Colorado CTE Course – Scope and Sequence

Course Name	Business Statistics	Course Details Course = 0.50 Carnegie Unit Credit	.5 Semester long
Course Description	Focuses on statistical study, sampling, organizing and visualizing data, descriptive statistics, probability, bi-nominal distributions, normal distributions, confidence intervals, linear regression, and correlation. Intended for business majors.		
Note:	This is a suggested scope and sequence for the course content. The content will work with any textbook or instructional resource. If locally adapted, make sure all course competencies are covered. This course aligns to the CCNS (BUS226). Please contact your local community college partner for credit options.		
SCED Identification #	02205	Schedule calculation based on 60 calendar days of a 90-day semester. Scope and sequence allow for additional time for guest speakers, student presentations, field trips, remediation, or other content topics.	

All courses taught in an approved CTE program must include Essential Skills embedded into the course content. The Essential Skills Framework for this course can be found at **https://www.cde.state.co.us/standardsandinstruction/essentialskills**

COURSE COMPETENCIES AND OUTCOMES

STUDENT COMPETENCIES:

The competencies you will demonstrate in this course are as follows:

A. Describe the nature and implication of basic principles of statistics and how they play an important role in our daily lives.

B. Organize and summarize data, and represent graphically the important information contained in a data set.

C. Compute numerical quantities that measure the central tendency and dispersion of a set of data.

D. Understand the basic properties of probability.

E. Determine probabilities using postulates, rules of probability and various probability distribution tables.

F. Distinguish between discrete and continuous variables.

G. Compute the mean and standard deviation of a probability distribution.

H. Test hypotheses by using the appropriate distribution and constructing confidence intervals about means, standard deviations, and proportions.

I. Use methods for estimating some population parameters.

J. Understand and apply the basic concepts of statistical inference to the decision-making process.

K. Fit a least-square line to a set of data and interpret the coefficient of correlation.

L. Use a statistical software package in performing statistical computations.

The module outcomes that will permit you to demonstrate course competencies are:

MODULE 1 (or unit)

Outcomes & Competencies

1 Define basic concepts and vocabulary of statistics. A, F
2 Use data to construct tables and charts for qualitative (categorical, word-based) and quantitative (numerical) data. B
3 Calculate measures of central tendency and variation for quantitative variable. C, L
4 Evaluate the symmetry/skewness of a set of data. B, C

MODULE 2

Outcomes & Competencies

1 Use data to construct tables and charts for qualitative (categorical, word-based) and quantitative (numerical) data. B
2 Master and understand basic probability concepts. D, F
3 Identify and calculate conditional probabilities. E
4 Construct a probability distribution to compute expected value (mean) and variance of a probability distribution. E, G
5 Compute probabilities from normal distribution. E, L
6 Use the standard normal distribution to solve business problems. E, L
7 Use statistics software application for calculations. L

MODULE 3

Outcomes & Competencies

1 Compute probabilities related to the sample mean and the sample proportion. E, I
2 Understand the importance of the Central Limit Theorem in sampling from non-normally distributed populations. I, J
3 Construct and interpret confidence interval estimates for the mean and the proportion. H
4 Determine the sample size necessary to develop a confidence interval estimate for the mean or proportion. I, J
5 Use statistics software application for calculations. L

MODULE 4

Outcomes & Competencies

1 Evaluate, using hypothesis testing, the difference between:

a. population mean and sample mean,
b. means of two independent populations,

c. means of two related populations,
d. population proportion and sample proportion,
e. proportions of two independent populations, and
f. means of more than two populations. H, L

2 Differentiate the types of statistical testing that can be conducted on two or more samples. H, J
3 Use statistics software application for calculations. L

MODULE 5

Outcomes & Competencies
1 Predict the value of a dependent variable using linear regression analysis. H, J, K, L
2 Evaluate assumptions of linear regression analysis. H, J
3 Use basic concepts and vocabulary of statistics. A, F
4 Use statistics software application for calculations. L

(*Outcomes outline taken from CCConline)

<u>CTSO integration:</u>
FBLA:
Database Design & Applications

- Introduction to Financial Math
- Spreadsheet Applications