

**STAT 113 Statistics & Society.** *Semester: Fall and Spring. Class 3, cr. 3.*

An introduction to statistical ideas intended for students in non-science majors. Sampling, design of experiments, descriptive statistics, correlation and regression, probability and tests of significance are covered. A major effort is made in this course to explain statistics in everyday language. Applications are given in education, medicine, genetics and other fields.

**STAT 213 Probability & Decision Theory.** *Semester: Fall, Spring and Summer. Class 3, cr. 3.*

*Prerequisite: MA 152, 153 or equivalent.*

An introduction to finite mathematics intended for students in the managerial, life and social sciences who possess the prerequisite knowledge in elementary algebra. Linear functions, matrices, linear programming, probability, probability distributions, finance, Markov chains, and theory of games are covered.

**STAT 225 Introduction to Probability Models.** *Semester: Fall and/or Spring. Class 3, cr. 3. Prerequisite: MA 224 or equivalent. Credit not allowed in more than one of STAT 225 or 311.*

An introduction to probability intended for students who possess the prerequisite knowledge in calculus. Combinatorial analysis, axioms of probability, conditional probability and independence, random variables, expectation and limit theorems are covered.

**STAT 301 Elementary Statistical Methods.** *Semester: Fall, Spring and Summer. Class 3, cr. 3. Prerequisite: MA 152, 153 or equivalent. Credit not allowed in more than one of STAT 301, 350, 503 or PSY 201, 203.*

An introduction to statistics intended for students in non-science majors who possess the prerequisite knowledge in algebra. Descriptive statistics, probability, probability distributions, sampling distributions, estimation, hypothesis testing, simple linear regression and analysis of variance are covered. This course is available as an Internet course.

**STAT 311 Introductory Probability.** *Semester: Fall Class 3, cr. 3 Prerequisite: MA 169 or equivalent. Credit not allowed in more than one of STAT 225 or STAT 311.*

A thorough introduction to probability intended for students who possess the prerequisite knowledge in calculus. Combinatorial analysis, axioms of probability, conditional probability and independence, random variables, expectation and limit theorems are covered.

**STAT 350 Introduction to Statistics.** *Semester: Spring. Class 3, cr. 3. Prerequisite: STAT 311 Credit not allowed in more than one of STAT 301, 350, 503 or PSY 201, 203.*

An introduction to statistics intended for students in mathematical sciences or engineering majors who possess the prerequisite knowledge in calculus. Descriptive statistics, probability, probability distributions, sampling distributions, estimation, hypothesis testing, simple linear regression and analysis of variance are covered. Statistical computer programs such as SAS are used.

**STAT 361 Applied Regression Analyses.** *Semester: Fall Class 3, cr. 3 Pre/Corequisites: (STAT 225 or 311) AND (STAT 301, 350, 503 or PSY 201, 203)*

Simple linear regression: inference, diagnostics and remedial measures; multiple linear regression: predictor selection, diagnostics and remedial measures, qualitative predictors; nonlinear regression: logistic, Poisson, generalized linear models; correlation analysis. Statistical software programs are used in STAT 361.

**STAT 362 Design of Experiments** *Semester: Spring Class 3, cr. 3 Prerequisite: STAT 361 or equivalent or instructor permission.*

Single-factor analysis of variance (ANOVA): diagnostics and remedial measures; multifactor ANOVA: equal and unequal sample sizes, random and mixed effects, analysis of covariance; randomized block designs, nested designs, repeated measures, latin square and response surface methodology. Statistical software programs are used in STAT 362.

**STAT 363 Sampling Techniques** *Semester: Spring, alternates with STAT 465 Class 3, cr. 3 Pre/Corequisite: (STAT 225 or 311) AND (STAT 301, 350, 503 or PSY 201, 203)*

Simple probability samples, ratio and regression estimation, stratified sampling, cluster sampling with equal probabilities, sampling with unequal probabilities, complex surveys, dealing with non-response. This course teaches statistical ideas that are useful in understanding and designing research in most areas of study, particularly for students in business, the social and behavioral sciences, communication and education. Statistical software programs are used in STAT 363.

**STAT 465 Case Studies in Statistical Methods** *Semester: Spring, alternates with STAT 363 Class 3, cr. 3 Prerequisite: STAT 361 and STAT 362 or equivalent or instructor permission.*

The statistical methods covered include applied regression analyses, experimental designs, sampling, time series, categorical data analyses and applied multivariate analyses. This course provides a summary of how statistical ideas are useful in understanding and designing research in most areas of study. Each student investigates and reports on a number of case study projects. Statistical software programs are used in STAT 363. Statistical computer packages are used.

**STAT 503 Statistical Methods for Biology.** *Semester: Fall. Class 3, cr. 3 Prerequisite: MA 223 or MA 224 or equivalent. Credit not allowed in more than one of STAT 301, 350, 503 or PSY 201, 203.*

An introduction to statistics intended for students in life sciences who possess the prerequisite knowledge in calculus. Descriptive statistics, probability, probability distributions, sampling distributions, estimation, hypothesis testing, simple linear regression and analysis of variance are covered. Statistical computer programs such as SAS are used.