

Spring 2020

## IT 230-002: Computer Systems Security

Arnold Felberbaum

Follow this and additional works at: <https://digitalcommons.njit.edu/info-syllabi>

---

### Recommended Citation

Felberbaum, Arnold, "IT 230-002: Computer Systems Security" (2020). *Informatics Syllabi*. 166.  
<https://digitalcommons.njit.edu/info-syllabi/166>

This Syllabus is brought to you for free and open access by the NJIT Syllabi at Digital Commons @ NJIT. It has been accepted for inclusion in Informatics Syllabi by an authorized administrator of Digital Commons @ NJIT. For more information, please contact [digitalcommons@njit.edu](mailto:digitalcommons@njit.edu).

## Course Syllabus

[Jump to Today](#) 

### Course Description

IT 230 introduces the applied topic of Computer Security. Students will learn ways of preventing, identifying, understanding, and recovering from attacks against computer systems. It also presents the evolution of computer security, the main threats, attacks and mechanisms, applied computer operation and security protocols, main data transmission and storage protection methods, cryptography, network systems availability, recovery and business continuation procedures. The prerequisite is IT120, Introduction to Network Technology.

Upon completion of this course, students will:

- Have a sound understanding of computer system vulnerabilities and threats, and ways to mitigate them to protect computers against attacks
- Design, develop and implement a computer information security strategy

The textbook addresses all of the objectives of the CompTIA Security+ Certification Exam. The purpose of the course is not to prepare you for the exam, and you are not required to take it. However, you may be able to pass the exam with some extra preparation.

All students **must not** use their smartphone during class. Electronic distractions will interfere with your ability to participate in class and will impact your class participation score. I will provide periodic breaks during class that will allow you time to "catch up" on your digital interactions. Of course, from time to time, you may have that occasional call regarding a personal or work situation that needs your immediate attention. You may accept these calls and leave the classroom. More than one warning during class may result in being marked absent for the class since you are unable to participate in class.

### Instructor

#### Arnold Felberbaum

Guttenberg Information Technologies Center (GITC)

Phone: 973-632-8866

Email: [afelberb@njit.edu](mailto:afelberb@njit.edu)

Office Hours: Class Day 4:00 pm – 6:00 pm, by appointment

### Resources

**Textbook:** CompTIA Security+ SYS-501 Cert Guide [Academic Edition](#), Copyright 2018 by Pearson Education, Inc.

The class web page is on **Canvas** where Notes, assignments, tests, and solutions will be located.

### Grading

Your term grade is based on exams, quizzes, homework, and a lab submissions and participation.

|               |     |   |
|---------------|-----|---|
| Midterm       | 15% | One 150-point exam  |
| Final         | 15% | One 150-point exam  |
| Quizzes       | 15% | 2 quizzes, each worth 75 points                                   |
| Homework      | 15% | 10 homework assignments at 10 points each                         |
| Participation | 10% | Based on engagement in class (7.5 points based on 13 classes)     |
| Palo Alto Lab | 30% | 20 Labs to be completed each worth 15 pts for total of 300 points |

Grades are assigned based on the sum of the points you earn (1000 total points).

|    |                                     |
|----|-------------------------------------|
| A: | Greater than or equal to 911 points |
| B+ | 860 – 910 points                    |
| B: | 800 – 859 points                    |
| C+ | 750 – 799 points                    |
| C  | 700 – 749 points                    |
| D  | 600 – 699 points                    |
| F: | 0 - 599 points                      |

For example, you may earn an A if you have 900 points and have good class participation. You cannot earn an A without reasonable class participation.

Grades are based solely on the points you earn and are not negotiable.

### Exams and Quizzes

The midterm will be during a regular class period. The final exam will be during finals week. The final is not cumulative and covers the material from the midterm until the end of the course. Quizzes will be given during class and will last about 60 minutes. The purpose of the quizzes is for you to assess your readiness for the midterm and final. Make-up exams and quizzes will not be given unless there is a reason beyond your control.

Exams and quizzes will be closed book and must be taken in the classroom. I will allow you one 5 1/2X8 1/2 sheet of paper with notes on both sides. Calculators, mobile devices or smart watches are not permitted.

**Tests and Quizzes must be completed in the classroom.** When you are done with tests, you may leave. When you are done with Quizzes, you may take a break and must return to class and attendance will be taken at the end of class.

