STATISTICS (STAT)

STAT 251G. Statistics for Business and the Behavioral Sciences
3 Credits
Techniques for describing and analyzing data; estimation, hypothesis testing, regression and correlation; basic concepts of statistical inference. Crosslisted with: A ST 251G.
Prerequisite(s): C- or better in MATH 120.

STAT 271G. Statistics for Psychological Sciences
3 Credits
Techniques for describing and analyzing data; basic concepts of statistical inference; estimation, hypothesis testing, correlation, and analysis of variance.
Prerequisite(s): C- or better in MATH 120.

STAT 271. Statistics for Engineers and Scientists I
3 Credits
Modern probability and statistics with applications to the engineering sciences.
Prerequisite(s): C - or better in MATH 192.

STAT 400. Undergraduate Research
1-3 Credits
Arrangements must be made with supervising professor before registration. May be repeated for a maximum of 6 credits.

STAT 470. Probability: Theory and Applications
3 Credits
Basic probability distributions including binomial, normal; random variables, expectation; laws of large numbers; central limit theorem.
Prerequisite(s): C- or better in MATH 291 and C- or better in at least one-300 level Math course.

STAT 480. Statistics: Theory and Applications
3 Credits
Point and interval estimation; sufficiency; hypothesis testing; regression; analysis of variance; chi-square tests.
Prerequisite(s): C- or better in STAT 470.

STAT 515. Probability: Theory and Applications
3 Credits
Same as STAT 470 with additional work for graduate students.

STAT 525. Statistics: Theory and Applications
3 Credits
Same as STAT 480 with additional work for graduate students.

STAT 535. Elementary Stochastic Processes
3 Credits
Markov chains, Poisson processes, Brownian motion, branching processes, and queuing processes, with applications to the physical, biological, and social sciences.
Prerequisite: STAT 515 or consent of instructor.

STAT 540. Directed Reading
1-6 Credits
May be repeated for a maximum of 6 credits. Graded S/U.
Prerequisite: consent of instructor and graduate committee.

STAT 562. Foundations of Probability
3 Credits
Probability spaces, expectation and conditional expectation, limit theorems and laws of large numbers.
Prerequisite: MATH 593.

STAT 571. Continuous Multivariate Analysis
3 Credits
Theory and applications of the multivariate normal distribution.
Prerequisite: MATH 480 and STAT 525, or consent of instructor.

STAT 572. Linear Models
3 Credits
Core topics include distribution of quadratic forms, theory of regression, analysis of variance and covariance in linear models. Advanced topics chosen from random and mixed linear models, generalized linear, growth curve, and nonlinear models, quartile and copula regression. May be repeated up to 6 credits.
Prerequisite(s): STAT 571.

STAT 581. Advanced Theory of Statistics I
3 Credits
Testing hypotheses, probability and sufficiency, uniformly most powerful tests, unbiasedness, invariance, and minimax principle.
Prerequisite: STAT 525 or consent of instructor.

STAT 582. Advanced Theory of Statistics II
3 Credits
Estimation of parameters; unbiased estimators; equivariance; Bayes properties; large sample theory and optimality.
Prerequisite: STAT 581 or consent of instructor.

STAT 598. Special Research Problems
1-3 Credits
Individual investigations or consulting programs. Maximum of 3 credits.