Administrivia

- One purpose of the syllabus is to spell out policies (review today).

- Most information will be on the Web, on either my home page (office hours) or the course Web site.

A Few Words about Remote Teaching and Learning

- (If you filled out my two forms asking about your access to technology and about tools other instructors use — thank you! Only about a third of students did, and the information was interesting and helpful.)

- Last spring's abrupt switch to remote teaching and learning was difficult. We all learned a lot about its pluses and minuses. Two lessons I took away:

  Trinity students are great! Almost without exceptions my students made sincere efforts to make the best of a non-ideal situation.

  Student access to resources varies. Some "check your privilege" moments for me!

A Few Words about Remote Teaching and Learning, Continued

- After a summer of trying to prepare for remote classes, there's still a lot I have to figure out / learn. Possibly true for you as well. Zoom meetings — there's a tendency to zone out. I'll try to reduce the temptation; please do your part too.

- No one knows how the pandemic will evolve and what further actions Trinity might need to take. Also, many people are really struggling. These are stressful times for (almost?) everyone!

- So I say let's all to try to be kind and tolerant with each other. Guiding principles:

  Start from the premise that we're all reasonable people trying to do the right thing.

  Even if we're not sure how something is going to work, odds are that something reasonable will happen.

Course Web Site

- "Course Web site" is meant to point you to pretty much all information for the course — readings, assignments, etc.

- You can find it via TLearn, or via the link from my home page (should be findable from the page about me in TU's Web site, or by doing a Web search on my name).

- A request: If you spot something wrong with course material on the Web, please let me know!

Syllabus

- (Review syllabus.)

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A Little About Me

- Short version of biography: Undergrad degrees from UT Austin, math and Plan II. More than ten years in what we now call IT (about half doing operating-system-related work on IBM mainframes). Back to school for master's and PhD in computer science. Two years as a postdoc, then at Trinity since Fall 1999.

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- I teach a variety of courses, but currently focusing more on courses "close to the machine". My research area (sadly neglected for some years) is parallel computing.

- (What do I do for fun? well . . .)

- (And this summer I did some domestic decluttering. Amazing how much much money one can spend on things to organize other things!)

Why Take This Course?

- (It was required in a previous departmental curriculum. Now it's not, but maybe it should be?)

- "ACM says so" (i.e., curriculum recommendations include course on operating systems). Why? Well . . .

- To be a "computer scientist", need to have a broad understanding of computer systems — and operating system is a key part of a computer system.

- Knowing something about how operating systems work helps you write efficient code.

- Many of our courses "demystify" parts of computer systems (e.g., CS1/CS2 and Computer Design); so does this course.

- It might even be interesting . . . (I hope so!)

What Is An Operating System?

- Definition by example? (Respond via Zoom Chat.)

- Definition from operating systems textbook?

What Is An Operating System? Continued

- Definition by example:
  - **–** Recent: Windows, Linux, UNIX, OS X (Mac), iOS, ChromeOS, Android ...
  - **–** Older: MULTICS, VMS, MVS, VM/370, ... (In the mainframe days, typically each hardware company had its own operating system(s).)
  - **–** Special-purpose O/S's for special-purpose hardware.
- Definition from textbook:
  - **–** Something that provides "virtual machine" for application programs and users ("top down").
  - **–** Something that manages computer's resources ("bottom up").
- Another view — key part of bridging gap between what hardware can do (not much, but very fast) and what users want.

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Course Overview

- Brief history of operating systems.
- Review of what hardware can do, what operating system must/should do.
- Discussion of major functions of operating system — problem(s) to be solved, solutions:
  - **–** Process management.
  - **–** Memory management.
  - **–** I/O management.
  - **–** Filesystem management.

  Focus on principles rather than details.

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About Minute Essays

- Most lectures will end with a "minute essay" — as a quick check on your understanding, a way for me to get some information, etc., and also to track attendance.

- Send me your answer by e-mail (no word-processor attachments please). And *please* put "minute essay" and the course in the Subject line.

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Minute Essay

- Where are you located now?

- What are your goals for this course? (It's okay to just say that you need a course for the Systems requirement for the major!)

- Anything else you want to tell me? about the course, what you did this summer, . . . ?

- If you didn't already fill out those two questionnaires, take a few minutes to do it as soon as you send me your answers.

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