

Title (Units): SCI7430 Statistical Software in Business and Management (3,3,0)

Syllabus Reviewed by: Michael Ng

Prerequisite and Co-requisite: None

Objectives: This subject introduces elementary statistical concepts and methods and how to use SPSS, a friendly statistical software, as a computational aid to carry out the statistical computation. The students will learn how to organize and analyze data with the guidance of statistical concepts and methods. This module also introduces the ideas on how to choose appropriate statistical methods to deal with the problems of interest; and how to make correct statistical inference.

Calendar Description: This subject introduces elementary statistical concepts and methods and how to use SPSS, a friendly statistical software, as a computational aid to carry out the statistical computation.

References: D.M. Shannon & M.A. Davenport, Using SPSS to Solve Statistical Problems, Merrill Prentice Hall, 2001.

Assessment: Continuous assessment (40%) and Final examination (60%)

Subject Content in Outline:

- I. Introduction to SPSS (4 hours of teaching)
 - A. Retrieving and saving SPSS files
 - B. Data entry and definition
 - C. Transforming data and creating new variables
- II. Summarizing Data (8 hours of teaching)
 - A. Graphical descriptions
 - B. Tabular presentations
 - C. Statistics as numerical summaries of data
- III. Introduction to Probability (5 hours of teaching)
 - A. Probability as idealised proportion
 - B. Simple rules for probability
 - C. Random variable and distribution
 - D. Mean and variance
- IV. Inference on Population Proportion (8 hours of teaching)
 - A. Binomial distribution for binary data
 - B. Estimation and confidence interval
 - C. Test of hypotheses and P-values
 - D. Comparing two proportions
- V. Inference on Population Mean and Variance (5 hours of teaching)
 - A. Justifications for using normal distribution for continuous data
 - B. Inference on the mean

- VI. Comparing Means and Variances of Normal Populations (6 hours of teaching)
 - A. Comparing two means with common variance
 - B. Comparison of two means using paired observations
 - C. Comparing several means with common variance: ANOVA
 - D. Multiple comparisons of means after ANOVA

- VII. Regression Analysis (6 hours of teaching)
 - A. Multiple linear regression
 - B. Regression with categorical predictors