Computer Science 3020 (Numerical Methods)
Fall Semester 2001

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Office Hours: 9:30-11 TR
9:30-11:30 MWF


Prerequisites: Two semesters of calculus and the ability to write computer programs in a high-level language.

Course Objectives: Students learn algorithms for solving several types of mathematical problems using numerical techniques. Convergence of methods and types of errors are covered. Students get practice at solving many problems using both calculators and computers as computational devices.

Course Contents: The plan is to cover the majority of the material from Chapters 0 through 6 in the textbook. The proposed topics are as follows: iterative methods for approximating roots of nonlinear equations, rates of convergence of methods, error analysis, solving sets of linear and nonlinear equations, condition numbers and errors in solutions to linear systems, interpolation using polynomials and splines, curve fitting methods applied to discrete data, numerical differentiation and integration, and approximation of solutions to ordinary differential equations.

Requirements: You will take 2 in-class tests (25% each) and a final exam (scheduled for Friday, December 14, at 8:00 am), complete several homework assignments (25% collectively). The final may have a take-home portion. The standard 10-point scale (90+ is an A, etc.) applies.

Students with a disability requiring accommodations should contact the Office of Disability Services (ODS). An Accommodation Request (AR) should be completed as soon as possible, preferably by the end of the first week of the course. The ODS is located in the Roaden University Center, Room 112; phone 372-6119.