STATISTICS (STAT)

STAT 1369. Elementary Statistics. 3 Hours.
Students engage in a survey of elementary statistics designed to acquaint students with the role of statistics in society. Coverage may include graphical descriptive methods, measures of central tendency and variation, the basic concepts of statistical inference, the notion of estimators, confidence intervals, and tests of hypotheses. Also offered as MATH 1369.
Prerequisite: Passing score on the MATH TSI Assessment or equivalent.

STAT 3379. Statistical Methods in Practice. 3 Hours.
Students study organization and presentation of data; measures of central tendency, dispersion, and position; probability distributions for discrete and continuous random variables, sampling techniques, parameter estimation, and hypothesis testing. Emphasis is given to the use of statistical packages. Also offered as MATH 3379.
Prerequisite: Three (3) semester hours of college mathematics.

STAT 3380. Stat Design & Anal of Experimts. 3 Hours.
Students study sampling designs and hypothesis testing in analysis of variance, analysis of covariance, and regression analysis. Design characteristics, model diagnostics, and hypothesis testing are emphasized and work is required on real data. The MINITAB and SAS statistics packages are applied. Normally offered in the Spring semester. Normally offered in the Spring semester.
Prerequisite: STAT 3379 or MATH 3379.

STAT 3381. Sample Survey Methods. 3 Hours.
Students study the principles needed in planning and conducting sample surveys. Topics may include random, stratified, systematic, and cluster sampling methods as well as sub sampling techniques.
Prerequisite: STAT 3379 or MATH 3379.

STAT 4090. Independent Study. 1-3 Hours.
This course is designed for advanced students to engage in independent study of an area of interest in statistics under the close guidance of a faculty mentor. Prerequisite: Consent of instructor. Variable credit (1 to 3).
Prerequisite: Consent of instructor.

STAT 4370. Thry & Appl of Prob & Stat I. 3 Hours.
Students explore basic concepts and properties of probability, random variables, statistical distributions, measures of central tendency, variance, covariance, correlation, functions of random variables, sampling distributions, and the Central Limit Theorem. Also offered as MATH 4371. Normally offered in the Fall semester.
Prerequisite: MATH 1430.

STAT 4371. Thry & Appl of Prob & Sta II. 3 Hours.
Students study multivariate, conditional and marginal distributions, point and interval estimation, theory of estimation, maximum likelihood estimates, hypothesis testing, likelihood ratio tests, contingency analysis, and nonparametric statistics. Also offered as MATH 4372. Normally offered in the Spring.
Prerequisite: STAT 4371.

STAT 4372. Nonparametric Statistics. 3 Hours.
Students study chi-square goodness-of-fit testing and inferences concerning location and scale. Specific tests include the sign test, Wilcoxon signed-rank test, the Kruskal-Wallis test, tests for randomness and trends, and contingency analyses.
Prerequisite: STAT 3379 or MATH 3379.

STAT 4374. Regression Modeling & Analysis. 3 Hours.
Students study model estimation and testing, model diagnostics, residual analysis, variables selection, and multicollinearity. Work is required on real data with the use of the MINITAB and SAS statistics packages.
Prerequisite: STAT 3379 or MATH 3379.

STAT 4375. Quality Control & Reliability. 3 Hours.
Students examine topics, such as attribute and variables control charts, process capability, acceptance sampling, probabilistic foundations of reliability, hazard functions, failure laws, and system reliability.
Prerequisite: MATH 3379 or STAT 3379.
STAT 4376. Time Series and Forecasting. 3 Hours.
Students examine topics, such as types and classification of time series, methods of forecasting, errors in forecasting, regression analysis for time series, decomposition methods, exponential smoothing, Box-Jenkins methods, nonseasonal and seasonal modeling, and transfer function and intervention models.
Prerequisite: MATH 3379 or STAT 3379.