I. GENERAL COURSE INFORMATION

Subject and Number: Mathematics 150S
Descriptive Title: Elementary Statistics Support
Course Disciplines: Mathematics
Division: Mathematical Sciences

Catalog Description:
This course is designed to support students concurrently enrolled in Elementary Statistics (Math 150). As needed, students review core skills and topics necessary to meet the Elementary Statistics student learning outcomes and objectives. Students explore strategies and habits used by successful independent learners. Topics reviewed in this support course may include: concepts from arithmetic, pre-algebra, elementary and intermediate algebra, and descriptive statistics that are needed to understand the basics of college-level statistics.

Conditions of Enrollment:
Co-requisite Mathematics 150

Course Length: X Full Term Other (Specify number of weeks):
Hours Lecture: 1.00 hours per week
Hours Laboratory: 0.00 hours per week
Course Units: 1.00

Grading Method: Pass/No Pass
Credit Status: Non-Degree Credit

Transfer CSU: **No**
Transfer UC: **No**

General Education:
El Camino College:
CSU GE:
IGETC:

II. OUTCOMES AND OBJECTIVES

A. COURSE STUDENT LEARNING OUTCOMES (The course student learning outcomes are listed below, along with a representative assessment method for each. Student learning outcomes are not subject to review, revision or approval by the College Curriculum Committee)

Computing and Interpreting Various Measures: From data or bivariate data, compute statistics and develop displays of the data that illustrate the measures of central tendency, variation, relative position, and correlation. Interpret the displays in context.

Probability: Compute probability of an event by applying the basic assumption in classical probability and using addition rule and multiplication rule for contingency tables.

*Central Limit Theorem: U*se the Central Limit Theorem to compute probabilities concerning the distribution of the sample means and comparing these to the probabilities of the related random variable.

Confidence Intervals and Hypothesis Testing: Compute the confidence intervals and conduct hypothesis testing for a variety of parameters, and perform non-parametric hypothesis testing

B. COURSE OBJECTIVES (The major learning objective for students enrolled in this course are listed below, along with a representative assessment method for each)

1. Solve, graph and interpret linear equations, including understanding slope and intercepts in real-life applications.
   (Objective Exams)

2. Evaluate expressions correctly using order of operations and evaluate formulas given values for all necessary variables.
   (Written Homework)

3. Read and interpret a variety of tables, charts, and graphs including Bar Graphs, Pie Charts, Histograms, and Scatterplots.
   (Quizzes)

4. Translate applied problems into mathematical statements and translate mathematical solutions into verbal conclusions.
   (Objective Exams)

5. Convert between fractions, decimals, and percentages and understand the relative sizes of these values.
   (Written Homework)

III. OUTLINE OF SUBJECT MATTER (Topics are detailed enough to enable a qualified instructor to determine the major areas that should be covered as well as ensure consistency from instructor to instructor and semester to semester.)

Lecture or Lab	Approximate Hours	Topic Number	Major Topics
Lecture	3	I	LINEAR EQUATIONS Concepts and skills as needed through just-in-time work to support: A. Solving Linear Equations B. Graphing Linear Equations C. Interpreting Slope and Intercepts
Lecture	3	II	EVALUATING EXPRESSIONS Concepts and skills as needed through just-in-time work to support: A. Order of Operations B. Evaluating Formulas
Lecture	2	III	CALCULATOR SKILLS Concepts and skills as needed through just-in-time work to support: A. Arithmetic on the Calculator B. Rounding C. Lists, Graphing, and Displays
Lecture	4	IV	TABLES, CHARTS AND GRAPHS Concepts and skills as needed through just-in-time work to support: A. Reading and Interpreting Tables, Charts, and Graphs B. Plotting Coordinates
Lecture	4	V	APPLICATIONS Concepts and skills as needed through just-in-time work to support: A. Translating verbal statements into numeric expressions B. Estimating the reasonableness of results C. Stating mathematical conclusions verbally

