CGS 4313 - Neural Net Mathematics (3 semester credit hours) Advanced matrix calculus and vector calculus-based probability theory with applications to problems in machine learning and artificial neural network modeling. Intended to provide mathematics preparation for CGS 4314 or CS 4314 and CGS 4315 or CS 4315. Includes introduction to gradient descent type unsupervised, supervised, and reinforcement learning algorithms as well as iterative constraint satisfaction algorithms. Prerequisites: (MATH 2414 or MATH 2419) and (STAT 3341 or STAT 4351) and MATH 2418. (Same as CS 4313) (3-0) T