Statistics (STAT)

Courses

STAT 0PX Preparatory Statistics 1 Unit
This course assists entering Freshman students with basic statistical concepts and problem solving. Designed for students who do not meet the prerequisites for 2. Offered through the Student Learning Center.
Rules & Requirements

Prerequisites: Consent of instructor

Hours & Format

Summer:
6 weeks - 5 hours of lecture and 4.5 hours of workshop per week
8 weeks - 5 hours of lecture and 4.5 hours of workshop per week

Additional Details

Subject/Course Level: Statistics/Undergraduate

Grading/Final exam status: Offered for pass/not pass grade only. Final exam required.

Instructor: Purves

STAT 2 Introduction to Statistics 4 Units
Population and variables. Standard measures of location, spread and association. Normal approximation. Regression. Probability and sampling. Binomial distribution. Interval estimation. Some standard significance tests.
Rules & Requirements

Credit Restrictions: Students who have taken 2X, 5, 20, 21, 21X, or 25 will receive no credit for 2.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 2 hours of laboratory per week

Summer: 8 weeks - 5 hours of lecture and 4 hours of laboratory per week

Additional Details

Subject/Course Level: Statistics/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

STAT 20 Introduction to Probability and Statistics 4 Units
For students with mathematical background who wish to acquire basic concepts. Relative frequencies, discrete probability, random variables, expectation. Testing hypotheses. Estimation. Illustrations from various fields.
Rules & Requirements

Prerequisites: One semester of calculus

Credit Restrictions: Students who have taken 2, 2X, 5, 21, 21X, or 25 will receive no credit for 20.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 2 hours of laboratory per week

Summer: 8 weeks - 6 hours of lecture and 3 hours of laboratory per week

Additional Details

Subject/Course Level: Statistics/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

STAT 21 Introductory Probability and Statistics for Business 4 Units
Descriptive statistics, probability models and related concepts, sample surveys, estimates, confidence intervals, tests of significance, controlled experiments vs. observational studies, correlation and regression.
Rules & Requirements

Prerequisites: One semester of calculus

Credit Restrictions: Students will receive no credit for Statistics 21 after completing Statistics 2, 2X, 5, 20, 21X or 25 . A deficency in Statistics N21 may be moved by taking 21.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 2 hours of laboratory per week

Summer: 8 weeks - 5 hours of lecture and 4 hours of laboratory per week

Additional Details

Subject/Course Level: Statistics/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

STAT W21 Introductory Probability and Statistics for Business 4 Units
Reasoning and fallacies, descriptive statistics, probability models and related concepts, combinatorics, sample surveys, estimates, confidence intervals, tests of significance, controlled experiments vs. observational studies, correlation and regression.
Rules & Requirements

Prerequisites: One semester of calculus

Credit Restrictions: Students will receive no credit for Statistics W21 after taking Statistics 2, 20, or 25.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of web-based lecture per week

Summer: 8 weeks - 7.5 hours of web-based lecture per week

Online: This is an online course.

Additional Details

Subject/Course Level: Statistics/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

Formerly known as: N21

STAT 39D Freshman/Sophomore Seminar 2 - 4 Units
Freshman and sophomore seminars offer lower division students the opportunity to explore an intellectual topic with a faculty member and a group of peers in a small-seminar setting. These seminars are offered in all campus departments; topics vary from department to department and from semester to semester.
Rules & Requirements

Prerequisites: Priority given to freshmen and sophomores

Repeat rules: Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 2-4 hours of seminar per week

Additional Details

Subject/Course Level: Statistics/Undergraduate

Grading/Final exam status: The grading option will be decided by the instructor when the class is offered. Final exam required.

STAT C79 Societal Risks and the Law 3 Units
Defining, perceiving, quantifying and measuring risk; identifying risks and estimating their importance; determining whether laws and regulations can protect us from these risks; examining how well existing laws work and how they could be improved; evaluting costs and benefits. Applications may vary by term. This course cannot be used to complete engineering unit or technical elective requirements for students in the College of Engineering.
Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of discussion per week

Additional Details

Subject/Course Level: Statistics/Undergraduate

Grading/Final exam status: Letter grade. Final exam not required.

Also listed as: COMPSCI C79/POL SCI C79

STAT 94 Special Topics in Probability and Statistics 1 - 4 Units
Topics will vary semester to semester.
Rules & Requirements

Prerequisites: Consent of instructor

Repeat rules: Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 1-3 hours of lecture and 0-2 hours of discussion per week

Additional Details

Subject/Course Level: Statistics/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

STAT 97 Field Study in Statistics 1 - 3 Units
Supervised experience relevant to specific aspects of statistics in off-campus settings. Individual and/or group meetings with faculty.
Rules & Requirements

Repeat rules: Course may be repeated for credit. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 1-3 hours of fieldwork per week

Summer:
6 weeks - 2.5-7.5 hours of fieldwork per week
8 weeks - 1.5-5.5 hours of fieldwork per week

Additional Details

Subject/Course Level: Statistics/Undergraduate

Grading/Final exam status: Offered for pass/not pass grade only. Final exam not required.

STAT 98 Directed Group Study 1 - 3 Units
Must be taken at the same time as either Statistics 2 or 21. This course assists lower division statistics students with structured problem solving, interpretation and making conclusions.
Rules & Requirements

Prerequisites: Consent of instructor

Repeat rules: Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 2-3 hours of directed group study per week

Summer: 8 weeks - 4-6 hours of directed group study per week

Additional Details

Subject/Course Level: Statistics/Undergraduate

Grading/Final exam status: Offered for pass/not pass grade only. Final exam not required.

