CDS 510 Introduction to Cyber Security

(3 credit hours)

Course Syllabus

Course Description

Introduction to Cyber Security teaches the basic concepts and principles of information security, and the fundamental approaches to secure computers and networks. Some of the topics covered in this course are security basics, security management and risk assessment, software security, operating systems security, database security, cryptography algorithms and protocols, network authentication and secure network applications, malware, network threats and defenses, web security, and privacy.

This course provides the foundation for understanding the key issues associated with protecting information assets, determining the levels of protection and response to security incidents, and designing a consistent, reasonable information security system, with appropriate intrusion detection and reporting features. The purpose of the course is to provide the student with an overview of the field of information security and assurance. Students will be exposed to the spectrum of security activities, methods, methodologies, and procedures. Coverage will include inspection and protection of information assets, detection of and reaction to threats to information assets, and examination of pre- and post-incident procedures, technical and managerial responses, and an overview of the information security planning and staffing functions.

Course Learning Outcomes

By the end of this course, you will be able to:

1. Describe the CIA triad of Confidentiality, Integrity and Availability.
2. Communicate and interpret ideas related to the principles of Information Security.
3. Explain, as a practical overview, the issues involved in the field of Information Security.
4. Define key terms and concepts in Information Security.
5. Describe current and emerging cyber threats and vulnerabilities and recommend effective counter-measures.

Prerequisites/Corequisites

None.

Required Textbook(s) and Resources

Whitman, M. E., & Mattord, H. J. (2021). *Principles of Information Security*, 7th Edition. Cengage MindTap Information Security, 1 term (6 months) Instant Access.

Be sure to also review the weekly **Explore** sections for additional library or web resources. For access to databases, research help, and writing tips, visit the Tiffin University Library.

Time Commitment

Effective time management is possibly the single most critical element to your academic success. To do well in this online class you should plan your time wisely to maximize your learning through the completion of readings, discussions, and assignments. Because of our accelerated, seven-week term, TU online courses are designed with the expectation that you dedicate a little over **six (6)** hours per credit hour to course activities and preparation **each week**. For example, for successful completion of a three-credit, seven-week online course you should reserve roughly **twenty (20) hours per week**.

To help plan your time and keep on track toward successful course completion, note the distinctive rhythm of assignment due dates:

1. All times assume Eastern Time (GMT-4).
2. Weeks begin at 12:00 a.m. ET on Monday and end at 11:55 p.m. ET on Sunday.
3. Unless otherwise noted, initial assignments or discussion posts are due by **11:55 p.m. ET** on **Wednesdays.**
4. Additional assignments or follow-up discussion posts are due by **11:55 p.m. ET** on **Saturdays, and**
5. Major assignments and reflections are typically due by **11:55 p.m. ET** on **Sundays.**

Learning Activities

There will be different types activities to assess your progress through course topics. There will be quizzes after each topic, some forum discussions and written assignments. You can estimate 4 activities per week on average. There will also be a course project report where you are expected to make research on a specific topic of your choice.

Grading

The chart below identifies the individual contributions from each type of activity, per week.

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Total
Discussions Activity 1.1 (n/a) Activity 1.2 (30)				**Discussions** Activity 5.1 (30)	**Discussions** Activity 6.1 (40)		**100**
	Wiki Submissions Activity 2.1b (30)		**Wiki Submissions** Activity 4.1b (30)		**Wiki Submissions** Activity 6.3 (30)		**90**
Assignments Activity 1.3 (40) Activity 1.4 (40)	**Assignments** Activity 2.3 (30)	**Assignments** Activity 3.3 (40)	**Assignments** Activity 4.2 (40) Activity 4.3 (40)	**Assignments** Activity 5.2 (30) Activity 5.3 (50)	**Assignments** Activity 6.2 (50)	**Assignments** Activity 7.1 (30) Activity 7.2 (100)	**490**
	Untimed Quiz Activity 2.2 (30)	**Untimed Quiz** Activity 3.1 (30) Activity 3.2 (40)					**100**
Chapter Quiz Activity 1.5 (20)	**Chapter Quiz** Activity 2.4 (20) Activity 2.5 (20)	**Chapter Quiz** Activity 3.4 (20) Activity 3.5 (20)	**Chapter Quiz** Activity 4.4 (20) Activity 4.5 (20)	**Chapter Quiz** Activity 5.4 (20) Activity 5.5 (20)	**Chapter Quiz** Activity 6.4 (20)	**Chapter Quiz** Activity 1.5 (20)	**220**
	Reflection (Extra Credit) Activity 2.6 (10)	**Reflection (Extra Credit)** Activity 3.6 (10)	**Reflection (Extra Credit)** Activity 4.6 (10)	**Reflection (Extra Credit)** Activity 5.6 (10)	**Reflection (Extra Credit)** Activity 6.5 (10)		**50 Extra Credit**
130	**130**	**150**	**150**	**150**	**140**	**150**	**1000**

