

**College of San Mateo**  
**Official Course Outline**

1. **COURSE ID:** BUS. 207    **TITLE:** Business Analytics Fundamentals  
**Units:** 3.0 units    **Hours/Semester:** 48.0-54.0 Lecture hours; 96.0-108.0 Homework hours; 144.0-162.0 Total Student Learning hours  
**Method of Grading:** Grade Option (Letter Grade or Pass/No Pass)  
**Recommended Preparation:**  
Eligibility for BUS. 123, or Eligibility for ENGL 105, Eligibility for MATH 200, or Eligibility for CIS 124 or
2. **COURSE DESIGNATION:**  
**Degree Credit**  
**Transfer credit:** CSU; UC
3. **COURSE DESCRIPTIONS:**  
**Catalog Description:**  
This course is designed to introduce business students to statistical analysis in order to analyze and transform data into useful information, identify and anticipate trends and outcomes, and ultimately make smarter, data-driven business decisions. The course covers the process, technologies, applications, tools, and skills required to analyze data so that informed and timely decisions can be made. Students will learn the methodologies, techniques, and tools (such as Structured Query Language (SQL), Excel, and Tableau) for visualization, inference, forecasting, optimization, simulation, and data mining.
4. **STUDENT LEARNING OUTCOME(S) (SLO'S):**  
Upon successful completion of this course, a student will meet the following outcomes:
  1. Demonstrate an understanding of how managers use business analytics to formulate and solve business problems to support managerial decision making
  2. Interpret key concepts involved in developing, analyzing and reporting business data
  3. Apply data-driven decisions to optimize business processes
  4. Execute Structured Query Language (SQL) queries to extract and organize data that is stored in relational databases
5. **SPECIFIC INSTRUCTIONAL OBJECTIVES:**  
Upon successful completion of this course, a student will be able to:
  1. Describe how business analytics is used to solve business problems.
  2. Define key concepts involved in developing, analyzing and reporting business data.
  3. State data-driven decisions to optimize business processes.
  4. Analyze large data sets using Excel and Structured Query Language (SQL).
6. **COURSE CONTENT:**  
**Lecture Content:**
  - Introduction to Spreadsheet Modeling
    - Basic Spreadsheet Modeling: Concepts and Best Practices
    - Cost Projections
    - Breakeven Analysis
    - Decisions Involving the Time Value of Money
  - Describing the Distribution of a Variable
    - Populations and Samples
    - Data Sets, Variables, and Observations
    - Data Types
  - Relationships among Categorical Variables
    - Stacked and Unstacked Formats
  - Relationships among Numeric Variables
    - Scatterplots
    - Correlation and Covariance
    - Pivot Tables
  - Business Intelligence (BI) Tools for Data Analysis
    - Importing Data into Excel with Power Query

- Introduction to Relational Databases
- Excel's Data Model
- Creating and Editing Queries
  - Data Analysis with Pivot Tables
- Basing Pivot Tables on a Data Model
  - Data Cleansing
  - Probability and Probability Distributions
- Probability Distribution of a Random Variable
- The Normal Distribution
- The Binomial Distribution
- The Poisson and Exponential Distributions
  - Decision Making under Uncertainty
- Elements of Decision Analysis
- EMV and Decision Trees
- One-Stage Decision Problems
  - Sampling and Sampling Distributions
- Methods for Selecting Random Samples
- Introduction to Estimation
  - Regression Analysis: Estimating Relationships
- Scatterplots: Graphing Relationships
- Correlations: Indicators of Linear Relationships
- Multiple Regression
- Validation of the Fit
  - Regression Analysis: Statistical Inference
- The Statistical Model
- Inferences about the Regression Coefficients
- Outliers
  - Time Series Analysis and Forecasting
- Testing for Randomness
- Regression-Based Trend Models
- The Random Walk Model
- Moving Averages Forecasts

## 7. REPRESENTATIVE METHODS OF INSTRUCTION:

Typical methods of instruction may include:

- A. Lecture
- B. Activity
- C. Discussion
- D. Guest Speakers

## 8. REPRESENTATIVE ASSIGNMENTS

Representative assignments in this course may include, but are not limited to the following:

### **Writing Assignments:**

- A. Discussion posts, including peer evaluation of key business analysis concepts.
- B. Chapter practice problems.

### **Reading Assignments:**

- A. One chapter of college level textbook per week.
- B. Weekly chapter study guide including key concepts, videos, and additional support documents.

## 9. REPRESENTATIVE METHODS OF EVALUATION

Representative methods of evaluation may include:

- A. Class Participation
- B. Class Work
- C. Exams/Tests
- D. Oral Presentation
- E. Projects
- F. Quizzes

## 10. REPRESENTATIVE TEXT(S):

Possible textbooks include:

- A. Albright, S. *Business Analytics: Data Analysis & Decision Making*, 7th ed. Cengage, 2020  
B. Camm, J.D., Cochran, J.J., Fry, M.J., Ohlmann, J.W.. *Business Analytics*, 4th ed. Cengage, 2021

**Origination Date:** November 2023

**Curriculum Committee Approval Date:** December 2023

**Effective Term:** Fall 2024

**Course Originator:** Sujata Verma