

IINF 455/IINF 555: *Prevention and Protection Strategies in Cybersecurity* (3 credit hours)

Spring 2015

T 7:15pm-10:05pm, BA 227

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Course Information

Course Description

The role of security policies and design strategies to minimize security vulnerabilities in computer and networked systems. The affected areas range from the overall design of systems, networking protocols, operating systems and applications software on individual computers. The role of coding standards. End user education and role in security.

Prerequisites

IINF 306, Information Security and Assurance.

Course Goals

By the end of the semester, you should be able to

- Demonstrate and be able to analyze the role of policy, design and software implementation in cybersecurity.
- Implement a simple design that reflects attention to cybersecurity.
- Demonstrate a knowledge of how coding standards can improve cybersecurity.
- Demonstrate a knowledge of and ability to analyze the importance of end-user usability in security.

Readings

Required Readings

Computer Security: Principles and Practice (3rd Edition), W. Stallings and L. Brown, 2014, ISBN-13: 978-0133773927. Available at usual University at Albany book sellers, as well as via online sellers.

Supplemental Readings

Security Engineering: A Guide to Building Dependable Distributed Systems (2nd Edition), Ross J. Anderson, 2008, ISBN-13: 978-0470068526 (Available for free on the Author's website - <http://www.cl.cam.ac.uk/~rja14/book.html>)

Additional Materials

Students will require access to a computer, a modern generation browser, and the Internet.

Instructional Methods

Readiness Assurance Test (RAT) – You are expected to have read the assigned readings before coming to the class. At the beginning of almost every session, a test will be administered based on the reading materials assigned for that session.

In-Class Activities – There will be both graded and non-graded assignments that are due in class.

Course Policies

Attendance

Attendance is mandatory in every class and students are expected to arrive on time. Your in-class performance is key to your success in this course. Attendance is graded towards your participation score. In addition, there will be RATs and graded in-class activities that constitute an important part of the course grade. It is not possible to maintain a passing average without consistent attendance. Missing class means the student earns an automatic zero for the activities or assignments missed. Because of the nature of the assignments, no make-up opportunities will be available.

Tardiness

Missing an assignment or activity that happened before a student arrives or after a student leaves also earns a zero. No make-up opportunities will be available.

If you know that it will be difficult for you to consistently get to class on time and stay for the entire period, you should take this course at a time that better fits your schedule. Being late frequently will guarantee a low grade for the course.

Make-up Policy

There are generally no make-up opportunities for missed assignments except in extenuating circumstances. Instead of asking to make up missed work, please see the course 'safety valves' described below.

Since there will be occasions in your life when missing a class meeting is simply unavoidable, this course has a no-fault safety valve.

Safety valve 1

You may miss ONE class and its associated in-class assignment grade(s). So, if you must miss class for any reason, it will be possible to drop the zero you would automatically receive for missing the in-class grades. Be careful not to waste your drop on frivolous things early in the semester, since you may need

it if you catch a cold or need to leave town for a day later in the semester. If you do not use your safety valve for missed class, you will be able to use your safety valve to improve your grade, by dropping the scores you received in one class.

Plan carefully for classes that you know you will need to miss. Work, religious practice, sports team travel, military duty, club activities, fraternity/sorority obligations, family responsibilities, assignments for other courses, and even brief illnesses, etc.—these are your responsibility to manage by using your safety valve. If you need to be out of class for any of these, make sure you have conserved your droppable grade to cover the class you need to miss.

Safety valve 2

If you become seriously ill during the semester, or become derailed by unforeseeable life problems, and have to miss so many assignments that it will ruin your grade, schedule a meeting with me in order to make arrangements for you to drop the course to save your grade point average. Don't wait until it's too late to see me when you get in trouble.

Late homework

Unless otherwise mentioned, assignments are due by the end of the specified day, submitted through Blackboard. If you decide to submit your assignment late, it will be subject to 10% penalty per day late for up to 5 days. No assignment will be accepted after 5 days past the deadline.

Extra Credit

There may be extra credit work. All students will be expected to complete, and be graded on, the same set of assignments. Details to follow. All extra-credit opportunities are capped at no more than 5 points on your overall grade.

Withdrawal from the course

The drop date for the Spring 2015 semester is **March 23 for GRADUATE** students and **April 7 for UNDERGRADUATE** students. That is the last date you can drop a course and receive a 'W'. It is your responsibility to take action by this date if you wish to drop the course. In particular, grades of "incomplete" will not be awarded to students because they missed the drop deadline.