### Guidelines for labs

Palo Alto Labs are to be completed according to the delivery dates specified. Each lab takes approximately 30 minutes each. You will need to submit the following document for each lab:

1. A full-screen print according to the schedule provided. The screen print must include:
  1. The session id number (you will need that to name the file)
  2. The time left in the session
  3. The date and time of your PC (Windows – lower right, MAC – upper right) must be included
2. Must paste the screen copies in a word document
3. The file name is: Session ID Your last and first name lab #. Example: 123456789 Felberbaum Arnold Lab 1
4. Do not convert to a PDF.

### Class Preparation and Participation

Powerpoint notes and other resources will be available on the class page before each class. I expect you to do the assigned reading and review the notes before you come to class. You will get more out of the class if you have spent some time thinking about the material in advance. This course covers a lot of material quickly. There are 10 questions 15-minute homework assignment

due by the following class. Don't let yourself get behind!

Attendance and participation is highly correlated with good performance in the class, so I will record attendance for every class and can affect your grade as follow (more than one warning during class regarding smartphone use will result in no class participation for that class):

- Miss 2 - 6 classes Up to a 75% participation penalty
- Miss > 6 classes You cannot receive an A

Absences may be excused for athletics, religious holidays, illness, military obligation, or family emergencies if you contact me before the missed class. Leaving class early with a realistic reason will have an impact on your ability to participate during class. If you need to leave early, please advise the professor.

I expect you to be an active participant in each class.

Homework

Homework is due regularly. Homework problems will be online through Canvas. Solutions will be provided on the class Canvas page.

Unless otherwise specified, homework is due at the beginning of class on the due date. It is automatically graded unless a question requires a detailed answer. Late homework will be accepted with a penalty unless there is a reason beyond your control. Homework is a large component of your semester grade.

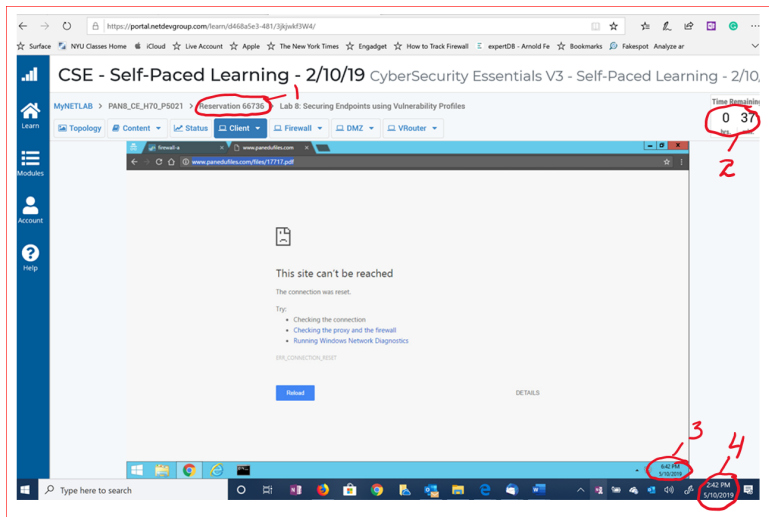
Lab Submissions

For each lab, in addition to the required screen prints, you must answer the following questions in complete sentences:

- What is the primary learning objective of this lab?
- Why is this an important function to understand from a security perspective?
- What type of threat is being mitigated?

All Labs are to be submitted according to the schedule posted on Canvas. Lab screen submissions consist of several pieces of information, as follows:

Sample:



1 – Reservation Number, 2 – Session time remaining, 3 – Lab Time, 4 Your computer time

Course Summary:

