

Course Syllabus: COMPSCI 360: Introduction to Security

University of Massachusetts Amherst

Spring 2026

Last updated Feb 2

Course Overview

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| Course Number and Title | COMPSCI 360: Introduction to Security |
| Location | LGRC A104 |
| Time | Mon & Wed 2:30PM-3:45PM |
| Credits | 3 |
| Course Description | This course provides an introduction to the principles and practice of computer, network, and artificial intelligence security. We will focus on both fundamentals and practical information. Two key topics of this course are communication privacy and security on the web, mobile, and AI. Subtopics include ciphers, hashes, key exchange, security services (integrity, availability, confidentiality, etc.), mobile and web security, prompt injections and jailbreaking, and countermeasures. This course counts as a CS Elective for the CS Major. Prerequisite: COMPSCI 230 with a grade of C or better. 3 credits. |

People

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|----------------------------|---|
| Instructor Name | <u>Eugene Bagdasarian</u> (he/him) |
| Instructor Contact | Website: Faculty page ; Email: eugene@umass.edu . |
| Appointment Hours | Office: CSL E451; Schedule appointment . |
| Teaching Assistants | <u>Jade Sheffey (she/they)</u> |
| TA Office Hours | CSL E233, Wednesdays 12:30 - 14:30 |

Student Learning Objectives

- Core security concepts and common threat models.
- Identify common vulnerabilities and defenses in software, systems, and networks.
- Apply basic security tools and techniques to analyze and mitigate risks.
- Communicate security findings and recommendations clearly and responsibly.

Course Materials

- Required readings: slides and notes.

- Recommended: a laptop capable of running course software and tools.
- Platforms/tools: Edlab, Python.

Course Expectations

- Attendance and participation are expected.
- Follow course policies and University guidelines on academic integrity and conduct.

Course Schedule

Table 1: Schedule.

| Date | Notes | Homework/Notes |
|---|---------------------------------|---------------------------------------|
| Feb 2, Mon | Introduction | Homework 0 (bonus) - Due Feb 6 |
| Feb 4, Wed | Basics | Last day to drop! |
| Feb 9, Mon | Cryptography Basics | Homework 1 - Due Feb 20 |
| Feb 11, Wed | Symmetric Cryptography | |
| Feb 17, Tue! | Asymmetric Cryptography | |
| Feb 18, Wed | Asymmetric Cryptography. Part 2 | |
| Feb 23, Mon | Authentication | Homework 2 - Due Mar 6 |
| Feb 25, Wed | Identity | |
| Mar 2, Mon | Biometrics | |
| Mar 4, Wed | Network Basics | |
| Mar 9, Mon | TCP/IP Attacks | Project Proposal - Due Mar 13 |
| Mar 11, Wed | BGP Attacks | |
| Mar 15–22: Spring Break (no classes) | | |
| Mar 23, Mon | Preparation | Mid-term (Mar 23-24) |
| Mar 25, Wed | Guest Lecture: DNS Poisoning | |
| Mar 30, Mon | TLS | Homework 3 - Due Apr 10 |
| Apr 1, Wed | PKI and certificates | |
| Apr 6, Mon | Web Security | |
| Apr 8, Wed | Web CSRF/XSS | |
| Apr 13, Mon | AI Attacks. Part 1 | Homework 4 - Due Apr 24 |
| Apr 15, Wed | AI Attacks. Part 2 | |
| Apr 20, Mon | No class – Patriots' Day | |
| Apr 22, Wed | Phishing | |
| Apr 27, Mon | Future of Security | Project work begins |
| Apr 29, Wed | Research Discussions | |
| May 4, Mon | Project Poster Session | |
| May 6, Wed | Final lecture: TBD | |
| May 11, Mon | | Final Exam (May 11-12) |
| May 15, Fri | | Project report due (May 15) |

Attendance Policy

We expect you to attend lectures. You are excused 4 absences without penalty.

Assignments and Course Project

We will have 4 core assignments and multiple bonus assignments throughout the semester.

- Pre-Assignment: setup AI Agent infrastructure.
- Assignment 1: Encryption. Develop encryption between multiple agents
- Assignment 2: Authentication and Identity.
- Assignment 3: Network Attacks.
- Assignment 4: AI poisoning and data privacy.

Extensions

You are automatically granted 2 extra days for each assignment no questions asked.

Course Project. This is the semester long project that will be conducted in a group of 4. The goal is to do research and study concepts of security. This is the semester long project.

