

CSC 790 AG
Advanced Topics in CS: Computer Security, Spring 2014
T Th 9:30 - 10:45am

Instructor

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Course

Text: (*not required*)
Computer Security: Art and Science, Bishop
Computer Security: Second Edition, Gollmann

Articles:

Students will read selected articles concerning computer security. Materials will be available on the web or in the library. Students will be responsible for obtaining all assigned readings.

Grading:

Tests	30%
Lab and project assignments	25%
Homework and quizzes	15%
Final exam	30%

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Prerequisites: CSC 643, CSC 691, C/C++ programming, scripting languages, Unix.

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Attendance: Regular attendance of class and lab is expected.

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Tests, Quizzes, and the Final Exam: Two tests will be administered during class. The tests will cover the material from the assigned readings, lectures, and lab. All tests and exams will be closed book. Make-up tests will be administered only for **University excused absences**.

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Homework: Homework assignments include paper reviews, which are an important part of this course and will be assigned at least once a week. Homework will always be due before class the following lecture. **No** late homework will be accepted.

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Laboratory and Projects: Laboratory assignments will be done in Manchester 22 and/or using VMware on **your** laptop. Some labs will be scheduled during lecture. Students must bring their text, lab assignment, and any assigned pre-lab to lab.

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Academic Integrity: All tests, programs, and homework must be done independently by each student. Copying of partial or complete work will not be tolerated and will be referred to the University Judicial System. Do not throw away or recycle any notes until the end of the semester. Should a question of authorship arise you will be expected to produce hand-written and printed documents that trace the development of your work.

As a result of this class, you will gain knowledge that will allow you to mount **unethical** attacks against computers. This is **not** the purpose of this class. In particular, always ask and obtain permission from the system administrators (CS and WFU campus) before experimenting with security vulnerabilities and vulnerability detection tools. Such activities, without first obtaining explicit permission from the appropriate administration, are strictly **forbidden**. In-class discussions of methods for exploiting security vulnerabilities does **not** constitute permission to use them. Any violation with this and/or any other Wake Forest computer usage policy will be referred to the University Judicial System.

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Disabilities and special accommodations: If you have a disability that may require an accommodation for taking this course, then please contact the Learning Assistance Center (758-5929) within the first two weeks of the semester.

**Lecture
Topics**

The following is the tentative list of lecture topics for this course. Topics may change during the semester!

- Overview of computer security
- Legal and ethical aspects of computer hacking
- Reconnaissance, network mapping, vulnerability assessment
- Network attacks and defenses
- Deception, hopping and honeynets
- Moving target solutions
- Insider threat
- Cyber to physical threats
- Worms, viruses, and bots
- Bio-inspired, agent based, and mixed-initiative security