

UNDERGRADUATE STATISTICS COURSES

STAT 272 (3) Data Analysis. Prerequisite: MATH 271 with a grade of “C” or better or department approval. This course covers simple linear regression, multiple linear regression, and analysis of variance (ANOVA).

STAT 300 (3) Regression Analysis. Prerequisite: STAT 272, with a grade of “C” or better. This course covers multiple regression including variable selection procedures, detection and effects of multicollinearity, identification and effects of influential observations, residual analysis, use of transformations, non-linear regression, the use of indicator variables, logistic regression, and the use of R or SAS.

STAT 301 (3) Introduction to Experimental Design. Prerequisite: STAT 272. This course is an introductory approach to the principles of statistical experimental design with applications for non-statistics majors. Elementary approaches to randomized complete and incomplete block designs and computation will be introduced.

STAT 323 (3) Nonparametric Statistics. Prerequisite: STAT 272. This course covers distribution-free analysis of location and scale measures, nonparametric comparison procedures, association and contingency tables, goodness-of-fit, and tests of randomness, one sample and two sample problems. It also uses statistical packages to perform various tests and conduct nonparametric analysis and enhance students’ abilities to process distribution-free data.

STAT 350 (3) Computational Statistics and Data Management. Prerequisite: STAT 272, with a grade of “C” or better. This course covers R, SAS, SPSS, S-Plus, computational statistics packages and other big data statistical computational packages with emphasis on reading, manipulating and summarizing data and implementations of simulation and bootstrapping.

STAT 357 Actuarial Sciences Examination: Probability/Exam 1 (3).

Prerequisite: MATH 355 or MATH 307. This course will cover basic elements of probability, addition and multiplication rules, conditional probability, independent events, Bayes’ Rules, univariate probability distributions, multivariate probability distributions. It is designed for students who intend to take actuarial sciences Exam1/Probability.

STAT 408 (3) Time Series Analysis. Prerequisite: STAT 300 with a grade of “C” or better. This course covers the methods for analyzing data collected over time, review of multiple regression analysis, elementary forecasting methods, moving averages and exponential smoothing. Autoregressive-moving average (Box-Jenkins) models: identification, estimation, diagnostic checking, and forecasting, transfer function models and intervention analysis, and introduction to multivariate time series methods will also be covered.

STAT 414 (3) Multivariate Data Analysis. Prerequisite: STAT 300. This course is primarily designed to expose students to conducting multivariate data analysis using real life data. This course will also serve to enhance the statistical analysis backgrounds of the students and expose the students to the use of statistical packages such as R, SAS, or SPSS to learn various methods of analyzing multivariate data. This course covers topics including multivariate normal; multiple and partial correlation, principal components analysis, factor analysis, discriminant analysis, logistic regression, cluster analysis, etc.

STAT 418 (3) Seminar in Statistics. Prerequisite: STAT 350 with a grade of “C” or better, or Departmental Approval. The provisions to the student of an opportunity to discuss pertinent trends and ideas in statistics and to evaluate the experience he/she has had through study and practice during his/her previous years of training in statistics. It also provide students with the opportunity to discuss new trends and ideas in statistics by first exposing them to scholarly trends in the application of statistics to other academic and emerging fields of computational data-enabled science and engineering. This includes supervised activities on research projects identified on an individual or small group basis.

STAT 424 (1-6) Internship in Statistics. A well planned exercise of supervised off- campus, non-group instruction on the field, concentrated experiences, practical, or internships. Location for internship may include business, industry, banks, hospitals, governmental agencies, and other National research centers or appropriate educational entities. Up to six credit hours can be counted towards general electives for the degree requirement.

STAT 455 (3) Experimental Design. Prerequisite: MATH 272. This course covers the principles of statistical experimental design with applications, randomized complete and incomplete block designs, Latin square designs, and analysis of covariance, split-plot design, factorial and fractional designs.

STAT 496 (1-3) Independent Study. Prerequisite: Departmental Approval. A well designed creative project, including research and design, which are supervised on an individual basis and which fall outside the scope of formal courses. The project may be selected by the student in consultation with a faculty member of the department. Up to three credit hours can also be used as general electives to meet the degree requirement.