STAT 100 Introduction to the SAS System for Data Analysis 1 Unit
The SAS system is useful for reading input data from a variety of sources and then performing a wide range of analyses and graphical displays with the data. Topics include accessing SAS on a variety of computer platforms; inputting raw data; managing SAS data sets; programming in SAS and in the SAS macro language. Emphasis on large data sets. Students are encouraged to bring in their own data. Students should have used at least one program, such as a word processor.
Hours & Format

Summer: 3 weeks - 5 hours of lecture per week

Additional Details

Subject/Course Level: Statistics/Undergraduate

Grading/Final exam status: Offered for pass/not pass grade only. Final exam required.

Instructor: Spector

STAT 131A Introduction to Probability and Statistics for Life Scientists 4 Units
Ideas for estimation and hypothesis testing basic to applications, including an introduction to probability. Linear estimation and normal regression theory.
Rules & Requirements

Prerequisites: One semester of calculus or consent of instructor

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 2 hours of laboratory per week

Summer: 8 weeks - 5 hours of lecture and 4 hours of laboratory per week

Additional Details

Subject/Course Level: Statistics/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

STAT 132 Practical Machine Learning 3 Units
Machine learning is a collection of topics in which the focus is on large-scale statistical problems where computational issues are paramount. The goal is often one of prediction or classification, where based on a set of labeled data it is desired to predict the lablels of unlabeled data. Machine learning algorithms also often focus on exploratory data analysis. This course will introduce core statistical machine learning algorithms in a non-mathematical way, emphasizing applied problem-solving.
Rules & Requirements

Prerequisites: Some prior exposure to basic probability and to linear algebra

Hours & Format

Summer: 8 weeks - 4 hours of lecture per week

Additional Details

Subject/Course Level: Statistics/Undergraduate

Grading/Final exam status: Letter grade. Final exam not required.

STAT 133 Concepts in Computing with Data 3 Units
An introduction to computationally intensive applied statistics. Topics will include organization and use of databases, visualization and graphics, statistical learning and data mining, model validation procedures, and the presentation of results.
Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 2 hours of laboratory per week

Summer: 10 weeks - 4 hours of lecture and 3 hours of laboratory per week

Additional Details

Subject/Course Level: Statistics/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

STAT 134 Concepts of Probability 3 Units
An introduction to probability, emphasizing concepts and applications. Conditional expectation, independence, laws of large numbers. Discrete and continuous random variables. Central limit theorem. Selected topics such as the Poisson process, Markov chains, characteristic functions.
Rules & Requirements

Prerequisites: One year of calculus

Credit Restrictions: Students will not receive credit for 134 after taking 101 or 201A.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 2 hours of discussion per week

Summer: 8 weeks - 5 hours of lecture and 3 hours of discussion per week

Additional Details

Subject/Course Level: Statistics/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

STAT 135 Concepts of Statistics 4 Units
A comprehensive survey course in statistical theory and methodology. Topics include descriptive statistics, maximum likelihood estimation, non-parametric methods, introduction to optimality, goodness-of-fit tests, analysis of variance, bootstrap and computer-intensive methods and least squares estimation. The laboratory includes computer-based data-analytic applications to science and engineering.
Rules & Requirements

Prerequisites: Statistics 134 and linear algebra (Mathematics 54 or equivalent). Statistics 133 strongly recommended

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 2 hours of laboratory per week

Summer: 8 weeks - 6 hours of lecture and 4 hours of laboratory per week

Additional Details

Subject/Course Level: Statistics/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

STAT 150 Stochastic Processes 3 Units
Random walks, discrete time Markov chains, Poisson processes. Further topics such as: continuous time Markov chains, queueing theory, point processes, branching processes, renewal theory, stationary processes, Gaussian processes.
Rules & Requirements

Prerequisites: 101 or 103A or 134

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Statistics/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

STAT 151A Linear Modelling: Theory and Applications 4 Units
A coordinated treatment of linear and generalized linear models and their application. Linear regression, analysis of variance and covariance, random effects, design and analysis of experiments, quality improvement, log-linear models for discrete multivariate data, model selection, robustness, graphical techniques, productive use of computers, in-depth case studies.
Rules & Requirements

Prerequisites: 102 or 135. 133 recommended

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 2 hours of laboratory per week

Additional Details

Subject/Course Level: Statistics/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

STAT 151B Linear Modelling: Theory and Applications 4 Units
A coordinated treatment of linear and generalized linear models and their application. Linear regression, analysis of variance and covariance, random effects, design and analysis of experiments, quality improvement, log-linear models for discrete multivariate data, model selection, robustness, graphical techniques, productive use of computers, in-depth case studies.
Rules & Requirements

Prerequisites: 102 or 135. 133 recommended

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 2 hours of laboratory per week

Additional Details

Subject/Course Level: Statistics/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

STAT 152 Sampling Surveys 4 Units
Theory and practice of sampling from finite populations. Simple random, stratified, cluster, and double sampling. Sampling with unequal probabilities. Properties of various estimators including ratio, regression, and difference estimators. Error estimation for complex samples.
Rules & Requirements

Prerequisites: 101 or 134. 133 and 135 recommended

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 2 hours of laboratory per week

Additional Details

Subject/Course Level: Statistics/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

STAT 153 Introduction to Time Series 4 Units
An introduction to time series analysis in the time domain and spectral domain. Topics will include: estimation of trends and seasonal effects, autoregressive moving average models, forecasting, indicators, harmonic analysis, spectra.
Rules & Requirements

