STATISTICS (STAT)

STAT 5300 Categorical Data Analysis
In this course students will be exposed to statistically significant techniques beyond those of linear regression. Topics to be covered include the Generalized Likelihood Ratio test, theory of a generalized linear model, Poisson regression, logistic regression, and analysis of data on a more categorical basis among others. Crosslisted with DS 5300.

STAT 5305 Applied Data Analysis
Concepts related to the theory and application of analysis of significance in data samples, probabilistic inference, expectation, hypothesis testing, and other statistical analysis methods.

STAT 5306 Generalized Lin Mdls with Apps
In a broader statistical context, simple discrete statistical modeling does not suffice. To accommodate the analysis of mixed discrete and continuous models and other more general samples, this course implements generalized linear models. This is an extension on linear regression analysis.

STAT 5310 Stat Methods for Clin Trials
This course is designed around the design of data collection and analysis related to experiments conducted in a clinical setting. Approaches towards minimizing bias in sampling and category responses are emphasized.

STAT 5322 Theory of Sampling & Surveys
This course will cover the theory and application of methods geared towards sample intake and survey conduct. Topics include simple random sampling, proportion estimates, regression estimation, cluster sampling, multistage design, and more

STAT 5327 Compt Mthds in Stat
This course will focus on statistically significant computing methods, such as the R programming language, and the implementation of models relevant to such studies.

STAT 5328 Reg & App Time Series Mdls
This course focuses on the study of data correlated over a certain period of time. The correlation of such data can be analyzed using various tools including ARIMA models, suitability estimates, forecast predictions, smoothing methods, cross correlation, lagged regressions, use of time series variables, intervention analysis, longitudinal analysis, multivariate time series, and frequency domain analysis to name a few.

STAT 5329 Anlys of Var in Expt Dsgn Mdls
Experimental data can be correlated via an analysis of the variances related to the data, with a statistically significantly large enough sample. This course focuses on the use of ANOVA methodology to encourage proper model selection for statistical analysis in a laboratory setting.

STAT 5340 Quality Control & Improvement
This course is designed for the study of the theory and application of statistical methods in order to assess the integrity of statistically analyzable processes (like mass production). Methods to increase quality management and productivity while considering variables, attributes, various analysis methodologies, sampling, graphing, model selection, and others will be studied.

STAT 5341 Applied Multivariate Analysis
This course covers the study of more sparsely correlated data. Among the topics are the theory and application of advanced testing of correlations and analysis of varied aggregate data techniques such as cluster and discriminant analysis. Factor analysis is covered in detail, as is graphical display of multivariate data, sample correlations, inference, conditional distribution and partial correlation, principal component analysis, and multivariate analysis of variance.

STAT 5387 Stat Mdls for Spatial Data
This course will cover the linear and general linear regression models with respect to smoothing and in the context of large correlated samples taken over multi-dimensional regions. Some programming experience is recommended for proper implementation of the models and samples to be discussed.

STAT 5390 Case Seminar in App Stats
The student, guided by a chosen faculty member(s), will prepare a project related to statistics and applied mathematics. The student then presents the results in a seminar during the student's final semester that usually lasts 75 minutes followed by a short Q&A session. Students must exhibit a working knowledge of two useful computer languages or data analysis software packages.