1. General Information

Course Number: IS310
Course Title: Business Statistics I
Course Coordinator: Khosrow Moshirvaziri
SCO Prepared by: Khosrow Moshirvaziri
Date prepared/revised: January 20, 2008

2. Catalog Description

IS 310. Business Statistics I (three-unit credit). Prerequisite: MATH 114 or MATH 108. Application of statistics to business decision making problems. Data collection and organization, probability theory, measures of central tendency and dispersion, hypothesis testing and estimation, simple regression, and correlation. Use of statistical software. Letter grade only (A-F)

3. Curriculum Justification(s)

While business experience, thoughtful guesswork, and intuition are key attributes of successful managers, real world business problems are too complex for this type of decision making alone. This course is designed to help students to get the “feel” of basic statistics--what it is, how and when to apply statistical techniques to decision-making situations, and how to interpret the results attained. Statistics is an integral part of the structure and functions of business. The primary objective of this course is to introduce basic statistical tools needed for the collection, processing, analysis, and interpretation of numerical data and various sampling methods used in Management, Accounting, Marketing, Finance, and other business disciplines. By the end of the semester, students should be familiar with the function of samples, probability distributions, t-statistics, z statistics, hypothesis testing, and central dispersion measures. Emphasis also will be placed on statistical software packages (such as Excel, Minitab, and SPSS) as a means for data interpretation; however, students should become familiar with the necessary rigor involved in calculations so that interpretation is less problematic.

4. Course Learning Goals

Upon completion of the course the student will meet the following three specific college learning goals, among others. In particular, the student will be able to:

- Demonstrate conceptual learning, critical thinking, and problem solving skills.
- Possess quantitative skills and analytical reasoning enabling them to interpret business data to improve overall business performance.
- Demonstrate awareness of ethical, social responsibility, and citizenship issues and the ability to apply them in decision making in the local, regional, and global communities.

4.1 Student–based Learning Outcomes

Upon completion of the course the student will be able to:
• Understand and discuss principles, concepts, and application of statistics in business.
• Develop an understanding of descriptive and inferential statistics.
• Compute various measures of location and dispersion and their applications.
• Utilize the application of various types of data sets in report writing.
• Describe the distribution of the data using tabular, graphical, and numerical methods.
• Generate numerical description of data utilizing typical values and percentiles.
• Apply the principles and concept of probability to assign probabilities and estimation to experimental outcomes. Understand probabilities associated with various discrete and continuous distributions.
• Be able to apply the properties of normal probability distribution in business decision-making situations.
• Demonstrate effective skills in data collection and random sampling.
• Estimate population parameters utilizing confidence interval estimates.
• Relate the implication of the statistical skills on various management researches utilizing hypothesis testing techniques for both single and two population means and proportions.
• Be able to perform a single factor hypotheses test using analysis of variance. Measure and predict the relationship among data variables using correlation and regression analysis.

5. Outline of Subject Matter

• Data and Statistics.
• Descriptive Statistics: Tabular and Graphical Presentations.
• Descriptive Statistics: Numerical Measures of Location and Dispersion.
• Introduction to Probability Theory.
• Discrete Probability Distributions; including Binomial, Hyper geometric, and Poisson.
• Continuous Probability Distributions; including Uniform, Normal, and Exponential.
• Sampling and Sampling Distributions.
• Interval Estimation of various population parameters.
• Hypothesis Testing, one population case.
• Statistical Inference about Means and Proportions with Two Populations.
• Inferences about Population Variances.
• Test of Goodness of Fit and Independence.
• Simple Linear Regression and Correlation Analysis.
• Regression Analysis: Model Building.
6. Methods of Instruction

The preferred method of instruction for this course is lecture based. Depending on the individual instructors, opportunities for class discussion, group work, and student presentations may be considered. Students should be encouraged to form study groups and collaborate on the use of technology, understanding of lecture contents, and solution strategy and techniques to recommended exercises. Since business statistics is a quantitative subject in nature and requires certain level of analytical ability and mathematical skills, working through problems and exercises by hand and in a step by step manner would help students in better understanding of the subject than displaying the problem and its solution via PowerPoint presentation alone. Using a combination of lecture, slide presentations, and hands-on exercises is strongly recommended. Students should be encouraged to regularly attend and actively engage in practicing their thinking and quantitative skills through exercises and discussions.

Extend and Nature of Technology Use

The use of technology will depend on individual instructors. But may include BeachBoard, and should include the development of familiarity with web resources specific to the course. It may also include assignments that involve the evaluation of web materials on the subjects. Students may be made familiar, if they are not already, with relevant search databases in the library.

7. Required Texts

Since Business Statistics I is offered in multiple sections, for conformity and consistency across all sections, it is highly recommended, but not mandated, that all sections of the course use a unified textbook designated by the course coordinator with consultation of the qualified department faculty and herein referred to as required textbook:


Instructors may be asked to justify the use of a different textbook, if different from the required text above, or utilizing an older text, if updated texts are available.

8. Grading System and Assessment Activities

8.1 Assessment Criteria

Online Quizzes and Chapter Test Assessment
Students will complete many online self-assessed quizzes profiling of their competence on the text chapters using tools on various web sites, including one supplied by the textbook publisher.

At least three formal class tests
Each formal class test covers about four or possibly five chapters of the textbook. The tests must be carefully designed to measure learning goals described earlier.
Each test must not count for more than one third of the course grade.

**Attendance, Participation Activities**

Students are expected to attend all class meetings and complete all assignments to ensure passing the class with a grade of C or better. All BeachBoard online activities, if any, must be completed by the posted deadlines, e.g. discussion boards, small group discussions, responses to instructor queries, etc.

**8.2 Required Statement:**

In compliance with university policy: Final grades will be based on at least three, and preferably four or more, demonstrations of competence. In no case will the grade on any class tests should count for more than one-third of the course grade.

9. **Policies for Attendance, Withdrawal, Late Assignments**

Students are expected to have regular, punctual attendance. Students are requested to notify instructor when they will be absent.

No late work is accepted, except by prior approval of instructor. Withdrawal policy is the same as that of the university.

**Special With Disabilities**

Students with disabilities are responsible for notifying their instructor as early as possible of their needs for an accommodation of a verified disability. A student with a disability is urged to consult with Disabled Student Services as soon as possible in order to identify possible accommodations to enhance academic success.

10. **Selected Bibliography**


