

**Computing Sciences Department
SUNY at Brockport**

**COURSE SYLLABUS
Spring 2020**

Course	CSC 312: Cybersecurity
Type of Course	required
Instructor	Dr. Zakariya Qawaqneh
Email:	zqawaqneh@brockport.edu
Classroom:	Holmes 104
Class Times:	MWF 02:30 PM - 3:20 PM
Office:	110A Albert W. Brown Building
Phone:	(585) 395-5597
Office Hours:	Monday: 12:30 pm – 2:00 pm Tuesday: 1:00 pm – 2:30 pm Wednesday: 12:30 pm – 1:30 pm And by appointment.

Course Description from the Computer Science Department Handbook

Covers fundamental issues and tools relating to ensuring that computer systems are secure and reliable. Includes these topics: recognizing attackers, maintaining confidentiality, integrity and availability of computing systems, account control and access rights management, operating system security and malware, applied cryptography concepts, and legal and ethical issue of security. 3 Cr.

Prerequisite

CSC 209: UNIX Tools

CIS 303: Information Technology Hardware and Software, or CSC 311: Computer Organization and Architecture

Course Textbook

Richard E. Smith, Elementary Information Security, 2th Edition, JONES & BARTLETT LEARNING.

Learning Outcomes

A student who has successfully completed CSC 312 has the ability to:

- Demonstrate foundational knowledge of cybersecurity within the organization and as applied to an IT infrastructure.
- Demonstrate foundational knowledge of cybersecurity including legal, regulatory and policy issues, understanding general threats against information systems including denial of service, spoofing, and hijacking.
- Explain what viruses, worms, Trojan horses and logic bombs are.
- Describe how malicious attacks, threats, and vulnerabilities impact an IT infrastructure.
- Demonstrate foundational knowledge of security objectives and policy development.
- Demonstrate foundational knowledge of cryptography
- Demonstrate foundational knowledge of target hardening of network devices, operating systems and applications.
- Explain the importance of network principles and architecture to security operations.

Nature of the Course

This course deals with fundamental concepts of cybersecurity that provide students with the basic knowledge necessary to help create and manage systems that may be trusted. Topics include threats and

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adversaries, vulnerabilities and risks, basic risk assessment. security life-cycle, intrusions detection and prevention systems, cryptography, data security, security models, access control models, confidentiality, integrity, availability, access, authentication, authorization, non-repudiation, privacy, security mechanisms, separation of domains, isolation, encapsulation, least privilege, simplicity of design, minimization of implementation, fails safe defaults/fail secure, modularity, and usability. This is a 3-credit course of 3 hours of lecture per week. It is expected that you will work 6-10 hours per week outside the class in order to complete all your assignments and fully understand the material.

Course Evaluation (subject to change)

Midterm:	20%
Final exam (Comprehensive):	30%
Participation:	5%
Presentation:	5%
Assignments	20%
Labs	20%

Participation

Students should be prepared to actively participate and discuss weekly readings in class. There will be several short activities/exercises completed in class. You must be in class to complete these activities/exercises and receive credit.

Assignments

Homework assignments are due at the beginning of class. No credit will be given for late assignments. Detailed instructions will be given in class.

Exams

There will be mid-term exam and there will be a comprehensive final exam. There are no make-up quizzes or exams.

Course Topics (subject to change)

The following topics are covered in this course. This content may be changed at the discretion of the instructor. Also note that each of the topics below may contain a homework assignment, a quiz, or both. More details will be communicated to you throughout the semester.

- 1) Chapter 1 Security From the Ground Up
- 2) Chapter 2 Controlling a Computer
- 3) Chapter 3 Controlling Files
- 4) Chapter 4 Sharing Files
- 5) Chapter 5 Storing Files
- 6) Chapter 6 Authenticating People
- 7) Chapter 7 Encrypting Files
- 8) Chapter 8 Secret and Public Keys
- 9) Chapter 9 Encrypting Volumes
- 10) Chapter 10 Connecting Computers
- 11) Chapter 11 Networks of Networks
- 12) Chapter 15 Internet Services and Email
- 13) Chapter 16 The World Wide Web

Class Policies

Grading Policy

The grading policy is subject to change. The passing grade in this course is D-.

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A	Greater than 93%
A-	Greater than 90% but less than 93%
B+	Greater than 85% but less than 90%
B	Greater than 83% but less than 85%
B-	Greater than 80% but less than 83%
C+	Greater than 75% but less than 80%
C	Greater than 73% but less than 75%
C-	Greater than 70% but less than 73%
D+	Greater than 67% but less than 70%
D	Greater than 63% but less than 67%
D-	Greater than 60% but less than 63%
E	Less than 60%

Passing Grade

For Computer Science major (Advanced Computing and Software Development), the passing grade in this course is **C**. That is, if you receive a grade of **C-** or less, you must repeat this course to graduate. The passing grade for others in this course is **D-**.

