GENERAL STUDIES STATISTICS

Typical Course Description:

A first college-level statistics course provides students with a basic understanding of statistics and prepares them to solve problems that involve collecting and analyzing meaningful data. This includes the study of measures of central tendency, measures of variation, graphical representation of data, least squares regression, correlation, probability distributions, sampling techniques, parameter estimation, and hypothesis testing. Technology and statistical literacy will be integrated throughout the course.

Students will:

1. select and apply appropriate technologies to manage and explore data numerically, graphically and in tables; perform inference, and answer questions of a statistical nature;

2. identify characteristics of good study designs and explain what conclusions are appropriate for a given design and whether conclusions can be generalized to a larger population;

3. know statistical terminology and formulas, and solve for various variables in the formulas, using technology and algebraic manipulations;

4. perform elementary probability calculations and solve problems by applying appropriate standard probability distributions, including discrete, binomial, uniform and normal distributions;

5. construct and interpret confidence intervals with 1 or 2 means, differences of means, and 1 or 2 proportions to estimate population parameters;

6. model the sampling distribution of proportions and means, including verifying the necessary conditions, e.g. the Central Limit Theorem for means.

7. perform hypothesis tests with 1 or 2 means, differences of means, and 1 or 2 proportions in order to analyze and interpret data;

8. (optional?) find the equation of best fit, generate the various measures for the strength of the relationship, identify outliers and influence points, and use the equation of best fit for predictions; *(This includes the possibility of exploring nonlinear and multiple regression.)*

9. (optional?) solve problems involving one-way analysis of variance; and,

10. (optional?) solve problems involving chi-squared analysis.