COSC 303/MATH 303 (3) Numerical Analysis Numerical techniques for basic mathematical processes and their analysis. Taylor polynomials, root-finding, linear systems, eigenvalues, approximating derivatives, locating minimizers, approximating integrals, solving differential equations. Credit will be granted for only one of MATH 303 or COSC 303. [3-1-0]. Prerequisite: All of MATH 200, MATH 221 and either (a) COSC 111 or (b) DATA 301. Equivalency: COSC 303. We will cover the following: Error, Rates of Convergence Solving 1-Variable Non-linear Equations Optimization of 1-Variable Problems Polynomial Interpolation Numerical Differentiation and Integration Monte Carlo Methods for Integration Solving Ordinary Differential Equations. Solving Linear Systems - Direct Methods. Solving Linear Systems - Iterative Methods.