

COURSE: MATHEMATICS 301: Statistics

DESCRIPTION: Statistics (3): Surveys basic techniques and principles of statistical analysis, both descriptive and analytical. Descriptive statistics includes univariate measures of central tendency and dispersion, bivariate crosstabulation and correlation and regression analysis. Inferential statistics includes point and parameter estimation and hypothesis testing techniques. Emphasizes health-related examples and incorporates the latest software technology in the health field. *Prerequisite: Mathematics 101 or higher; Mathematics 102 recommended*

RECOMMENDED TEXT: Richard D. De Veaux, Paul D. Velleman, David E. Bock. Intro Stats, 2006. Addison Wesley. ISBN: 0-321-28671-5

FORMAT: 35 multiple choice questions (2 points each) and 5 short answer questions (6 points each).

GRADING: Students must receive a “C” (73-76) in order to receive credit for a course taken as a Challenge Exam.

TOPICS OF STUDY:

Research Design – scientific approach, survey sampling, reliability and validity

Qualitative and Quantitative Data - initial data inspection, tables and graphs

Univariate Data Description – central tendency, dispersion, normal distribution

Bivariate Data Description – cross tabs and scatter plots

Data Summary and Inferential Statistics

Confidence Intervals

Hypothesis testing

T-Tests, Analysis of Variance and Non-Parametric Alternatives

Chi-Square, Significance vs. strength of relationship

Linear Correlation and Regression

Other Forms of Regression