

## Course Syllabus – Spring 2007

### CS 436/636/736 Computer Security (Syllabus version 1.0, as published to class on 08JAN07)

Course Instructor	Gary Warner Email: <a href="mailto:gar@cis.uab.edu">gar@cis.uab.edu</a> Office hours: By appointment or immediately following class Phone: 205-422-2113 (cell. Prefer to make appointment by email)
Course Session	Monday and Wednesday 7:00 – 8:15 PM Room CH430
Prerequisite	CS 303 Algorithms and Data Structures CS 330 Computer Organization and Assembly Language Programming
Description	Study of computer security including assurance, authorization, authentication, key distribution, encryption, threats including phishing and key logging, and related distributed computing issues. Theory and practical applications.
Objectives	<ol style="list-style-type: none"><li>1. Computer Security Fundamentals: Confidentiality, Integrity, Availability</li><li>2. Concepts: Assurance, Threats, Trust</li><li>3. Basics of cryptography, digital signatures, identity</li><li>4. Policies and Mechanisms for Security</li><li>5. Authentication, Authorization, Access Control</li><li>6. Kinds of Security, Intrusions</li><li>7. Covert channels, kinds of attack, highlights of network security</li></ol>
Textbook	<i>Introduction to Computer Security</i> . Dieter Gollman, Wiley Press. ISBN 0-470-86293-9, 2006.
Reference	<i>Security Engineering: A Guide to Building Dependable Distributed Systems</i> . Ross Anderson. Wiley Press. ISBN 0-471-38922-6, 2001. (online at: <a href="http://www.cl.cam.ac.uk/~rja14/book.html">http://www.cl.cam.ac.uk/~rja14/book.html</a> )

<b>Grading Policy</b>	<b>CS 436</b>	<b>CS 636</b>	<b>CS 736</b>
<b>Tests(1)</b>	<b>30%</b>	<b>25%</b>	<b>25%</b>
<b>Homework(6 )</b>	<b>30%</b>	<b>20%</b>	<b>20%</b>
<b>Final Exam</b>	<b>30%</b>	<b>25%</b>	<b>25%</b>
<b>Projects / Papers</b>		<b>20%</b>	<b>20%</b>
<b>Attendance/Participation</b>	<b>10%</b>	<b>10%</b>	<b>10%</b>

**Final Exam will be held at its normally scheduled time.**

**Students enrolled in CS 636 and CS 736 will have additional questions on tests and exams. They will have one Graduate Project and one Graduate paper not assigned to undergrads.**

**Expect programming assignments as part of the work for this class. Submitted programs should be documented and must compile and function.**

- Late Submission**
1. All assignments are due at the beginning of class on the due date. Any assignment turned in after this deadline is late. Late assignments will lose 10% per UAB M-F business day late, up to a maximum of 50%. (If the University is open for class, it counts as a day.)
  2. Every assignment must be turned in (even if late) to pass this course. Failure to submit any assignment prior to final exam date will result in a grade of 'F' for the course.

- Class Attendance**
1. Attendance is mandatory for this course. Roll will be taken and included in the grading procedure. Students are expected to supplement their reading and contribute to course conversation.
  2. There will be NO make-up exams. Students who anticipate an excused absence on the date of an exam should make **prior arrangement** to sit for the exam at another time.
  3. Early final exams will not be given.

**Academic Honesty** Students who plagiarize code (in whole or part), get others to write programs, or are found cheating on a quiz/exam, will be reported for academic dishonesty. Anyone who is caught cheating will receive a 0 on a given test or assignment. A second offense will result in an F for the semester grade. This includes both the provider and the receiver of the information. Any student who violates the university's academic honesty policy will be reported for academic discipline. All university and department policies related to students are included here by implication.

Specific instructions regarding collaborative homework assignment may be given. Read instructions and follow accordingly.

- Add/Drop Policy**
1. A student can drop the course through January 11, 2007.
  2. A student can add the course through January 13, 2007.
  3. A student can withdraw with a “W” by March 7, 2007. (436)
  4. A student can withdraw with a “W” by April 26, 2007. (Grad)
  5. For more details please see Registration / Academic Records office.

**Email**

Every student will be required to use his/her official email address that is [blazerid@uab.edu](mailto:blazerid@uab.edu). New students must login and configure their email addresses. For more details on obtaining *blazerid* and configuring email please see: <http://www.uab.edu/blazerid/>. All email communications will be made using this address. Additional instructions or announcements will be sent by email, so check your email often. Email is the best way to contact the instructor.

<b>Class Date</b>	<b>Topic</b>
Jan 8.	Security and Risk - Chapter One
Jan 10.	Risk / Threat Analysis – Chapter One
<b>Jan 15.</b>	<b>Martin Luther King Holiday – no class</b>
Jan 17.	Security Foundations – Chapter Two
Jan 22.	Crime vs. Control – (non-book)
Jan 24.	Identity & Authentication – Chapter Three
Jan 29.	Identity Theft (case / current events) – (non-book) Homework #1 due
Jan 31.	Access Control – Chapter Four
Feb 5.	Access Control Hacks (case / current events) – (non-book) Homework #2 due
Feb 7.	Reference Monitors - Chapter Five
Feb 12.	OS Wars (Unix) – Chapter Six – (student lecture – How does OS do X?) Homework #3a due (Grad Project #1 due – Hardening Unix)
Feb 14.	OS Wars (Windows) – Chapter Seven (student lecture – How does OS do X?) Homework #3b due (Grad Project #1 due – Hardening Windows)
Feb 19.	OS Wars Debate (Class participation – COME PREPARED!)
Feb 21.	Bell LaPadula Model – Chapter Eight
Feb 26.	Security Models – Chapter Nine

- Feb 28. Sarbanes Oxley Compliance – (non-book)
- Mar 5. \*\* MID-TERM EXAM \*\***
- Mar 7. Compliance in Practice (guest lecture)
- Mar 12. Security & Risk Assessment – Chapter Ten
- Mar 14. Real World Bugs (guest lecture)
- Mar 19. Cryptography – Chapter Eleven Homework #4
- Mar 21. Distributed System Authentication – Chapter Twelve
- Mar 26. Network Administration (firewalls / LAN / WAN) – Chapter Thirteen
- Mar 28. Penetration Testing (guest lecture)
- Apr 2. System Administration (OS)
- Apr 4. Information Warfare & Espionage
- Apr 9. Database Administration - Chapter Seventeen Homework #5
- Apr 11. Database Administration (guest lecture)
- Apr 16. Software Security – Chapter Fourteen
- Apr 18. Web Application Security – (non-book)
- Apr 23. Presentations Grad Project #2 “Secure this network” Homework #6  
(Undergrad paper “Assessment & Roles” due)
- Apr 25. Last Day of Class: Q & A
- Apr 30. \*\* FINAL EXAM \*\***

Last updated: January 8, 2007

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Course webpage: <http://www.cis.uab.edu/cs436/>