

CSCI330: Midterm Prep Document

Rules and Logistics

- 2 hour time limit, on Sakai
- Open lecture slides, your notes, textbook
 - Closed [other] internet
 - Don't download Wikipedia or other web pages into your notes
- Write your answers in Word and then copy to Sakai to avoid issues with the site timing out

Topics – through Monday, October 15

OS Design

- Roles
- Goals

Systems Programming

- Unix, Unix commands
- Shell scripting
- C
- Make

OS Structures, Mechanisms

- Dual modes (kernel, user)
- Interfaces
- Memory, Address space
- System calls, Exceptions, Interrupts
- Booting

Processes

- Process creation, management
- Process state and metadata
- Process switching
- Process scheduling
 - Goals
 - Metrics
 - Mechanisms
 - Policies
- Interprocess communication
- Threads
 - Relation to processes
 - Concurrency

What I expect from you on exam

- To know the material well and just need your notes as backup/clarification
- To be able to synthesize the material. We spent multiple class periods plus projects/assignments on various topics. Bring it all together.
 - What are the common issues/challenges? What are common solutions and their tradeoffs? Why/when are certain tradeoffs made? What caused the tradeoff to be deemed okay?
- To be able to state many of these ideas relatively succinctly, hitting on the salient points.
- Analyzing problems, suggesting solutions, and articulating tradeoffs/limitations
- To be able to read code written in C, Bash, or a Makefile and describe what it does (e.g., describing its output, identifying where there is a problem, ...)

What I do not expect from you:

- Writing code

Suggestions on how to prepare

- Review your notes and my slides; the textbook may be helpful for clarification—especially deeper discussion and details than I can't fit on slides
 - What are common threads/issues/challenges/solutions and their tradeoffs?
- Review code examples, run them, explain their output
- Review the projects and assignments
 - What were the objectives?
 - Did you understand their results?