Prerequisites: 101, 134 or consent of instructor. 133 or 135 recommended

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 2 hours of laboratory per week

Additional Details

Subject/Course Level: Statistics/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

STAT 154 Modern Statistical Prediction and Machine Learning 4 Units
Theory and practice of statistical prediction. Contemporary methods as extensions of classical methods. Topics: optimal prediction rules, the curse of dimensionality, empirical risk, linear regression and classification, basis expansions, regularization, splines, the bootstrap, model selection, classification and regression trees, boosting, support vector machines. Computational efficiency versus predictive performance. Emphasis on experience with real data and assessing statistical assumptions.
Rules & Requirements

Prerequisites: Mathematics 53 and 54 or equivalents; Statistics 135 or equivalent; experience with some programming language. Mathematics 55 or equivalent exposure to counting arguments is recommended but not required

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 2 hours of laboratory per week

Summer: 10 weeks - 4.5 hours of lecture and 3 hours of laboratory per week

Additional Details

Subject/Course Level: Statistics/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

STAT 155 Game Theory 3 Units
General theory of zero-sum, two-person games, including games in extensive form and continuous games, and illustrated by detailed study of examples.
Rules & Requirements

Prerequisites: 101 or 134

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Summer: 8 weeks - 6 hours of lecture per week

Additional Details

Subject/Course Level: Statistics/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

STAT 157 Seminar on Topics in Probability and Statistics 3 Units
Substantial student participation required. The topics to be covered each semester that the course may be offered will be announced by the middle of the preceding semester; see departmental bulletins. Recent topics include: Bayesian statistics, statistics and finance, random matrix theory, high-dimensional statistics.
Rules & Requirements

Prerequisites: Mathematics 53-54, Statistics 134, 135. Knowledge of scientific computing environment (R or Matlab) often required. Prerequisites might vary with instructor and topics

Repeat rules: Course may be repeated for credit with consent of instructor. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of seminar per week

Additional Details

Subject/Course Level: Statistics/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

STAT 158 The Design and Analysis of Experiments 4 Units
An introduction to the design and analysis of experiments. This course covers planning, conducting, and analyzing statistically designed experiments with an emphasis on hands-on experience. Standard designs studied include factorial designs, block designs, latin square designs, and repeated measures designs. Other topics covered include the principles of design, randomization, ANOVA, response surface methodoloy, and computer experiments.
Rules & Requirements

Prerequisites: Statistics 134 and 135 or consent of instructor. Statistics 135 may be taken concurrently. Statistics 133 is recommended

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 2 hours of laboratory per week

Additional Details

Subject/Course Level: Statistics/Undergraduate

Grading/Final exam status: Letter grade. Final exam required.

STAT 159 Reproducible and Collaborative Statistical Data Science 4 Units
A project-based introduction to statistical data analysis. Through case studies, computer laboratories, and a term project, students will learn practical techniques and tools for producing statistically sound and appropriate, reproducible, and verifiable computational answers to scientific questions. Course emphasizes version control, testing, process automation, code review, and collaborative programming. Software tools may include Bash, Git, Python, and LaTeX.
Rules & Requirements

Prerequisites: Statistics 133, Statistics 134, and Statistics 135 (or equivalent)

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 2 hours of laboratory per week

Additional Details

Subject/Course Level: Statistics/Undergraduate

Grading/Final exam status: Letter grade. Alternative to final exam.

STAT H195 Special Study for Honors Candidates 1 - 4 Units
Rules & Requirements

Repeat rules: Course may be repeated for credit. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 0 hours of independent study per week

Summer:
6 weeks - 1-5 hours of independent study per week
8 weeks - 1-4 hours of independent study per week

Additional Details

Subject/Course Level: Statistics/Undergraduate

Grading/Final exam status: Letter grade. Final exam not required.

STAT 197 Field Study in Statistics 1 - 3 Units
Supervised experience relevant to specific aspects of statistics in off-campus settings. Individual and/or group meetings with faculty.
Rules & Requirements

Credit Restrictions: Enrollment is restricted; see the Introduction to Courses and Curricula section of this catalog.

Repeat rules: Course may be repeated for credit. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 1-3 hours of fieldwork per week

Summer:
8 weeks - 2-6 hours of fieldwork per week
10 weeks - 1.5-4.5 hours of fieldwork per week

Additional Details

Subject/Course Level: Statistics/Undergraduate

Grading/Final exam status: Offered for pass/not pass grade only. Final exam not required.

STAT 198 Directed Study for Undergraduates 1 - 3 Units
Special tutorial or seminar on selected topics.
Rules & Requirements

Prerequisites: Consent of instructor

Repeat rules: Course may be repeated for credit. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 1-3 hours of directed group study per week

Summer:
6 weeks - 2.5-7.5 hours of directed group study per week
8 weeks - 1.5-5.5 hours of directed group study per week

Additional Details

Subject/Course Level: Statistics/Undergraduate

Grading/Final exam status: Offered for pass/not pass grade only. Final exam not required.

STAT 199 Supervised Independent Study and Research 1 - 3 Units
Rules & Requirements

Repeat rules: Course may be repeated for credit. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 0 hours of independent study per week

Summer:
6 weeks - 1-4 hours of independent study per week
8 weeks - 1-3 hours of independent study per week

Additional Details

Subject/Course Level: Statistics/Undergraduate

Grading/Final exam status: Offered for pass/not pass grade only. Final exam not required.