Assignments and Academic Integrity

All homework assignments are to be completed on individual basis, i.e., on your own. Group efforts are not acceptable. Academic dishonesty is unacceptable and considered grounds for failure and other disciplinary actions as stipulated in the College Policy on Academic Dishonesty. All assignments are due at the beginning of class on the day they are due. Late assignments will not be accepted. No credit will be given for late assignments.

Exams

Students will not receive any credit for missed exams. If you will not be able to attend an exam you must notify me at least a week in advance to make arrangements to take the exam ahead of time.

Blackboard

Course information and handouts may be distributed through Blackboard. Check Blackboard regularly. Students may be required to complete some assignments on Blackboard or submit assignments to the appropriate dropbox on Blackboard. Please be aware that Blackboard only supports certain browsers. For more information see:
<http://wiki.sln.suny.edu/display/SLNKB/Open+SUNY+Online+Course+Browser+Compatibility>

Email

Email is the preferred method of communication. When sending email please include CSC 312 in the subject line and be sure to include your first and last name in the message.

Attendance and Classroom Conduct

Faculty Senate legislation mandates student attendance in all classes. Students who are unable to attend the examinations or meet deadlines for assignments on particular days due to religious beliefs, must contact me ahead and work out alternate arrangements. Students are expected to behave as reasonable adults, motivated to explore the subject matter with proper guidance from the instructor. Late arrivals and early departures disturb the entire class and should be avoided. As per Senate policy, students whose unexcused absences exceed 15 percent of the scheduled classes and laboratories may receive a lowered grade or failure at my discretion.

Disability Statement

Students with documented disabilities may be entitled to specific accommodations. The College at Brockport's Office for Student with Disabilities makes this determination. Please contact the Office for Students with Disabilities at (585) 395-5409 or osdoffic@brockport.edu to inquire about obtaining an official letter to the course instructor detailing any approved accommodations. The student is responsible for

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providing the course instructor with an official letter. Faculty work as a team with the Office for Students with Disabilities to meet the needs of students with disabilities.

Title IX Compliance

Sex and Gender discrimination, including sexual harassment, are prohibited in educational programs and activities, including classes. Title IX legislation and College policy require the College to provide sex and gender equity in all areas of campus life. If you or someone you know has experienced sex or gender discrimination, sexual harassment, sexual assault, intimate partner violence, or stalking, we encourage you to seek assistance and to report the incident through resources available at https://brockport.edu/about/title_ix/. Confidential assistance is available on campus at Hazen Center for Integrated Care and RESTORE. Faculty are NOT confidential under Title IX and will need to share information with the Title IX & College Compliance Officer. For these and other policies governing campus life, please see <https://www.brockport.edu/support/policies/student.php>.

Statement of Non-discrimination

"The College is committed to fostering a diverse community of outstanding faculty, staff, and students, as well as ensuring equal educational opportunity, employment, and access to services, programs, and activities, without regard to an individual's race, color, national origin, religion, creed, age, disability, sex, gender identity, sexual orientation, familial status, pregnancy, predisposing genetic characteristics, military status, domestic violence victim status, or criminal conviction. Employees, students, applicants or other members of the college community (including but not limited to vendors, visitors, and guests) may not be subjected to harassment that is prohibited by law or treated adversely or retaliated against based upon a protected characteristic."

Statement of Equity and Open Communication

"I recognize that each class I teach is composed of diverse populations and am aware of and attentive to inequities of experience based on social identities including but not limited to race, class, assigned gender, gender identity, sexuality, geographical background, language background, religion, disability, age, and nationality. This classroom operates on a model of equity and partnership, in which we expect and appreciate diverse perspectives and ideas. If anyone is experiencing exclusion, intentional or unintentional aggression, silencing, or any other form of oppression, I encourage open communication with myself and/or the class as a whole."

Emergency Alert Statement

In case of emergency, the Emergency Alert System at The College at Brockport will be activated. By signing up for RAVE, you can receive warnings and emergency information via the web, your cell phone, email and other technologies.

Students can sign-up for RAVE using the link on the College's Emergency Information website, <https://www.brockport.edu/support/emergency>. Included on the website are detailed information about the College's Emergency Action Plan, Classroom Emergency Preparedness, Official Evacuation Procedures, Emergency Communication, and Contacts (phone numbers, email addresses, etc.). In addition, students are encouraged to familiarize themselves with the Emergency Procedures posted in classrooms, halls, and buildings and all college facilities.

Weather Conditions and Class Cancellations

I have no authority to cancel classes, no matter what the weather condition is. Only the President of the College makes that decision. On days of severe weather conditions, please listen to WBSU (89.1 FM) and WHAM (1180 AM) for class cancellations. You may also call (585) 395-COLD at the College. If I have any information, I will try my best to send email or post messages.