE CREDIT COURSE

_X_ Transfer course _X_ A.A. degree applicable course

COURSE NUMBER AND TITLE: Math 120 - Elementary Statistics

UNIT VALUE: 3

MINIMUM NUMBER OF SEMESTER HOURS: 48

BASIC SKILLS REQUIREMENTS: Appropriate language and computational skills.

ENTRANCE REQUIREMENTS:

PREREQUISITE: A minimum grade of "C" in Math 60 or Math 56 or eligibility determined through the math placement process.

COREQUISITE: None

RECOMMENDED PREPARATION: None

SCOPE OF COURSE: Selected topics include tabular and graphical representation of data, counting principles, permutations, combinations, discrete and continuous probability distributions, sampling distributions, the Central Limit Theorem, an introduction to inferential statistics, and simple linear regression analysis. Applications from the fields of business, economics, life sciences, social sciences, and the physical sciences.

SPECIFIC COURSE OBJECTIVES: The successful student will be able to:
1. Organize and analyze data by using descriptive techniques such as tables, graphs, measures of central tendency, and measures of dispersion
2. Use probability models to analyze data
3. Perform hypothesis tests and interpret those tests for a variety of data types
4. Use appropriate technology, such as a calculator, graphing calculator, computer, Internet, etc., for statistical purposes.

CONTENT IN TERMS OF SPECIFIC BODY OF KNOWLEDGE: At least the following topics will be covered:
1. Types of data, frequency distributions, histograms, measures of central tendency, measures of dispersion.
2. Counting techniques, permutations, combinations, random variables, sample space, event.
3. Probability, conditional probability, probability distributions (binomial, normal, Student-t, chi-square), expected value of a probability distribution.
4. Variance and standard deviation of a probability distribution, sampling distributions, hypothesis testing, type I and type II errors, estimation of parameters (mean, proportion, difference of means, difference of proportions).
5. Contingency tables, goodness of fit.
6. Correlation and regression, analyze relationships between two variables, use scatter diagram and linear correlation coefficient, describe linear relationship using the equation and graph of regression line.
7. Appropriate applications of the above techniques.
8. Additional topics, such as Bayes Theorem and the hypergeometric distribution, may be included at the instructor's discretion.

REQUIRED READING:

Brase, Charles Henry, and Corrine Pellillo Brase. Understandable Statistics. 5th Edition. Lexington, MA: D.C. Heath and Company, 1995.

SUGGESTED READING:

Farber, Elizabeth. Study and Solutions Guide for Understandable Statistics. 5th Edition. Lexington, MA: D.C. Heath and Company, 1995.

REQUIRED WRITING: Statistical problem-solving exercises on homework assignments and written tests are more appropriate. In addition, students may be required to write reports from one paragraph to several pages interpreting or presenting statistical research.

OUTSIDE ASSIGNMENTS:
Students are expected to spend a minimum of three hours per unit per week in class and on outside assignments, prorated for short term classes.

Students are expected to read the text, study lecture notes, and complete daily homework assignments. Homework assignments may include practice solving routine problems, explaining concepts, and solving application or non-routine problems.

Student projects requiring a student to design and implement a statistical experiment may be assigned. Students may also be expected to use a computer or a graphing calculator on some assignments.

INSTRUCTIONAL METHODOLOGY:

Check all that apply:
_X_ lecture
_____ laboratory
_____ lecture-laboratory combination
_____ directed study

Lecture and discussion. Students may be required to work in groups and/or at a computer.

This course may be offered as a distance education course and meets Title 5 regulations 55370, 55372, 55374, 55376, 55378, and 55380.
Yes _____ No _X_

If yes, check all that apply. (See guidelines for preparation for definitions.)
_____ telecourse
_____ mediated instruction
_____ computer assisted instruction

GRADING POLICY AND STANDARDS (include methods of determining whether the stated objectives have been met by students):

Computation of semester grade may include the following methods of evaluation: In-class exams, take-home exams, computer lab assignments, homework assignments, essays or other evaluation methods. A comprehensive final exam (in class) is required. For example, the semester grade may be computed as follows:

Written exams	40 - 80%
Comprehensive final	20 - 30%
Homework or other outside assignments	0 - 30%

IS COURSE REPEATABLE FOR REASON(S) OTHER THAN DEFICIENT GRADE?
Yes _____ No _X_ Number of times course may be taken for credit: _1_

If yes, identify specific provision of Title 5 Division 2 section(s) 55761-55763 and 58161 which qualifies course as repeatable:

CONTACT PERSON: James Daniels **EXTENSION:** 2789