STAT 200A Introduction to Probability and Statistics at an Advanced Level 4 Units
Probability spaces, random variables, distributions in probability and statistics, central limit theorem, Poisson processes, transformations involving random variables, estimation, confidence intervals, hypothesis testing, linear models, large sample theory, categorical models, decision theory.
Rules & Requirements

Prerequisites: Multivariable calculus and one semester of linear algebra

Credit Restrictions: Students will receive no credit for Statistics 200A after completing Statistics 201A-201B.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 2 hours of laboratory per week

Additional Details

Subject/Course Level: Statistics/Graduate

Grading: Letter grade.

STAT 200B Introduction to Probability and Statistics at an Advanced Level 4 Units
Probability spaces, random variables, distributions in probability and statistics, central limit theorem, Poisson processes, transformations involving random variables, estimation, confidence intervals, hypothesis testing, linear models, large sample theory, categorical models, decision theory.
Rules & Requirements

Prerequisites: Multivariable calculus and one semester of linear algebra

Credit Restrictions: Students will receive no credit for Statistics 200A-200B after completing Statistics 201A-201B.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 2 hours of laboratory per week

Additional Details

Subject/Course Level: Statistics/Graduate

Grading: Letter grade.

STAT 201A Introduction to Probability at an Advanced Level 4 Units
Distributions in probability and statistics, central limit theorem, Poisson processes, modes of convergence, transformations involving random variables.
Rules & Requirements

Prerequisites: Multivariable calculus, one semester of linear algebra, and Statistics 134 or consent of instructor

Credit Restrictions: Students will receive no credit for 201A after taking 200A.

Hours & Format

Fall and/or spring: 7 weeks - 6 hours of lecture and 3 hours of laboratory per week

Additional Details

Subject/Course Level: Statistics/Graduate

Grading: Letter grade.

STAT 201B Introduction to Statistics at an Advanced Level 4 Units
Estimation, confidence intervals, hypothesis testing, linear models, large sample theory, categorical models, decision theory.
Rules & Requirements

Prerequisites: Statistics 200A, Statistics 201A, or consent of instructor

Credit Restrictions: Students will receive no credit for Statistics 201B after completing Statistics 200B.

Hours & Format

Fall and/or spring: 7 weeks - 6 hours of lecture and 3 hours of laboratory per week

Additional Details

Subject/Course Level: Statistics/Graduate

Grading: Letter grade.

STAT 204 Probability for Applications 4 Units
A treatment of ideas and techniques most commonly found in the applications of probability: Gaussian and Poisson processes, limit theorems, large deviation principles, information, Markov chains and Markov chain Monte Carlo, martingales, Brownian motion and diffusion.
Rules & Requirements

Credit Restrictions: Students will receive no credit for Statistics 204 after completing Statistics 205A-205B.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Statistics/Graduate

Grading: Letter grade.

Instructor: Evans

STAT C205A Probability Theory 4 Units
The course is designed as a sequence with Statistics C205B/ Mathematics C218B with the following combined syllabus. Measure theory concepts needed for probability. Expection, distributions. Laws of large numbers and central limit theorems for independent random variables. Characteristic function methods. Conditional expectations, martingales and martingale convergence theorems. Markov chains. Stationary processes. Brownian motion.
Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Statistics/Graduate

Grading: Letter grade.

Also listed as: MATH C218A

STAT C205B Probability Theory 4 Units
The course is designed as a sequence with with Statistics C205A/ Mathematics C218A with the following combined syllabus. Measure theory concepts needed for probability. Expection, distributions. Laws of large numbers and central limit theorems for independent random variables. Characteristic function methods. Conditional expectations, martingales and martingale convergence theorems. Markov chains. Stationary processes. Brownian motion.
Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Statistics/Graduate

Grading: Letter grade.

Also listed as: MATH C218B

STAT C206A Advanced Topics in Probability and Stochastic Process 3 Units
The topics of this course change each semester, and multiple sections may be offered. Advanced topics in probability offered according to students demand and faculty availability.
Rules & Requirements

Prerequisites: Statistics C205A-C205B or consent of instructor

Repeat rules: Course may be repeated for credit with a different instructor. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Statistics/Graduate

Grading: Letter grade.

Also listed as: MATH C223A

STAT C206B Advanced Topics in Probability and Stochastic Processes 3 Units
The topics of this course change each semester, and multiple sections may be offered. Advanced topics in probability offered according to students demand and faculty availability.
Rules & Requirements

Repeat rules: Course may be repeated for credit with a different instructor. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Statistics/Graduate

Grading: Letter grade.

Also listed as: MATH C223B

STAT 210A Theoretical Statistics 4 Units
An introduction to mathematical statistics, covering both frequentist and Bayesian aspects of modeling, inference, and decision-making. Topics include statistical decision theory; point estimation; minimax and admissibility; Bayesian methods; exponential families; hypothesis testing; confidence intervals; small and large sample theory; and M-estimation.
Rules & Requirements

Prerequisites: Linear algebra, real analysis, and a year of upper division probability and statistics

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Statistics/Graduate

Grading: Letter grade.

STAT 210B Theoretical Statistics 4 Units
Introduction to modern theory of statistics; empirical processes, influence functions, M-estimation, U and V statistics and associated stochastic decompositions; non-parametric function estimation and associated minimax theory; semiparametric models; Monte Carlo methods and bootstrap methods; distributionfree and equivariant procedures; topics in machine learning. Topics covered may vary with instructor.
Rules & Requirements

Prerequisites: Statistics 210A and a graduate level probability course; a good understanding of various notions of stochastic convergence

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Statistics/Graduate

Grading: Letter grade.

