

# Spring 2022 – CSC 400R Section 1

Professor: Perry Kivolowitz  
Office: Straz 090 - All 1:1 contact by Internet  
Office Hours: Almost anytime, Day or Night – just make an appointment when it is convenient for you (and I). To make an appointment, consult my Google Calendar.  
Instructions below.  
Contact Info: [pkivolowitz@carthage.edu](mailto:pkivolowitz@carthage.edu)  
Meetings: Section 1 meets TR 14:40 to 16:00  
Text: All readings are online and free of charge

## Software Security

This course is experimental. How experimental? See Grading.

In a way, we will be teaching each other.

I will be experiencing this course for the first time, same as you.

Much of the material is about avoiding bugs (which give rise to exploitable defects). What I have going for me (and what I have to offer you) is my unnaturally well-developed debugging skills... these will be taught with a different spin. That is, software security as taught in this course, is a kind of proactive debugging.

## COVID

I expect to present this course fully online at least until after Spring Break. Possibly the entire term.

*Should we meet in person, N95 or KN95 masks are required. Anything less than N95 or KN95 such as cloth masks, surgical masks and gaiters are unacceptable. I have N95 masks for anyone who doesn't have them. These are expensive (at more than \$1 each), and I pay for them myself as evidence of my seriousness on this point.*

*Every student is expected to extensively contribute to every class.*

*All cameras will be always on.*

## Topics covered

Terminology	Thinking Like an Attacker	Threat Modeling Overview
Secure Design Principles	Pointers and Strings	Numeric Errors
Directory Traversal	Exceptions	Serialization
Intro to Injection Attacks	SQL Injection	Command Injection
Code Injection	XML Injection	Web Attack Background
Cross Site Scripting	Cross Site Request Forgery	Session Management Attacks
Redirection Attacks	Mobile Attack Background	Mobile Attacks
Address Space Randomization	Memory Safety Checking	Fuzz Testing

## A comment about equity and inclusion

I completely subscribe and agree with the Carthage statements on equity and inclusion. See them here: <https://www.carthage.edu/equity-inclusion/mission-statement/>

## Accessing Schoology

You are required to be up to date on any announcements or postings on our class learning management system whether said announcement is made in class.

## Class Recordings

Virtual class sessions will be recorded.

You are implicitly agreeing to be recorded by attending my class.

## Accessing the Class Text

This class makes *extensive* use of readings. These will be found online and are free of charge.

## Grading

This course is experimental. This being its first offering, grading is based upon your participation and contribution to the class experience.

<i>Component</i>	<i>Weight</i>
Attendance	50
Participation	50

Quizzes *might* be given. If given, the above weightings will be adjusted.

Participation is defined as including but not limited to:

- Sharing the load in in-class reading
- Asking questions
- Answering questions
- Brings news and article to class and leading a discussion of them
- Leading class discussions

## Workload

You can expect to read at least 2 short papers every week. You will be required to discuss them.

You can expect to watch at two short videos every week. You will be required to discuss them.

All projects will be done as a class. You will take turns leading the team.

I expect the workload to be lower than my Computer Organization, which all of you have taken or will take.

## Computers

The projects will use a VM. VirtualBox will be required. The VM is Intel-based. If you have a Mac based on the M1, you *might* be out of luck.

## Advising and accommodations

The Carthage Advising Center offers a variety of services and accommodations to students with disabilities, based on appropriate documentation, nature of disability, and academic need. To initiate services, students should meet with Diane Schowalter at the start of the semester to discuss reasonable accommodation. After meeting with Diane Schowalter, students in need of accommodations should also speak with individual faculty members from whom accommodations are sought to communicate their needs and make requests in a timely manner.

If a student does not request accommodation or provide documentation, the faculty member is under no obligation to provide accommodations. You may contact Diane Schowalter at ext. 5802 or via e-mail at [dschowalter1@carthage.edu](mailto:dschowalter1@carthage.edu).

## A note about accessibility

Carthage College strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers due to your disability (including mental health, learning disorders and chronic medical conditions), please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, you also need to register with Diane Schowalter in Learning Accessibility Services ([dschowalter1@carthage.edu](mailto:dschowalter1@carthage.edu)).

## Academic Success and Health

Good health can help you achieve academic success. The Health and Counseling Center (HCC) supports students by addressing physical, mental, and emotional well-being. All services are free

and confidential and are provided by experienced and licensed professionals. Services are available to all full-time, undergraduate students.

TARC 2240 | 262-551-5710 | <https://www.carthage.edu/campus-life/health-counseling/>  
Mon-Fri 8:00am-4:00pm

## My office hours

I have always been very available to students. In the era of COVID I am even more available. Just make an appointment when it is convenient for you, using Google Calendar. By adding my calendar to yours, you'll see when I am available.

Select show co-worker's schedule and enter "pkivolowitz". When my schedule is visible, pick a blank spot. Click on the blank spot you want and enter an informative title and adjust the time carefully. THEN MAKE SURE YOU SEND ME AN INVITATION. Do this by entering my email address where guests are specified. Make sure you click the "send invitation" button shown to you when you've saved the meeting.

No office hour will be offered face-to-face in person. All contact will be by digital means, even if it means we're separated by only my office wall.

## Possibility of changes made to the course

Please note the above schedule, policies, procedures, and assignments in the course are subject to change in the event of extenuating circumstances, by mutual agreement and / or to encourage better student outcomes.

## Concerning learning outcomes

Students may vary in their competency levels of any stated outcome. Students can expect to achieve stated outcomes *only if* they honor all course policies, attend classes regularly, complete all assigned work in good faith and on time and meet all other course expectations of them as students.