

STATISTICS (STA)

STA-173: Statistical Methods (3 Credits)

This course will address a broad spectrum of fundamental statistics concepts. The topics include exploratory data analysis, basic probability distributions, sampling distributions, interval estimations, hypothesis testing, and significance testing (P-Values) with single, paired and two-sample problems.

STA-341: Statistical Theory I (3 Credits)

Pre/Co-requisite(s): MTH-203 is required.

This course provides a calculus-based treatment of probability, which forms the foundation of statistics. Students study probability theory, combinatorics, random variables, discrete and continuous distribution theory, expected values, moment-generating functions, multivariate distributions, functions of random variables, and conditional and marginal probability distributions, and the Central Limit Theorem.

STA-342: Statistical Theory II (3 Credits)

Pre-requisite(s): STA-341 is required.

This course builds on the calculus-based treatment of probability provided in STA-341 to introduce concepts in statistics. Students study Chebyshev's Inequality and convergence in probability, descriptive statistics, exploratory data analysis, order statistics, least-squares regression; estimation including maximum likelihood, method of moments, unbiased, consistent, minimum variance estimators; confidence intervals, tests of hypotheses, significance testing with p-values, and goodness-of-fit tests. Other topics, as time permits.