Virginia Commonwealth University

CMSC 257: COMPUTER SYSTEMS
Section: XXX

Fall 2022 Syllabus

4 Credit Hours

(Last Modified on: 8/21/2022)

Instructor Information

Name:	Ahmet Sonmez
Email:	sonmeza@vcu.edu
Office:	Engineering East 4255
Zoom (for office hours):	XXX
Discord (labs and help sessions):	**Please register to our Discord channel using section specific link: XXX** Please see the instructions Schedule will be posted on Canvas
Phone:	XXX-XXX-XXXX (Mobile number for emergencies, you can also text)
Class Meetings:	**Lectures:** **Labs:** More information about the labs will be posted on Canvas by the second week.
Office Hours:	T-Th 2:30PM to 3:30PM at my office and through Zoom. First come first served. or By appointment on Zoom

Course Information

Class Format:	XXX

Prerequisites: CMSC 256 Data Structures and Object-Oriented Programming
With a minimum grade of C

Textbook: Computer Systems: A Programmer's Perspective 3rd Edition

ISBN-13: 978-0-13-409266-9

Second edition will also work fine. International/Global editions are different, so please do not purchase or rent international or Global editions.

Course is mostly aligned with the textbook; however, we are also covering an introduction to C programming which is not covered in the textbook. You can find the mapping of the course content and textbook within the schedule document. I will also assign some of the homework assignments from the textbook.

Catalog Course Description

Semester course: 3 lecture and 2 laboratory hours. 4 credits.

Prerequisite: CMSC 256 with a minimum grade of C. Topics include UNIX essentials; system programming in C; machine-level representation and organization of programs/data, arrays and pointers; types, structs and unions; strings; bit/byte operations; memory management; shell programming; input/output, including file handling; debugging; signals; network programming using sockets; program concurrency using forks and threads; experiments on program performance and optimization techniques.

Expected Learning Outcomes

After completing this course, students will be able to:

1. Demonstrate a working knowledge of C programming language
2. Work effectively with the UNIX/Linux platform
3. Demonstrate system programming skills
4. Effectively Use Linux APIs and functions

ABET Criteria Addressed

- Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.
- Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.
- Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.

- Apply computer science theory and software development fundamentals to produce computing-based solutions.
- Other ABET requirements addressed:
    - Substantial coverage of at least one general-purpose programming language
    - Exposure to operating systems, security, and parallel and distributed computing
    - The study of computing-based systems

Online Learning Considerations

Many students take an online class because they believe it will be “easy” but survey responses from students who have taken an online class described the experience as “harder than expected.” This is due to the unique nature of the online environment. It is important to keep up with the class content (readings & videos) as well as the assignments. Check the course schedule regularly to familiarize yourself with the work and due dates.

Technology Requirements

- Access to a personal computer (with Mac or Windows Operating System) and the Internet for major amounts of time for this course. For our current system requirements and recommendations, see: https://egr.vcu.edu/admissions/accepted/computer-recommendations/
- An Internet browser that is compatible with Canvas. To see if your browser is compatible with Canvas, visit the Canvas Browser Checker webpage: https://community.canvaslms.com/t5/Canvas-Basics-Guide/What-are-the-browser-and-computer-requirements-for-Canvas/ta-p/66
- Speakers to hear sound for videos and audio files.
- Access to word processing software such as Microsoft Word or Google Docs. Please note that any software that you use must be able to save files as Microsoft files (example *.doc or *.docx) or PDF.
- Adobe Acrobat Reader or an equivalent PDF reader.
- You will need to install and use Respondus Lockdown Browser for taking tests. https://web.respondus.com/he/lockdownbrowser/resources/
- A webcam and microphone on your computer. It is your responsibility to ensure your computer systems allow for real time video conferencing and video and audio recording. You will take tests with Respondus monitoring, which requires camera and microphone on the system. https://web.respondus.com/wp-content/uploads/2020/07/RLDB-QuickStartGuide-CanvasNewQuizzes-Student.pdf
- You will need VPN to access to work remotely on servers: https://ts.vcu.edu/software-center/security/vpn/
  If you are on campus VPN connection is not necessary
- You will need access to compile server to work on your projects and complete labs: https://ts.vcu.edu/askit/research-math-science/technology-services-research-servers/compile-server---linux/

· You may need to install and use other software on your computer such as:

a. WinSCP or FileZilla to transfer files between server and your personal computer
b. PuTTY or another ssh client as a terminal emulator.
c. Oracle VM VirtualBox or another virtualization software to virtualize a Linux operating system on your personal computer. This is not necessary if you prefer to work on Compile Server.

Engineering & VCU Technology Resources:

- **VCU provides a lot of software available for students to download to their personal computers.** For a list of software and the specifics for each, see: https://ts.vcu.edu/software-center/. In particular, Microsoft Office is available free to students.
- **VCU is using Canvas.** See the Canvas Student Guide at this link: https://community.canvaslms.com/t5/Student-Guide/tkb-p/student
- **VCU's Technology Services (TS) provides support for "central IT" services**. If you have a technical issue with any of the following services, please submit a ticket with VCU Technology Services at https://itsupport.vcu.edu/ or call (804) 828-2227. VCU TS maintains and supports these services and will be able to provide assistance to you.
    - VCU Cisco VPN
    - 2Factor or Dual Authentication (DUO)
    - Canvas
    - Gmail or other Google Apps
    - Zoom videoconferencing
    - VCU App2Go (Application server)
    - Resetting VCU password
- **For IT issues related to College of Engineering teaching and research, email egrfixit@vcu.edu**

Technology Support

If you have persisting technical problems with VCU services, contact the IT support center itsc@vcu.edu or 804-828-2227

Grading Assessment

Homework Assignments	20%

Labs	20%
Projects	30%
Tests	30%

Grading Scale

A	90% - 100%
B	80% - 89%
C	70% - 79%
D	60% - 69%
F	Below 60%

Grading Policy

Unexcused late programming projects will be penalized 5% for every 24 hours beyond the deadline, for up to 5 days. No projects will be accepted after 5 days. Late homeworks will not be accepted. Late labs will be accepted within one week with 5 % penalty per day. A test cannot be made up unless 1) *prior* notice is given, and 2) extraordinary circumstances are involved. Any discrepancies in the grading must be brought to my attention in writing within 7 days of receiving the grade.

