CMPS 485 Computer Security

Syllabus and Course Admin

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بسم الله الرحمن الرحيم

Outline for Today

- Course introduction
- Grading
- Policies

About the Instructor

- **Dr. Abdelkarim Erradi**
  - **Office:** Office 132 Female Engineering Building
  - **Phone:** 4403 4254

Office hours:
  - Female - **Tuesday 9am to 10am** at my office
  - Male - **Tuesday 12:15 to 1:15pm** at CSE Meeting Room BCR-E104
  - Other times are available **by appointment only** on Sunday or Tuesday before 2pm
  - You can talk to me **after** class if you have issues/questions
  - **Best way to contact me is by Email** erradi@qu.edu.qa

Three Main Course Goals

1. Apply the *security mindset*
   - A new way to think about and analyze systems

2. Experiment with *security tools*
   - Tools for attacks and defense

3. Learn *security fundamentals*
   - Core knowledge about the field

Not Course Goals

- Learn the entire field
  - Security is broad and covers too many areas

- Legal and economic impacts
  - We'll touch on these, but not focus

- Learn to hack/crack computers
  - This is not a hacking class

Quick Note on Ethics

- We will learn attack techniques and tools in this class

- To provide good defense, you need to understand attacks

- Do not use them against computers or networks you do not have *written* permission for

Prerequisites

- Required
  - Basic networking
  - Basic computer organization
  - Java/Python programming
- Useful
  - Linux usage
  - Operating systems
- Most Important
  - Desire to learn and experiment!

Why this Course?

- ?

=> This course **equips you with the skills** and best practices needed to protect computing systems from attacks

Topics	Chapter	Weeks
Cryptography	Online readings	4
Authentication & Authorization		2
Network Security: Port scanning, Network attacks, Protecting the Network		3
Web Security		2
Ethics and Legal Issues		1
Recent Cybersecurity Incidents and their Impacts		1
Student Presentations		1
Total		**14**

Textbook

- None

- Online resources will be provided.

Your Grade is Based on:

Quizzes	15%	5 Quizzes
Homework	20%	4 homework assignments
Review paper & Presentation	20%	
Midterm exam	20%	Week 7
Final exam	25%	QU Exam schedule

How to succeed in this course….

❑ Do your weekly assigned readings

❑ **Read the slides before you come to the class**

❑ **Experiments with security tools that will be introduced**

❑ **Attend and participate in class**

　❑ **Many of the exam questions are from the class explanation**

❑ Do all the assignments **yourself.** Actively contribute to your group work.

❑ Seek help when needed and ask questions (and do it EARLY): During Lectures & Come to office hours

Software we will use

- Kali Linux (Penetration Testing toolkit)

- Nmap port scanner

- aircrack-ng suite

- Wireshark

- Java or Python programming language (student choice)

GitHub will be used to deliver content and assignments

Check regularly!

https://github.com/cmps485f18/cmps485-content

Lecture slides, Demos and Assignments are there!

Communications will be by email

Important Notes

- Attendance… QU attendance policies will be enforced

  – Do not miss classes/labs

- **Start your assignments early!!!**

- This is a senior-level course and students are expected to learn independently as much as needed in order to complete the course requirements

  – Do not expect me to find/fix your code bugs

  – Do not expect me to find and fix your technical issues

  – I can only give you high level suggestions and guidance

No 'Free Riding' allowed

- 'free riders' (who do not contribute much) => not acceptable and not fair for hardworking students
  - You must actively contribute to group work and do your ultimate best to deliver the best possible results
  - Otherwise you will be asked to do the work alone

Plagiarism / Cheating

- "Getting an unfair academic advantage"

  - Using other people's work as your own

  - Not doing your assignments yourself

- All the code you submit has to be your own

  - Only exception: Code I have provided or explicitly authorized
  - **NO** code you have found on the web. **NO** sharing with others.

- **Do your homework yourself**

  - Do NOT copy from each other or from the Internet - **I will know it!**

  - You can be picked-up randomly to explain your implementation

  - Cheating will be treated very seriously

- Penalties START with a zero on the assignment, failing the course! and other disciplinary actions as per QU policy

Email Rules

- When emailing me you must add – **CMPS 485** to the beginning of the email title

e.g., CMPS 485 – Request for a meeting

- I reply to **CMPS 485** emails on Sundays, Tuesdays and Thursdays

- For **guidance** on technical issues come to office hours NOT by email

To do before next class

- Email me your team members (StudentID and Student Name)

- Install the required software (see the email I have sent you)

- Register for GitHub and Piazza

- Prepare any questions you might have

I wish you a fruitful and enjoyable journey!