| Date             | Details   |            |
|------------------|---|------------|
| Thu Jan 30, 2020 | <a href="https://njit.instructure.com/courses/11272/assignments/31059">Homework Chapter 1</a> | due by 1pm |
|                  | <a href="https://njit.instructure.com/courses/11272/assignments/31050">Homework Chapter 2</a> | due by 1pm |
| Thu Feb 6, 2020  | <a href="https://njit.instructure.com/courses/11272/assignments/31074">CSG Lab 1</a>          | due by 1pm |
|                  | <a href="https://njit.instructure.com/courses/11272/assignments/31077">CSG Lab 2</a>          | due by 1pm |
|                  | <a href="https://njit.instructure.com/courses/11272/assignments/31078">CSG Lab 3</a>          | due by 1pm |
|                  | <a href="https://njit.instructure.com/courses/11272/assignments/31049">Homework Chapter 3</a> | due by 1pm |
|                  | <a href="https://njit.instructure.com/courses/11272/assignments/31044">Homework Chapter 4</a> | due by 1pm |
| Thu Feb 13, 2020 | <a href="https://njit.instructure.com/courses/11272/assignments/31079">CSG Lab 4</a>          | due by 1pm |
|                  | <a href="https://njit.instructure.com/courses/11272/assignments/31080">CSG Lab 5</a>          | due by 1pm |
|                  | <a href="https://njit.instructure.com/courses/11272/assignments/31081">CSG Lab 6</a>          | due by 1pm |
|                  | <a href="https://njit.instructure.com/courses/11272/assignments/31061">Homework Chapter 5</a> | due by 1pm |
| Thu Feb 20, 2020 | <a href="https://njit.instructure.com/courses/11272/assignments/31047">Homework Chapter 6</a> | due by 1pm |
|                  | <a href="https://njit.instructure.com/courses/11272/assignments/31083">CSG Lab 8</a>          | due by 1pm |
|                  | <a href="https://njit.instructure.com/courses/11272/assignments/31084">CSG Lab 9</a>          | due by 1pm |
|                  | <a href="https://njit.instructure.com/courses/11272/assignments/31042">Homework Chapter 7</a> | due by 1pm |
|                  | <a href="https://njit.instructure.com/courses/11272/assignments/31056">Homework Chapter 8</a> | due by 1pm |
|                  | <a href="https://njit.instructure.com/courses/11272/assignments/31082">CSG Lab 7</a>          | due by 4pm |
|                  | <a href="https://njit.instructure.com/courses/11272/assignments/31060">Homework Chapter 9</a> | due by 6pm |

