Mathematics 305, Spring 2013

Scientific Computation

J. Hefferon, STE 217C

Course Description Methods for approximating the solutions of problems that are difficult or impossible to solve exactly. Floating point representation; approximation of functions; roots of nonlinear equations; interpolation and curve-fitting; linear systems; some operations research methods; additional topics possibly including numerical integration and differentiation.

Prerequisites Calculus II.

Text *Scientific Computation* by Heath, edition two. (Before you buy the book, come to the first class.)

Requirements As in all courses, to get satisfactory results you must come to class and you must do the homework.

You will have a mid-term exam and a final exam, which will include programming components. There will be a number of projects that are primarily programs. The overall letter grade for the course weighs equally these three.

Attendence A good part of this course involves in-class work with the tools. You are expected to come to class. If for some reason you are unable to attend a class then let me know via email. If you know in advance that you are unable to attend a class then let me know in advance when you will be missing.

Meaning of your course grade A D tells you that although you will get credit for this course, you have dead-ended: you are not prepared for following courses. A C says that you are minimally prepared for following courses but you should expect to have to work hard there. Do not consider a C an acceptable grade; it is a warning that you have gaps that you must fill. In contrast, a B states my judgement that you are well-prepared to move up to the next level. Finally, an A marks superior performance and is the way that I get to recognize your work and encourage you to go on.