Grading

The overall grading rubric is below:

- **4 Homeworks:** 40%
- **Mid-term** (10%) – Open book – 2-hour time limit, 48 hours to complete
- **Final** (10%) – Open book – During final exam period, 2-hour time limit, 48 hours to complete.
- **Research Project (30%)**
 - Research Proposal (5%)
 - Poster presentation (10%)
 - Research Paper (15%)
- **Attendance, participation** (10%)

We will have additional bonus assignment throughout the course (max bonus of 5%).

Course Grade Scale

| Grade | Percentage |
|-------|------------|
| A | 93–100 |
| A- | 90–92 |
| B+ | 87–89 |
| B | 83–86 |
| B- | 80–82 |
| C+ | 77–79 |
| C | 73–76 |
| C- | 70–72 |
| D+ | 67–69 |
| D | 63–66 |
| F | 0–62 |

Course Timeline: Spring 2026

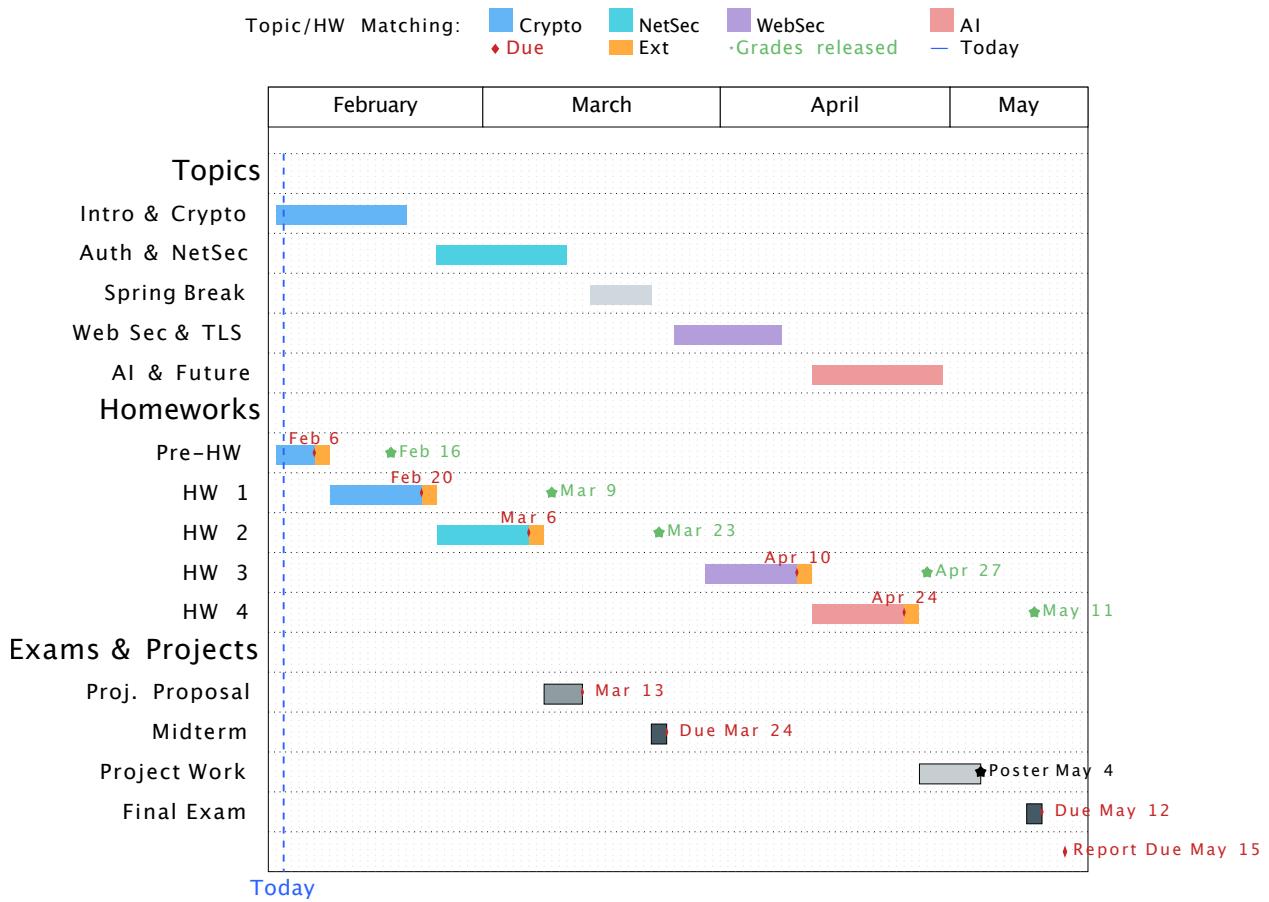


Figure 1: Schedule

Communication Outside of Class

We are using Discord to communicate in this course. Please join [using this invitation link](#). You may use **#help** to create private tickets to ask questions of the course staff. For private questions, please allow up to **two business days** for a response during the semester; response times may be longer on weekends, holidays, or during high-volume grading periods. If your message is urgent, include **URGENT** in the subject line and briefly explain the time sensitivity.

