STA 1020 Elementary Statistics Cr. 3
Satisfies General Education Requirement: Quantitative Experience Comp
Descriptive statistics, correlation and regression, notions in probability, binomial and normal distributions, testing hypothesis. Offered Every Term.

STA 2210 Probability and Statistics Cr. 4
Satisfies General Education Requirement: Quantitative Experience Comp
Basic probability theory (definition of probability, conditional probability, independence, random variables, expectation and variance, normal distribution, law of large numbers, central limit theorem), descriptive statistics (histograms, scatter plots, box plots, mean, variance, quantiles, empirical rule, z-scores), statistical inference (confidence intervals for mean, t-tests, chi-square tests, linear regression, analysis of variance) and data analysis. Offered Every Term.
Prerequisites: MAT 1800 with a minimum grade of C- or MAT 2010-2350 with a minimum grade of C- or MAT Permit to Reg ACT/SAT with a test score minimum of 4 or Math Permit to Reg L1-L4 with a test score minimum of 4

STA 5030 Statistical Computing and Data Analysis Cr. 3
Computational aspect of statistics and data analysis for advanced undergraduate and beginning graduate students. Topics include descriptive statistics, probability distributions, hypothesis testing, ANOVA, linear regression and logistic regression. Data analysis by use of statistical packages such as R, SAS, Python, SPSS or Minitab. Satisfies Society of Actuaries Validation by Educational Experience (VEE) in Applied Statistics for regression component with a B- or better. Offered Yearly.
Prerequisites: MAT 2250 or MAT 2150 and MAT 2210 or STA 2210 or MAT 5700 or BE 2100 or ECO 5100 or PH 3200

STA 5800 Introduction to Mathematical Statistics Cr. 4
A one-semester course for senior undergraduate and master's degree students. Introduction to basic mathematical theory of statistics. Topics include descriptive statistics, probability distributions, hypothesis testing, ANOVA, linear regression and logistic regression. Data analysis by use of statistical packages such as R, SAS, Python, SPSS or Minitab. Satisfies Society of Actuaries Validation by Educational Experience (VEE) in Applied Statistics for regression component with a B- or better. Offered Yearly.
Prerequisite: MAT 5700 with a minimum grade of C-

STA 5830 Applied Time Series Cr. 3
Time series models, moving average models, autoregressive models, non-stationary models, and more general models; point estimators, confidence intervals, and forecast in the time domain. Statistical analysis in the frequency domain; spectral density and periodogram. Satisfies Society of Actuaries Validation by Educational Experience (VEE) in Applied Statistics for regression component with a B- or better. Offered Yearly.
Prerequisites: MAT 2250 or MAT 2150 and MAT 2210 or STA 2210 or BE 2100 and ECO 5100 or PH 3200

STA 6840 Linear Statistical Models Cr. 3
Multivariate linear regression models, examples; least square estimates and system of normal equations; the Gauss-Markov theorem; hypothesis testing about regression coefficients; confidence intervals and regions; prediction; model selection, stepwise regression. Analysis of variances (ANOVA). Offered Every Other Year.
Prerequisites: MAT 5800 or STA 5800

STA 7810 Advanced Statistics Theory I Cr. 3
First of two basic courses for Ph.D. students in the Mathematics Department who are interested in statistics. Topics include sample distribution theory, point and interval estimations, optimal estimates, theory of hypothesis testing, and most powerful tests. Offered Every Other Year.
Prerequisite: MAT 5610 with a minimum grade of C and MAT 5700 with a minimum grade of C
Restriction(s): Enrollment is limited to Graduate level students.

STA 7820 Advanced Statistics Theory II Cr. 3
Continuation of STA 7810. Topics include regression analysis, linear models, analysis of categorical data, nonparametric statistics, decision theory, and Bayesian inference. Offered Every Other Year.
Prerequisite: MAT 7810 with a minimum grade of C or STA 7810 with a minimum grade of C
Restriction(s): Enrollment is limited to Graduate level students.

STA 7870 Topics in Statistics Cr. 3-4
Selected topics such as statistical estimation theory; theory of statistical hypothesis testing; non-parametric methods in statistics; statistical sequential analysis; statistical multivariate analysis. Topics to be announced in Schedule of Classes. Offered Every Other Year.
Prerequisite: MAT 7810 with a minimum grade of C or STA 7810 with a minimum grade of C
Restriction(s): Enrollment is limited to Graduate level students.
Repeatable for 12 Credits