ISS403: Information and Computer Security
Spring 2018
3 units

Point Loma Nazarene University
College of Natural and Social Sciences

PLNU Mission
Point Loma Nazarene University exists to provide higher education in a vital Christian community where minds are engaged and challenged, character is modeled and formed, and service is an expression of faith. Being of Wesleyan heritage, we strive to be a learning community where grace is foundational, truth is pursued, and holiness is a way of life.

Instructor:
>Dr. Benjamin Mood
>bmood@pointloma.edu
>619 849 2269
>RS 216

Meeting Times and Locations:
>**Lecture:**
>>**RS13 - MWF - 8:30am – 9:25am**

Office Hours:
>M: 10:30 – 11:30, 1:30 – 2:30, 4:00 – 5:00
>T: 3:00 – 5:00
>W: 11:00 – 11:30, 1:30 – 2:30
>R: 12:15 – 1:15
>F: 10:30 – 11:30, 1:30 – 2:30

Books:
>*Security Engineering* by Ross Anderson. Second edition Its free, posted by the author, online:
http://www.cl.cam.ac.uk/~rja14/book.html

Course Description:

This course provides an overview of modern topics in information and computer security, including: network security, web security, compliance and operational security, threats and vulnerabilities, privacy and anonymity, application, data and host security, access control and identity management, cryptography. This class includes theoretical analysis and hands-on activities. Alternating Years. Offered 2017-18

Learning Outcomes:

Students will be able to apply their technical knowledge to solve problems.

Students will analyze the interaction between hardware and software.

Students will be able to gather relevant information, examine information and form a conclusion based on that information.

Students will be able to understand and create arguments supported by quantitative evidence, and they can clearly communicate those arguments in a variety of formats.

Students will be able to speak about their work with precision, clarity and organization.

Students will be able to write about their work with precision, clarity and organization.

Department Mission:

The Mathematical, Information, and Computer Sciences department at Point Loma Nazarene University is committed to maintaining a curriculum that provides its students with the tools to be productive, the passion to continue learning, and Christian perspectives to provide a basis for making sound value judgments.

Additional Course Information:

Pre-class assignment: On the first day of a given chapter is "due" on the schedule below, please turn in a paper in class with two paragraphs. For (1) answer, "what is the main idea of this chapter"? for (2), answer, "how does this affect my life?". Please read as much as necessary to answer these two questions. Late work will not be accepted.

Lectures: lectures will be mostly from the topics assigned, but may cover material slightly different than the book. This class will cover a wide variety of security topics; some you are familiar with and some you might not be familiar with.

Missed Classes: Work missed due to PLNU activities (i.e., sports teams, choirs, etc), should be turned in the next day the student is back. Missed Exams must be scheduled before the student leaves (exception is dire circumstances). It is the student's responsibility to inform the professor of when they will be gone. In-class work will be waived for excused events.

Presentations: Each student will prepare 3 write ups and presentations throughout the semester on different topics. These presentations will be graded on the following criteria: (1) did they cover the most important points about the topic or was something missing? (2) are the slides understandable / readable / etc.? (3) was the presenter able to answer they should be able to answer asked by the class? The topic and date list will be posted online. Each write up should be written by you and at least 500 words long; it is to be turned in on the day the presentation is made. It is suggested to use more than just the book in your research.

Other assignments: throughout the semester, other graded assignments will happen in class. They are placed into this category. Late homework will not be accepted.

Exams: Exams are comprehensive. The midterm covers all of what we have talked about so far and the final covers all material, with emphasis on the second half of the class. Students must inform the professor about missed exams before the exam. Missed exams must be scheduled before the exam.

Final: The final time is **Wednesday at 7:30am**. As per department policy, no one will be

allowed to take the final at an earlier or later time unless there is a university policy reason for it.

Cell Phones & Laptops: Please don't use them in class unless we are doing a demonstration or asked to use them. An occasional peek is OK, but ignoring what is going on in class is not.

Be Courteous and Respectful. Be respectful to me. Be respectful of each other. It is highly distracting to me to see someone doing something else while in my class. This includes things like listening to music during my lecture. Do not do work for any other class inside of this one. Students violating the above rules may be asked to leave class for the day and will receive a 0 for all in class work.

Grading:

Pre-class assignments	10%
Other assignments	15%
Presentations/write ups	15%
Midterm	25%
Final	35%

Grading scale
93 – 100%	A
90 – 92%	A-
87 – 89%	B+
83 – 86%	B
80 – 82%	B-
77 – 79%	C+
73 – 76%	C
70 – 72%	C-
67 – 69%	D+
63 – 67%	D
60 – 62%	D-
0 – 59%	F

PLNU Policies

Attendance:
Attendance is expected at each class session. In the event of an absence you are responsible for the material covered in class and the assignments given that day.