Lecture	2	VI	FRACTIONS, PROPORTIONS AND PERCENTAGES
			Concepts and skills as needed through just-in-time work to support:
			A. Fractional Arithmetic and Simplifying Expressions with Fractions
			B. Converting between Fractions, Decimals, and Percentages
			C. Understanding Fractions as Proportions
			D. Comparing values on the real line, including decimals and negatives

Total Lecture Hours	18
Total Laboratory Hours	
Total Hours	18

IV. PRIMARY METHODS OF EVALUATION AND SAMPLE ASSIGNMENTS

A. PRIMARY METHOD OF EVALUATION
Problem solving demonstrations (computational or non-computational)

B. TYPICAL ASSIGNMENT USING PRIMARY METHOD OF EVALUATION
Evaluate the following expression rounding your answer to two decimal places, $\dfrac{.53-.50}{\sqrt{\frac{(.50)(.50)}{150}}}$

C. COLLEGE LEVEL CRITICAL THINKING ASSIGNMENTS

1. Suppose you are modeling the resale value, V, of a Nissan Versa based on its age in years, x. You build the following linear model, V = -1250x + 15000.
(a) Write a sentence explaining what the slope of this linear model means in the context of this situation.
(b) Write a sentence explaining what the V-intercept of this linear model means in the context of this situation.
(c) Use this model to predict at what age a Nissan Versa will have no resale value.

2. Suppose you are studying the students in a math class. You classify the students according to gender and age bracket and get the following data:

	18-21 years old	22-25 years old	25+ years old
Male	9	2	4
Female	7	5	6

(a) How many students were in this math class?

(b) What percent of the students in this math class were Female? (Round to the nearest tenth of a percent)

(c) What percent of the students in this math class were 22-25 years old? (Round to the nearest tenth of a percent)

(d) What percent of the Male students were 18-21 years old? (Round to the nearest tenth of a percent)

(e) What percent of the 25+ year old students were Female? (Round to the nearest tenth of a percent)

D. OTHER TYPICAL ASSESSMENT AND EVALUATION METHODS:
   Objective Exam
   Other Exams
   Quizzes
   Homework Problems
   Written Homework

V. INSTRUCTIONAL METHODS:
   Lecture
   Group Activities
   Discussion

Note: In compliance with Board Policies 1600 and 3410, Title 5 California Code of Regulations, the Rehabilitation Act of 1973, and Sections 504 and 508 of the Americans with Disabilities Act, instructional delivery shall provide access, full inclusion, and effective communication for students with disabilities.

VI. WORK OUTSIDE OF CLASS:
   Study
   Answer questions
   Skill practice
   Required reading
   Problem solving activity

Estimated Study Hours Per Week: 2

VII.   TEXTS AND MATERIALS

A. UP-TO-DATE REPRESENTATIVE TEXTBOOKS
Statistics, Informed Decisions Using Data 5th Edition, Michael Sullivan III, Pearson, 2017
Elementary Statistics, Second California Edition, Triola, Pearson, 2013.

B. REQUIRED TEXTS (title, author, publisher, year)

C. REQUIRED SUPPLEMENTARY READINGS

D. OTHER REQUIRED MATERIALS

VIII.   CONDITIONS OF ENROLLMENT

A.   Requisites (Course and Non-Course Prerequisites and Corequisites)

Requisites	Category and Justification
Math 150	Corequisite

B.   Requisite Skills

Requisite Skills
Identify, compare and contrast various types of data and sampling techniques. Math 67 - Describing and Displaying Data

C.   Recommended Preparations (Course and Non-Course)

Recommended Preparation	Category and Justification

D.   Recommended Skills

Recommended Skills

E.   Enrollment Limitations

Enrollment Limitations and Category	Enrollment Limitations Impact

Course created by Benjamin Mitchell
BOARD APPROVAL DATE: 1/22/2019
LAST BOARD APPROVAL DATE:
Last Reviewed and/or Revised by: 10/17/2018