STAT 3120: Statistical Methods I

3 Credit Hours

Prerequisite: STAT 1401 or DATA 1501 or STAT 2332 or MATH 3332

This course is designed to provide students with a foundation in statistical methods, including confidence intervals for population parameters, correlation, simple linear regression and hypothesis testing (F and T-tests for regression, chi-square for independence, 2 group and paired sample T-tests). These concepts are taught with heavy emphasis on statistical coding software and real-world datasets from a variety of disciplines.

STAT 3125: Biostatistics

3 Credit Hours

Prerequisite: BIOL 1107 or BIOL 1108 or CHEM 1212 or permission of the instructor

In this course students use descriptive statistics and visual displays to describe biological and medical data. They perform and analyze results of statistical analyses which may include confidence intervals, correlation, linear regression, odds/risk ratios, and hypothesis testing (Chi-square for independence, 2 group and paired sample t-tests). Analyses are performed using the statistical software R.

STAT 3130: Statistical Methods II

3 Credit Hours

Prerequisite: DATA 3010 and (STAT 3120 or STAT 3125 or STAT 2332 or PSYC 3000)

Students continue to build their foundation in statistical methods in this course. They will conduct non-parametric methods (Wilcoxon Signed Rank, Rank Sum, and Kruskal Wallis tests), ANOVA and multiple regression. These concepts are taught with heavy emphasis on statistical coding software and real-world datasets.

STAT 4025: Clinical Trial Design

3 Credit Hours

Prerequisite: STAT 3125 or STAT 3120

The course introduces students to statistical concepts used to design clinical trials, or randomized studies of humans. Students will be able to design, conduct, and analyze clinical trials in the format required by the Food and Drug Administration. The topics include endpoint definition, sources of bias, randomization schemes, types of blindness, phases of clinical studies (I-IV), hypothesis formation, sample size determination, patient recruitment, adverse events, and protocol development.