Syllabus Statements

University policies regarding **Accommodations**, **Academic Integrity**, and **Title IX** apply to all courses. The required statements are provided below. These statements are also maintained by the Faculty Senate at: [required syllabus statements](#).¹

¹That page indicates that the instructor for this course is not a “responsible employee” for Title IX reporting purposes.

Academic Integrity

You are expected to submit original work and properly attribute all sources. Collaboration rules for specific assignments will be stated in the assignment instructions. When in doubt, ask the teaching staff before submitting.

Academic Integrity Statement

UMass Amherst is strongly committed to academic integrity, which is defined as completing all academic work without cheating, lying, stealing, or receiving unauthorized assistance from any other person, or using any source of information not appropriately authorized or attributed. As a community, we hold each other accountable and support each other's knowledge and understanding of academic integrity. Academic dishonesty is prohibited in all programs of the University and includes but is not limited to: Cheating, fabrication, plagiarism, lying, and facilitating dishonesty, via analogue and digital means. Sanctions may be imposed on any student who has committed or participated in an academic integrity infraction. Any person who has reason to believe that a student has committed an academic integrity infraction should bring such information to the attention of the appropriate course instructor as soon as possible. All students at the University of Massachusetts Amherst have read and acknowledged the Commitment to Academic Integrity and are knowingly responsible for completing all work with integrity and in accordance with the policy: ([Academic Integrity Policy](#))

Accommodation Statement

The University of Massachusetts Amherst is committed to making reasonable, effective, and appropriate accommodations to meet the needs of students with disabilities and help create a barrier-free campus. If you have a disability and require accommodations, please register with Disability Services, meet with an Access Coordinator in Disability Services, and send your accommodation letter to your faculty. Information on services and registration is available on the Disability Services website ([Disability Services](#)).

Title IX Statement (Non-Responsible Employee)

Title IX Statement 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: [Title IX 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.

Additional Recommended Statements

Inclusive Language

This course is committed to fostering an inclusive and respectful learning environment. All students are welcome, regardless of age, background, citizenship, disability, education, ethnicity, family status, gender, gender identity or expression, national origin, language, military experience, political views, race, religion, sexual orientation, socioeconomic status, or work experience. Our collective learning benefits from the diversity of perspectives and experiences that students bring. Any language or behavior that demeans, excludes, or discriminates against members of any group is inconsistent with the mission of this course and will not be tolerated.

Reference: [Inclusive syllabus guide](#)

Pronoun Statement

Everyone in this course has the right to be addressed by the name and pronouns that reflect their identity. Students are able to choose their name and pronouns in SPIRE, which will appear on class rosters. Please let the instructor or teaching staff know if you wish to be referred to using a name or pronouns different from those listed in official University records. The teaching staff will make a good-faith effort to use correct names and pronouns; mistakes should be corrected respectfully. Intentional or repeated misuse of names or pronouns is inconsistent with the expectations of this course.

Land Acknowledgment

The University of Massachusetts Amherst is located on lands traditionally stewarded by the Nipmuc and Pocumtuc peoples. We acknowledge their presence, history, and continued connection to this land. This acknowledgement is offered as a starting point for awareness and reflection, and does not replace meaningful engagement with Indigenous communities or issues.

Reference: [Land Acknowledgment](#)

Classroom Civility & Respect

We will maintain a respectful learning environment that supports open inquiry, constructive critique, and professional conduct. Students are expected to engage with course material and with each other in a collegial manner. Disruptive behavior or conduct that interferes with teaching and learning may be addressed in accordance with University policies.

Reference: [Classroom civility policy](#)

Student Success Resources

If you would like additional academic or personal support, UMass Amherst provides many free resources, including:

- **Learning Resource Center (LRC):** tutoring, study skills support, and related services ([LRC site](#)).
- **Writing Center:** one-on-one writing support for drafts, revisions, and research writing ([Writing Center site](#)).
- **UMass Amherst Libraries:** research help, reserves, and learning support ([Libraries site](#)).
- **Undergraduate Student Success Center:** campus-wide student success resources and support ([Student Success Center site](#)).

Generative AI Policy

You are encouraged to use AI tools to consult and better understand the material. We expect you to produce original work to achieve learning objectives.