STAT 212A Topics in Theoretical Statistics 3 Units
This course introduces the student to topics of current research interest in theoretical statistics. Recent topics include information theory, multivariate analysis and random matrix theory, high-dimensional inference. Typical topics have been model selection; empirical and point processes; the bootstrap, stochastic search, and Monte Carlo integration; information theory and statistics; semi- and non-parametric modeling; time series and survival analysis.
Rules & Requirements

Prerequisites: 210 or 205 and 215

Repeat rules: Course may be repeated for credit with different instructor. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Statistics/Graduate

Grading: Letter grade.

Formerly known as: 216A-216B and 217A-217B

STAT 212B Topics in Theoretical Statistics 3 Units
This course introduces the student to topics of current research interest in theoretical statistics. Recent topics include information theory, multivariate analysis and random matrix theory, high-dimensional inference. Typical topics have been model selection; empirical and point processes; the bootstrap, stochastic search, and Monte Carlo integration; information theory and statistics; semi- and non-parametric modeling; time series and survival analysis.
Rules & Requirements

Prerequisites: 210 or 205 and 215

Repeat rules: Course may be repeated for credit with different instructor. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Statistics/Graduate

Grading: Letter grade.

Formerly known as: 216A-216B and 217A-217B

STAT 215A Statistical Models: Theory and Application 4 Units
Applied statistics with a focus on critical thinking, reasoning skills, and techniques. Hands-on-experience with solving real data problems with high-level programming languages such as R. Emphasis on examining the assumptions behind standard statistical models and methods. Exploratory data analysis (e.g., graphical data summaries, PCAs, clustering analysis). Model formulation, fitting, and validation and testing. Linear regression and generalizations (e.g., GLMs, ridge regression, lasso).
Rules & Requirements

Prerequisites: Linear algebra, calculus, upper division probability and statistics, and familiarity with high-level programming languages. Statistics 133, 134, and 135 recommended

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 2 hours of laboratory per week

Additional Details

Subject/Course Level: Statistics/Graduate

Grading: Letter grade.

STAT 215B Statistical Models: Theory and Application 4 Units
Course builds on 215A in developing critical thinking skills and the techniques of advanced applied statistics. Particular topics vary with instructor. Examples of possible topics include planning and design of experiments, ANOVA and random effects models, splines, classification, spatial statistics, categorical data analysis, survival analysis, and multivariate analysis.
Rules & Requirements

Prerequisites: Statistics 215A or consent of instructor

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 2 hours of laboratory per week

Additional Details

Subject/Course Level: Statistics/Graduate

Grading: Letter grade.

STAT 222 Masters of Statistics Capstone Project 4 Units
The capstone project is part of the masters degree program in statistics. Students engage in professionally-oriented group research under the supervision of a research advisor. The research synthesizes the statistical, computational, economic, and social issues involved in solving complex real-world problems.
Rules & Requirements

Prerequisites: Statistics 201A-201B, 243. Restricted to students who have been admitted to the one-year Masters Program in Statistics beginning fall 2012 or later

Hours & Format

Fall and/or spring: 15 weeks - 4 hours of seminar per week

Additional Details

Subject/Course Level: Statistics/Graduate

Grading: Letter grade.

STAT 230A Linear Models 4 Units
Theory of least squares estimation, interval estimation, and tests under the general linear fixed effects model with normally distributed errors. Large sample theory for non-normal linear models. Two and higher way layouts, residual analysis. Effects of departures from the underlying assumptions. Robust alternatives to least squares.
Rules & Requirements

Prerequisites: Matrix algebra, a year of calculus, two semesters of upper division or graduate probability and statistics

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 2 hours of laboratory per week

Additional Details

Subject/Course Level: Statistics/Graduate

Grading: Letter grade.

STAT 232 Experimental Design 4 Units
Randomization, blocking, factorial design, confounding, fractional replication, response surface methodology, optimal design. Applications.
Rules & Requirements

Prerequisites: 200B or equivalent

Repeat rules: Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 2 hours of laboratory per week

Additional Details

Subject/Course Level: Statistics/Graduate

Grading: Letter grade.

STAT 239A The Statistics of Causal Inference in the Social Science 4 Units
Approaches to causal inference using the potential outcomes framework. Covers observational studies with and without ignorable treatment assignment, randomized experiments with and without noncompliance, instrumental variables, regression discontinuity, sensitivity analysis and randomization inference. Applications are drawn from a variety of fields including political science, economics, sociology, public health and medicine.
Rules & Requirements

Prerequisites: At least one graduate matrix based multivariate regression course in addition to introductory statistics and probability

Hours & Format

Fall and/or spring: 15 weeks - 3-3 hours of lecture and 1-2 hours of discussion per week

Additional Details

Subject/Course Level: Statistics/Graduate

Grading: Letter grade. This is part one of a year long series course. A provisional grade of IP (in progress) will be applied and later replaced with the final grade after completing part two of the series.

Instructor: Sekhon

STAT 239B Quantitative Methodology in the Social Sciences Seminar 4 Units
A seminar on successful research designs and a forum for students to discuss the research methods needed in their own work, supplemented by lectures on relevant statistical and computational topics such as matching methods, instrumental variables, regression discontinuity, and Bayesian, maximum likelihood and robust estimation. Applications are drawn from political science, economics, sociology, and public health. Experience with R is assumed.
Rules & Requirements

Prerequisites: Statistics 239A or equivalent

Hours & Format

Fall and/or spring: 15 weeks - 3-3 hours of lecture and 1-2 hours of discussion per week

Additional Details

Subject/Course Level: Statistics/Graduate

Grading: Letter grade. This is part two of a year long series course. Upon completion, the final grade will be applied to both parts of the series.

