

Statistics (M.S.)

About The Program:

The Department of Statistical Science offers an M.S. program through which students acquire in-depth knowledge of statistics. Graduates are trained to serve as professional statisticians in industry, research organizations, or government.

Career Options: Graduates of the master's program may find employment as statisticians in the pharmaceutical industry, in medical research organizations, or in other areas of business and government.

Prerequisites for Admission: Students must have taken two semesters of university-level Calculus or its equivalent. A course in Linear Algebra is also desirable. A baccalaureate degree is required, although it need not be in a business discipline.

Areas of Specialization: Faculty members offer master's students substantial coursework in statistical theory and applications.

Requirements of Programs:

- **Total Credit Hours:** 30
- **Culminating Events:** Satisfactory completion of coursework is all that is required to earn the degree.

Core Courses

Probability and Statistics Theory I - Topics include basic probability theory and combinatorial problems, generating functions, random variables, probability distributions, law of large numbers, and limit theorems.

Probability and Statistics Theory II – A comprehensive development of the theory of statistics, including standard distributions, sampling distributions, general theory of estimation, testing of hypotheses, statistical decision theory, order statistics, linear statistical estimation.

Statistical Methods I – Introduction to applied statistics. Topics include data management, probability distributions, parameter estimation, hypothesis testing, sampling methodologies, graphical display, analysis of variance, and simple and multiple regression. Use of R, S-Plus and SAS statistical software.

Statistical Methods II – Design of experiments, analysis of discrete data, introduction to nonparametric methods, logistic regression, ARIMA time series analysis, bootstrapping, jackknife, robustness, and selected topics in multivariate analysis. Use of R, S-Plus and SAS statistical software.

Electives (18 credits)

Courses:

Click [HERE](#) for more information on the courses below.

- Quantitative Methods for Business
- Introduction to Biostatistics
- Special Topics
- Independent Study
- Foundations for Data Analytics
- Visualization: The Art of Numbers and the Psychology of Persuasion
- Statistical Learning and Data Mining
- Experiments: Knowledge by Design
- Decision Models: From Data to Decisions
- Data: Care, Feeding, and Cleaning
- Advanced Business Analytics
- Business Analytics II
- Statistical Analysis for Management
- Quantitative Techniques for Management
- Probability and Statistics Theory I
- Probability and Statistics Theory II
- Statistical Methods I
- Statistical Methods II
- Probability and Large Sample Theory
- Stochastic Processes
- Statistical Methods III
- Sampling Theory
- Mathematics for Stat
- Univariate Time Series Analysis
- Linear Models I
- Design of Experiments I
- Applied Multivariate Analysis I
- Regression, Time Series, and Forecasting for Business Applications
- Survey Techniques for Business Applications
- Statistical Methods for Business Research I
- Statistical Methods for Business Research II
- Survival Analysis I
- Nonparametric Methods
- Categorical Data Analysis
- Clinical Trials
- Statistical Computing
- Advanced SAS Programming
- Time Series Analysis and Forecasting
- Advanced Statistical Inference I
- Linear Models II
- Design of Experiments II
- Multivariate Analysis II
- Survival Analysis II
- Statistical Genetics: An Advanced Graduate Course
- Seminar in New Topics in Statistics
- Directed Study in Statistics