Mathematics 371 – Numerical Analysis
Information on Schedule, Final Presentations
November 14, 2001

Schedule to End of Semester

We are exactly on schedule in our syllabus, and we will not need the "spare day" I built into the schedule on November 16. Hence we will start into Chapter 5 of the text (numerical methods for ODE initial value problems) that day, and cover the material from sections 5.1, 5.2, and 5.4 as follows:

November 16: ODE Initial Value Problems, Euler's Method (5.1,5.2)
November 19: Begin Runge-Kutta Methods (5.4)
November 26: Runge-Kutta, continued
November 28: CEF's, Runge-Kutta, concluded

This material will be covered on the Final Problem Set; I will not be giving a problem set or lab on it before then, however, because I want to give you time to be working on your in-class presentations.

Information on Presentations

Recall that in the syllabus for the course, I mentioned that one of the assignments would be an in-class presentation on an assigned topic. These will be scheduled for the last two class meetings, November 30 and December 3. The presentations will be given by teams of 2; you should divide up what you want to say so that each team member speaks for 20-25 minutes. Leave about 5 minutes at the end for questions. I will be happy to work with you as you prepare, listen to an run-through, etc.

The topics and pair assignments will be as follows:

- Group 1: Dan and Quan – November 30 – Topic: Runge-Kutta-Fehlberg (Section 5.5). Your presentation should explain the idea behind the method, and present a worked-out example like one of the parts of problem 1 in Section 5.5. There is an implementation of the RKF 4th-5th order method presented in the book in Maple, and you should use that for your computations and explain how it is used as part of your presentation.

- Group 2: Catherine and Maura – December 3 – Topic: The Adams-Bashforth Multistep Methods (Section 5.6). Note: there is a lot of other stuff in that section, but you will be only concerned with the Adams-Bashforth methods. Give the general idea, do the derivation of the 3-step explicit method (equation 5.33), and work out an example like one of the parts of problem 1 in Section 5.6.