STAT C239A The Statistics of Causal Inference in the Social Science 4 Units
Approaches to causal inference using the potential outcomes framework. Covers observational studies with and without ignorable treatment assignment, randomized experiments with and without noncompliance, instrumental variables, regression discontinuity, sensitivity analysis and randomization inference. Applications are drawn from a variety of fields including political science, economics, sociology, public health and medicine.
Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 2 hours of discussion per week

Additional Details

Subject/Course Level: Statistics/Graduate

Grading: Letter grade.

Also listed as: POL SCI C236A

STAT 240 Nonparametric and Robust Methods 4 Units
Standard nonparametric tests and confidence intervals for continuous and categorical data; nonparametric estimation of quantiles; robust estimation of location and scale parameters. Efficiency comparison with the classical procedures.
Rules & Requirements

Prerequisites: A year of upper division probability and statistics

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 2 hours of laboratory per week

Additional Details

Subject/Course Level: Statistics/Graduate

Grading: Letter grade.

STAT C241A Statistical Learning Theory 3 Units
Classification regression, clustering, dimensionality, reduction, and density estimation. Mixture models, hierarchical models, factorial models, hidden Markov, and state space models, Markov properties, and recursive algorithms for general probabilistic inference nonparametric methods including decision trees, kernal methods, neural networks, and wavelets. Ensemble methods.
Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Statistics/Graduate

Grading: Letter grade.

Instructors: Bartlett, Jordan, Wainwright

Also listed as: COMPSCI C281A

STAT C241B Advanced Topics in Learning and Decision Making 3 Units
Recent topics include: Graphical models and approximate inference algorithms. Markov chain Monte Carlo, mean field and probability propagation methods. Model selection and stochastic realization. Bayesian information theoretic and structural risk minimization approaches. Markov decision processes and partially observable Markov decision processes. Reinforcement learning.
Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Statistics/Graduate

Grading: Letter grade.

Instructors: Bartlett, Jordan, Wainwright

Also listed as: COMPSCI C281B

STAT 243 Introduction to Statistical Computing 4 Units
Concepts in statistical programming and statistical computation, including programming principles, data and text manipulation, parallel processing, simulation, numerical linear algebra, and optimization.
Objectives Outcomes

Student Learning Outcomes: Become familiar with concepts and tools for reproducible research and good scientific computing practices.
Operate effectively in a UNIX environment and on remote servers.
Program effectively in languages including R and Python with an advanced knowledge of language functionality and an understanding of general programming concepts.
Understand in depth and make use of principles of numerical linear algebra, optimization, and simulation for statistics-related research.

Rules & Requirements

Prerequisites: Graduate standing

Repeat rules: Course may be repeated for credit. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 2 hours of laboratory per week

Additional Details

Subject/Course Level: Statistics/Graduate

Grading: Letter grade.

STAT 244 Statistical Computing 4 Units
Algorithms in statistical computing: random number generation, generating other distributions, random sampling and permutations. Matrix computations in linear models. Non-linear optimization with applications to statistical procedures. Other topics of current interest, such as issues of efficiency, and use of graphics.
Rules & Requirements

Prerequisites: Knowledge of a higher level programming language

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 2 hours of laboratory per week

Additional Details

Subject/Course Level: Statistics/Graduate

Grading: Letter grade.

STAT C245A Introduction to Modern Biostatistical Theory and Practice 4 Units
Course covers major topics in general statistical theory, with a focus on statistical methods in epidemiology. The course provides a broad theoretical framework for understanding the properties of commonly-used and more advanced methods. Emphasis is on estimation in nonparametric models in the context of contingency tables, regression (e.g., linear, logistic), density estimation and more. Topics include maximum likelihood and loss-based estimation, asymptotic linearity/ normality, the delta method, bootstrapping, machine learning, targeted maximum likelihood estimation. Comprehension of broad concepts is the main goal, but practical implementation in R is also emphasized. Basic knowledge of probability/statistics and calculus are assume
Rules & Requirements

Prerequisites: Statistics 200A (may be taken concurrently)

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 2 hours of laboratory per week

Additional Details

Subject/Course Level: Statistics/Graduate

Grading: Letter grade.

Instructor: Hubbard

Also listed as: PB HLTH C240A

STAT C245B Biostatistical Methods: Survival Analysis and Causality 4 Units
Analysis of survival time data using parametric and non-parametric models, hypothesis testing, and methods for analyzing censored (partially observed) data with covariates. Topics include marginal estimation of a survival function, estimation of a generalized multivariate linear regression model (allowing missing covariates and/or outcomes), estimation of a multiplicative intensity model (such as Cox proportional hazards model) and estimation of causal parameters assuming marginal structural models. General theory for developing locally efficient estimators of the parameters of interest in censored data models. Computing techniques, numerical methods, simulation and general implementation of biostatistical analysis techniques with emphasis on data applications.
Rules & Requirements

Prerequisites: Statistics 200B (may be taken concurrently)

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 2 hours of laboratory per week

Additional Details

Subject/Course Level: Statistics/Graduate

Grading: Letter grade.

