# Computer Science 360
## Introduction to Computer and Network Security

Credit Hours: 3
Prerequisites: COMPSCI 230 with a grade of 'C' or better.

## How can you contact me?

Name: Eugene Bagdasarian
Email: eugene@umass.edu
Office Hours: By Appointment
Location: Zoom (link on Canvas)
TA: June Jeong, hjeong@umass.edu
TA Office Hours: By appointment.

## When and where does the class meet?

The course meets at the registrar-scheduled times: Monday and Wednesday from 02:30 PM to 03:45 PM in Hasbrouck 134

## Where do I find course materials?

You can find the link to Zoom and other resources on the course Canvas page. The slides, forums for question and answer, assignments, and related external links will all be kept in Canvas. Canvas will be used for submitting assignments and returning grades.

## What digital technology tools and equipment will you need for this course?

You will require the standard technology needed for any CS course.

## How will this course be delivered?

This course will be delivered in person. Some lecture sections will be synchronous via Zoom. Details to be provided in Canvas

## What is this course about?

I am excited for you to join me and your fellow students on this learning journey together as we delve into the topic of Network and Computer Security. Information security has shifted from a deeply technical discipline to a regular conversation in mass media, at home, and across disciplines. Given how much of our collective life is delivered online, studying information security is fundamental to computer science, but most other disciplines and facets.
 This course counts as a CS elective.

## What are my hopes and vision for the course?

I hope that you will come away from completing this course with a broad assessment of the field of information security, an essential awareness of the underlying skills and demands of the field, and an opportunity to succeed in future coursework using the basics learned in 360. I envision this course as a supportive and inclusive learning community where we can share experiences, engage critically with relevant texts, ask big questions, and discuss our thoughts and ideas. This means that the success of this class and your own and your peers' learning relies on your thoughtful contributions. There will be readings, a project, creative assignments, and experiential and reflective learning experiences.

I also hope you will actively engage with me and each other. I invite your feedback on the course content, such as what's missing and what's redundant, the clarity or any confusion about the course structure and/or the assignments, and my facilitation of the course. Your feedback is invaluable to me as I care deeply about making your learning in this course a good experience for you.

> *From Brandi:*
> *I aim for my class to be a place where students can express themselves—open inquiry, voice doubt, or assert beliefs. This class is also a place for learning which requires open mindedness and personal reflection. In these settings it is important that all of us pay attention to the effect and intention of what is said and what is shared. It is important that we do not demean others or assume offensive motives—instead, seek to understand and learn from one another.*

Please know that I will always be here to help you. Please email me to schedule a meeting or personal video chat with me.

## What will you learn in this course?

Weekly course meeting scheduled have been updated on Canvas. We will cover the following topics, in order:

- Introductions and logistics
- Basic Crypto
- Symmetric Encryption
- Hash functions
- Public key Crypto
- Kerberos
- Transport Layer Security
- Network attacks: BGP, DNS, TCP/IP
- Firewalls and intrusion detection systems
- Tracking and Monitoring
- Phishing and Malware

## Course Materials
- Class Lecture – The primary course materials
- Slides - the basis of the lectures
- Textbook
    - Supplementary to the lectures
    - Basis for homework in the first half of the semester
    - Background definitions that supplement the lectures
    - Allow more lecture time to focus on concepts in greater depth

## How will I assess your learning?
You will have a variety of ways to demonstrate your learning. This includes how and what you contribute to class discussions, how you engage with course readings and other texts, and how you complete homework assignments, readings, exams, papers, and other assigned materials. The overall grading rubric is below:
- Homework (4)                    40%
- Exams       (3)                   30%
    - 2 exams - open book – 2-hour time limit, 24 hours to complete
    - 1 final exam - open book - during final exam period
- Paper                              25%
    - Research proposal    (5%)
    - Research paper        (20%)
- Participation, Forums, etc.   5%

Course Grade Scale (100-499)
- A          95-100
- A-         90-94
- B+         87-89
- B          83-86d
- B-         80-82
- C+         77-79
- C          73-76
- C-         70-72
- D+         67-69
- D          63-66
- F          0-62

## What if I am late in submission or want to make-up?

We do not expect makeup exams as they last for 24 hours including a lecture meeting time, which is sufficient for the exams. But in case you have emergencies or special events, please email the TA and instructor to discuss potential make up exams.

Every student has **a single opportunity** for late submission. Other exceptions are expected to notified to the instructor or TA at least three days before the deadlines.

## How will I assess your participation?

A weekly online forum discussion topic will be released, and random class attendance will be taken to assess your participation. We will also have in-class discussions with breakout sessions.

## Nondiscrimination Policy

This class includes and welcomes all students regardless of age, background, citizenship, disability, sex, education, ethnicity, family status, gender, gender identity, geographical origin, language, military experience, political views, race, religion, sexual orientation, socioeconomic status, and work experience. Our discussions and learning will benefit from these and other diverse points of view. Any kind of language or action displaying bias against or discriminating against members of any group or making members of any group uncomfortable is against the mission of this course and will not be tolerated. The instructor welcomes discussion of this policy, and encourages anyone experiencing concerns to speak with the instructor and TAs.

## Academic Integrity

Students are allowed to work together on all aspects of this class. All work in this course will be labeled as "individual" or "group" work. When the work is individual, we expect that you will complete the work on your own. You may work alongside others and discuss the work, but all writing (either natural language or code) should be yours and yours only. When the work is group-based, you will submit a single submission for your entire group and receive the same grade. All work in this class must be your own or your group's work, where appropriate. This work will usually consist of a written component (either natural language or code). ALL writing must be your own original work or the joint work of your group where appropriate and may not be copied from any source without proper attribution. Please refer to the UMass Academic Honesty Policy and Procedures for guidelines on what constitutes academic dishonesty and the sanctions that may be imposed on any student who has committed an act of academic dishonesty. If you have any questions or concerns about what constitutes cheating in this class, please ask us as soon as the question arises.

## Accommodation Statement

The University of Massachusetts Amherst is committed to providing an equal educational opportunity for all students. If you have a documented physical, psychological, or learning disability on file with Disability Services (DS), you may be eligible for reasonable academic accommodations to help you succeed in this course. If you have a documented disability that requires an accommodation, please notify me within the first two weeks of the semester so that we may make appropriate arrangements. For further information, please visit Disability Services (https://www.umass.edu/disability/).

_Title IX Statement (Non-Mandated Reporter Version):_ In accordance with Title IX of the Education Amendments of 1972 that prohibits gender-based discrimination in educational settings that receive federal funds, the University of Massachusetts Amherst is committed to providing a safe learning environment for all students, free from all forms of discrimination, including sexual assault, sexual harassment, domestic violence, dating violence, stalking, and retaliation. This includes interactions in person or online through digital platforms and social media. Title IX also protects against discrimination on the basis of pregnancy, childbirth, false pregnancy, miscarriage, abortion, or related conditions, including recovery. There are resources here on campus to support you. A summary of the available Title IX resources (confidential and non-confidential) can be found at the following link: https://www.umass.edu/titleix/resources. You do not need to make a formal report to access them. If you need immediate support, you are not alone. Free and confidential support is available 24 hours a day / 7 days a week / 365 days a year at the SASA Hotline 413-545-0800.