

CSC 245 Computer and Systems Security

Contents

Course Welcome.....	2
Instructor Contact Information.....	2
Instructor Email Response Policy	3
Course Description and Credit Hours	3
Course Objectives.....	3
Program Core Competencies.....	3
Required Textbook / Materials	4
Course Requirements	4
Final Grade Calculation.....	5
Grade Distribution.....	5
Grading Scale.....	5
Netiquette Policy	6
Learning Activities and Tests	6
Online Discussion.....	6
Class Participation	6
Post / Response Guidelines.....	7
Weekly Assignments	7
Course Schedule.....	8
Bethel University Policies and Resources.....	9
Online Attendance	9
Late or Make Up Work.....	9
Class Cancelation / Weather Policy for Online Courses	10
Plagiarism.....	10
Disability Services	10
Information Technology Help Desk	10
Library.....	10
Syllabus Acknowledgment	12

CSC 245: Computer and Systems Security

Course Welcome

Hello Class - I am looking forward to this class and getting to know you all. In the meanwhile, please come over here - www.drjeffteo.com ([Links to an external site.](#)) - as I share a bit about myself and my family....

Instructor Contact Information

Name: Jeff Teo, Ph.D

Phone: For emergency use only: 828 275 1863 (but please text me first and identify who you are - please provide the name of the course. For example “Hello Dr. Teo, I am Mary Smith from your CSC 245 at Bethel”. That way we can initiate future phone chats - unfortunately I do not answer incoming calls if they are not in my Contact list).

Email: jeff.teo@betheluniversity.edu

Preferred contact method: Via email at jeff.teo@betheluniversity.edu (this is the preferred way as a record of communication is maintained and documented).

Best time to contact / Office hours: By arrangement

To foster professional demeanor and promote clear and well-written communication, please follow an example below (replies can be less formal...)

Salutation: Please remember to greet/address the individual. For example, write “Hello Dr. Teo,” or “Hi Dr. Teo” – please do not “Hey Dr. Teo” – ‘Hey’ is acceptable in a social context but not in a professional/corporate setting.

Main body of the email: Ask/inquiry the sender in a professional, well-written and courteous way so that you solicit the response you are looking for.

Sign-off: Please end with words like Regards, Blessings, Gratefully etc

Example of a well-written, professional email:

“Hello Dr. Teo,

I hope you are well – I am in your CSC 245 Computer and Systems Security (listed here as an example) class.

I have a question regarding this week’s quiz. I understand it is on chapter 1 of the textbook and consists of 5 multiple-choice questions – am I correct?

I look forward to your confirmation – thank you!

Blessings to your day,

John Smith”

For emergency purposes, you can text me at 828 275 1863, noting that this is my personal cell phone number. Typically, I do NOT answer incoming calls that are not in my contact list but will respond to valid text messages. In your text message, you must identify who you are and the course you are taking and concisely write your request. Again text communication is NOT encouraged as records are not kept by the college – please use it only for emergency purposes. Always follow up with using the college’s email system.

Instructor Email Response Policy

Any course related email sent to the instructor will have a response either by email, phone, or through the LMS within 48 hours.

Course Description and Credit Hours

(3 credit hours) This course provides students with a comprehensive examination of computer and systems security. The course focuses on the knowledge and skills that are essential to effectively participate in risk mitigation work. Student will learn about operational and

information security while learning how to apply security controls to ensure effective protection. Student will be asked to identify appropriate technologies and strategies within appropriate legal, organizational, and regulatory guidelines.

Course Objectives

At the conclusion of the course, students should be able to:

- Describe threats to networks, and detail techniques for ensuring network security, including encryption, authentication, firewalls, and intrusion detection.
- Understand the basic concepts of information security, including security policies, models, and mechanisms.
- Identify and explain the common vulnerabilities in computer programs.
- Describe how malware and destructive viruses function.
- Understand and assess issues about password authentication, including password guessing, password management, and other forms of password hacking.
- Compare and contrast security mechanisms for contemporary operating systems, including memory, time, file, object protection requirements and techniques.
- Describe techniques for ensuring database reliability and integrity, secrecy, and multi-level databases.
- Explain the requirements and techniques for security management.