Instructor: van der Laan

Also listed as: PB HLTH C240B

STAT C245C Biostatistical Methods: Computational Statistics with Applications in Biology and Medicine 4 Units
This course provides an introduction to computational statistics, with emphasis on statistical methods and software for addressing high-dimensional inference problems in biology and medicine. Topics include numerical and graphical data summaries, loss-based estimation (regression, classification, density estimation), smoothing, EM algorithm, Markov chain Monte-Carlo, clustering, multiple testing, resampling, hidden Markov models, in silico experiments.
Rules & Requirements

Prerequisites: Statistics 200A or equivalent (may be taken concurrently)

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 2 hours of laboratory per week

Additional Details

Subject/Course Level: Statistics/Graduate

Grading: Letter grade.

Instructor: Dudoit

Also listed as: PB HLTH C240C

STAT C245D Biostatistical Methods: Computational Statistics with Applications in Biology and Medicine II 4 Units
This course and Pb Hlth C240C/STAT C245C (http://guide.berkeley.edu/search/?P=STAT%20C245C) provide an introduction to computational statistics with emphasis on statistical methods and software for addressing high-dimensional inference problems that arise in current biological and medical research. The courses also discusses statistical computing resources, with emphasis on the R language and environment (www.r-project.org). Programming topics to be discussed include: data structures, functions, statistical models, graphical procedures, designing an R package, object-oriented programming, inter-system interfaces. The statistical and computational methods are motivated by and illustrated on data structures that arise in current high-dimensional inference problems in biology and medicine.
Rules & Requirements

Prerequisites: Statistics 200A-200B or Statistics 201A-201B (may be taken concurrently) or consent of instructor

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 2 hours of laboratory per week

Additional Details

Subject/Course Level: Statistics/Graduate

Grading: Letter grade.

Instructor: Dudoit

Also listed as: PB HLTH C240D

STAT C245E Statistical Genomics 4 Units
Genomics is one of the fundamental areas of research in the biological sciences and is rapidly becoming one of the most important application areas in statistics. This is the first course of a two-semester sequence, which provides an introduction to statistical and computational methods for the analysis of meiosis, population genetics, and genetic mapping. The second course is Statistics C245F/Public Health C240F. The courses are primarily intended for graduate students and advanced undergraduate students from the mathematical sciences.
Rules & Requirements

Prerequisites: Statistics 200A and 200B or equivalent (may be taken concurrently). A course in algorithms and knowledge of at least one computing language (e.g., R, matlab) is recommended

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of discussion per week

Additional Details

Subject/Course Level: Statistics/Graduate

Grading: Letter grade.

Instructors: Dudoit, Huang, Nielsen, Song

Also listed as: PB HLTH C240E

STAT C245F Statistical Genomics 4 Units
Genomics is one of the fundamental areas of research in the biological sciences and is rapidly becoming one of the most important application areas in statistics. The first course in this two-semester sequence is Public Health C240E/Statistics C245E. This is the second course, which focuses on sequence analysis, phylogenetics, and high-throughput microarray and sequencing gene expression experiments. The courses are primarily intended for graduate students and advanced undergraduate students from the mathematical sciences.
Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 1 hour of discussion per week

Additional Details

Subject/Course Level: Statistics/Graduate

Grading: Letter grade.

Instructors: Dudoit, Huang, Nielsen, Song

Also listed as: PB HLTH C240F

STAT C247C Longitudinal Data Analysis 4 Units
The course covers the statistical issues surrounding estimation of effects using data on subjects followed through time. The course emphasizes a regression model approach and discusses disease incidence modeling and both continuous outcome data/linear models and longitudinal extensions to nonlinear models (e.g., logistic and Poisson). The primary focus is from the analysis side, but mathematical intuition behind the procedures will also be discussed. The statistical/mathematical material includes some survival analysis, linear models, logistic and Poisson regression, and matrix algebra for statistics. The course will conclude with an introduction to recently developed causal regression techniques (e.g., marginal structural models). Time permitting, serially correlated data on ecological units will also be discussed.
Rules & Requirements

Prerequisites: 142, 145, 241 or equivalent courses in basic statistics, linear and logistic regression

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 2 hours of discussion per week

Additional Details

Subject/Course Level: Statistics/Graduate

Grading: Letter grade.

Instructors: Hubbard, Jewell

Also listed as: PB HLTH C242C

STAT 248 Analysis of Time Series 4 Units
Frequency-based techniques of time series analysis, spectral theory, linear filters, estimation of spectra, estimation of transfer functions, design, system identification, vector-valued stationary processes, model building.
Rules & Requirements

Prerequisites: 102 or equivalent

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 2 hours of laboratory per week

Additional Details

Subject/Course Level: Statistics/Graduate

Grading: Letter grade.

STAT C249A Censored Longitudinal Data and Causality 4 Units
This course examines optimal robust methods for statistical inference regarding causal and non-causal parameters based on longitudinal data in the presence of informative censoring and informative confounding of treatment. Models presented include multivariate regression models, multiplicative intensity models for counting processes, and causal models such as marginal structural models and structural nested models. Methods will be illustrated with data sets of practical interest and analyzed in the laboratory section. This course, appropriate for advanced masters and Ph.D. students, provides exposure to a number of ongoing research topics.
Rules & Requirements

Prerequisites: 240B, Statistics 200A-200B or consent of instructor

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 2 hours of laboratory per week

Additional Details

Subject/Course Level: Statistics/Graduate

Grading: Letter grade.

