

STATISTICS (STAT)

STAT 301 Introductory Probability and Applied Statistics 3 Hours

A calculus-based introduction to probability and applied statistics, with emphasis on analysis of real-world data. Topics include principles of elementary probability; essential discrete and continuous probability distributions; descriptive statistics; sampling distributions; estimation and hypothesis testing for means, variances, and proportions; and simple linear regression. Technology is integrated throughout the course.

Prerequisite(s): MATH 136 with a minimum grade of C

Recent Term(s) Offered: spring 2022; fall 2022; spring 2023; summer 2023; fall 2023; spring 2024; fall 2024

STAT 330 Introduction to Statistical Software 3 Hours

Using proprietary and open-source statistical software for data analysis. Interactive techniques for data management, manipulation and transformation. Interactive techniques for data error checking, descriptive statistics, basic inferential statistics, and basic report generation such as tabular and graphical displays. Introduction to scripts and batch processing when applicable. Proper use and interpretation of the methods are emphasized. Note: Three hours of undergraduate statistics with a grade of C or better, or consent of instructor.

Recent Term(s) Offered: spring 2022; spring 2023; spring 2024

STAT 401 Regression Analysis 3 Hours

Regression topics including simple and multiple linear regression, least squares estimates, inference, transformations, diagnostic checking, and model selection methods. Selected special regression topics will also be introduced. Statistical software packages will be used for analyses. Note: Permission of instructor may be required.

Prerequisite(s): STAT 301 with a minimum grade of C and (STAT 330 (may be taken concurrently) with a minimum grade of C or CS 396 with a minimum grade of C)

Recent Term(s) Offered: fall 2022; fall 2023; fall 2024

STAT 402 Experimental Design 3 Hours

Experimental design and analysis topics including single- and multiple-factor designs, factorial and fractional factorial designs, fixed vs. random effects models, response surface, nested designs, and special topics. Statistical software packages will be used for analyses. Note: Permission of instructor may be required.

Prerequisite(s): STAT 301 with a minimum grade of C and (STAT 330 (may be taken concurrently) with a minimum grade of C or CS 396 with a minimum grade of C)

Recent Term(s) Offered: spring 2022; spring 2023; spring 2024

STAT 440 Categorical Data Analysis 3 Hours

Categorical data analysis topics including contingency tables, log-linear models, relative risk and odds, and logistic regression. Statistical software packages will be used for data analyses.

Prerequisite(s): STAT 301 with a minimum grade of C and STAT 330 (may be taken concurrently)

Recent Term(s) Offered: None