ISE331 Fundamentals of Computer Security

Course Information

<table>
<thead>
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<th>Semester:</th>
<th>Spring 2019</th>
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<tbody>
<tr>
<td>Time:</td>
<td>Tuesday and Thursday, 11:30AM - 12:50PM</td>
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<tr>
<td>Location:</td>
<td>CS2120</td>
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Contact Information

| Instructor: | Dr. Robert Kelly |
| E-mail:     | robkelly@cs.stonybrook.edu (be sure to include “ISE331” with no spaces, in the subject line of any e-mail message you send to me) |
| Office hours: | Tuesdays, 3:30PM-5:00PM  
               | Wednesdays, 2:15PM-3:45PM |
| Office location: | New Computer Science 218 |

Content

The course introduces the concepts and terminology of computer security in addition to describing attacks against computer infrastructure and typical defenses against such attacks. The course will outline security policies and procedures used by enterprises and will provide an introduction to tools and techniques used by both attackers and defenders.

The following topic will be covered:

- Intro to Security
- General Security Concepts
- CSI Study and Operational Security
- People in Security
- Cryptography
- Public Key Infrastructure
- PKI (continued)
- Physical Security
- Physical Security (continued)
- Network Fundamentals
- Infrastructure Security
- Authentication
- Intrusion Detection and Network Security
• Attacks
• Web Components
• Legal Issues
• Cyber Warfare

Course Objectives

After successfully completing this course, you will:

• Be conversant with the terminology and concepts of computer security
• Understand security threats to enterprise data
• Be familiar with strategies used to protect enterprise data.

Assignment Information

You are expected to work on the project as part of a small group (maximum of 4 students in a group).

The semester project includes a number of deliverables during the semester. Some of these are intended to ensure that you stay on track, while others are meant to provide feedback during the semester. For the "on-track" assignments, you can lose points on your project if the components are incomplete or late. A few project components are major milestones and will be graded, with the grade counting towards your final project grade.

You will submit assignments through a shared repository. Each group of 3-4 students will use a shared repository, accessed by members of the group along with your TA. The assignments are due at Midnight on the due date listed in the class Web site. However, TAs will not begin grading until the next morning, so if you submit it a few hours after midnight it will also be accepted.

Grades and Exams

This is a three credit graded course. Your final grade is based on your project, exams, and oral communication.

The components of the grade are:

• Mid-term exam - 30%
• Final exam - 10%
• Quizzes – 15%
• Oral communications - 10%
• Project - 30%

The oral component of your grade is designed to reflect oral communications skills displayed in class and during formal presentations. An important consideration in this part of the grade is that your grade cannot be reduced by any of your oral communication in class. You start at 0 points in this category, and your grade is increased when you show evidence of effective oral communications. These points are typically earned through interaction in class. The classroom is meant to be a safe way for you to learn the skills necessary software team communications. You will receive feedback on your
communications in class, so that you can improve these skills. For any of your presentations, please let me know any time you would like additional feedback.

The project score is calculated as the weighted average of your scores for you during various phases of the project.

The mid-term and final exams will be closed book.

Be sure to bring your student ID to all exams. The TAs will check your ID, and no one will be allowed to take an exam without the proper ID.

Be sure to be there for you assigned examination time since there will be no make-up exams.

The Pass/No Credit (P/NC) option is not available for this course.

**TA**

The class TAs are available to help you in understanding the material in many ways. They will provide hints and suggestions when they respond to your submission of a homework assignment. They may also be available in teaching sessions given in the Computer Science Teaching Lab.

The TAs and the instructor will be coordinating hints and instructions concerning the HW assignment through Piazza. Piazza is a Q&A platform designed to get you answers from classmates and instructors. It serves as a forum to allow you to collaborate and solve common challenges. You can post any questions you have or errors you may encounter, and we will post our answers on Piazza directly. You are also encouraged to answer any questions posted by your classmates. This way when an issue is resolved, everyone gets to benefit and learn from the answer.

**Academic Integrity & Behavior**

As a student at Stony Brook, you have agreed to follow the university's rules regarding academic integrity and appropriate conduct. You should read both the academic integrity information and procedures and the student code of conduct.

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Any suspected instance of academic dishonesty will be reported to the Academic Judiciary.

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Judicial Affairs any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn.

**Special Assistance**

If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Student Accessibility Support Center, ECC (Educational Communications Center) Building, Room 128, (631)632-6748. They will determine with you what accommodations, if any, are necessary and appropriate. All information and documentation is confidential.
Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and Student Accessibility Support Center. For procedures and information go to the following website: http://www.stonybrook.edu/ehs/fire/disabilities.

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of University Community Standards any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures. Further information about most academic matters can be found in the Undergraduate Bulletin, the Undergraduate Class Schedule, and the Faculty-Employee Handbook.