Program Core Competencies

At the completion of the program, the student should:

- Identify and assess the computer, mobile, and information network security needs of a business or organization;
- Identify potential security risks and threats and design appropriate strategies and responses to mitigate them;
- Perform the requisite technical functions of a cybersecurity expert tasked with the security of an organization's information and networks;
- Communicate technical information clearly and effectively, specifically in the articulation of cybersecurity risk-management policies and the composition of appropriate recommendations for organizational review;
- Articulate a thorough understanding of the professional, ethical, legal, and social issues associated with current advances in cyber-technology and an ethical approach to addressing those challenges in a way that is consistent with a Christian worldview; and
- Demonstrate the ability to research and apply the latest trends, tools, and techniques in order to effectively serve as a leader charged with safeguarding an organization's digital assets.

Required Textbook / Materials

Title: Information Security Fundamentals, Ebook

Author(s): *Kim, David*

Publisher: Jones & Barlett Learning

Published ISBN: [978-1284-23964-5](#)

Textbooks and other required course materials can be purchased from the [online campus bookstore](#).

Online Virtual Labs: Required access to labs on Information Security Fundamentals by Infosec Learning. Please refer to the steps listed below "How to locate access codes and connect to Infosec Learning labs" to access the labs required for this course. **Please watch this video** - [InfoSec Student Registration Without an LMS Integration](#) noting the Course ID: **OVESIAOLVZ**

And just as importantly, please be sure to link your course to me, using my email address: jeff.teo@betheluniversity.edu

Course Requirements

Any online course activities assigned to the course are performed within Canvas.

Additional web sites and related web-based activities, if assigned, will be accessed through the course or through web links provided for web sites located outside the course.

Final Grade Calculation

Grade Distribution

Assignment	Point Value
Online Discussions	[140]
Module Quizzes	[700]
Module Assignments (13 Lab Reports)	[1300]
Final Examination	[600]
Total	[2740]

Grading Scale

Letter Grade	Percent
A	100% - 94%
A-	< 94% - 90%
B+	< 90% - 87%
B	< 87% - 84%
B-	< 84% - 80%

C+	< 80% - 77%
C	< 77% - 74%
C-	< 74% - 70%
D+	< 70% - 67%
D	< 67% - 64%
D-	< 64% - 60%
F	< 60% and below

Netiquette Policy

In an online course, almost all your interactions with other people will be through the internet. This netiquette policy applies to all your interactions with the instructor and your fellow students, and you are expected to follow the guidelines outlined below.

Respect other people and be willing to share your ideas and thoughts in a respectful way. Simply, respect others' views. You may disagree with someone, but do so graciously and constructively. Pause before writing emails or posts when you are angry, and reread what you wrote carefully before clicking 'send.' Treat others the way you wish to be treated—with respect.

Do not post or communicate offensive or hateful content. Bethel University does not permit discussions that are obscene, harassing, sexually explicit, or derogatory toward individuals or groups. These will be deleted, and repeat offenders may be barred from future participation.

Do not post or share personal information. Do not post or share information such as addresses, telephone numbers, etc., and do not post or share someone else's personal information.

Learning Activities and Tests

Online Discussion

Class Participation

In the event of classroom meeting cancelation due to a campus scheduled holiday or severe weather, the scheduled class session will continue online. The following requirements are for online discussions:

The student will submit an initial discussion post per discussion topic. This initial discussion is a minimum of 250 words. This initial discussion post must include a level of detail, analysis and reflection related to the discussion topic. The student is expected to cite references to support their opinion. Any use of references must be properly cited using APA format.

Each student is required to reply to a minimum of two student initial posts. The reply post is a minimum of 100 to 150 words. This post must include a level of detail, analysis and reflection.