Regular and punctual attendance at all classes is considered essential to optimum academic achievement. If the student is absent from more than 10 percent of class meetings, the faculty member can file a written report which may result in de-enrollment. If the absences exceed 20 percent, the student may be de-enrolled without notice until the university drop date or, after that date, receive the appropriate grade for their work and participation. See
http://catalog.pointloma.edu/content.php?catoid=24&navoid=1581#Class_Attendance in the

Undergraduate Academic Catalog.

Class Enrollment:
It is the student's responsibility to maintain his/her class schedule. Should the need arise to drop this course (personal emergencies, poor performance, etc.), the student has the responsibility to follow through (provided the drop date meets the stated calendar deadline established by the university), not the instructor. Simply ceasing to attend this course or failing to follow through to arrange for a change of registration (drop/add) may easily result in a grade of F on the official transcript.

Academic Accommodations:
If you have a diagnosed disability, please contact PLNU's Disability Resource Center (DRC) within the first two weeks of class to demonstrate need and to register for accommodation by phone at 619-849-2486 or by e-mail at DRC@pointloma.edu. See Disability Resource Center for additional information. For more details see the PLNU catalog:
http://catalog.pointloma.edu/content.php?catoid=24&navoid=1581#Academic_Accommodations

Students with learning disabilities who may need accommodations should discuss options with the instructor during the first two weeks of class.

Academic Honesty:
Students should demonstrate academic honesty by doing original work and by giving appropriate credit to the ideas of others. Academic dishonesty is the act of presenting information, ideas, and/or concepts as one's own when in reality they are the results of another person's creativity and effort. A faculty member who believes a situation involving academic dishonesty has been detected may assign a failing grade for that assignment or examination, or, depending on the seriousness of the offense, for the course. Faculty should follow and students may appeal using the procedure in the university Catalog. See http://catalog.pointloma.edu/content.php?catoid=24&navoid=1581#Academic_Honesty for definitions of kinds of academic dishonesty and for further policy information.

Final Exam: May 2nd at 7:30am
The final exam date and time is set by the university at the beginning of the semester and may not be changed by the instructor. This schedule can be found on the university website and in the course calendar. No requests for early examinations will be approved. Only in the case that a student is required to take three exams during the same day of finals week, is an instructor authorized to consider changing the exam date and time for that particular student.

Copyright Protected Materials:
Point Loma Nazarene University, as a non-profit educational institution, is entitled by law to use materials protected by the US Copyright Act for classroom education. Any use of those materials outside the class may violate the law.

Credit Hour:
In the interest of providing sufficient time to accomplish the stated course learning outcomes, this class meets the PLNU credit hour policy for a 3-unit class delivered over 15 weeks. Specific details about how the class meets the credit hour requirements can be provided upon request.

Schedule

Monday	Tuesday	Wednesday	Thu	Friday
Jan: 8	9: Thinking of security	10: Chapter 1	11:	12 Chapter 2
15 (no classes)	16	17 Chapter 2	18	19 Chapter 3
22 Chapter 3 ACT: creating and analyzing a protocol	23	24 Chapter 3	25	26 Chapter 4
29 Chapter 4	30	31 Chapter 5 ACT: substitution ciphers	Feb 1	2 Chapter 5
5 Chapter 5	6	7 Chapter 8	8	9 Chapter 8 ACT: read up vs write down
12 Chapter 10	13	14 Chapter 10	15	16 Chapter 26 ACT: Pen testing
19 NDSS	20	21 NDSS	22	23 Chapter 26
26 Chapter 11	27	28 Chapter 11	1	2 Midterm
5 (spring break)	**6**	**7**	**8**	**9 (spring break)**
12 Chapter 12	13	14 Chapter 12 ACT: differential privacy	15	16 Chapter 13
19 Chapter 14	20	21 Chapter 15	22	23 KALI hacking
26 KALI hacking	27	28 KALI hacking	29 **Easter Break**	30 **Easter Break**

2 **Easter Break**	3	4 KALI hacking	5	6 Chapter 16 ACT: Tamper proof? Ha!
9 Chapter 19	10	11 Chapter 19 ACT: Japan's codes in WWII	12	13 Chapter 20
16 Chapter 21	17	18 Chapter 21	19	20 Chapter 21 ACT: the difficulty of being a defender: the CROSSFIRE attack.
23 Chapter 21	24	25 Chapter 21	26	27 Chapter 22 ACT: is anything really secure if it can be read? (hint: HDMI)
30	1	2 **Final @ 7:30am**	3	4

Other topics: Kali, Risk management, Firewalls, IPS, IDS