M: Course Objectives / Learning Outcomes

At the end of the course, the successful student should be able to:

1. Describe data using measures of central tendency and variability;
2. Utilize SPSS statistical software to extract data from a database (PRISM), conduct basic statistical computations, and analyze the results.
3. Calculate the probability of mutually exclusive, dependent or independent events; apply probability distributions to make estimates;
4. Identify appropriate sampling techniques in order to make inferences about the population mean or proportion;
5. Set up confidence intervals and conduct tests of significance for the population mean, proportion and variance using small or large samples;
6. Set up and conduct tests of hypotheses and interpret results;
7. Examine relationships between variables using correlation and linear regression.

N: Course Content:

1. Review of Descriptive Statistics
   . scales of measurement
   . frequency distributions
   . histograms, graphs and diagrams
   . averages and variation
   . using SPSS for computing frequencies, averages and variance
   . cross-tabulation

2. Introduction to SPSS
   . setting up a data file
   . defining data
   . running SPSS/PC+
   . the PRISM data base

3. Probability and Probability Distributions
   . approaches to probability
   . measures of probability or expectation
   . mutually exclusive events
   . independent and dependent events
   . conditional probabilities
   . binomial, normal, and poisson distributions

4. Sampling Theory and Techniques
   . types of sampling
   . surveys
   . sampling distributions

5. Statistical Inference
   . population parameters and sample statistics
   . sampling distribution of the mean
   . standard error of the mean
   . first limit theorem and central limit theorem
   . estimation of the population mean
   . confidence intervals
   . sample size
   . estimation of the population proportion
   . z-scores, t-distribution, chi-square distribution
   . using SPSS in statistical inference