Slide 1

Administrivia

- Please try to turn in Homework 8 today, but I will accept it through Friday at 11:59pm.
- Reminder (as if you needed one!): Final Friday. Review sheet on the Web. Should there be a review session? I could *probably* do one Wednesday. I'll take a poll as one of the minute-essay questions and announce the results by e-mail.
- I will send out a "grade summary", similar to what I sent out at midsemester, soon.
- Draft extra-credit assignment on the Web (more problems to be added tomorrow.) Due next Monday at end of day.

Slide 2

More Administrivia

- Solutions to all quizzes online; sample solutions to all but the last homework too. I will post solutions for Homeworks 8 and 8x soon, probably tomorrow.
- My office hours this week — I'm not quite sure. I will likely be in Wednesday; I'll let you know when by e-mail. Normally on Mondays I stay past my last class, but today I'll only do so if there's interest (so let me hear from you).

Slide 3

Minute Essay From Last Lecture

- Surprisingly (to me!), no one really preferred to relax the rule about computer use on the final, so I'll keep it as it is — browse online notes and course Web site only.

Slide 4

C and "Third-Party" Libraries

- C would not be most people's first choice for general application programming, in part because the standard library is so limited — nothing for graphics, GUIs, networking, multithreading, etc., etc.
- Does that mean you can't do those things in C? no, but it does mean you may have to do them differently on different platforms, via "third-party" libraries (possibly not the best term but will do).
- Some libraries of possible interest on Linux/UNIX platforms are `ncurses` for full-screen text-mode programs, X11 for graphics/GUIs (though for GUIs you probably want one of several "toolkits"), OpenMP and MPI for "parallel" programming.

Slide 5

Course Recap

- Course is an "introduction to programming."
- Ideally, a first course would focus more on ideas of programming than details — except that, in the words of a colleague

  "Programming is not a spectator sport."

  so we have to choose a programming language, and an environment, and then it's difficult *not* to get caught up in the details.

Slide 6

Course Recap, Continued

- Course intended as introduction to programming for students majoring in Engineering Science, taught in a language acceptable to them, with some exposure to Linux command-line environment.
- Choice of examples and assignments meant to slant toward those of use in STEM field.
- Some material normally covered in a first course for majors omitted/skimmed.

Slide 7

What I Hope You Got From This Course

- A basic understanding of what programming is — expressing a problem and its solution as "an algorithm" and turning that into code.

  In particular I tried to make at least some assignments not-totally-trivial, to give a sense of what you can do with programming skills.
- A basic knowledge of C and its quirks.
- Exposure to Linux command-line tools, including `gnuplot`.

Slide 8

"Why C?", Revisited

- C would not be most people's choice as a beginning language — must learn both programming basics in general and C quirks. (But our department used it in CS1 at one time!)
- But traditionally it's a "universal language" with implementations on pretty much every platform (though that may be changing?). So you may need it at some point, particularly for "embedded systems" work.

Slide 9

"Why Not C"

- On many occasions I've mentioned "more-recent languages" as being easier to use, safer, etc. Also many of them include extensive standard libraries that support GUIs, graphics, networking, etc., etc.
- In my thinking, for general-purpose/application programs one of these is the way to go. Popular choices include C++, Java, and Python (particularly the latter, for people outside CS). We like Scala but it is not (yet?) as widely-used.
- Does that mean it was useless to learn C? I say no! good to have in your "bag of tricks", and once you know *one* programming language, the next is easier, and the one after that is easier still . . .

Slide 10

Minute Essay

- Would you be interested in a review session Wednesday? I'm thinking between noon and 6pm; what times in that range could you *not* attend?
- Any parting remarks?