SY308: Security Fundamentals

Course Policy

Contact Information

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Learning Outcomes

1. Explain fundamental security principles such as the pillars of cybersecurity, economy of mechanism, fail-safe default, complete mediation, open design, least privilege and isolation.
2. List basic cryptographic primitives and explain relevant security definitions.
3. Use well-known cryptographic libraries to write secure software.
4. Implement a simple, security-enhanced information system using appropriate cryptographic primitives.
5. Analyze a simple information system given the source codes and identify potential vulnerabilities.
6. Appel buffer-overflow attacks on simple programs.

Course Web Page

http://courses.cyber.usna.edu/SY308

The website will contain all course notes, homework assignments, labs, and project assignments.

Textbook

The course is self-contained, all necessary notes and assignments will be available on the course website. If you wish to purchase a textbook as an additional reference, *Computer Security: Principles and Practice* by Stallings and Brown is highly recommended and would be a good additional resource for this class.

Extra Instruction

EI is strongly encouraged and should be scheduled by email with the instructor. EI is not a substitute lecture; students should come prepared with specific questions or problems.

Grading

Homework: Homework assignments will be given out every week, due the following week.

Projects: There is one semester-long project which will be made up of several parts, due at various points in the semester. This project will be completed with a small group.

Quizzes: There will be quizzes on Fridays covering material from the week. Each lecture will have candidate questions that might be on the quiz, it is your responsibility to review them to make sure you understand and can successfully solve each question. Quizzes missed due to excused absence will be ignored in grade calculations.

Late policy: Assignments will not be accepted late unless prior arrangement with your instructor has been made (due to illness, MO, etc.)

Course Grade Breakdown:

	6-Week Grade	12-Week Grade	Final Grade
6-Week Exam	45%	20%	12.5%
12-Week Exam		25%	12.5%
Final Exam			20%
Projects	20%	20%	20%
Quizzes	10%	10%	10%
Homework	25%	25%	25%

Collaboration

You are allowed to collaborate with **one other student** for homework assignments, subject to the following conditions:

1. You can only collaborate with students currently enrolled in SY308.
2. All collaboration **must be cited** on your assignment when you submit it. Do not forget to do this as uncited collaboration is the same as plagiarizing another student's work.
3. Solutions are written on your own, in your own words/code. It is never appropriate to even look at another student's code, let alone copy it as your assignment.

Collaboration should take the form of discussions and high-level problem solving/planning. All students should contribute to this collaboration, or else it is not collaboration it is someone else doing your assignment for you.

Projects will be done in groups, but otherwise no collaboration is allowed outside of your group.

Violation of any of these conditions will be considered a violation of the Brigade Honor Concept and will be forwarded to the Brigade Honor Staff.

Dr. Travis Mayberry

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Course Coordinator

CDR Tracy Emmersen

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Department Chair