CS 4315 Intelligent Systems Design (3 semester credit hours) Mathematical analysis of behavior and generalization performance of deterministic batch and stochastic adaptive learning algorithms within a statistical empirical risk minimization framework. Topics include: Convergence analysis of batch learning algorithms, convergence analysis of adaptive learning algorithms, Comte Carlo Markov Chain inference and sampling, bootstrap sampling methods, and estimation of generalization performance using asymptotic statistical theory. Unsupervised, supervised, and reinforcement machine learning applications are emphasized throughout the course. Prerequisite: CGS 4313 or instructor consent required. (Same as CGS 4315) (3-0) T