

**STATE UNIVERSITY OF NEW YORK
COLLEGE OF TECHNOLOGY
CANTON, NEW YORK**



COURSE OUTLINE

BSAD 204 – INTRODUCTION TO BUSINESS STATISTICS

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**SCHOOL OF BUSINESS AND LIBERAL ARTS
BUSINESS DEPARTMENT**

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A. **TITLE:** Introduction to Business Statistics

B. **COURSE NUMBER:** BSAD 204

C. **CREDIT HOURS:** 3

D. **WRITING INTENSIVE COURSE:** No

E. **COURSE LENGTH:** 15 weeks

F. **SEMESTER(S) OFFERED:** Fall

G. **HOURS OF LECTURE, LABORATORY, RECITATION, TUTORIAL, AND ACTIVITY:** 3 lecture hours per week

H. **CATALOGUE DESCRIPTION:**

In this course, the students are introduced to the subject of business statistics to include the need for quantitative analysis in business, the basic procedures in problem solving, and the sources and types of data used by business firms using business application software. Basic probability concepts and normal probability distribution are used by the student to solve real world business problems which involve business applications.

I. **PRE-REQUISITES:** a. Math 141, AND CITA 110, AND ACCT101 or ECON103, OR permission of instructor.

J. **GOAL:** By the end of this course, students will be able to:

<u>Course Objective</u>	<u>Institutional SLO</u>
a. Compute basic sample and population descriptive statistics of business data.	2. Crit. Thinking 3. Prof. Competence
b. Apply common probability distributions (i.e. normal, uniform, etc.) in business decision-makings.	2. Crit. Thinking 3. Prof. Competence
c. Demonstrate the ability to present business data using various graphs and summary statistics	3. Prof. Competence
d. Compute point and interval estimates and constructing confidence interval to make business conclusions	2. Crit. Thinking 3. Prof. Competence
e. Use computer software to analyze business data	3. Prof. Competence

K. **TEXTS:**

The Practice of Business Statistics and Economics, 3/E by David S. Moore, George P. McCabe, Layth C. Alwan, Bruce A. Craig, William M. Duckworth. ISBN-13: 978-1429242530, 2011, W.H. Freeman and Company

L. **REFERENCES:** Business Statistics, 3/E by Norean D. Sharpe, Richard D. De Veaus, Paul F. Velleman. ISBN-13: 9780321925831, 2015, Pearson

M. EQUIPMENT: Technology enhanced classroom, access to company financial statements, Yahoo Finance, MS Excel, and computer internet access, and access to computer lab.

N. GRADING METHOD: A-F

O. MEASUREMENT CRITERIA:

- Exams
- Quizzes
- Homework
- Project participation
- Computer assignments

P. DETAILED OUTLINE:

Part I: BUSINESS STATISTICS INTRODUCTION AND BUSINESS DATA

1. An Introduction of Statistics in Business Decision Makings (E-Commerce).
 - a. Descriptive versus Inferential Statistics-- Using E-Commerce Data
 - b. Types of Variables and Scales of Measurement-- Using E-Commerce Data
 - c. Statistics in Business Decisions Applications-- Analyzing E-Commerce Data in Excel
2. Visual Description (T-Bills).
 - a. The Frequency Distribution and the Histogram--Using T-Bill Data
 - b. The Scatter Diagram--Using T-Bill Data
 - c. Other Methods for Visual Representation of the T-Bill Data
 - d. Excel PivotTable, Tabulation and Contingency Tables of T-Bill Data
3. Business Decision Makings: Time to Start a Business, Risk and Return
 - a. Measures of Central Tendency and Measures of Dispersion—Using AIG Data
 - b. Descriptive Statistics from Grouped Data—Using AIG Data
 - c. Statistical Measures of Association—Using AIG Data
 - d. Statistical Description of AIG Data.
 - e. Analyzing AIG Data in Excel
4. Examining Relationships and Simpson’s Paradox in Business (Amazon.com)
 - a. Correlation—Using Amazon.com Data
 - b. Least-Squares Regression—Using Amazon.com Data
 - c. Business Interpretation of R-square—Using Amazon.com Data
 - d. Cautions about Correlation and Regression—Using Amazon.com Data
 - e. Business Applications: Business Data Mining
 - f. Relations in Categorical Data—Amazon.com Data VS Keen, Inc. Data
 - g. Analyzing Amazon.com Data in Excel
5. Changes in Consumers Behavior: Business Data Collection and Sampling Methods.
 - a. Research Basics and Survey Research—Using Roper Rolls Data
 - b. Experimentation and Observational Research—Using Roper Rolls Data
 - c. The Basics of Sampling—Using Roper Rolls Data
 - d. Sampling Methods—Using Roper Rolls Data

