CS 493
Secure Software Systems
Preliminaries

Dr. Williams
Central Connecticut State University

Agenda

- Get to know each other
- Walk through syllabus
  - Course description & objectives
  - Grading
  - Assignments
  - Class participation
  - Course calendar

Getting to know each other

- Name
- Prior experience with security, programming/development background
- What sort of job do you want after graduation
- Something unique about yourself

Basics

- **My office:** MS 303
- **Phone:** 860-832-2719
- **Office hours:** MW: 1:00-2:30; TR 1:30-2:30; and by appointment.
  - **Please note my office hours may have changes any particular week, any changes will be noted on Blackboard**
- **e-mail:** cwilliams@ccsu.edu
- **Course website:**

  Blackboard

Text book and references

- **Required books:**
  "Secure Software Design" by Richardson and Thies, 2013.
- **Optional books:**

  "SCFM: Secure Coding Field Manual: A Programmer's Guide to OWASP Top 10 and CWE/SANS Top 25" by Wear, 2015.

What is this class about?

- Making software less vulnerable to security threats
- Examining common ways vulnerabilities are introduced/exposed
- Learning ways to try and catch and eliminate vulnerabilities in:
  - Design
  - Development
  - Run-time

Course objectives

At the end of this course you should have:

- An in depth understanding of the different sources of security threats that impact software systems
- Understand different architectural approaches that can be used to create secure software systems
- Increase understanding of how to execute different types of software analysis to ensure more secure software

Course objectives cont.

- Develop an understanding of language-based approaches to building secure software
- Understand how run-time enforcement mechanisms can protect against software insecurity
- The course will culminate in a large final project that will require working on teams and combining knowledge developed throughout the course

➢ **Result: Not only do you know how to create secure applications, you are also more marketable!**

Grading for the course

Letter grade will be calculated according to the following table:

A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
95-100	90-94	87-89	84-86	80-83	77-79	74-76	70-73	67-69	64-66	60-63	0-59

Percentage of grade:	
Assignments	30%
Midterm	20%
Final project	30%
Final exam	20%

- Basic philosophy:
  - Assignments your chance to learn, effort rewarded
  - Exams test that you learned from your mistakes
  - Final project demonstrates deeper understanding

Assignments (30% of grade)

Assignments (4 tentatively)

- Hands on problems based on lectures and reading
- A mix of individual and group work
  - Start work early!
- All assignments are due at 11:59pm on the day that they are due unless told otherwise
- All assignments must be submitted through Blackboard
- Keep pace with lectures and assignments otherwise it will be difficult to catch up

Final project (30% of grade)

- Will work in teams
- You will be given a project that was created without thinking specifically from a security perspective, your job will be to apply what you've learned that demonstrates:
  - A detailed understanding of the concepts you have learned in the course
  - Knowledge of work in the area
  - And how to implement/apply them
- Submission will be in 2 checkpoints in addition to the final submission

Final project – final deliverables

- Write up explaining how your project exemplifies the concepts in this course
- Presentation slides
  - You will need to give an oral presentation of your project the final week of class
  - Final projects will be due at the **beginning of class** Monday, 12/2

Late work

- Late work (assignments, project deliverables) is accepted with a penalty of **10% per day** late
- No work will be accepted after the final exam
- Be sure to keep pace and start work early to avoid getting into trouble

Exams (40% of grade)

- 1 Midterm (20% of grade)
  - Tentatively Monday, October 14th
- Final (20% of grade & cumulative) will be at the university's scheduled time:
  - Wednesday, December 11th 5:30-7:30pm

Attendance

- I expect students to attend class regularly not doing so **will** impact your grade
- For each absence over 4 will reduce your overall final letter grade by $1/4^{th}$ (unless university excused)
- If you miss class it is **your responsibility** to get announcements and determine what you missed from your classmates
- In the event of a weather emergency that requires curtailment or cancellation of classes, listen to WTIC (1080 AM) or call (860) 832-3333

Common Sense

- No cell phones or texting doing so may result in me asking you to leave class in which case it will count as an absence for the day as well as impacting your participation grade
- Cheating will not be tolerated
  - Turning in someone else's work as your own
  - Allowing someone else to copy your work
  - Using a solution from a previous term or from the web
  - Plagiarizing
  - **Penalties for cheating go beyond just receiving a zero for the assignment and could result in penalties as harsh as failure of the course and an Academic Misconduct Report being filed**

Students with special needs

- Please contact me privately to discuss your specific needs if you believe you need course accommodations based on the impact of a disability, medical condition, or if you have emergency medical information to share. I will need a copy of the accommodation letter from Student Disability Services in order to arrange your class accommodations. Contact Student Disability Services, Willard Hall, 101-04 if you are not already registered with them. Student Disability Services maintains the confidential documentation of your disability and assists you in coordinating reasonable accommodations with your faculty.

How to succeed

- **USE OFFICE HOURS!**
  - Work through practice problems
  - Discuss some topic you are having difficulty with
  - Put simply, **if you are confused come see me**. While I have posted office hours, feel free to stop by anytime or make an appointment with me if you want to make sure I'm available at a specific time.
- **Do all of your assignments**. It is the best way to realize quickly if you are missing any important points so that you don't make similar mistakes on the mid-term and final exams.
- **Get involved** in lectures. Don't be afraid to ask for clarification or additional explanation, chances are if you are confused someone else is as well.
- **Pay attention to all of your feedback on homework and exams**

Keeping up with latest

- Blackboard will have
  - Full version of the syllabus
  - Announcements
  - Assignments
  - Lecture material
- GitHub will have
  - Code based examples

First “Homework” due Wednesday 9/4

- Submit through Blackboard a **head shot** of yourself and **GitHub id**.
- Please make it close enough that I can clearly make out your face