Course Description

Provides a broad overview of computer security. Provides a solid theoretical foundation, as well as real-world examples, for understanding computer security. Fundamental theoretical results, foundational models, and salient examples will be covered. Security in computer operating systems, networks, and data will be covered, with emphasis on operating system and program security.

Prerequisites

CS 333 Operating Systems; CS 350 Algorithms and Complexity; C programming

Required Textbooks


Course Outline

Topics include

1. Software Vulnerabilities and Exploitation
2. Malicious Software
3. OS and Hardware Protection Mechanisms
4. Basics of Applied Cryptography
5. Authentication, Provenance, and Trust
6. Access Control Theory and Practice
7. Intrusion Detection and Forensics

Grading

Final grades will be determined according to the following formula:

<table>
<thead>
<tr>
<th></th>
<th>CS 491</th>
<th>CS 591</th>
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</thead>
<tbody>
<tr>
<td>Homework</td>
<td>40%</td>
<td>40%</td>
</tr>
<tr>
<td>Course Participation and Quizzes</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>Class Presentation</td>
<td>n/a</td>
<td>10%</td>
</tr>
<tr>
<td>Midterm Exam</td>
<td>25%</td>
<td>20%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>25%</td>
<td>20%</td>
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</tbody>
</table>

Letter grades will be calculated according to the standard US system on a roughly 10-point scale. (A- ≈ 90%, B- ≈ 80%, C- ≈ 70%, etc.)
Late Work  
Unless there are special circumstances, all assignments should be turned in no later than the assigned deadline. Some late work will be accepted, subject to the following penalties:

<table>
<thead>
<tr>
<th>Time past deadline</th>
<th>Grade Penalty</th>
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<tbody>
<tr>
<td>Less than 2 hours</td>
<td>-5%</td>
</tr>
<tr>
<td>Less than 24 hours</td>
<td>-20%</td>
</tr>
<tr>
<td>Less than 48 hours</td>
<td>-50%</td>
</tr>
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Note: If there are special circumstances (medical issues, family emergency, etc) that prevent you from turning in an assignment by the given deadline, please let me know as soon as possible. I will work with you to find a fair and workable solution.

Mailing List

A mailing list will be created for this course. Details will be provided in class. All students should sign up for the mailing list to receive important course-related announcements.

Academic Honesty

All submissions must represent the work of the submitting team or individual. It is permissible to discuss the assignment with other students, but you must develop the solution yourselves. Do not, under any circumstances, copy another persons program and submit it as your own. Writing any material (whether it be code, English text, or other) for use by another or using anothers work as your own, in any form (even with their permission), will be considered cheating. Cheating on an assignment or exam will result in an automatic zero grade for that piece of work, and the initiation of disciplinary action at the University level.

Ethics

Some of the technical material studied in this course might be useful for doing things that violate university regulations, laws, or common standards of ethical behavior. Any such behavior that comes to the instructors attention will be reported to appropriate authorities. In particular, note that use of university computing resources is governed by the Office of Information Technology’s Acceptable Use Policy, which may be found at http://oit.pdx.edu/aup/.

Accessibility

If you are a student with a disability in need of academic accommodations, you should register with Disability Services for Students and notify the instructor immediately to arrange for support services.