CSCE 251, Sec 700: UNIX Programming

University of Nebraska – Lincoln

Spring 2020

Instructor: Garrett Wirka E-mail: Through Canvas

Course Location: Online Website: https://canvas.unl.edu/

Course Description

This online course introduces the basics of the Unix operating system, including commands and script programming. The goal of this course is for you to become familiar with Unix, to learn the art of scripting, and to support other courses in programming languages, data structures, and operating systems.

The topics covered in this course include: Unix history, accessing Unix systems, different programs/utilities found in Unix, the Unix file system, file processing, ownership and permissions, editing files with vi and emacs, filters and pipes, wildcards and regular expressions, command shells, AWK programming, Unix processes, and shell scripting.

Required Materials

There are no required materials for this course.

Online Course

This course is an online-only course. There will not be any regular meeting times. All materials will be posted to Canvas. You are responsible for checking Canvas regularly to keep up with any information and content that is posted. If you have any problems or questions, please feel free to contact the instructor via Canvas.

Course Objectives

After you complete this course, you will have:

1. Developed a good understanding of the Unix operating system

2. Gained an understanding of and experience with basic Unix commands and the bash programming environment
3. Used regular expressions and gained an understanding of AWK programming
4. Obtained a basic understanding of Unix processes
5. Perhaps most importantly, taken your first steps towards learning effective shell scripting

Course Structure

Homework Assignments

There will be three required assignments to complete during this course. These will be used to help you gain hands-on experience with Unix, Unix programming, and shell scripting. In total, assignments are worth 55% of your final grade, though they may not necessarily be weighted equally.

Assignments may be composed of written questions, scripting exercises, or some combination of the two. The solutions to written work must be submitted as a text file, and scripting exercise solutions as shell scripts. More detailed instructions will be given with the individual assignments. Both text files and scripts must be submitted via handin (`cse.unl.edu/handin`). Scripts will be graded using a webgrader (`cse.unl.edu/~cse251/grade`), which you will have access to in order to verify your solutions. It is strongly recommended that you take advantage of this.

Lastly, constructive collaboration on homework assignments is encouraged. All students are expected to do and submit their own work on homework assignments, though you are allowed to ask each other questions and bounce ideas off of one another, especially for the purpose of debugging. **If you collaborate with another student, prominently indicate their name(s) in your solution (commented out, in the case of scripts)**. Failure to do so will leave you vulnerable to accusations of violating the department's academic integrity policy, discussed below.

Quizzes

There will be 3 quizzes for this course. Each quiz is worth 10% of your final grade. These quizzes will all be multiple choice and taken via Canvas. Each quiz will have questions randomly selected (and in random order) from a large question bank, so that no two quizzes will be the same. The quizzes will be open everything (books, notes, etc.). During the quizzes, any communication regarding the quiz contents with other students is strictly prohibited. You must complete the quizzes by yourself. The three quizzes cover material from lectures 1–9, 10–14, and 15–22 respectively.

Final Exam

The final exam for this course will be open all semester as a quiz on Canvas, but must be completed by 11:59:00 pm on **Wednesday, May 6th**. The final exam will essentially be a big quiz (worth 15% of your final grade) with the questions randomly drawn from the question banks of

the previous 3 quizzes. Some of the questions may be ones you've had before, while others may be new. There will be 60 questions total, and you will have 2 hours to complete it.

Grading Policy

Your final grade for this course will be determined according to your grades on quizzes, homework assignments, and the final. Each quiz will be worth 10% of your grade, and the final will be worth 15%. The homework assignments will make up the remaining 55% of the points, but they may be weighted differently.

Computing letter grades starts with this base scale, where s is the final score:

$$\begin{aligned} s \geq 90\% &\Rightarrow \text{A} \\ 80\% \leq s < 90\% &\Rightarrow \text{B} \\ 70\% \leq s < 80\% &\Rightarrow \text{C} \\ 60\% \leq s < 70\% &\Rightarrow \text{D} \\ s < 60\% &\Rightarrow \text{F} \end{aligned}$$

You will receive a "+" with your grade if the last digit of your score is ≥ 7, and a "$-$" if the last digit is < 3. I will scale up from this base scale if warranted. So if you get an 87% in this course you are guaranteed at least a B+ (similarly, an 82% guarantees at least a B-).

Course Policies

Late Assignments / Quizzes

All due dates in this course are at exactly 11:59:00 pm on the specified date. CSE's system clock, which timestamps your submissions, is the official clock for this course. Late submissions for quizzes and the final will not be accepted. Late submissions for assignments are allowed within **one week** of the deadline, for at most half credit.

Late Pass

Life happens, and sometimes deadlines can't be met. To accommodate life, each student may use a late pass for one **homework** during this course, which will allow for one assignment to be submitted up to one week late with no penalty. This pass will be automatically applied if you submit an assignment within a week after the deadline has passed, provided you have not yet used your late pass. This late pass **may not** be used on any of the quizzes or the final.

Academic Integrity

All homework assignments, scripts, and quizzes must be your own work. No collaboration with fellow students, past or current, is allowed unless otherwise permitted. The Computer Science & Engineering department has an Academic Integrity Policy. All students enrolled in any computer science course are bound by this policy. You are expected to read, understand, and follow this policy. Violations will be dealt with on a case by case basis and may result in a failing assignment or a failing grade for the course itself. The most recent version of the Academic Integrity Policy can be found at `http://cse.unl.edu/academic-integrity-policy` .

It is worth noting that all scripts submitted in this course will be compared with those of other students.

Accommodations for Disabilities

Students with disabilities are encouraged to contact us for a confidential discussion of their individual needs for academic accommodation. This includes students with mental health disabilities like depression and anxiety. It is the policy of the University of Nebraska-Lincoln to provide individualized accommodations to students with documented disabilities that may affect their ability to fully participate in course activities or to meet course requirements. To receive accommodation services, students must be registered with the Services for Students with Disabilities (SSD) office, 117 Louise Pound Hall, (402) 472-3787.

CSE Anonymous Contact Form

The CSE Department has an anonymous contact form that you may use to voice your concerns about any problems in the course or department if you do not wish to be identified. The form can be found at `http://cse.unl.edu/contact-form` .

Additional Information

It is CSE Department policy that all students in CSE courses are expected to regularly check their email so they do not miss important announcements.