Grading Scale

A: 90-100% | B: 80-89% | C: 70-79% | F: <69%

Course Schedule and Weekly Checklist

Week 1 - Introduction to Information Security

- ☐ WED: Activity 1.2: Hackers... Hackers... – Initial Post

- ☐ SAT: Activity 1.2: Hackers... Hackers... – Discussion Responses
- ☐ SAT: Activity 1.3: Secret Lives of Security Professionals
- ☐ SAT: Activity 1.4: A Hard Day at SLS
- ☐ SUN: Activity 1.5: Module 1 Quiz

Week 2 - Need for Security / Information Security Management

- ☐ WED: Activity 2.1a: Topic Selection
- ☐ SAT: Activity 2.1b: Recent Attack Examples
- ☐ SAT: Activity 2.2: Cyber Exploits
- ☐ SAT: Activity 2.3: Poster
- ☐ SUN: Activity 2.4: Module 2 Quiz
- ☐ SUN: Activity 2.5: Module 3 Quiz
- ☐ SUN: Activity 2.6: Weekly Reflection (Extra Credit)

Week 3 - Risk Management / Incident Response and Contingency Planning

- ☐ SAT: Activity 3.1: Risk Assessment Calculations
- ☐ SAT: Activity 3.2: Incident or Disaster?
- ☐ SAT: Activity 3.3: Incident Response
- ☐ SUN: Activity 3.4: Module 4 Quiz
- ☐ SUN: Activity 3.5: Module 5 Quiz
- ☐ SUN: Activity 3.6: Weekly Reflection (Extra Credit)

Week 4 - Legal, Ethical, and Professional Issues / Security and Personnel

- ☐ WED: Activity 4.1a: Choose Job Description
- ☐ SAT: Activity 4.1b: Security Jobs
- ☐ SAT: Activity 4.2: Just Found a USB
- ☐ SAT: Activity 4.3: Hiring & Firing Policies
- ☐ SUN: Activity 4.4: Module 6 Quiz

- ☐ SUN: Activity 4.5: Module 7 Quiz
- ☐ SUN: Activity 4.6: Weekly Reflection (Extra Credit)

Week 5 - Security Technologies

- ☐ WED: Activity 5.1: Passphrase Generators – Initial Post
- ☐ SAT: Activity 5.1: Passphrase Generators – Discussion Responses
- ☐ SAT: Activity 5.2: Event Correlation
- ☐ SAT: Activity 5.3: Sweet or Bitter Vengeance
- ☐ SUN: Activity 5.4: Module 8 Quiz
- ☐ SUN: Activity 5.5: Module 9 Quiz
- ☐ SUN: Activity 5.6: Weekly Reflection (Extra Credit)

Week 6 - Cryptography

- ☐ WED: Activity 6.1: PKI Encryption/Decryption – Encrypt Message
- ☐ SAT: Activity 6.1: PKI Encryption/Decryption – Decrypt Message
- ☐ SAT: Activity 6.2: Lost Key
- ☐ SAT: Activity 6.3: Cryptography/Password Cracking
- ☐ SUN: Activity 6.4: Module 10 Quiz
- ☐ SUN: Activity 6.5: Weekly Reflection (Extra Credit)

Week 7 - Information Security Maintenance

- ☐ SAT: Activity 7.1: Server Room Security
- ☐ SAT: Activity 7.2: Course Project - Finding Fresh Ideas
- ☐ SAT: Activity 7.3: Module 12 Quiz

Tips for Success

Online learning requires self-discipline and self-direction. As seekers of the truth, we should be willing to challenge one another's academic work in a spirit of respectful comradery. Your course is a place for you to grow as you benefit from the expertise, experience, and diverse perspectives of your instructor and peers. Constructive feedback will challenge you to stretch your own thinking, thereby expanding your knowledge and understanding.

To get the most out of your learning experience, you should actively engage (participate) in **ALL** course activities. Course elements are arranged chronologically. To complete a week, simply work your way "down the page" through all of the course materials and activities.

For More Information:

Be sure to review the Support, Policies, and Procedures addendum.