CSC 352: Systems Programming and Unix
Spring 2015
January 14, 2015
[updated January 24, 2015]

http://proebsting.cs.arizona.edu/courses/spring2015/csc352
course-CSC-2151-1-352-001@list.arizona.edu
https://piazza.com/class/i4vrjijq9420294

Instructor
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Office hours: MW 9-10 (after class)

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Schedule
Class meets Mondays and Wednesdays, 7:30-8:45AM, in McClelland Park 105.

Prerequisites
Earned at least a C in CSC 127B or CSC 227, or consent of instructor.

At the beginning of class, students are expected to have mastery of a modern
programming language for writing short (less than 100-line) programs of moderate
complexity.

Course Overview
This course introduces the Unix operating system, both at the user-interface level,
and at the systems programming level, with an emphasis on those things needed to
effectively develop software using a Unix-based system.
The user-interface level will emphasize command-line tools. The tools include the following:

- Shell programming: pipes, redirection, variables, control, environment variables, etc.
- gcc, C compiler
- make
- grep
- valgrind
- gprof
- gdb
- strace

Systems programming will be done in the C programming language. No previous experience with C is assumed, and all relevant issues will be covered in this course.

Systems programming will include the following:

- Files: creating, reading, writing
- Formatted input and output
- Signals

This course has a significant programming load.

**Absence Policy**
While students are not required to attend lectures, there will be in-class quizzes that cannot be rescheduled.

For exams, there will be no rescheduling of exams except for the following:

- All holidays or special events observed by organized religions will be honored for those students who show affiliation with that particular religion,
- Absences pre-approved by the UA Dean of Students (or Dean’s designee) will be honored.

If there is a conflict, it is your responsibility to let the instructor know at least three weeks prior to the test.

**Late Policy**
Homework is not accepted late without an approved, extraordinary excuse.

**Textbook**

**Environment**
We will be using lectura.cs.arizona.edu.

**Coursework**
The course includes the following graded work:
- Two midterm exams
- One final exam
- Multiple, randomly scheduled in-class quizzes
- Programming or written homework assignments.

Ungraded Work:
- Readings
- Videos
- Practice

**Classroom Behavior**
No electronics: no cellphones, laptops, pagers, tablets, etc. None.

No recording devices: audio or video. None.

Electronic devices distract you and those around you. There’s nothing in lecture that requires an electronic device. Paper and a writing instrument will suffice.

This is a very large class, which means it’s important to be quiet, keeping side conversations to an absolute minimum. If you have a question, raise your hand and I will try to get to you quickly. If you cannot get my attention, please interrupt me respectfully.

**Code of Conduct**
All students are expected to conduct themselves professionally and respectfully. This includes classroom behavior towards fellow students, teaching assistants, and instructors. Any misconduct will be reported to the Dean of Students for appropriate disciplinary action on the first offense. **This is a Zero Tolerance Policy.**

Threatening behavior by students will result in immediate reporting to the Dean of Students. University policies against such behavior can be found in http://policy.web.arizona.edu/threatening-behavior-students

This Code of Conduct applies to all interactions related to this course including computer forums, office hours, meetings with teaching assistants, and interactions between students outside of the classroom.

**Grading**
Grades will be determined via two different independent mechanisms. You will receive the higher of the two grades.

**Grading Mechanism #1**
The grading structure of this course rewards consistently good performance. To do that, poor performance is doubly counted.

M1 = Midterm Exam #1
M2 = Midterm Exam #2
Q = Class Quizzes
P = Programming Projects
F = Final Exam (cumulative)

Raw Score = \( M1 + M2 + Q + 3 \times P + 2 \times F + (\text{The two lowest of } M1, M2, Q, P, F) \)

Maximum Raw Score = 1000, given maximum of 100 on each of M1, M2, Q, P, F

The Raw Grades will be curved to assign A, B, C, D, E final grades subject to the following constraints:
- At least 10% will receive an A.
- At least 25% will receive an A or B.
- At least 40% will receive an A, B, or C.
- No inversions.

There are no set grade ranges. For instance, greater than 90% does not guarantee an A. Similarly, less than 60% might be a C (or higher). It depends on the final curve of Raw Scores.

**Grading Mechanism #2**
The Raw Score for the second mechanism will not count lower scores twice.

Raw Score = \( M1 + M2 + Q + 3 \times P + 2 \times F \)

Using this raw score, curved grades will be assigned subject to the same constraints as in the other grading mechanism.

**Mailing List and Piazza**
Announcements will be sent out via email to your UA email address and/or posted to Piazza. You are responsible for checking both of those daily.

**Academic Integrity**
Violations of academic integrity are very serious problems, and they will be punished severely. Simply put, violations of academic integrity involve receiving or giving unapproved aid in completing coursework. Violations can also include any misrepresentations of who did what work.
The least-effort way to cheat in Computer Science courses is to copy the work of another, or to make your work available to others to cheat. Another easy way to cheat is seek unapproved assistance from friends, family, classmates, and internet strangers. All such efforts will result in recommendations of severe punishment.

If you would like to seek assistance on coursework, seek the instructor’s permission in writing first. Without that permission in writing, the assistance would constitute a violation of academic integrity.

**Violators of academic integrity should expect to receive a failing grade (E) for the course. In addition, severe violations will to not have the ability for a Grade Replacement Option (GRO) for the course. This effectively makes it impossible to become a Computer Science major.**

Please consult the following for details of how the university handles violations of academic integrity: [http://deanofstudents.arizona.edu/policies-and-codes/code-academic-integrity](http://deanofstudents.arizona.edu/policies-and-codes/code-academic-integrity)

Do not turn in “malware” as a prank. (“Malware” is software that intentionally does harm to a computer, computer data, computer networks, etc.) Malware is a federal crime (see [https://www.fas.org/sgp/crs/misc/97-1025.pdf](https://www.fas.org/sgp/crs/misc/97-1025.pdf)). The instructor will request permanent expulsion from the university for any student who submits malware. The instructor will further suggest that the university refer the situation to the proper law enforcement agencies.

**Seeking Help**
We encourage you to seek help, but within the confines of not violating academic integrity policies:

- Help from the instructor or teaching assistants is always OK.
- Questions posted to Piazza are encouraged, although care should be taken to not reveal a (partial) homework solution in the process.
- Responses posted to Piazza are encouraged, although care should be taken to not reveal a (partial) homework solution in the process.
- Requests for solutions posed anywhere else are almost certainly violations of academic integrity.

**Sharing**
Some of you may create work that would be generally helpful if shared with other students. (For example, extra test cases.) Of course, you don’t want to violate any rules by sharing. Therefore, please check with the instructor or a teaching assistant before sharing an artifact with others. If approved, share it openly via Piazza so that everybody benefits. (We do not want a situation where some benefit in a way that gives them an advantage.)
Accessibility and Accommodations:
(http://drc.arizona.edu/instructors/syllabus-statement)

It is the University’s goal that learning experiences be as accessible as possible. If you anticipate or experience physical or academic barriers based on disability, please let me know immediately so that we can discuss options. You are also welcome to contact Disability Resources (520-621-3268) to establish reasonable accommodations.

Please be aware that the accessible table and chairs in this room should remain available for students who find that standard classroom seating is not usable.

Instructors are encouraged to provide appropriate individual flexibility to all students. When disability-related accommodations are requested, instructors should consult with DRC staff to identify strategies or accommodations to provide access.

Subject to Change
This syllabus is subject to change as deemed appropriate by the instructor, with a 3-week notice.
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