

Courses Offered

650 - Stochastic Processes 3	725 - Applied Statistics 3	774 - Linear Models I 3
Discrete time Markov chains, Poisson processes, continuous time Markov chains, birth and death processes, renewal processes, branching processes, queuing systems, and applications. Prereq: Stat 368.	Data description, probability, inference on means, proportions, difference of means and proportions, categorical data, regression, analysis of variance and multiple comparisons. Prereq: Knowledge of algebra. NOTE: This course is not intended for statistics or mathematics majors.	General linear models. Full rank models. Estimation, confidence ellipsoids and tests of hypotheses. Not full rank models. Applications to regression and design of experiments. Prereq: Stat 768.
651 - Bayesian Statistical Decision Theory 3	726 - Applied Regression & Analysis of Variance 3	775 - Linear Models II 3
Bayesian approach to statistics including utility and loss, prior and posterior densities, and Bayesian inference. Comparisons with classical statistical methods. Prereq: Stat 368 or 468.	Still need Description	Repeated measurements models. Variance components models. Response surfaces. Growth curve models, unbalanced designs. Prereq: Stat 774.
660 - Applied Survey Sampling 3	730 - Biostatistics 3	777 - Multivariate Theory 3
Simple random, stratified, systematic and cluster sampling; two-stage sampling. Estimation of population means and variances. Ratio and regression estimators. Prereq: Stat 330 or 368.	Direct assays, parallel line assays, slope ratio assays, multiple assays, and quantal assays. Model, estimation and testing. Probit and logit analysis. Prereq: Stat 461/661, 520 or 725.	Wishart distribution, distribution of Hotelling t-square and Lambda Statistics, cluster analysis, correspondence analysis, discriminant analysis, multidimensional scaling. Prereq: Stat 764.
661 - Applied Regression Models 3	732 - Introduction to Bioinformatics 3	778 - Modern Probability Theory 3
Simple linear regression, matrix approach to multiple regression, and various tests and confidence intervals are introduced. Multicollinearity and autocorrelation are discussed. Prereq: Stat 330 or 368.	Cross-listed with Math 732 and CSCI 732.	Probability theory presented from the measure theoretic perspective. Emphasis on various types of convergence and limit theorems. Discussion of random walks, conditional expectations, and martingales. Prereq: Stat 768 or Math 750. Cross-listed with Math.
662 - Introduction to Experimental Design 3	750 - Time Series 3	780 - Asymptotics, Bootstrap, and Other Resampling Plans 3
Fundamental principles of designing an experiment, randomized block, latin square, and factorial. Analysis of covariance and response surface methodology will also be covered. Prereq: Stat 330 or 368.	Estimation of trend in time series data. Seasonal models. Stationary models. Moving average, autoregressive and ARMA models. Model identification. Forecasting. Intervention analysis. Prereq: Stat 461/661.	Large sample and small sample properties of a variety of estimators will be developed. Prereq: Stat 768.
663 - Nonparametric Statistics 3	761 - Advanced Regression 3	786 - Advanced Inference 3
Various tests and confidence intervals that may be used when the underlying probability distributions are unknown, including the Wilcoxon, Kruskal-Wallis, and Friedman. Prereq: Stat 330 or 368.	Multiple regression, analysis of residuals, model building, regression diagnostics, multi-collinearity, robust regression, and nonlinear regression. Prereq: Stat 461/661.	Properties of estimators, theory of estimation, and hypotheses testing are further discussed. Prereq: Stat 768.
664 - Discrete Data Analysis 3	762 - Messy Data Analysis 3	<i>The following variable credit courses are also offered:</i>
Application of binomial, hypergeometric, poisson, mixed poisson, and multinomial distributions in discrete data analysis. Log-linear models and contingency tables. Logistic regression. Discrete discriminant analysis. Prereq: Stat 367.	One-way classification models with heterogeneous errors. Two-way classification analysis in the unbalanced case. Analysis of mixed models. Split-plot, nested and crossover designs. Prereq: Stat 462/662.	690, 790 Seminar 1-3
665 - Meta-Analysis Methods 3	764 - Multivariate Methods 3	696, 796 Special Topics 1-5
Statistical methods for meta-analysis with applications. Various parametric effect size from a series of experiments: fixed effect, random effect linear models; combining estimates of correlation coefficients; meta-analysis in the physical and biological sciences. Prereq: Stat 330 and 331 or 461/661 or 725.	Sample geometry, correlation, multiple, partial, canonical correlation test of hypothesis on means, multivariate analysis of variance, principal components, factor analysis, and discriminant analysis. Prereq: Stat 461 or 462.	793 Individual Study 1-5
670 - Statistical SAS Programming 3	767 - Probability and Mathematical Statistics I 3	794 Consulting/Presentation Practicum 1-15
Focuses on statistical problem solving and writing SAS computer code. Data types, data management, data input/output, SAS as a programming language, data analysis, report writing, and graphing. Prereq: Stat 461/661 or 462/662.	Random variables, discrete probability distributions, density functions, joint and marginal density functions, transformations, limiting distributions, central limit theorem. Additional project required. Prereq: Math. 270.	797 Master's Paper 1-3
	768 - Probability and Mathematical Statistics II 3	798 Master's Thesis 1-10
	Properties of estimators, confidence intervals, hypotheses testing. Neyman-Pearson Lemma, likelihood ratio tests, complete and sufficient statistics. Additional project required. Prereq: Stat 767.	799 Doctoral Dissertation 1-15
	770 - Survival Analysis 3	
	Presents basic methodology in the analysis of censored data, two basic types of censoring, parametric estimation, nonparametric estimation, and life table methods. Prereq: Stat 768.	