807 Topics in Hispanic Culture
Spring of odd years. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course. Topics such as the Enlightenment, Post-Francoist film, and pre-Columbian cultures.

810 Studies in Medieval Spanish Literature
Spring of even years. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course. Works, genres, and writers of the Spanish Middle Ages. Topics vary.

815 Studies in Golden Age Literature
Fall of even years. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course. Poetry, drama, and prose of 16th and 17th century Spain. Topics vary.

820 Cervantes
Fall of odd years. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course. Critical study of "Don Quijote," "Novelas Ejemplares," or other works.

825 Studies in 18th and 19th Century Spanish Literature
Spring of odd years. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course. Literature from post-Baroque Spain to the Generation of 1898. Topics vary.

830 Studies in 20th-Century Spanish Literature
Fall of odd years. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course. Authors, generations, and tendencies that shape the directions of Spanish literature in the 20th Century. Topics vary.

835 Spanish-American Literature before Modernismo
Spring of even years. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course. Major authors and movements from the colonial period to Modernismo. Topics vary.

840 Contemporary Spanish-American Literature
Fall of even years. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course. Poetry, drama, prose, fiction, and essay from Modernismo to the present. Topics vary.

850 Evolution of the Spanish Language
Spring of odd years. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course. Phonology, morphology and syntax of Spanish from its origins to the present.

860 Topics in Hispanic Linguistics
Spring. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course. Issues in Spanish language in relation to current linguistic inquiry. Topics vary.

870 Topics in Hispanic Culture
Spring of odd years. 3(3-0) A student may earn a maximum of 9 credits in all enrollments for this course. Topics such as the Enlightenment, Post-Francoist film, and pre-Columbian cultures.

880 Current Approaches to Spanish Instruction
Fall. 3(3-0) Theoretical and applied study of methodologies of teaching Spanish.
Statistics and Probability—STT

351 Probability and Statistics for Engineering
Fall, Spring, Summer. 3(3-0) P:NM: (MTH 234 or concurrently or MTH 254H or concurrently or LBS 220 or concurrently) R: Open only to juniors or seniors. Not open to students with credit in STT 430.
A calculus based course in probability and statistics for engineering majors. Probability models and random variables. Estimation, confidence intervals, tests of hypotheses, simple linear regression. Other topics with applications to engineering.

421 Statistics I
Fall, Spring, Summer. 3(3-0) P:NM: (MTH 103 or MTH 110 or MTH 116 or LBS 117) Not open to students with credit in STT 200 or STT 201 or STT 315.
Basic probability, random variables, and common distributions. Estimation and tests for one-, two-, and paired sample problems. Introduction to simple linear regression and correlation, 1-way ANOVA.

422 Statistics II
Fall, Spring, Summer. 3(3-0) P:NM: (STT 421) Not open to students with credit in STT 464.
Goodness of fit and other non-parametric methods. Linear models including multiple regression and ANOVA for simple experimental designs.

430 Introduction to Probability and Statistics
Fall. 3(3-0) P:NM: (MTH 126 or MTH 133 or MTH 153H or LBS 119) R: Open only to majors in the Department of Economics or Department of Agricultural Economics. Not open to students with credit in STT 351.
Calculus based probability and statistics with applications. Discrete and continuous random variables and their expectations. Point and interval estimation, tests of hypotheses, simple linear regression.

441 Probability and Statistics I: Probability
Fall, Spring, Summer. 3(3-0) P:NM: (MTH 234 or MTH 254H or LBS 220) Probability models and basic statistics at an intermediate mathematical level. Discrete, continuous, univariate, and multivariate distributions. Random variables. Normal approximation. Sampling distributions, parameter estimation, and elementary tests of hypotheses.

442 Probability and Statistics II: Statistics
Spring. 3(3-0) P:NM: (STT 441 and MTH 314) Estimation, tests of hypothesis, confidence intervals. Goodness of fit, non-parametric methods. Linear models, multiple regression, ANOVA.

461 Computations in Probability and Statistics
Spring. 3(3-0) P:NM: (CSE 131 or CSE 230) and (MTH 314 and STT 441)
Computer algorithms for evaluation, simulation and visualization. Sampling and prescribed distributions. Robustness and error analysis of procedures used by statistical packages. Graphics for data display, computation of probabilities and percentiles.

464 Statistical Methods for Biologists I
Fall. 3(3-0) P:NM: (Animal Science; Crop and Soil Sciences. P:NM: (STT 421)
Biological random variables. Estimation of population parameters and hypothesis. Linear correlation and regression (prediction). Analysis of counts and measured data to compare several biological groups (contingency tables and analysis of variance).

