This course teaches the security mindset and introduces the principles and practices of computer security as applied to software, host systems, and networks. It covers the foundations of building, using, and managing secure systems. Topics include standard cryptographic functions and protocols, threats and defenses for real-world systems, incident response, and computer forensics.

More Information

- Class Schedule
- Assignments
- Piazza
- svn
- VM image

Staff

<table>
<thead>
<tr>
<th>Name</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ryan Cunningham</td>
<td>Instructor</td>
</tr>
<tr>
<td>Phuong Cao</td>
<td>Teaching Assistant</td>
</tr>
<tr>
<td>Samir Chaudhry</td>
<td>Teaching Assistant</td>
</tr>
<tr>
<td>Jerry Guo</td>
<td>Teaching Assistant</td>
</tr>
<tr>
<td>Justin Loew</td>
<td>Teaching Assistant</td>
</tr>
<tr>
<td>Ben Ni</td>
<td>Teaching Assistant</td>
</tr>
<tr>
<td>Manasa Sanka</td>
<td>Teaching Assistant</td>
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</tbody>
</table>

Office Hours

<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
<th>Room</th>
<th>TAs</th>
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<tbody>
<tr>
<td>Monday</td>
<td>5pm-7pm</td>
<td>1131 Siebel Center</td>
<td>Manasa, Ben</td>
</tr>
<tr>
<td>Wednesday</td>
<td>5pm-7pm</td>
<td>1131 Siebel Center</td>
<td>Samir, Justin</td>
</tr>
<tr>
<td>Friday</td>
<td>5pm-7pm</td>
<td>1131 Siebel Center</td>
<td>Jerry, Phuong</td>
</tr>
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</table>

NOTE: There will be no office hours on Monday 09/11 and Monday 09/25.
Ryan's office hours will be Wednesday and Friday 10:30am-11:30am in 2211 Siebel Center.

Lectures

Monday, Wednesday, and Friday in 1002 ECE Building.

Discussion Sections

<table>
<thead>
<tr>
<th>Section</th>
<th>Time</th>
<th>Day</th>
<th>Room</th>
<th>TA</th>
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</thead>
<tbody>
<tr>
<td>ADA</td>
<td>11-11:50am</td>
<td>Wednesday</td>
<td>1214 Siebel Center</td>
<td>Justin</td>
</tr>
<tr>
<td>ADB</td>
<td>11-11:50am</td>
<td>Wednesday</td>
<td>1131 Siebel Center</td>
<td>Ben</td>
</tr>
<tr>
<td>ADC</td>
<td>1pm-1:50pm</td>
<td>Wednesday</td>
<td>1214 Siebel Center</td>
<td>Samir</td>
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<tr>
<td>ADG</td>
<td>4pm-4:50pm</td>
<td>Wednesday</td>
<td>1302 Siebel Center</td>
<td>Justin</td>
</tr>
<tr>
<td>ADE</td>
<td>5pm-5:50pm</td>
<td>Wednesday</td>
<td>1302 Siebel Center</td>
<td>Ben</td>
</tr>
</tbody>
</table>
Communication

We will exclusively use Piazza for class discussions and administrative issues. You are welcome to make your posts private if you want to communicate exclusively with course staff. We will distribute assignments using svn and you will submit them through the same system.

References

No textbook is required, but if you would like additional references, we recommend:

- Security Engineering by Ross Anderson
- Cryptography Engineering by Ferguson, Schneier, and Kohno
- Introduction to Computer Security by Matt Bishop
- Computer Security: Principles and Practice by William Stallings
- Computer Security: Art and Science by Matt Bishop
- Security in Computing by Charles P. Pfleeger
- Introduction to Computer Security by Michael Goodrich and Roberto Tamassia

Campus Resources

- Security and Privacy Research at Illinois
- Security Course Roadmap

Grading

Criteria

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Percent</th>
<th>Description</th>
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<tbody>
<tr>
<td>Programming Projects</td>
<td>50%</td>
<td>Five programming projects (MPs,) completed in teams of two</td>
</tr>
<tr>
<td>Midterm Exam</td>
<td>20%</td>
<td>One exam covering material in the first half of class</td>
</tr>
<tr>
<td>Final Exam</td>
<td>30%</td>
<td>One exam covering all material from the course</td>
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</table>

Cutoffs

Below are tentative final grade cutoffs. The intervals might be adjusted downward (i.e. in your favor,) but they will never be adjusted upward.

<table>
<thead>
<tr>
<th>Range</th>
<th>Cutoff</th>
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<tbody>
<tr>
<td>92-100%</td>
<td>A</td>
</tr>
<tr>
<td>90-92%</td>
<td>A-</td>
</tr>
<tr>
<td>88-90%</td>
<td>B+</td>
</tr>
<tr>
<td>82-88%</td>
<td>B</td>
</tr>
</tbody>
</table>
Ethics, Law, and University Policies

To defend a system you need to be able to think like an attacker, and that includes understanding techniques that can be used to compromise security. However, using those techniques in the real world may violate the law or the university’s rules, and it may be unethical. Under some circumstances, even probing for weaknesses may result in severe penalties, up to and including expulsion, civil fines, and jail time. Our policy in ECE 422, CS 461 is that you must respect the privacy and property rights of others at all times, or else you will fail the course.

Acting lawfully and ethically is your responsibility. Carefully read the Computer Fraud and Abuse Act (CFAA), a federal statute that broadly criminalizes computer intrusion. This is one of several laws that govern “hacking.” Understand what the law prohibits — you don’t want to end up like this guy. If in doubt, we can refer you to an attorney.

Please review the Campus Administrative Manual (especially Policy on Appropriate Use of Computers and Network Systems at the University of Illinois at Urbana-Champaign) for guidelines concerning proper use of information technology at Illinois, as well as the Student Code (especially 1-302 Rules of Conduct, 1402 Academic Integrity Infractions). As members of the university, you are required to abide by these policies.