

Virginia Western Community College BUS 224
Business Statistics

Prerequisites

MTH 161

Course Description

Introduces methods of probability assessment and statistical inference. Includes data presentation; descriptive statistics; basic probability concepts; discrete and continuous probability distributions; decision theory; estimation and sampling distributions; Central Limit Theorem; simple linear regression and hypothesis testing for a single sample or population. Emphasizes business and economic applications. Utilizes computer software as a tool for problem-solving.

Semester Credits: 3 Lecture Hours: 3 Lab/Clinical/Internship Hours: 0 Required Materials

Textbook:

Discovering Business Statistics, Textbook + Minitab-2nd edition; ISBN: 9781642775204

Other Required Materials:

Minitab or another Statistics Package

Course Outcomes**Critical Thinking**

- Use information, ideas and arguments from relevant perspectives to make sense of complex issues and solve problems. Students will create, evaluate, interpret, and combine information to reach well-reasoned conclusions or solutions.

Written Communication

- Develop, convey, and exchange ideas in writing, as appropriate to a given context and audience. Students will express themselves effectively in a variety of written forms

Quantitative Literacy

- Perform accurate calculations, interpret quantitative information, apply and analyze relevant numerical data, and use results to support conclusions. Students will calculate, interpret and use numerical and quantitative information in a variety of settings.

Topical Description

Presentation of Data

- Organize, present and interpret statistical data presented in tabular and graphical formats

Numerical Representations of Data

- Calculate and interpret measures of center, dispersion, shape and location for a data set.

Introduction to Probability

- Identify the basic concepts of probability, such as sample spaces and probability events, basic relationships of probability events; complement rule, addition laws, multiplication laws, conditional probability and counting rules.

Probability Distributions

- Describe the properties of and calculate probabilities using commonly encountered probability distributions, including the Discrete, Uniform, Normal, Binomial, Poisson, Hypergeometric and Exponential distributions

Sampling Distributions

- Apply the Central Limit Theorem to the distribution of sample means and sample proportions

Estimation

- Calculate and interpret confidence intervals for the Mean, Proportion and Variance

Hypothesis Testing

- Perform and interpret tests of hypothesis for the mean, proportion and variance of a single population or sample using the Critical Value, Confidence Interval and P-value approach

Decision Theory

- Apply Decision Theory principles, including decision making under risk, and EMV, EVPI to business decisions.

Regression Analysis

- Interpret and apply simple linear regression and use it to solve complex business problems and make recommendations to a target audience.

Notes to Instructors