465 Statistical Methods for Biologists II
Spring. 3(3-0) Interdepartmental with Animal Science; Crop and Soil Sciences. P:NM: (STT 464)
Concepts of reducing experimental error: covariance, complete and incomplete block designs, latin squares, split plots, repeated-measures designs, regression applications, and response surface designs.

471 Statistics for Quality and Productivity
Fall of even years. 3(3-0) P:NM: (STT 351 or STT 422 or STT 442)
Scientific context of quality: Box, Deming, Taguchi. Graphical techniques, control charts. Design of experiments: factorial and fractional factorials, confounding and aliasing. Engineering parameter design through experimentation.

481 Issues in Statistical Practice
Spring. 1(1-0) P:NM: Completion of Tier I writing requirement. R: Open only to seniors in the Department of Statistics.
Selected readings and projects illustrating special problems encountered by professional statisticians in their roles as consultants, educators, and analysts.

490 Directed Study of Statistical Problems
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 9 credits in all enrollments for this course. R: Open only to juniors or seniors in the Department of Mathematics or Department of Statistics and Probability. Approval of department.
Individualized study of selected topics.

801 Design of Experiments
Fall of odd years. 3(3-0) P:NM: (STT 422 or STT 442 or STT 465 or STT 471) Blocking and randomization. Split-plot, latin square and factorial designs. Fractional factorial designs, aliasing and confounding of effects. Mixture and central composite designs and response surface exploration. Clinical trials.

820 Econometrics I
Spring. 3(3-0) Interdepartmental with Economics; Agricultural Economics. Administered by Department of Economics. P:NM: (EC 801 and STT 430)
The single equation regression model. Properties of least-squares estimators under various specifications, multicollinearity, generalized least-squares, errors in variables, seemingly unrelated regressions. Identification and estimation in simultaneous equations models.

821 Econometrics II
Fall. 3(3-0) Interdepartmental with Economics; Agricultural Economics. Administered by Department of Economics. P:NM: (EC 820 and STT 442)

822 Econometrics III
Spring. 3(3-0) Interdepartmental with Economics; Agricultural Economics. Administered by Department of Economics. P:NM: (EC 820 and STT 442)
Dynamic models and time series data. ARMA models. ARCH models. Unit roots, cointegration and error correction. Rational expectations models.

825 Sample Surveys
Fall. 3(3-0) P:NM: (STT 422 or STT 442 or STT 862)
Application of statistical sampling theory to survey designs. Simple random, stratified, and systematic sampling. Sub-sampling, double sampling. Ratio and regression estimators.

826 Nonparametric Statistics
Fall. 3(3-0) P:NM: (STT 442 or STT 862)
Statistical methods based on counts, ranks, order statistics and permutations of observations. Point and interval estimates, tolerance sets, and tests valid under broad distributional assumptions. Applications to social and natural sciences.

841 Linear Statistical Models
Fall. 3(3-0) P:NM: (STT 442 or STT 862)
Theory and applications of statistical models with linear parameters. Curve fitting, simple and multiple regression, multiple and partial correlation. Analysis of variance, simultaneous inference, experimental design.

842 Categorical Data Analysis
Spring of odd years. 3(3-0) P:NM: (STT 442 or STT 862)
Analysis of categorical and ordinal data: contingency tables; chi square tests; exact tests; log-linear models; measures of association; logistic regression; generalized linear models.

843 Multivariate Analysis
Spring of even years. 3(3-0) P:NM: (STT 442 or STT 862)
Multivariate normal distribution, tests of hypotheses on means, multivariate analysis of variance. Discriminant analysis, Principal components. Factor analysis. Analysis of frequency data.

844 Time Series Analysis
Spring of odd years. 3(3-0) P:NM: (STT 442 or STT 862)

852 Stochastic Methods in Operations Research
Spring of even years. 3(3-0) P:NM: (STT 441 or STT 861)
Optimization techniques related to queuing, inventory, and Markov decision models. Simulation, reliability, and decision analysis.

861 Theory of Probability and Statistics I
Fall. 3(3-0) P:NM: (MTH 320 or concurrently)

862 Theory of Probability and Statistics II
Spring. 3(3-0) P:NM: (MTH 314 and MTH 421 or concurrently and STT 861)
Statistical inference; sufficiency, likelihood, estimation, and tests of hypotheses in parametric and nonparametric cases. Linear models, goodness of fit, and other topics.

865 Modern Statistical Methods
Spring. 3(3-0) P:NM: (STT 862)