Instructor: Shahriar “Nick” Rahimi

- **Office**: Faner 2136
- **Office Hours**: MW (8:30 - 11) am And F (10-11) am
- **E-Mail**: nick@cs.siu.edu
- **Course Web Site**: https://online.siu.edu/
- **Class schedule & Location**:
  - **CS-410**: TR 3:35-4:50 pm, LINDEGREN 18
  - **CS-591**: TR 2-3:15pm, LINDEGREN 18

Email is the best way to contact me. I usually respond to emails within 24 hours during the week and 48 hours on weekends.

**Required Textbook**


**Course Description**

This course is designed to introduce a broad overview of the principles, mechanisms, and implementations of computer security. Topics include cryptography, access control, software security and malicious code, trusted systems, network and wireless security.

Prerequisite: CS 306 or equivalent

**Course Objectives**

- To learn the principles, mechanisms and implementation of information and communication security in computer systems and networks.
- Understand the fundamentals of cryptography and its deployment.
- To learn the up-to-date securities protocols and explain the design criteria and possible flaws behind them.
- Understand the security threats and their countermeasures.
- To learn to build secure software and systems.
To learn programming techniques for security protocols.

Specific topic coverage includes:

- Introduction: security goals, types of threats, security policies models, security standards
- Cryptography: classical ciphers stream and block ciphers, public-key encryption, hashes and message digests, signature schemes, key establishment and management
- Network security: PKI, E-mail security, IP security, Web security, virtual private networks, sniffing and spoofing, firewalls, denial-of-service attacks, electronic commerce wireless security
- System security: access control, authentication and authorization, file protection, intrusion detection, trusted computing and digital rights management, UNIX security
- Program security: buffer overflow attacks, viruses and worms, Trojan horses, proof-carrying code, sandboxing, Java security
- Physical security, operational security, ethical and legal issues in security

Assignment and Examination Overview

Assignments:

1. Homework Assignments: There will be a homework assignment in approximately every two weeks. Assignments may contain different types of questions from the textbook and elsewhere: arithmetic, problem-solving, open-ended, essay, hands-on, and programming.

2. Hands-on Assignments: Hands-on exercises may be Linux-based or Windows-based. Most hands-on exercises are to be done in the Hands-on Lab.

3. Information Security Stories Discussion: Students will also be expected to monitor and interpret current information security news. Every class one student is assigned to prepare at least five recent security stories and present them to the class. The assigned student must first post the stories’ links to the class Discussion board available in D2L.

Project: There will be a group (2 members) project related to the implementation or simulation of some security protocols for grad students. For undergrads, there is no project. But they are expected to write a 5-page essay in groups of 2 on a security topic of their choice. These topics should be different than the ones covered in the class.

Quizzes: There can be pop up quizzes in the class regarding the topics covered in the previous classes. This requires you to be prepared on what have been discussed in the previous lectures.

Exams: There will be two exams. The exams will be closed-book and closed-notes. The final exam will be comprehensive. No makeup exams will be given. No early or late final can be given.
GRADING AND ASSIGNMENTS

The criteria for each assignment will be posted as will the grading scheme for that assignment. Your grade is based on the total number of points you earn, and you earn points with each assignment (see below). We will have graded activities every week. The due dates will be announced when I post the assignments. Other assignments may be added.

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<thead>
<tr>
<th>Grading:</th>
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<tbody>
<tr>
<td>Quizzes</td>
<td>10%</td>
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<tr>
<td>Assignments</td>
<td>30%</td>
</tr>
<tr>
<td>Group Project</td>
<td>15%</td>
</tr>
<tr>
<td>Midterm Exam</td>
<td>20%</td>
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<tr>
<td>Final Exam</td>
<td>25%</td>
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<tr>
<td>TOTAL</td>
<td>100%</td>
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Lab assignments and Project must be submitted on or before the due date.

Grading is based on 100 possible points with letter grades being assigned as follows:

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<thead>
<tr>
<th>Grade</th>
<th>Points</th>
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<tbody>
<tr>
<td>A</td>
<td>90-100</td>
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<tr>
<td>B</td>
<td>80-89</td>
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<tr>
<td>C</td>
<td>70-79</td>
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<tr>
<td>D</td>
<td>60-69</td>
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<td>F</td>
<td>59 or less</td>
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Attendance Policy

I strongly encourage regular attendance in my classes and will take attendance at the beginning of each class. You are responsible for all announcements and for all material presented in the lecture sessions.

SIUC Grade Policies:

Incomplete (INC): An INC is assigned when, for reasons beyond their control, students engaged in passing work are unable to complete all class assignments. Students are required to apply, in writing, to the instructor for an INC. If the application is approved by the faculty member and should the student fail to complete the course within the time period designated by the faculty...
member, not to exceed one year, or graduation, whichever occurs first, the Incomplete will be converted to a grade of F and the grade will be computed in the student’s grade point average. WF: Failure. A grade of WF may be awarded to students who do not officially withdraw from class, cease attending the class, and fail to complete requirements for the course. When awarding a WF, the faculty member will note the date/time of the student’s last date of attendance/participation.

Course Drops: Students officially drop courses through the program change process. This process is done with the Program Advisor. Unless a student has processed an authorized drop from the course by the published Add/Drop Date, the student will not be allowed to drop the course. It is the student’s responsibility to ensure that the drop process is officially completed. It is probable that a student who does not drop by the Add/Drop Date, but stops attending/participating during the second half of the course, will be awarded a grade of WF.

Academic Dishonesty Policy

Students may be subject to disciplinary proceedings resulting in an academic penalty or disciplinary penalty for academic dishonesty. Academic dishonesty includes, but is not limited to, cheating on a test, plagiarism, or collusion. References to the Student Conduct Code, (e.g. plagiarism policy) available at the following link: http://policies.siu.edu/documents/StudentConductCodeFINALMay32011.pdf

Student Assistance:

1. To obtain academic accommodations for this course, students with disabilities should contact Disability Support Services and the instructor as soon as possible. Disability Support Services is located at Woody Hall B-150, DSSsiu@siu.edu, 453-5738, or visit the website at http://www.siu.edu/~dss/.
2. For help with writing for this class or others, SIU’s Writing Center provides a variety of services. Visit the website at http://www.siu.edu/~write
Student Agreement

CS 410- CS 591
Computer Security Spring 2016—Nick Rahimi

I have received and read the syllabus for the course, and I agree to enroll in the course under those terms. I understand that the skills I learn here can be dangerous if used improperly, and I agree to use them only in ethical ways. I understand that unauthorized hacking is a crime and could get me into serious legal trouble which neither my instructor nor the department will be able to save me from.

Name:

Email:

Dawg Tag:

Semester:

Date: