

IA340 – Introduction to Information Assurance

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1 Course Description

This course provides an overview of design considerations involved with the security of site design. The course will also provide an understanding of the Levels of Trust and system accreditation/certification processes. Life cycle management of software, hardware, and physical plant, from planning through destruction will be examined and reinforced using case studies. Additionally, understanding of the variety of security systems involving computers and networks and an ability to evaluate vulnerabilities will be discussed. Prerequisite C or higher in CS140 or permission of instructor. (3 Credits)

2 Course Objectives

By the end of this course, students will be able to discuss the following issues at a management level:

- Recognize, define and use the technical terminology of information assurance (IA).
- Name, define and give illustrations of the fundamental concepts of IA and their breaches.
- Describe models and key elements of information warfare.
- Recognize, name, define and discuss computer crime techniques; present countermeasures for each type.
- Describe and discuss the criminal-hacker subculture.
- Recognize, name, define, and discuss techniques of denial-of-service (DoS) attacks and countermeasures.
- Recognize, name, define, and discuss physical (facilities) security vulnerabilities and defenses.
- Recognize, name, define, and discuss identification and authentication techniques.
- Discuss specific security issues pertaining to voice and data networks.
- Recognize, name, define, and discuss fundamentals of firewalls and of intrusion-detection systems.
- Recognize, name, define, and discuss fundamentals of modern cryptography.
- Evaluate requirements and techniques for backing up, archiving, storing, managing, and destroying electronic records.

3 Course Schedule & Location

- NUoodle < <https://nuoodle.norwich.edu/login/index.php> >
- See Syllabus < http://www.mekabay.com/courses/academic/norwich/ia340/ia340_syllabus.pdf >

4 Text

- Bosworth, S., M. E. Kabay & E. Whyne (2014), eds. *Computer Security Handbook*, 6th Edition. Wiley (New York). ISBN 978-1118127063. Two volumes; 2040 pp. Index. Volume 1 is used for **IA340**; Volume 2 is used for **IA342**. AMAZON < <http://www.amazon.com/Computer-Security-Handbook-Seymour-Bosworth/dp/1118127064/> > or < <http://tinyurl.com/ldg9c8r> >
- Additional readings are provided on the course Web pages, through links in NUoodle, and in class handouts.

5 Course Web Site

Course materials are posted on the IA340 section of NUoodle. Students must visit NUoodle regularly for course news, changes, assignments, reading materials, and discussions.

6 Methods of Assessment

All assignments and quizzes are submitted using NUoodle. Deadlines for each assignment are posted in NUoodle and on the class Syllabus; normally students must complete the quizzes by 23:55 of the second Sunday after the start of the week's material – basically, with a two-week span available for each quiz. NUoodle is accessible on or off campus

< <https://nuoodle.norwich.edu/login/index.php> >

Responding punctually to professional responsibilities is part of the maturation of students. To encourage promptness, late submissions for any of the essay exams and assignments will result in reduction of grades by 10% per day from the total score allotted. However, because of the constraints on NUoodle quizzes, the time limits on quizzes have to be definite; therefore, quizzes close at their deadlines and cannot normally be taken or retaken after closure. Because too many students have failed to respect the deadlines and ended up cramming for quizzes at the end of the course – thus learning less effectively – these deadlines are rigid except in cases of demonstrable reasons not including hypomyelination of the prefrontal cortex (i.e., failure to plan does not excuse the failures).

6.1 Review Quizzes: 15% of final grade

Using NUoodle, there will be weekly quizzes (each individual quiz will cover an assigned chapter reading). These open-book, automatically graded quizzes will test for concepts and technical vocabulary and must be completed in 30 minutes or less. These quizzes are always open and close at the end of Sunday night (23:55) in the week *after* the topic was discussed.

6.2 Mid-term Multiple-Choice Exam: 15% of final grade

The mid-term exam will be open-book multiple-choice (M/C) exams taken via NUoodle and covering the material discussed from the start of the course to the end of Week 4. Opening and closing dates are specified in the Syllabus and on NUoodle.

6.3 Mid-term Memo-Question Exam: 15% of final grade

Students will complete open-book take-home assignments requiring management-level short memoranda responding to realistic questions raised by managers querying an information systems security officer (ISSO) or chief information security officer (CISO) about security issues. Coverage is Weeks 1 through 4 of the course.

