Syllabus: Math 320 Numerical Analysis, Spring 2014

Course   Math 320 meets MWF 12:00-12:50 in RH 237
Course web page `http://mathcs.slu.edu/~clair/numeric`

Instructor   Dr. Bryan Clair
`bryan@slu.edu`
Ritter Hall 110, 977-3043

Office Hours   M 1-2, Tu 11-12, W 10-11 or by appointment. Stop by my office anytime, and if I'm around I can usually help you.

Textbook   *Numerical Analysis*, 9ed, Richard Burden and J. Douglas Faires.

Homework   Homework will consist of some problems to be done by hand, and some computer programming projects using MATLAB or Octave. Your work should be neat and legible, with plenty of blank space on your pages so I have room to write comments. Staple your homework!

I encourage you to work together on homework, but write up results separately.

Late homework is always accepted for half credit, but I will not write comments.

Exams   I give makeup exams only for severe and *documented* reasons.
Exam 1 Wednesday, February 19
Exam 2 Friday, April 4
Final Exam Friday, May 9, 12:00-1:50
In addition, there will be a handful of short quizzes.

Grading   Grading is on a straight scale (uncurved), with 90%,80%,70%,60% guaranteeing A,B,C,D respectively. Grading is weighted as follows:

Homework: 25%
Quizzes: 10%
Exam 1: 20%
Exam 2: 20%
Final Exam: 25%

Honesty   Students are expected to be honest in their academic work, as per the Honesty Policy of the College of Arts & Sciences. Plagiarism, cheating and dishonesty will be reported to the dean and may result in probation, expulsion, or worse.

In particular, for this course, code you submit as solutions to programming assignments must be written by you. You are not allowed to copy code from other students or the web.

Copying code from examples presented in class is allowed.

Course Topics   (still tentative)

Computer arithmetic. Error. Convergence rates. Ch 1.
MATLAB/Octave programming
Iterative methods for solving equations. Ch 2.
Interpolation and polynomial approximation. Ch 3-3.4.
Numerical differentiation. Ch 4.1-2.
Numerical quadrature (integration). Ch 4.3-7.
Solving differential equations. Euler's method, Runge-Kutta. Ch 5-5.4.