To receive the minimum points possible for a weekly discussion requires each student to post their initial discussion response on the regular night of the class session and two student reply posts by day four of the session – unless otherwise directed by the professor.

Post / Response Guidelines

In an online classroom the majority of discussion among class members will take place in the discussion forum. Online discussion forums are designed to allow the class to engage in a healthy dialog on the lesson topic or question being presented. However, for the dialog to remain productive Bethel University requires each person to conduct themselves in a responsible manner by following the simple guidelines below. These help to maintain a collaborative and congenial environment by reminding us all that, when we communicate online, we are still engaging real people.

Stay on the discussion topic. Be respectful of participants and their time by staying on-topic and not commandeering a discussion with vague or unrelated comments. Contribute productive information when participating in a discussion by stating a complete and logical idea or concept. The goal in the discussion is to delve into a topic and “learn,” so when you post a comment stay on topic and explain your point of view.

Access the discussions several times in the weekly sessions to remain current and active in the discussion.

Do not post copyrighted material without the expressed, documented permission of the copyright holder or following proper source citation of the information, just as you would when writing an essay or term paper. Cite a source if you use it.

Contact your instructor if you have any questions.

Weekly Assignments

- A. Tests/Exams
- B. Labs/Projects

This course is intentionally designed to provide students with hands-on experience and knowledge of the concepts presented using state-of-the-art virtual labs. The following labs will be incorporated to enhance students' understanding:

1. Securing the pfSense Firewall
2. Implementing NAT and Allowing Remote Access
3. Implementing Common Protocols and Services
4. Examining Wireless Networks
5. Implementing Security Policies on Windows and Linux
6. Data Backups in Windows, BSD, and Linux
7. Incident Response Procedures, Forensics, and Forensic Analysis
8. Crafting and Deploying Malware
9. Social Engineering
10. Exploiting Wireless Security
11. Deep Dive in Packet Analysis – Using Wireshark and Network Miner
12. Vulnerability Scanners and Penetration Testing

Course Schedule

Week #	Required Reading	Assignment / Activity
1	Chapter 1	Review Syllabus Discussion Forum Unit Test Lab Report Chapter reading and lecture slides Web links/resources
2	Chapters 2 and 3	Discussion Forum Unit Test Lab Reports Chapter reading and lecture slides Web links/resources
3	Chapters 4 and 5	Discussion Forum Unit Test Lab Reports Chapter reading and lecture slides Web links/resources
4	Chapters 6 and 7	Discussion Forum Unit Test Lab Reports Chapter reading and lecture slides Web links/resources
5	Chapters 8 and 9	Discussion Forum Unit Test Lab Reports Chapter reading and lecture slides Web links/resources
6	Chapters 10 and 11	Discussion Forum Unit Test Lab Reports Chapter reading and lecture slides Web links/resources

7	Chapters 12 and 13	Discussion Forum Lab Reports Chapter reading and lecture slides Web links/resources Final Examination covering Chaps 1 to 13, consisting of 60 multiple-choice questions, each at 10 points
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Bethel University Policies and Resources

To view all Bethel University policies and information, please review the [Student Handbook](#).

Online Attendance

Online attendance is recorded each time that you log into the learning management system. The academic week is seven days for an online session and is based on the night the class normally meets (i.e. if the class meets on Monday night then the online session will be from Monday night through Sunday night of the following week). To receive full credit for attending online, you must login AND one of the following items must be completed as directed by the instructor:

- Submit an academic assignment.
- Submit a quiz or exam.
- Participate in a posted online academic discussion.

Note that the following actions will not count as attendance:

- Logging into class without active participation does not constitute attendance.
- Work done in a lab or other outside environment will not count toward online attendance.
- Assignments completed the week after the online assignment is due will not count toward attendance for the previous week.

Students are strongly encouraged to log into the course a minimum of three days during the week the course is “online” in order to understand the subject fully and to be successful in class.

