

STATISTICS (STAT)

STAT 218 Introduction to Statistics

Prerequisites: Removal of all entrance deficiencies in mathematics.

Notes: Credit toward the degree may be earned in only one of: CRIM 300 or ECON 215 or EDPS 459 or SOCI 206. Credit toward the degree cannot be earned in STAT 218 if taken after or taken in parallel with STAT/MATH 380.

Description: The practical application of statistical thinking to contemporary issues; collection and organization of data; probability distributions; statistical inference; estimation; and hypothesis testing.

Credit Hours: 3

Max credits per semester: 3

Max credits per degree: 3

Format: LEC

Prerequisite for: ABUS 341, MRKT 341; ACCT 308; AECN 436; ASCI 330; BLAW 371; BLAW 371H; BLAW 372; ECON 311; FINA 361; FINA 361H; FORS 411; MNGT 301; MNGT 301H; MRKT 345; MRKT 350; MRKT 446; SCMA 250; SCMA 331; SCMA 335; SCMA 350; SCMA 350H; STAT 318
ACE: ACE 3 Math/Stat/Reasoning

STAT 318 Introduction to Statistics II

Prerequisites: STAT 218 or equivalent.

Description: Tests for means/proportions of two independent groups, analysis of variance for completely randomized design, contingency table analysis, correlation, single and multiple linear regression, nonparametric procedures, design of experiments.

Credit Hours: 3

Max credits per semester: 3

Max credits per degree: 3

Format: LEC

Prerequisite for: STAT 412; STAT 414; STAT 450

STAT 380 Statistics and Applications

Crosslisted with: STAT 380H, RAIK 270H

Prerequisites: A grade of P, C, or higher in MATH 107 or MATH 107H.

Notes: Credit toward the degree can not be earned in STAT 218 if taken after or taken in parallel with STAT/MATH 380.

Description: Probability calculus; random variables, their probability distributions and expected values; t, F and chi-square sampling distributions; estimation; testing of hypothesis; and regression analysis with applications.

Credit Hours: 3

Max credits per semester: 3

Max credits per degree: 3

Format: LEC

Prerequisite for: ABUS 341, MRKT 341; BLAW 371; BLAW 371H; BLAW 372; BSAD 371H, RAIK 371H; ECEN 325; ECEN 850, ECEN 450; ECON 311; FINA 361; FINA 361H; MATH 435; MATH 809, MATH 409; MECH 343; MNGT 301; MNGT 301H; MRKT 345; MRKT 350; MRKT 446; RAIK 370H, CSCE 370H; SCMA 250; SCMA 331; SCMA 350; SCMA 350H; STAT 318; STAT 412; STAT 414; STAT 450

ACE: ACE 3 Math/Stat/Reasoning

Groups: Advanced Mathematics Courses

STAT 380H Statistics and Applications

Crosslisted with: STAT 380, RAIK 270H

Prerequisites: A grade of P, C, or higher in MATH 107 or MATH 107H.

Notes: Credit toward the degree can not be earned in STAT 218 if taken after or taken in parallel with STAT/MATH 380.

Description: Probability calculus; random variables, their probability distributions and expected values; t, F and chi-square sampling distributions; estimation; testing of hypothesis; and regression analysis with applications.

Credit Hours: 3

Max credits per semester: 3

Max credits per degree: 3

Format: LEC

Prerequisite for: ABUS 341, MRKT 341; BLAW 371; BLAW 371H; BLAW 372; BSAD 371H, RAIK 371H; ECEN 325; ECEN 850, ECEN 450; ECON 311; FINA 361; FINA 361H; MATH 435; MATH 809, MATH 409; MECH 343; MNGT 301; MNGT 301H; MRKT 345; MRKT 350; MRKT 446; RAIK 370H, CSCE 370H; SCMA 250; SCMA 331; SCMA 350; SCMA 350H; STAT 318; STAT 412; STAT 414; STAT 450

ACE: ACE 3 Math/Stat/Reasoning

Groups: Advanced Mathematics Courses

STAT 412 Introduction to Experimental Design

Prerequisites: STAT 318 or STAT 380

Description: Survey of elementary experimental designs and their analyses completely randomized, randomized block, factorial, and split-plot designs.

Credit Hours: 3

Max credits per semester: 3

Max credits per degree: 3

Format: LEC

STAT 414 Introduction to Survey Sampling

Prerequisites: STAT 318 or STAT 380

Description: Sampling Techniques: simple random sampling, sampling proportions, estimation of sample size, stratified random sampling, ratio and regression estimates.

Credit Hours: 3

Max credits per semester: 3

Max credits per degree: 3

Format: LEC

STAT 430 Sensory Evaluation

Crosslisted with: FDST 430, FDST 830, STAT 830

Prerequisites: Introductory course in statistics.

Description: Food evaluation using sensory techniques and statistical analysis.

Credit Hours: 3

Max credits per semester: 3

Max credits per degree: 3

Format: LEC

STAT 432 Introduction to Spatial Statistics

Prerequisites: STAT 463 (could be concurrent)

Description: Spatial point patterns, test of randomness, Morans I statistic and similar measures, checking assumptions for independence of observations, variography, estimation (point and global), Kriging, nearest neighbor techniques, cokriging, mixed models and their role in designed spatial experiments.

Credit Hours: 3

Max credits per semester: 3

Max credits per degree: 3

Format: LEC

STAT 442 Computational Biology

Crosslisted with: BIOC 842, STAT 842, BIOC 442

Prerequisites: Any introductory course in biology, or genetics, or statistics.

Description: Databases, high-throughput biology, literature mining, gene expression, next-generation sequencing, proteomics, metabolomics, system biology and biological networks.

Credit Hours: 3

Max credits per semester: 3

Max credits per degree: 3

Format: LEC

STAT 450 Introduction to Regression Analysis

Prerequisites: STAT 318 or STAT 380

Notes: Previous knowledge of matrix algebra is beneficial.

Description: General linear models for estimation and testing problems, analysis and interpretation for various experimental designs.

Credit Hours: 3

Max credits per semester: 3

Max credits per degree: 3

Format: LEC

STAT 462 Introduction to Mathematical Statistics I: Distribution Theory

Prerequisites: Grade of C or better in MATH 208 or MATH 107H.

Notes: STAT 380 or equivalent is strongly recommended.

Description: Sample space, random variable, expectation, conditional probability and independence, moment generating function, special distributions, sampling distributions, order statistics, limiting distributions, and central limit theorem.

Credit Hours: 4

Max credits per semester: 4

Max credits per degree: 4

Format: LEC

Offered: FALL

Prerequisite for: ACTS 401; STAT 463

STAT 463 Introduction to Mathematical Statistics II: Statistical Inference

Prerequisites: C or better in STAT 462

Description: Interval estimation; point estimation, sufficiency, and completeness; Bayesian procedures; uniformly most powerful tests, sequential probability ratio test, likelihood ratio test, goodness of fit tests; elements of analysis of variance and nonparametric tests.

Credit Hours: 4

Max credits per semester: 4

Max credits per degree: 4

Format: LEC

Offered: SPRING

Prerequisite for: STAT 432

STAT 494 Topics in Statistics and Probability

Prerequisites: Permission.

Description: Special topics in either statistics or the theory of probability.

Credit Hours: 1-5

Min credits per semester: 1

Max credits per semester: 5

Max credits per degree: 24

Format: LEC

STAT 496 Independent Study

Prerequisites: Prior arrangement with a faculty member and submission of proposed study plan to department office.

Credit Hours: 1-5

Min credits per semester: 1

Max credits per semester: 5

Max credits per degree: 5

Format: IND