STATISTICS (STAT)

STAT*6550 Computational Statistics Unspecified [0.50]
This course covers the implementation of a variety of computational statistics techniques. These include random number generation, Monte Carlo methods, non-parametric techniques, Markov chain Monte Carlo methods, and the EM algorithm. A significant component of this course is the implementation of techniques.
Department(s): Department of Mathematics and Statistics
Location(s): Guelph

STAT*6700 Stochastic Processes Unspecified [0.50]
The content of this course is to introduce Brownian motion leading to the development of stochastic integrals thus providing a stochastic calculus. The content of this course will be delivered using concepts from measure theory and so familiarity with measures, measurable spaces, etc., will be assumed.
Department(s): Department of Mathematics and Statistics
Location(s): Guelph

STAT*6721 Stochastic Modelling Unspecified [0.50]
Topics include the Poisson process, renewal theory, Markov chains, Martingales, random walks, Brownian motion and other Markov processes. Methods will be applied to a variety of subject matter areas.
Department(s): Department of Mathematics and Statistics
Location(s): Guelph

STAT*6761 Survival Analysis Unspecified [0.50]
Kaplan-Meier estimation, life-table methods, the analysis of censored data, survival and hazard functions, a comparison of parametric and semi-parametric methods, longitudinal data analysis.
Department(s): Department of Mathematics and Statistics
Location(s): Guelph

STAT*6801 Statistical Learning Unspecified [0.50]
Topics include: nonparametric and semiparametric regression; kernel methods; regression splines; local polynomial models; generalized additive models; classification and regression trees; neural networks. This course deals with both the methodology and its application with appropriate software. Areas of application include biology, economics, engineering and medicine.
Department(s): Department of Mathematics and Statistics
Location(s): Guelph

STAT*6802 Generalized Linear Models and Extensions Unspecified [0.50]
Topics include: generalized linear models; generalized linear mixed models; joint modelling of mean and dispersion; generalized estimating equations; modelling longitudinal categorical data; modelling clustered data. This course will focus both on theory and implementation using relevant statistical software. Offered in conjunction with STAT*4050/4060. Extra work is required for graduate students.
Restriction(s): Credit may be obtained for only one of STAT*4050 or STAT*4060 or STAT*6802
Department(s): Department of Mathematics and Statistics
Location(s): Guelph

STAT*6821 Multivariate Analysis Unspecified [0.50]
This is an advanced course in multivariate analysis and one of the primary emphases will be on the derivation of some of the fundamental classical results of multivariate analysis. In addition, topics that are more current to the field will also be discussed such as: multivariate adaptive regression splines; projection pursuit regression; and wavelets. Offered in conjunction with STAT*4350. Extra work is required for graduate students.
Restriction(s): Credit may be obtained for only one of STAT*4350 or STAT*6821
Department(s): Department of Mathematics and Statistics
Location(s): Guelph

STAT*6841 Computational Statistical Inference Unspecified [0.50]
This course covers Bayesian and likelihood methods, large sample theory, nuisance parameters, profile, conditional and marginal likelihoods, EM algorithms and other optimization methods, estimating functions, Monte Carlo methods for exploring posterior distributions and likelihoods, data augmentation, importance sampling and MCMC methods.
Department(s): Department of Mathematics and Statistics
Location(s): Guelph

STAT*6860 Linear Statistical Models Unspecified [0.50]
Generalized inverses of matrices; distribution of quadratic and linear forms; regression or full rank model; models not of full rank; hypothesis testing and estimation for full and non-full rank cases; estimability and testability; reduction sums of squares; balanced and unbalanced data; mixed models; components of variance.
Department(s): Department of Mathematics and Statistics
Location(s): Guelph

STAT*6920 Topics in Statistics Unspecified [0.50]
Department(s): Department of Mathematics and Statistics
Location(s): Guelph

STAT*6950 Statistical Methods for the Life Sciences Fall Only [0.50]
Analysis of variance, completely randomized, randomized complete block and latin square designs; planned and unplanned treatment comparisons; random and fixed effects; factorial treatment arrangements; simple and multiple linear regression; analysis of covariance with emphasis on the life sciences. STAT*6950 is intended for graduate students of other departments and may not normally be taken for credit by mathematics and statistics graduate students.
Department(s): Department of Mathematics and Statistics
Location(s): Guelph

STAT*6998 MSc Project in Statistics Unspecified [1.00]
This course is intended for students in the course-based MSc program in Statistics. The MSc project will be written under the supervision of a faculty member and will normally be completed within one or two semesters. Once completed, students will submit a final copy of their project to the Department and give an oral presentation of their work
Restriction(s): Restricted to MSC.MAST:L-STAT students.
Department(s): Department of Mathematics and Statistics
Location(s): Guelph