

CPSC 361: System Administration

Dr. Anil M. Shende
365A Trexler Hall
Tel: 540-375-2341 email:
shende@roanoke.edu

Class Meetings: MW: 3:30pm - 5:00pm, Trexler 363 (and Trexler 173)

Office Hours: M: 2pm - 3pm; T: 10:30am -11:30am; W: 10:30am - 11:30am; 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.

Text: *Unix and Linux System Administration Handbook*, 5th edition, by Evi Nemeth, Garth Snyder, et. al

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 3 hours during the week. There will be one test in class on **Wednesday, October 6, 2021**. **The final exam is scheduled for Monday, December 13, 2021 from 6:30pm to 9:30pm.**

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

Make-ups for quizzes, the midterm and the final will be available only in case of documented medical emergencies.

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

Quizzes: Quizzes will be in class every Monday at the beginning of class.

Notes and Homework: Notes from class for each week are due by 10pm on the Saturday at the end of the week. There will be some homework assignments, and they will be due along with the notes. All notes and homework assignments must be typed (either in plain text, LaTeX or your choice of typesetting software. The course website has a tutorial on LaTeX.) Late notes and homework assignments will not be accepted.

Co-curricular Requirement: Besides the quizzes, homeworks and exams, there is a 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 weights for the various components will be:

Co-curricular	4%
Quizzes	20%
Notes/Homeworks	40%
Midterm	16%
Final	20%

The final letter grade will be computed according to the following scale:

< 60	60 – 62	63 – 65	66 – 69	70 – 72	73 – 75	76 – 79
F	D-	D	D+	C-	C	C+
	80 – 82	83 – 85	86 – 89	90 – 92	> 92	
	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 his/her 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.

COVID-19 Related Requirements and Exceptions

Covid-19 Policy If you have a temperature of 100.4° F or higher or other coronavirus symptoms, don't come to class. Call Health Services IMMEDIATELY. Do not come to class or go to any public area on campus. Do keep up with all readings, assignments, and deadlines. In order for your absence to be excused, you must give Health Services permission to notify

me that you have consulted them about coronavirus symptoms. If Health Services informs you that you should isolate and not attend class for multiple days or weeks, inform me so that we can make a plan to keep you current in the course. All absences caused by consultation with Health Services about coronavirus symptoms or isolation ordered by Health Services will be excused, but you will need to do the work and graded assignments.

Masks : The College has issued a mask mandate for the start of the semester that requires masks to be worn in indoor common spaces such as our classroom. *In this class, we will wear masks when indoors throughout the semester.* If you arrive without a mask, you will not be allowed to stay and may lose credit for attendance or in-class work. The Bookstore sells masks if you need to make a quick purchase.

Please do not bring any food or drinks into the classroom.

If the college goes online mid-semester, we will continue meeting synchronously, at our usual class time, via zoom. I will work with you on an individual basis to make sure that you have all the appropriate software, etc. to complete all the assigned work. I will also make every effort to accommodate any logistical or personal difficulties you may have in case we go online; please let me know of your difficulties, and I will work with you on an individual basis to resolve them.

If I need to make modifications to the syllabus during the semester I will make the changes only after discussing them with the class.