Cell phones & laptops

Please make sure your electronic devices are turned off before entering the classroom unless we are doing a class exercise where they are helpful. Use of phones, tablets, computers, etc., for non-class purposes during class will count against you in your class participation grade. While you may be using computers in class for class activities, texting, using Facebook, etc., are not appropriate uses of class time and your instructor-evaluated grade will suffer for it.

Incompletes

As per the Undergraduate Bulletin, the grade of Incomplete (I) will be given "only when the student has nearly completed the course requirements but because of circumstances beyond the student's control the work is not completed." A student granted an incomplete will make an agreement specifying what material must be made up, and a date for its completion. The incomplete will be converted to a normal grade on the agreed upon completion date based upon whatever material is submitted by that time.

Important: Incompletes will not be given to students who have not fulfilled their classwork obligations, and who, at the end of the semester, are looking to avoid failing the course. This is asking for special treatment.

Academic Integrity

It is every student's responsibility to become familiar with the standards of academic integrity at the University. Claims of ignorance, of unintentional error, or of academic or personal pressures are not sufficient reasons for violations of academic integrity. See

http://www.albany.edu/undergraduate_bulletin/regulations.html

Course work and examinations are considered individual exercises. Copying the work of others is a violation of university rules on academic integrity. Individual course work is also key to your being prepared and performing well on tests and exams. Forming study groups and discussing assignments and techniques in general terms is encouraged, but the final work must be your own work. For example, two or more people may not create an assignment together and submit it for credit. If you have specific questions about this or any other policy, please ask.

The following is a list of the types of behaviors that are defined as examples of academic dishonesty and are therefore unacceptable. Attempts to commit such acts also fall under the term academic dishonesty and are subject to penalty. No set of guidelines can, of course, define all possible types or degrees of academic dishonesty; thus, the following descriptions should be understood as examples of infractions rather than an exhaustive list.

- Plagiarism
- Allowing other students to see or copy your assignments or exams
- Examining or copying another student's assignments or exams
- Lying to the professor about issues of academic integrity
- Submitting the same work for multiple assignments/classes without prior consent from the instructor(s)
- Getting answers or help from people, or other sources (*e.g.* research papers, web sites) without acknowledging them.

- Forgery
- Sabotage
- Unauthorized Collaboration (just check first!)
- Falsification
- Bribery
- Theft, Damage, or Misuse of Library or Computer Resources

Any incident of academic dishonesty in this course, no matter how "minor" will result in

1. No credit for the affected assignment.
2. A written report will be sent to the appropriate University authorities (*e.g.* the Dean of Undergraduate Studies)
3. One of -
 - A final mark reduction by *at least* one-half letter grade (*e.g.* B → B-, C- → D+),

- A Failing mark (E) in the course, and referral of the matter to the University Judicial System for disposition.

Policies from Undergraduate & Graduate Bulletins:

http://www.albany.edu/undergraduate_bulletin/regulations.html

http://www.albany.edu/graduatebulletin/admission_graduate_requirements.htm

Responsible Use of Information Technology

Students are required to read the University at Albany Policy for the Responsible Use of Information Technology available at the ITS Web Site:

<https://wiki.albany.edu/display/public/askit/Responsible+Use+of+Information+Technology+Policy>

Time Management

For every credit hour that a course meets, students should expect to work 3 additional hours outside of class every week (3 x 3= 9). For a three-credit course you should expect to work 9 hours outside of class every week. Manage your time effectively to complete readings, assignments, and projects.

Available Support Services

Reasonable accommodation

Reasonable accommodation will be provided for students with documented physical, sensory, cognitive, learning and psychiatric disorders. If you believe you have a disability requiring accommodation in this class, please notify the Director of Disability Resource Center (Campus Center 137, 442-5490). That office will provide the course instructor with verification of your disability, and will recommend appropriate accommodations. In general, it is the student's responsibility to contact the instructor at least one week before the relevant assignment to make arrangements.

Course Outline and Schedule

A link to the course schedule will be posted on Blackboard on the first day of the class. Note that the course schedule is tentative and will be updated during the semester. It is your responsibility to regularly check the schedule.

Grading

A-E graded

- Assignments/In-Class Activities: 35%
- Readiness Assurance Tests: 15%
- Midterm: 20%
- Final Project: 25%
- Class Participation: 5%