Title: Business Statistics
Abbreviation and Number: STAT201
School: Business
Department: Banking, Economics and Finance
Credits: 3

Course Outline

COURSE DESCRIPTION
This is an introductory course in statistics with applications to business and economics. Students are introduced to the analysis and interpretation of data using fundamental statistical techniques.

SPECIFIC OBJECTIVES
Upon successful completion of this course, students will be able to
1) explain the nature and scope of statistics;
2) apply statistical procedures and techniques to organise and summarise data;
3) utilise probability theories to analyse discrete and continuous random variables;
4) conduct hypothesis tests to analyse data;
5) apply regression and correlation analysis to analyse data; and
6) demonstrate the use of statistical software to manipulate raw data.

COURSE CONTENT
I. Data and Scope of Statistics
   A. Role
   B. Methods of data collection
      i. Surveys
      ii. Experimental studies
   C. Types of data
      i. Qualitative
      ii. Quantitative

II. Organising and Summarising Data
   A. Graphical descriptions
      i. Bar chart
      ii. Pie chart
      iii. Dot plot
      iv. Histogram
      v. Box-Whisker Plot
      vi. Stem and leaf
   B. Numerical descriptive measures
      i. Central tendency
      ii. Variability
   C. Measures of distribution and relative frequencies
   D. Measures of association between two variables
III. Elementary Probability Concepts and Applications
   A. Classical and empirical theory
      i. Counting rules
      ii. Addition law
      iii. Multiplication law
      iv. Conditional probability
   B. Contingency table of joint and marginal probability

IV. Discrete Random Variables
   A. Uniform probability distribution
   B. Binomial probability distribution
   C. Poisson probability distribution
   D. Hypergeometric distribution

V. Continuous Random Variables
   A. Uniform probability distribution
   B. Exponential distribution
   C. Normal probability distribution
   D. Central Limit Theorem
   E. Normal approximation to Binomial

VI. Sampling Distribution
   A. Finite and infinite population
   B. Mean
   C. Proportions
   D. Properties of estimators
      i. Unbiased
      ii. Efficiency
      iii. Consistency

VII. Statistical Inference
   A. Point estimates
   B. Interval estimates for mean with infinite and finite population
      i. Population variance known
      ii. Population variance unknown
   C. Sample size determination

VIII. Hypothesis Testing
   A. Type I and Type II errors
   B. One-tailed testing of a mean
      i. Population variance known
      ii. Population variance unknown
   C. Two-tailed testing of a mean
      i. Population variance known
      ii. Population variance unknown
D. Power of a test
E. Methods of hypothesis testing
   i. Critical value approach
   ii. P-value approach
   iii. Critical mean approach
   iv. Confidence interval approach

IX. Simple Linear Regression and Correlation
   A. Scatter diagram
   B. Relationship between variables
   C. Assumptions and model development
   D. Estimation and hypothesis testing of the regression line
   E. Correlation analysis

ASSESSMENT
Tests.....................................................45%
Assignments..........................................15%
Case studies or term paper....................10%
Final examination.................................30%
Total....................................................100%

REQUIRED TEXT

SUPPLEMENTARY READINGS/MATERIALS

JOURNALS
*American Economic Journal*
*American Economic Journal of Agriculture Economics*
*American Economic Review*
*Annual Review of Economics*
*Business Economics*
*Cambridge Journal of Economics*
*Journal of Economics*
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Journal of Economics and Finance
The Wall Street Journal

WEBSITES
www.aeaweb.org/aej-micro
www.bahamas.gov.bs
www.bls.gov
www.census.gov/hrd/www/index.html
www.centralbankbahamas.com/
www.commerce.gov
www.dol.gov
www.econpapers.repec.org/article/aeaaejmic
www.federalreserve.gov
www.imf.org
www.springer.com
www.webcrawler.com/