

SPRINGFIELD TECHNICAL COMMUNITY COLLEGE
ACADEMIC AFFAIRS

Course Number: 085^L Class/Lect. Hours: 1 Lab Hours: Credits: 1 Dept.: Mathematics
Course Title: Statistics Co Requisite Lab Semester: Spring Year: 2019

Course Description, Prerequisite, Corequisite:

COURSE DESCRIPTION

Students will explore descriptive methods of collecting, organizing, analyzing, and presenting categorical and numerical data including an introduction to elementary probability theory, estimation, and hypothesis testing. The course will also reinforce concepts of the place value system, order of operations, and fractions while introducing topics of decimal and percent notation, conversions between decimal, fractional and percent notation, and basic statistical measures. Topics from algebra such as operations of integers, evaluating variable expressions, and solving equations and formulas will be refreshed and reinforced through linking with statistical procedures. Statistical operations involving collecting, displaying and interpretation of small data sets will be introduced.

Prerequisite(s): Placement of MAT-081U – Extended Day Algebra 2 or higher.

Co-requisite: Statistics (MAT-115)

OBJECTIVES/COMPETENCIES

Course Objectives	Competencies
<p>OBJECTIVES:</p> <p>OBJECTIVES: Upon completion of this course, a student will be able to:</p> <ul style="list-style-type: none"> Round a number to a specified place value. Simplify an expression applying the order of operations. Solve equations. Solve equations involving proportions. Operations with fractions, decimals, percents and integers. Compute average, median and mode for a data set. Evaluate variable expressions. Apply order of operations to evaluate an expression. Solve applied problems. Solve equations involving percent. Solve literal equations and formulas. Linear Regression for two variables. Reading and constructing graphs, tables, histograms, and number plots. Collecting and interpreting small data sets. Properly implementing order of operations in a calculator. Identify Data types Identify Sample and Population Sample and types of sampling strategies Create and interpret the various types of charts and graphs 	<p>Prepared to succeed in Statistics. Demonstrate competency in topics from Pre-Algebra, and Algebra as applicable to their concurrent Statistic course.</p>

Course Objectives	Competencies
<p>Create, graph and interpret frequency, relative frequency and cumulative frequency distributions</p> <p>Understand the concept of Central Tendency</p> <p>Understand the concept of variation, empirical rule and Chebychev's Theorem</p> <p>Define, find and use appropriately the measures</p> <p>Mode, median, mean, standard deviation, variance, range , coefficient of variation correlation , for populations or samples</p> <p>Use the basic ideas and formulas of Classical Probability</p> <p>Define and understand the concept of a Random Variable</p> <p>Create a Probability Distribution for a discrete random variable</p> <p>Find the mean (expected value) and standard deviation of a random variable.</p> <p>Know the characteristics of the Normal Distribution</p> <p>Find and utilize probabilities using the Normal distribution</p> <p>Know and be able to apply the Central Limit Theorem</p> <p>Find probabilities using a sampling distribution</p> <p>Find and interpret confidence intervals for the population mean and proportion.</p> <p>Find the required sample size under various conditions and study guidelines.</p> <p>Conduct hypothesis tests for the mean and proportion and possibly the difference of two means and proportions</p> <p>Find and interpret the p-value, identify the type 1 and type 2 errors.</p>	