BAS 120 Intro to Analytics

COURSE DESCRIPTION:

Prerequisites: None
Corequisites: None

This course introduces basic concepts and applications of analytics. Topics include an overview of the analytical process and the role of the analyst, applied descriptive statistics, and exploratory data analysis. Upon completion, students should be able to demonstrate a basic understanding of analytics for decision-making in business.
Course Hours per Week: Class, 2. Lab, 3. Semester Hours Credit, 3.

LEARNING OUTCOMES:

Upon completing requirements for this course, the student will be able to:

1. Explain the basic analytics process, including the role of the analyst in supporting business decision-making.
2. Apply descriptive statistics to summarize and interpret business-related data.
3. Prepare, analyze, and visualize business-related data to identify patterns and trends that support decision-making.

OUTLINE OF INSTRUCTION:

I. Introduction to Business Analytics
   - A. Business analytics and the role of the analyst
   - B. The analytic process and business decision-making
   - C. Descriptive, predictive, and prescriptive analytics
   - D. Applications of analytics in business
   - E. Ethical considerations and responsible use of data

II. Descriptive Statistics
   - A. Types of data and data sources
   - B. Summarizing categorical and numerical data
   - C. Frequency distributions and histograms
   - D. Measures of central tendency: mean, median, and mode
   - E. Measures of variability, range, variance, and standard deviation
   - F. Percentiles, quartiles, and outliers
   - G. Covariance and correlation

III. Data Visualization
   - A. Principles of effective data visualization
   - B. Tables, crosstabulations, and PivotTables
   - C. Bar charts, line charts, and histograms
   - D. Scatterplots and visualizing relationships

E. Dashboards and communicating analytical findings

IV. Data Wrangling: Data Management and Data Cleaning Strategies
- A. Collecting, importing, and organizing data
- B. Structuring and formatting datasets
- C. Identifying missing, duplicate, and inconsistent data
- D. Cleaning, transforming, and validating data
- E. Preparing data for exploratory analysis

V. Probability: An Introduction to Modelling Uncertainty
- A. Basic probability concepts and terminology
- B. Probability rules and conditional probability
- C. Discrete and continuous probability distributions
- D. Interpreting uncertainty in business decisions

VI. Descriptive Data Mining
- A. Introduction to discovering patterns in data
- B. Identifying groups, similarities, and associations
- C. Interpreting patterns and trends in business datasets
- D. Communicating exploratory findings for decision-making

REQUIRED TEXTBOOK AND MATERIAL:

The textbook and other instructional material will be determined by the instructor.