

Midterm Exam Notes

MPCS 51082 – Introduction to Unix Systems

October 24, 2023

Midterm Structure

The exam will consist of the following types of questions:

- Short Answer Questions (which may have multiple parts)
- Be a Computer Questions (Given some code what is the output of the code.)
- Short Programming Questions (i.e., given a problem, provide the C code that solves this problem)

You will be given 110 minutes to complete the exam. The midterm will be closed-everything (no books, notes, cheat-sheets, etc). The exam is a fully written exam that I provide (no computers, etc.). I will provide any scratch paper if requested. Make sure to bring a pencil or pen.

Midterm Topics

- “History of Unix” will not be on the exam.
- Unix architecture layers
 - Hardware
 - kernel
 - shells
 - user
 - commands
 - user applications
 - file system
- Bash programming questions will be on the exam. We will provide you devhints cheatsheet (<https://devhints.io/bash>) to help remember syntax.
 - We did not fully go over everything on the devhints cheatsheet so focus on the material covered in module 1.
- Regular Expressions
 - You only need to understand the material covered in class and on your homework assignments.
- Unix text filter programs. You should know only the options/flags presented in slides and homework
 - sort
 - uniq
 - head
 - tail

- paste
- wc
- cut
- grep
- sed
- Shell aliasing and history
- Programs & Processes
 - Parts of a Program File
 - Computer memory
 - Process Virtual Address Space
- Job Control
 - “ps“ command - focus only on the options/flags in the slides
 - Commands and operations related to job control
- Shell Environment and Configuration
- Module 3 will not be on the midterm. Only material presented in module 1 -2 will be on the exam.

How to Study for the Exam?

Unfortunately, this one of the first few iterations of the course so I do not have practice problems. However, I think the best way to study for the exam is going through the lecture slides. You can reference the book for more in-depth information about a certain topic if you're still confused. If you're comfortable with the material presented in the lecture slides along with any companion material than you should be a good shape for doing well on the exam. Here's some additional tips

- Again, the exam will only cover the material presented in Modules 1-2 only.
- We do not provide solutions to the homework assignments. However, please come to office hours and we will be happy to review a solution with you to make sure you understand the best approach to solving a problem.
- Make sure to review the lecture videos. For each video, I took the time to provide time segment so you can skip to the material you need more clarification on instead of watching the entire video over again.
- Make sure you understand the filter program examples I shown in class. There will be questions about one of those on the exam.
- You will have to write bash scripts for the two programming questions on the exam. Make sure to review the syntax about how to write them.