An online absence is counted the same as an in-class absence.

Late or Make Up Work

It is important for students to submit work on time as scheduled in the class. This allows the instructor time to grade the material and provide feedback if necessary. Circumstances may interfere with the ability to submit an assignment on time. However, as a student you agree to take the class and therefore agree to submit work on time.

Students are encouraged to work ahead to avoid late assignments. Please communicate with your professor promptly if you have extenuating circumstances that may contribute to a late assignment.

Assignments (excluding discussion questions) will be accepted late, subject to a 10% deduction off the earned grade per day late (24-hour period), for up to 3 days. No assignments will be accepted after 3 days. Discussion posts and responses that are not posted by the due date will receive 0 points and are not accepted past the due date.

All work must be completed and submitted by the end of Week 7 of the course. No work will be accepted after the last day of the course.

Class Cancellation / Weather Policy for Online Courses

In the advent of in-classroom meeting cancellation due to a campus scheduled holiday or severe weather, the online course schedule will be maintained. Campus closures do not affect the online course schedule.

Plagiarism

Any act of deceit, falsehood or stealing by unethically copying or using someone else's work in an academic situation is prohibited. A student found guilty of plagiarism will receive an "F" for that paper, assignment or exam. The professor will have an interview with the student and submit a written report to the Program Director or Coordinator for the area in which the student is enrolled. If a second offense should occur, the student will be required to appear before the professor, the director and the vice president for adult and graduate studies. At this point the student's continuation in the course and academic career are in jeopardy. Students are encouraged to refer to the Bethel Library's [online help for proper citation](#).

Disability Services

The Americans with Disabilities Act (ADA) is a law that provides civil rights protection for people with disabilities. Bethel University is compliant with equal access laws and requests students with disabilities The Center for Academic Success (CAS) is located in the lower level of the Miller/Moore Academic Center.

If you have a disability, or think you have a disability, please make an appointment by calling Disability Services at the Center for Academic Success at (574) 807-7460 or (574) 807-7462 or email academicsuccess@betheluniversity.edu.

Bethel's website offers more detailed information under CAS. Please check out the [Student Guide for Disability Services](#).

Information Technology Help Desk

The Help Desk is open Monday-Thursday from 7:30 a.m. - 6 p.m. and Friday, 7:30 a.m. - 5 p.m., during the fall and spring semesters, and 8 a.m. - 5 p.m. during the summer (starting May 1). Hours may vary on holidays and breaks.

Contact the Help Desk at helpdesk@betheluniversity.edu or by calling (574) 807-7777.

Library

Bethel's Bowen Library offers a range of resources and services, both online and physical, to all students enrolled at Bethel University. All online resources are available at the [library website](#).

Almost all periodicals and journals are available online, and there is a wide selection of e-books available as well. Off-campus access to these resources requires an active Bethel login account. For assistance in locating information, librarians are available to answer questions via email ([Ask a Librarian](#)), phone, or in person during regular business hours. For physical resources, students are able to use the [library catalog](#) to locate books and resources that are

held either by Bethel or any other library. Students may use the catalog to request books from another library and have them delivered to the Bowen Library.

Students may also go to any [PALNI](#) library or to Notre Dame or Holy Cross and check material out in person with a valid student ID. PALNI is a consortium of several academic libraries in Indiana of which Bethel is a member; some nearby member libraries include Saint Mary's, Associated Mennonite Biblical Seminary, Goshen, and Grace. In addition, physical books and journals, the Bowen Library provides study spaces, computers, and printers (included a web print station) to all students.

Syllabus Acknowledgment

Enrollment in this course is considered an acknowledgment that the student will review and follow the course syllabus and additional college policies as stated within the student handbook, college catalog and student information provided by the college through the campus website.

This syllabus is not a legal contract, but serves as a general outline for the semester. The professor reserves the right to make adjustments to the course as the need arises.