- e. Analyzing Roper Rolls Data in Excel
 - f. Business Data Ethics in Action
6. Sampling Distributions of Generated Business Data (Roper Rolls Data Continued).
 - a. The Sampling Distribution of the Mean—Using Roper Rolls Data
 - b. The Sampling Distribution of the Proportion—Using Roper Rolls Data
 - c. Sampling Distributions When the Population Is Finite—Using Roper Rolls Data
 - d. Generating simulation data in Excel
 7. The Ethics of Data Analytics: Customer Profiling of Retailing Company Target
 - a. The Purpose of Data Analytics
 - b. Ethics and Policy
 - c. Business Data Collection Laws

Part II: APPLIED PROBABILITY THEORIES IN BUSINESS.

8. Probability: Review of Basic Concepts (Credit Reports and the Fair Isaacs Corporation).
 - a. Probability: Terms and Approaches—Using Credit Reports and the Fair Isaacs Corporation Data
 - b. Unions and Intersections of Events—Using Credit Reports and the Fair Isaacs Corporation Data
 - c. Addition Rules for Probability—Using Credit Reports and the Fair Isaacs Corporation Data
 - d. Multiplication Rules for Probability --Using Credit Reports and the Fair Isaacs Corporation Data
 - e. Counting: Permutations and Combinations—Using Credit Reports and the Fair Isaacs Corporation Data
 - f. Probability Rules: Bayes's Rules in Business—Using Credit Reports and the Fair Isaacs Corporation Data
9. Sharpe's Ratio and Portfolio Analysis
 - a. The Idea of probability and randomness in Portfolio Analysis
 - b. Applications of Probability Distribution in Portfolio Analysis
 - c. Applications of The mean of a random variable and rules for means in Portfolio Analysis
 - d. Applications of The variance of random variable and rules for variance in Portfolio Analysis
 - e. Applications of Probability Models and Random Variables in Portfolio Analysis
10. Inspecting Customers in Line Data of Western National Bank
 - a. The Binomial Distribution
 - b. The Poisson Distribution—Using Customers in Line Data of Western National Bank
 - c. Discrete Probability Distributions.
11. The Continuous Distribution in Finance and Operations Management.
 - a. The Normal Distribution--Using NYSE Data
 - b. The Standard Normal Distribution--Using NYSE Data
 - c. The Normal Approximation to the Binomial Distribution
 - d. The Exponential Distribution—Using Customers in Line Data of Western National Bank
 - e. Continuous Probability Distributions

Part III: INTRODUCTION TO BUSINESS INFERENCE

12. Bankruptcy Attorney Fees: Estimating with Confidence

- a. Statistical Confidence-Using Bankruptcy Attorney Fees Data
- b. Confidence intervals for a population mean-Using Bankruptcy Attorney Fees Data
- c. How confidence intervals behave-Using Bankruptcy Attorney Fees Data
- d. Choosing the sample size-Using Bankruptcy Attorney Fees Data
- e. Analyzing Bankruptcy Attorney Fees Data in Excel