

STATISTICS (STAT)

STAT 211 Principles of Statistics**3 Credits**

Grade Mode: Standard Letter, Audit/Non Audit

Prerequisite(s): MATH 162

This course content ranges from mathematical theory of statistics to probability. It provides a comprehensive approach to sample space: discrete, continuous, events, axioms of probability, basic properties of probability; union of events bound, discrete probability models; computing probability using counting, continuous probability models, conditional probability and the chain rule, sequential calculation of probability, law of total probability and Bayes rule, independence, random variables and their distributions, transformations of random variables, expectations and variance, generating functions, sampling distributions and basic limit theorems, principles for statistical inference, formulation of statistical models, reduction of data, point estimation, confidence intervals, hypothesis testing and Bayesian inference.

STAT 501 Introduction to Statistics and Research Method **3 Credits**

Grade Mode: Standard Letter

This course is a foundational course for graduate students who will be engaged in biomedical sciences research. It provides students with basic statistical knowledge, power calculation and project design. Advanced discussions on ethics and ethical misconduct, intellectual property and environmental health and safety as well as scientific thought, and design of experiments are also covered. A focus of the course is to transition students from textbooks to primary literature as their main source of information.