6.4 Final Multiple-Choice Exam: 20% of final grade

The final multiple-choice exam will be similar to the weekly quizzes but covering all the material in the course. The exam will be offered via NUoodle. Opening and closing dates are specified in the Syllabus and on NUoodle.

6.5 Final Memo-Question Exam: 15% of final grade

Students will complete an open-book take-home assignment requiring management-level 400 ± 100 word memoranda responding to realistic questions raised by managers querying an information systems security officer (ISSO) or chief information security officer (CISO) about security issues. Exam coverage is Weeks 5 through 9 of the course.

6.6 Term Project: 20% of final grade

- By the time specified in the Syllabus, students will submit their proposal for a research topic, subject to instructor approval. All submissions are via NUoodle.
- The word limits are 3,500 ± 500 words (i.e., 3,000 to 4,000 words).

- The upper word-count limit is intended to prevent students from unnecessarily expending more effort than required on their project. However, students who become enthusiastic about their research project may go beyond the 4,000 word upper limit if they wish without penalty.
- Students violating the lower word count will have their project grade reduced; for example, a 2,000 word submission would receive 67% of whatever grade it would otherwise have received.
- The standards for grading are shown in the Grading Rubric available through the main Webpage and through the link on NUoodle.
- Exceptionally good essays may be chosen for publication.

6.7 Extra Work for Extra Points:

Students may submit extra work for extra points on their final grade with permission of the instructor. For example, the instructor will agree to accept suitable short essays such as summaries of interesting incidents, articles or books relevant to the course materials.

- The rate granted for extra work is 1 point added to the *final* grade for 500 words of professional-grade writing. Thus an excellent 1,000 word essay could improve the final grade by 2 points.
- The maximum available extra points from all sources is 10 percentage points on the final grade.

6.8 Make-up Exams & Replacement Quizzes

- All quizzes and multiple-choice exams include replacement versions with the same deadlines as the original versions.
- Replacement quizzes and exams fully replace a lower grade by a higher grade. Thus a 60% grade on the original quiz or exam followed by a 100% grade on the corresponding replacement results in a quiz grade of 100% for that quiz or exam.
- Make-up exams cannot lower existing grades.

7 Cheating and Plagiarism

- Students are graded on an individual basis and must therefore complete their own work.
- Students are reminded of the University's Policy against cheating and plagiarism (Chapter 2, Section V of the *Student Rules*):
< <http://www.norwich.edu/about/policy/StudentRulesRegs.pdf> >.
- Plagiarism consists of using someone else's text or ideas without using quotation marks to indicate exact duplication of the original and/or failing to indicate the source of reference materials and quotations.
- If in doubt as to what constitutes plagiarism, ask the instructor for a review of your work before submitting an assignment.
- All instances of cheating and of plagiarism must be reported to the *Academic Integrity Committee* by the instructor or by students who have observed the dishonesty.
- Penalties include expulsion from the University.
- **Ignorance of the University's Rules is not a valid defense against accusations of academic dishonesty.**

8 Additional Notes

- There will be no *grading on a curve*. There are no predetermined numbers of final letter grades. Students do not compete with each other for grades; if everyone gets A, great. If everyone fails, tough.
- Review questions (without answers) and PowerPoints highlighting major points of each assigned chapter are available to students at all times at < http://www.mekabay.com/courses/academic/csh6_lecture_notes/index.htm >. These example questions and notes are intended to help students in review and exam preparation.
- Students are encouraged to study together but may not collaborate during quizzes or exams. Students are individually responsible for all assigned essays and online discussion material, unless otherwise noted.

9 Contact Information & Instructor Biography

- Students may use Facebook Messenger (Mich Kabay) and Skype (mekabay) at any time.
- Students are welcome to call the instructor at (802) 479-7937 at *any time* (that number cannot disturb him because he leaves his phone in his office when finished for the day); leave a voice-mail message with a return number if necessary.
- For email, use only the Norwich account (mkabay@norwich.edu) to conform to FERPA privacy regulations.
- See your prof's CV at <<http://www.mekabay.com/cv>> if you wish.