Academic Dishonesty

I will strictly enforce rigorous standards of academic integrity in all aspects and assignments of this course. For the detailed policy of Virginia Commonwealth University regarding the definitions of acts considered to fall under academic dishonesty and possible ensuing sanctions, please see the Student Conduct Code https://conduct.students.vcu.edu/student-code-of-conduct/Academic dishonesty is treated very seriously and can result in failure of the course, or expulsion from the university.

In computer science courses, we recognize that interactions with classmates and others can help facilitate the learning process. However, there is a difference between enlisting the help of another and submitting the work of another. All work submitted must be your own work.

The following list include examples that indicate the kinds of collaboration that are acceptable and unacceptable for this course. If you are unsure about a behavior, ask your instructor

Acceptable:

- Discussing the assignment in general terms with another student, including a discussion on how to approach the problem.

- Using the web for instruction, reference and solutions to technical problems, but not for outright solutions to the assignments.

- Whiteboarding solutions to labs or assignments with others using diagrams or pseudocode, but not actual code.

Unacceptable

- Working as a partner (splitting the workload) with another student on an assignment

- Showing another student your solution to an assignment

- Viewing another student's solution to an assignment

- Providing or making available solutions to individuals who might take this course in the future, such as publicly posting the solution on GitHub.

- Decompiling the instructor's solutions that were provided as an example

- Having another person (current student, former student, tutor, friend, anyone)., " walk you through, " how to solve an assignment

- Discussing programming assignments in any public forum

- Examining or using solutions to class assignments that you might find on the web.

Be careful when providing help to your fellow students. Refer to other students to class resources (lecture examples, the textbook, course website, or emailing to instructor). You might not share your solution with others. You must also ensure that your work is not copied by others by not leaving it in public places, emailing it to others, posting it on the web, etc.

Assessment Details

NO Assignments will be accepted through emails. Assignments must be submitted through Canvas or Gradescope as indicated in the assignment description.

Programming Assignments
There will be 3 programming assignments. All programming assignments must be submitted to Gradescope as specified on or before the due date specified.

Homework

Homework assignments will reinforce the material covered in class. Homework assignments will be in different forms. Some of them might require you to do research or programming and some may require you to complete a course from another online platform.

Labs
There will be about 10 labs throughout the term.

Tests
There will be three tests during the semester. Tests will be online, on student computer. A test cannot be made up unless 1) *prior* notice is given, and 2) extraordinary circumstances are involved.

General Instructions

Plagiarism and Cheating: Do your own work. Plagiarism applies to source code as with any other intellectual property. Plagiarized code is a form of cheating and will be treated as such. Instances of plagiarism and other violations of the VCU Honor Code will be reported to the VCU Honor Council. Any student(s) suspected of cheating or violating the VCU Honor Code will be turned over to the VCU Honor Council – the instructor has no discretion in these matters.

Cheating IS NOT TOLERATED. All programs/assignments/etc. are to be individual efforts. This does not preclude the discussion of techniques to be used or ideas for algorithms. In addition, it is permissible to help each other to find syntax errors or minor logic errors. However, the actual correction of such errors is up to the author of the program.

Where to post questions: Questions of general interest should first be posted to the discussion board (only if they have not already been answered) so that other students can benefit from the response or have an opportunity to respond to your question. Only questions of a private nature should be communicated to me through email. When sending a message to me, please allow a minimum of 24 hours for a response. Most of the time I will respond much faster, but sometimes meetings and other courses take over my schedule

The New Normal

Follow the covid related rules and information from : https://together.vcu.edu/students/

Inclusive Statement

I want you to know that I am grateful for your presence and input in our classrooms (whether in person or online). I appreciate and welcome you regardless of your immigration status, country of origin and/or citizenship, race, ethnicity, religious affiliation, gender/sex, gender identity, sexual orientation, age, or disability. Thank you for enriching our world, sharing your vital

experience, and contributing to the diversity that makes our intellectual community vibrant and evermore creative.

VCU recognizes that individuals have the right to use names other than their legal name, to identify with the gender they know themselves to be and to utilize the pronouns that best fit them. Please visit myname.vcu.edu to update your information. Entering a name of use other than your legal name into the VCU system comes with certain additional responsibilities. Specifically, it is important that you inform your faculty and others (such as recommenders) if you are using a name other than your legal name so that they can properly identify you if they receive communication about you which utilizes your legal first name (for example, if they are asked to provide recommendations/references for you).

VCU Syllabus Statement

Students should visit http://go.vcu.edu/syllabus and review all syllabus statement information. The full university syllabus statement includes information on safety, registration, the VCU Honor Code, student conduct, withdrawal and more.

Use **VCU Libraries** to find and access library resources, spaces, technology and services that support and enhance all learning opportunities at the university.