| Date             | Details   |               |
|------------------|---|---------------|
|                  | <a href="https://njit.instructure.com/courses/11272/assignments/31075">CSG Lab 10</a> (https://njit.instructure.com/courses/11272/assignments/31075)  | due by 1pm    |
|                  | <a href="https://njit.instructure.com/courses/11272/assignments/31076">CSG Lab 11</a> (https://njit.instructure.com/courses/11272/assignments/31076)  | due by 1pm    |
| Thu Feb 27, 2020 | <a href="https://njit.instructure.com/courses/11272/assignments/40296">S2020 Mid-Term Quiz Section 002 - Requires Respondus LockDown Browser</a> (https://njit.instructure.com/courses/11272/assignments/40296)                 | due by 2:10pm |
|                  | <a href="https://njit.instructure.com/courses/11272/assignments/40296">S2020 Mid-Term Quiz Section 002 - Requires Respondus LockDown Browser</a> (https://njit.instructure.com/courses/11272/assignments/40296)<br>(1 student)  | due by 3pm    |
| Tue Mar 3, 2020  | <a href="https://njit.instructure.com/courses/11272/assignments/40296">S2020 Mid-Term Quiz Section 002 - Requires Respondus LockDown Browser</a> (https://njit.instructure.com/courses/11272/assignments/40296)<br>(2 students) | due by 5:15pm |
| Thu Mar 5, 2020  | <a href="https://njit.instructure.com/courses/11272/assignments/40349">2020 Midterm 002- Requires Respondus LockDown Browser</a> (https://njit.instructure.com/courses/11272/assignments/40349)                                 | due by 3:10pm |
|                  | <a href="https://njit.instructure.com/courses/11272/assignments/40349">2020 Midterm 002- Requires Respondus LockDown Browser</a> (https://njit.instructure.com/courses/11272/assignments/40349)<br>(1 student)                  | due by 5pm    |
| Thu Mar 12, 2020 | <a href="https://njit.instructure.com/courses/11272/assignments/31058">Homework Chapter 10</a> (https://njit.instructure.com/courses/11272/assignments/31058)   | due by 6pm    |
|                  | <a href="https://njit.instructure.com/courses/11272/assignments/31053">Homework Chapter 11</a> (https://njit.instructure.com/courses/11272/assignments/31053)   | due by 6pm    |
| Thu Mar 26, 2020 | <a href="https://njit.instructure.com/courses/11272/assignments/31062">CSE Lab 1</a> (https://njit.instructure.com/courses/11272/assignments/31062)   | due by 1pm    |
|                  | <a href="https://njit.instructure.com/courses/11272/assignments/31066">CSE Lab 2</a> (https://njit.instructure.com/courses/11272/assignments/31066)   | due by 1pm    |
|                  | <a href="https://njit.instructure.com/courses/11272/assignments/31067">CSE Lab 3</a> (https://njit.instructure.com/courses/11272/assignments/31067)   | due by 1pm    |
|                  | <a href="https://njit.instructure.com/courses/11272/assignments/31068">CSE Lab 4</a> (https://njit.instructure.com/courses/11272/assignments/31068)   | due by 1pm    |
|                  | <a href="https://njit.instructure.com/courses/11272/assignments/31040">Homework Chapter 12</a> (https://njit.instructure.com/courses/11272/assignments/31040)   | due by 1pm    |
|                  | <a href="https://njit.instructure.com/courses/11272/assignments/31041">Homework Chapter 13</a> (https://njit.instructure.com/courses/11272/assignments/31041)   | due by 1pm    |
| Thu Apr 2, 2020  | <a href="https://njit.instructure.com/courses/11272/assignments/31069">CSE Lab 5</a> (https://njit.instructure.com/courses/11272/assignments/31069)   | due by 1pm    |
|                  | <a href="https://njit.instructure.com/courses/11272/assignments/31070">CSE Lab 6</a> (https://njit.instructure.com/courses/11272/assignments/31070)   | due by 6pm    |
|                  | <a href="https://njit.instructure.com/courses/11272/assignments/31071">CSE Lab 7</a> (https://njit.instructure.com/courses/11272/assignments/31071)   | due by 6pm    |
|                  | <a href="https://njit.instructure.com/courses/11272/assignments/31051">Homework Chapter 14</a> (https://njit.instructure.com/courses/11272/assignments/31051)   | due by 6pm    |
|                  | <a href="https://njit.instructure.com/courses/11272/assignments/31048">Homework Chapter 15</a> (https://njit.instructure.com/courses/11272/assignments/31048)   | due by 6pm    |
| Thu Apr 9, 2020  | <a href="https://njit.instructure.com/courses/11272/assignments/31072">CSE Lab 8</a> (https://njit.instructure.com/courses/11272/assignments/31072)   | due by 6pm    |
|                  | <a href="https://njit.instructure.com/courses/11272/assignments/31073">CSE Lab 9</a> (https://njit.instructure.com/courses/11272/assignments/31073)   | due by 6pm    |
|                  | <a href="https://njit.instructure.com/courses/11272/assignments/31054">Homework Chapter 16</a> (https://njit.instructure.com/courses/11272/assignments/31054)   | due by 6pm    |
| Thu Apr 16, 2020 | <a href="https://njit.instructure.com/courses/11272/assignments/31065">CSE Lab 12</a> (https://njit.instructure.com/courses/11272/assignments/31065)  | due by 6pm    |
|                  | <a href="https://njit.instructure.com/courses/11272/assignments/31063">CSE Lab 10</a> (https://njit.instructure.com/courses/11272/assignments/31063)  | due by 6pm    |
|                  | <a href="https://njit.instructure.com/courses/11272/assignments/31064">CSE Lab 11</a> (https://njit.instructure.com/courses/11272/assignments/31064)  | due by 6pm    |
|                  | <a href="https://njit.instructure.com/courses/11272/assignments/31052">Homework Chapter 17</a> (https://njit.instructure.com/courses/11272/assignments/31052)   | due by 6pm    |
|                  | <a href="https://njit.instructure.com/courses/11272/assignments/31045">Homework Chapter 18</a> (https://njit.instructure.com/courses/11272/assignments/31045)   | due by 6pm    |
| Thu Apr 30, 2020 | <a href="https://njit.instructure.com/courses/11272/assignments/31043">S2020 Final Quiz 002- Preliminary Final- Requires Respondus LockDown Browser</a> (https://njit.instructure.com/courses/11272/assignments/31043)          | due by 7:20pm |
| Thu May 14, 2020 | <a href="https://njit.instructure.com/courses/11272/assignments/31046">S2020 Final Examination- Requires Respondus LockDown Browser</a> (https://njit.instructure.com/courses/11272/assignments/31046)                          | due by 3pm    |
|                  | <a href="https://njit.instructure.com/courses/11272/assignments/31085">Roll Call Attendance</a> (https://njit.instructure.com/courses/11272/assignments/31085)  |               |
|                  | <a href="https://njit.instructure.com/courses/11272/assignments/49567">test quiz</a> (https://njit.instructure.com/courses/11272/assignments/49567)<br>(IT230002-Computer Systems Security)                                     |               |
|                  | <a href="https://njit.instructure.com/courses/11272/assignments/49567">test quiz</a> (https://njit.instructure.com/courses/11272/assignments/49567)<br>(2 students)   |               |