Instructor: van der Laan

Also listed as: PB HLTH C246A

STAT 259 Reproducible and Collaborative Statistical Data Science 4 Units
A project-based introduction to statistical data analysis. Through case studies, computer laboratories, and a term project, students will learn practical techniques and tools for producing statistically sound and appropriate, reproducible, and verifiable computational answers to scientific questions. Course emphasizes version control, testing, process automation, code review, and collaborative programming. Software tools may include Bash, Git, Python, and LaTeX.
Rules & Requirements

Prerequisites: Statistics 133, Statistics 134, and Statistics 135 (or equivalent)

Credit Restrictions: Students will receive no credit for Statistics 259 after taking Statistics 159.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture and 2 hours of laboratory per week

Additional Details

Subject/Course Level: Statistics/Graduate

Grading: Letter grade.

STAT 260 Topics in Probability and Statistics 3 Units
Special topics in probability and statistics offered according to student demand and faculty availability.
Rules & Requirements

Repeat rules: Course may be repeated for credit. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 3 hours of lecture per week

Additional Details

Subject/Course Level: Statistics/Graduate

Grading: Letter grade.

STAT C261 Quantitative/Statistical Research Methods in Social Sciences 3 Units
Selected topics in quantitative/statistical methods of research in the social sciences and particularly in sociology. Possible topics include: analysis of qualitative/categorical data; loglinear models and latent-structure analysis; the analysis of cross-classified data having ordered and unordered categories; measure, models, and graphical displays in the analysis of cross-classified data; correspondence analysis, association analysis, and related methods of data analysis.
Rules & Requirements

Prerequisites: Consent of instructor

Hours & Format

Fall and/or spring: 15 weeks - 2 hours of lecture per week

Additional Details

Subject/Course Level: Statistics/Graduate

Grading: Letter grade.

Also listed as: SOCIOL C271D

STAT 272 Statistical Consulting 3 Units
To be taken concurrently with service as a consultant in the department's drop-in consulting service. Participants will work on problems arising in the service and will discuss general ways of handling such problems. There will be working sessions with researchers in substantive fields and occasional lectures on consulting.
Rules & Requirements

Prerequisites: Some course work in applied statistics and permission of instructor

Repeat rules: Course may be repeated for credit. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 2 hours of session per week

Additional Details

Subject/Course Level: Statistics/Graduate

Grading: Offered for satisfactory/unsatisfactory grade only.

STAT 278B Statistics Research Seminar 1 - 4 Units
Special topics, by means of lectures and informational conferences.
Rules & Requirements

Repeat rules: Course may be repeated for credit. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 0 hours of seminar per week

Additional Details

Subject/Course Level: Statistics/Graduate

Grading: Offered for satisfactory/unsatisfactory grade only.

STAT 298 Directed Study for Graduate Students 1 - 12 Units
Special tutorial or seminar on selected topics.
Rules & Requirements

Prerequisites: Consent of instructor

Repeat rules: Course may be repeated for credit. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 0 hours of independent study per week

Summer:
6 weeks - 1-16 hours of independent study per week
8 weeks - 1-12 hours of independent study per week

Additional Details

Subject/Course Level: Statistics/Graduate

Grading: Letter grade.

STAT 299 Individual Study Leading to Higher Degrees 1 - 12 Units
Individual study
Rules & Requirements

Repeat rules: Course may be repeated for credit. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 3-36 hours of independent study per week

Summer:
6 weeks - 7.5-45 hours of independent study per week
8 weeks - 6-36 hours of independent study per week
10 weeks - 4.5-27 hours of independent study per week

Additional Details

Subject/Course Level: Statistics/Graduate

Grading: Letter grade.

STAT 375 Professional Preparation: Teaching of Probability and Statistics 2 - 4 Units
Discussion, problem review and development, guidance of laboratory classes, course development, supervised practice teaching.
Rules & Requirements

Prerequisites: Graduate standing and appointment as a graduate student instructor

Repeat rules: Course may be repeated for credit. Course may be repeated for credit when topic changes.

Hours & Format

Fall and/or spring: 15 weeks - 2 hours of lecture and 4 hours of laboratory per week

Additional Details

Subject/Course Level: Statistics/Professional course for teachers or prospective teachers

Grading: Offered for satisfactory/unsatisfactory grade only.

Formerly known as: Statistics 300

STAT 601 Individual Study for Master's Candidates 1 - 8 Units
Individual study in consultation with the graduate adviser, intended to provide an opportunity for qualified students to prepare themselves for the master's comprehensive examinations. Units may not be used to meet either unit or residence requirements for a master's degree.
Rules & Requirements

Repeat rules: Course may be repeated for a maximum of 16 units.Course may be repeated for a maximum of 16 units.

Hours & Format

Fall and/or spring: 15 weeks - 0 hours of independent study per week

Summer:
6 weeks - 1-10 hours of independent study per week
8 weeks - 1-8 hours of independent study per week

Additional Details

Subject/Course Level: Statistics/Graduate examination preparation

Grading: Offered for satisfactory/unsatisfactory grade only.

STAT 602 Individual Study for Doctoral Candidates 1 - 8 Units
Individual study in consultation with the graduate adviser, intended to provide an opportunity for qualified students to prepare themselves for certain examinations required of candidates for the Ph.D. degree.
Rules & Requirements

Prerequisites: One year of full-time graduate study and permission of the graduate adviser

Credit Restrictions: Course does not satisfy unit or residence requirements for doctoral degree.

Repeat rules: Course may be repeated for a maximum of 16 units.Course may be repeated for a maximum of 16 units.

Hours & Format

Fall and/or spring: 15 weeks - 0 hours of independent study per week

Summer:
6 weeks - 1-10 hours of independent study per week
8 weeks - 1-8 hours of independent study per week

Additional Details

Subject/Course Level: Statistics/Graduate examination preparation

Grading: Offered for satisfactory/unsatisfactory grade only.