STA: Statistics Courses

Courses

STA 2023  Elements of Statistics
3 sh (may not be repeated for credit)
Prerequisite: MAC 1105* OR MAC 1105C* OR MAT 1033* OR
MGF 1106* OR MGF 1107* OR 22 ACT Math OR 520 SAT Math OR
123

STA2023 covers descriptive statistics, elementary probability theory,
and basic statistical procedures, estimation, and inference. In addition
to provide basic concepts in the mentioned areas it prepares the
student for other more advanced statistical courses that are necessary
for research. Meets General Education requirement in Mathematics.
Meets Gordon Rule Applied Mathematics Requirement.

STA 3162C  Applied Statistics
4 sh (may not be repeated for credit)
Prerequisite: MAC 2311

Inferential statistics from an applied point of view. Probability and
sampling distributions, confidence intervals and hypothesis testing,
ANOVA, correlation, simple and multiple linear regressions. SAS
computer techniques. Lab required. Meets Gordon Rule Applied
Mathematics Requirement.

STA 3905  Directed Study
1-12 sh (may be repeated indefinitely for credit)

STA 4051  Nonparametric Statistics
3 sh (may not be repeated for credit)
Prerequisite: STA 2023

The nonparametric or distribution-free methods can be useful in
cases such as (i) no assumptions about the underlying population
distribution is made, (ii) the data can be categorical or ranked, such
as good or bad. This course provides an introduction of some key
concepts of nonparametric statistics. Students will learn Why, When,
and How to apply nonparametric techniques. This course covers
several nonparametric tests as it is described below in Topics.

STA 4173  Biostatistics
3 sh (may not be repeated for credit)
Prerequisite: STA 2023

A second course in statistics for students in the Biological Sciences.
Topics covered include analysis of variance, regression analysis,
nonparametric statistics, contingency tables. Offered concurrently with
STA 5176; graduate students will be assigned additional work. Meets
Gordon Rule Applied Mathematics Requirement.

STA 4222  Sampling Theory
3 sh (may not be repeated for credit)
Prerequisite: MAC 2311 AND STA 2023

A first course in sampling methods with application to survey sampling
and field sampling. Topics include simple random sampling, stratified
sampling, cluster sampling, systematic sampling, and adaptive
sampling and corresponding estimates for these sampling designs.
STA 6235  Modeling in Regression
3 sh (may not be repeated for credit)
Prerequisite: STA 5176
Several advanced topics in regression are covered, such as nonlinear regression, influence diagnostics, Eigensystem analysis of X’X matrix, logistic regression, ridge regression, robust regression, and generalized linear models.

STA 6246  Design and Analysis of Experiments
3 sh (may not be repeated for credit)
Further concepts in design and analysis of planned experiments with emphasis on confounding and fractional replications of factorial experiments; composite designs; incomplete block designs; estimation of variance components.

STA 6257  Advanced Statistical Modeling
3 sh (may not be repeated for credit)
This course will cover advanced statistical models, enabling students to model various discrete and continuous outcomes. The focus will be determined by instructor and may include such analyses as generalized linear analysis, nonlinear regression analysis, or spatial cluster analysis. In addition to advanced models, the course will include model constructions, model fit, interpretation of results, and dissemination of results.

STA 6507  Nonparametric Statistics
3 sh (may not be repeated for credit)
Extensive coverage of goodness-of-fit tests, location problems, association analysis and general nonparametric topics.

STA 6666  Statistical Quality Control I
3 sh (may not be repeated for credit)
Procedures used in acceptance sampling and statistical process control are based on concepts and theory from probability and statistics. Introduces the applications of these procedures, investigates them from the standpoint of their statistical properties and develops the methodology for construction, evaluation and comparison of procedures.

STA 6707  Multivariate Methods
3 sh (may not be repeated for credit)
This course provides some of the concepts and methods of Multivariate analysis in order to describe and analyze multivariate data. Students will be introduced to multivariate extensions of Chi-Square and t-tests; discrimination and classification procedures; applications to diagnostic problems in biological, medical, anthropological and social research; multivariate analysis of variance; factor analysis and principal components analysis.

STA 6905  Directed Study
1-12 sh (may be repeated indefinitely for credit)

STA 6912  Statistics Research 1
3 sh (may not be repeated for credit)
This course gives students the opportunity to engage in group and independent research projects. Research topics and materials vary according to instructor. Technical reports and oral presentations are expected of each student. Students must have completed 15 hours of graduate course work in the program and have maintained at least a 3.0 GPA. Students must also commit to both fall and spring sections of the course.

STA 6913  Statistics Research 2
3 sh (may not be repeated for credit)
Prerequisite: STA 6912
This course gives students the opportunity to engage in group and independent research projects. Research topics and materials vary according to instructor. Technical reports and oral presentations are expected of each student.

STA 6930  Proseminar in Statistics
1 sh (may not be repeated for credit)
Each M.A. candidate (except those who choose the thesis option), shall, under the direction of a project advisor, independently investigate a topic or topics in mathematics/statistics or mathematics education through the study of journal articles or other appropriate sources. The candidate shall submit a formal written report and make an oral presentation of the results of his/her investigations. The goal of the proseminar is to provide students an opportunity to integrate the total experience gained during their graduate training. Graded on satisfactory / unsatisfactory basis only. MA candidacy and permission is required.

STA 6971  Thesis
1-6 sh (may be repeated for up to 8 sh of credit)
Graded on satisfactory / unsatisfactory basis only. Permission is required.

* This course may be taken prior to or during the same term.