

# CPSC361A: Systems Administration

Fall 2019

Class: MW, 2:20pm-3:50pm in Trexler 173

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Trexler 365A

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Office Hours: MW 11:00am-12:00noon; Th 2:00-3:30pm;

and by appointment.

## Syllabus

### Course Description

In this course we will learn to install Linux on the computer, and learn about system administration tasks for stand-alone computers. We will also learn various Unix utilities and shell scripting to help us with the system administration tasks. In the second half of the semester, we will learn to network together a collection of computers and learn about installing, configuring and managing network applications such as the Network File System (NFS) and the Network Information System (NIS). We will also learn about packet filtering for various security and load sharing tasks such as creating a firewall and forwarding network requests for applications to an internal computer.

### Prerequisites CPSC

170.

### Intended Learning Outcomes

By the end of the course, successful students will be able to:

1. manage user accounts, user privileges, and various resources on the computer,
2. write scripts in a scripting language to automate common systems administration tasks,
3. perform routine maintenance of the system, e.g., install operating system updates, schedule and manage backups, restore user data from a backup, etc.,
4. set up a computer to be a part of a network,
5. troubleshoot network connectivity issues,
6. install, configure and manage various network applications, and
7. manage incoming and outgoing network traffic.

### Mechanics

The course will meet in class for three hours during the week. There will be one test (on **Wednesday, October 9**) in class during the semester. **The final exam is scheduled for Tuesday, December 10, 2:00 -- 5:00pm.**

Make-up tests will be available *by pre-arrangement only* in case of scheduling conflicts. After the test, make-ups will be available only in case of documented medical emergencies.

Besides the exams, there will be quizzes in class, regular homework assignments, and a co-curricular requirement. You are expected to keep detailed notes from class.

This course expects you to spend *at least* 12 hours of work each week inside and outside of class.

**Quizzes:** There will be a short pop quizzes; the quizzes will always be at the beginning of class. *You will not be allowed to take the quiz if you are over 5 minutes late to class.*

**Homework:** Homework assignments will be posted at the course website. All homeworks are due electronically by the beginning of class on the posted due date.

**Notes:** You are expected to keep detailed notes on what is done in class, including the lecture portion and your activities. When recording your activities, note the goal of your activity, what you did and whether it was successful or not. Your notes for the week need to be typed up as plain text documents and emailed to me by 5pm on Friday of that week.

**Co-curricular Requirement:** The Mathematics, Computer Science and Physics department offers a series of discussions that appeal to a broad range of interests related to these fields of study. These co-curricular sessions will engage the community to think about ongoing research, novel applications and other issues that face these disciplines. Each student is required to attend at least *three* of these sessions, and turn in a short paper describing the contents of the session, and his/her *critical reflections* about the topic and content. These papers are due in class within a week of the session. A paper submitted beyond a week from the event being discussed in the paper will not be accepted. The [MCSP Conversation Series website](#) has the schedule of talks in the series.

## Grading

The final grade will be computed based on the grades in the quizzes, notes, midterm, the final exam, homeworks, and co-curricular activities according to the following weights.

Component	Weight
Co-curricular	4%
Class Notes	25%
Homework/Quizzes	21%
Midterm	25%
Final Exam	25%

The final course grade will be calculated as follows:

< 60	60-62	63-65	66-69	70-72	73-75	76-79	80-82	83-85	86-89	90-92	> 92
F	D-	D	D+	C-	C	C+	B-	B	B+	A-	A

## Class Attendance and Policies

Regular attendance in class is highly recommended. Regardless of attendance, students are responsible for all material covered or assigned in class.

Cell phones should be kept in your backpacks or pockets (essentially, out of sight), and turned to the silent mode throughout the duration of the class. Please do not remove your cell phones until you are outside the classroom/lab. Similarly, during office consultations or consultations in the lab (even when it is not during regular class time), your cell phones should be out of sight and in the silent mode.

If you use an electronic device such as a tablet or a laptop for note-taking or to read the textbook, the content that is open on the screen should be strictly restricted to documents and pages of relevance to the class. For example, you should not have any social media websites open in your browser window, even if it is in a tab that is not currently in focus.

### Academic Integrity

Students are expected to adhere to the Academic Integrity policies of Roanoke College. All work submitted for a grade is to be strictly the work of the student unless otherwise specified by the instructor. The policies as outlined in the Academic Integrity handbook will be enforced in the course.

Graded programs are subject to the Roanoke College Academic Integrity policies. Copying a program or a portion of a program (even a single line) or reading another person's program to obtain ideas for solving a problem is plagiarism. Other examples of integrity violation include writing code for someone else, using code written by someone else, telling someone else how to solve a problem or having someone tell you how to solve a problem (and using their method). These cases apply to any work that is handed in for a grade under the instructor's assumption that the work is your own. Unless specified otherwise by the instructor, discussion among students should be limited to general discussion of concepts and language details, not specific aspects of a solution to the assigned problem.