Scientific Computing, G63.2043/G22.2112
Spring 2000
Professor Leslie Greengard

This course will cover fundamental numerical methods that are required in a variety of applications, from biology to physics, engineering and finance. Important things to note include

1. This is not a rigorous course in Numerical Analysis. For that, we offer the one year sequence "Numerical Methods."
2. In addition to calculus and linear algebra, some exposure to ordinary and partial differential equations would be useful.
3. Some programming experience will be assumed. This course uses a MATLAB based textbook, but you may use any computing environment you wish.
4. The course text is "Numerical Methods with Matlab" by G. J. Borse.

The topics covered will include error analysis and condition number, solving linear systems, interpolation and approximation, data fitting, optimization, methods for differential equations, and Monte Carlo methods. By and large, each topic will be motivated by a specific applied problem, hopefully determined by class interest. Various software packages will be used and discussed.

Course Web Page: There is a course web page at

`http://cs.nyu.edu/courses/spring00/G22.2112-001/index.htm`

with some useful pointers.

Office Hours: I have official office hours on Thursday afternoons from 3:00 - 5:00.

Mailing List: A class mailing list has been set up. To subscribe, send mail to majordomo@cs.nyu.edu with the line

`subscribe g22_2112_001_sp00`

in the body of the message. For help regarding the use of such lists, send mail to majordomo@cs.nyu.edu with a blank subject line and the word 'help' as the text of the message.

Course Accounts: will be given on **scires.nyu.edu**.

Grading: Based on Homework (50 %), Project (30 %), Exam (20 %).