

Elementary Statistics  
KRSN MAT1020 – Elementary Statistics

<b>Institution</b>	<b>Course ID</b>	<b>Course Title</b>	<b>Credit Hours</b>
Allen County CC	MAT115	Elementary Statistic	3
Barton County CC	STAT1829	Elements of Statistics	3
Butler CC	MA210	Applied Statistics	3
Cloud County CC	MA114	Elementary Statistics	3
Coffeyville CC	MATH250	Elementary Statistics	3
Colby CC	MA205	Statistics	3
Cowley County CC	MTH4423	Elementary Statistics	3
Dodge City CC	MATH230	Elementary Statistics	3
Fort Scott CC	MAT2253	Elementary Statistics	3
Garden City CC	MATH110	Fundamentals of Stat.	3
Highland CC	MAT203	Basic Statistics	3
Hutchinson CC	MA108	Elements of Statistics	3
Independence CC	MAT1103	Elementary Statistics	3
Johnson County CC	MATH181	Statistics	3
Kansas City KCC	MATH115	Statistics	3
Labette CC	MATH120	Elementary Statistics	3
Neosho County CC	MATH143	Elementary Statistics	3
Pratt CC	MTH181	Statistics	3
Seward County CC	MA2103	Elementary Statistics	3
Flint Hills TC	Not Offered	Not Offered	
Manhattan Area TC	MAT145	Elementary Statistics	3
North Central KTC	Not Offered	Not Offered	
Northwest KTC	MATH180	Statistics	3
Salina Area TC	Not Offered	Not Offered	
Wichita Area TC	MTH120	Elementary Statistics	3
Emporia St. U.	MA120	Intro. to Statistics	3
Fort Hays St. U.	Math250	Elements of Statistics	3
Kansas St. U.	STAT325	Intro. to Statistics	3
Pittsburg St. U.	Not Offered	Not Offered	
U. Of Kansas	MATH365	Elementary Statistics	3
Wichita St. U.		Intro to Statistics	3
Washburn U.	Not Offered	Not Offered	

## **Elementary Statistics MAT1020 OUTCOMES**

Upon completion of this course, students will be able to:

Students will be expected to use appropriate technology as one tool to achieve the following outcomes:

### **Basic Descriptive Statistics: Organizing and describing data**

- Define and distinguish between categorical (qualitative) and numerical (quantitative) data.
- Distinguish between data from an observational study and data from a designed experiment.
- Organize data in frequency tables and contingency tables.
- For a given set of data, construct appropriate graphical displays of qualitative and quantitative data
- Describe the general shape of data, skewed left, skewed right, normal or other symmetric.
- Calculate the measures of central tendency including mean and median.
- Calculate the measures of dispersion including range, standard deviation, variance, and interquartile range; explain the meaning of dispersion as it relates to a problem.
- Use a statistical package on a graphics calculator or a computer to enter data and analyze results.
- Measure the position of a data point by computing a percentile

### **Introduction to Probability: Finding the theoretical probability of an event**

- Use probability notation including the “or” condition and the “and” condition.
- Determine whether or not two events are mutually exclusive.
- Determine whether or not two events are independent.
- Calculate the probability of compound events.
- Calculate conditional probabilities; explain the meaning of conditional probabilities.

### **Random Variables: Determining probabilities of a random variable**

- Distinguish between discrete and continuous random variables.
- Find and interpret the mean and the standard deviation of a probability distribution.
- Recognize Bernoulli populations.
- Use the normal distribution to solve percent problems for normally distributed populations.
- Use the normal distribution to solve probability problems for normally distributed random variables.

### **Random Sampling and Sampling Theory: Generating distributions for sample means**

- Calculate the mean for a distribution of sample means.
- Calculate the standard deviation for a distribution of sample means.
- Assess normality of a set of data.
- Demonstrate the use of the Central Limit Theorem and explain its importance.

### **Estimating the Mean**

- Construct confidence intervals for a population mean and a difference of two population means and interpret them in context.
- Construct confidence intervals for a population proportion and a difference of two population proportions and interpret them in context.

### **Using Hypothesis Tests**

- Perform hypothesis tests for a population mean and a difference of two population means and interpret results.
- Perform a hypothesis test for a population proportion and a difference of two population proportions and interpret results.
- Explain Type I error, Type II error, p-value, significance level and power of test in context.
- Perform Chi-squared tests.

### **Linear Regression: Making predictions with linear data**

- Create a scatter plot and calculate a correlation coefficient for bivariate data.
- Construct a linear regression equation, interpret the results, and test significance of slope.
- Use a linear regression equation to make predictions about data.
- Calculate the coefficient of determination for a linear regression equation and interpret results.