

ITS 130 Introduction to Cybersecurity

Rubric: ITS

Term: Autumn 2023

Number: 130

Credits: 3

Section: 50

Lecture: Online

CRN: 74586

Lab: Online

Course Dates: September 18 – December 15, 2023

Instructor Information

Name: Dianne M Burke

Office: MC 205

Phone: 243-7842

Email: dianne.burke@mso.umt.edu

Virtual Office Hours by appointment.

Course Description

The *Introduction to Cybersecurity* course is designed to cover a wide range of security topics, both current and historical, accompanied by hands-on activities, lab exercises, and/or research. The course covers cyber ethics, basic networking and the Linux operating system, cyber attack and defense methods, and introductory cryptography.

Course Outcomes

Privacy Basics

- Explain the challenges of maintaining privacy in today's interconnected world

Cyber Ethics

- Understand ethical aspects of being a cyber citizen
- Explain laws protecting intellectual property including DMCA, Copyright, Patent, Trade Secret
- Explain hacking laws including the Computer Fraud and Abuse Act (CFAA) and the Electronic Communications Privacy Act (ECPA).

Essential Networking

- Learn and execute basic Linux commands
- Describe the basic components of a computer network
- Explain the concept of protocols and layering in networking
- Use Wireshark to perform network packet inspection
- Identify the elements of a website and develop an HTML web page

Cyber Attacks

- Enumerate common steps taken to initiate a cyber attack
- Describe and demonstrate strategies used during reconnaissance

Cyber Defense

- Identify the categories of cyber defense and technological defense techniques

- Explain the need for cryptography
- Describe the working of a generic public key algorithm
- Demonstrate how public key cryptography can be used to achieve confidentiality and/or authentication
- Enforce basic hardening steps on a Linux operating system

Resources

There is no required text. The course will use a variety of materials to facilitate learning.

Students will be registered on the Montana Cyber Range as a course supplement. There is no charge to access or use the Range. The course instructor will handle registration tasks and, after receiving an email from the Range, students will complete the registration process.

Grading

During the semester you'll be graded in two areas: lesson homework assignments and module quizzes.

Grades will be assessed as follows:

Assessment:	Weight:
Lesson Homework/Written Assignments	50%
Module Quizzes	50%

Grading Scale:	Letter Grade:
90-100%	A
80-89%	B
70-79%	C
60-69%	D

Lesson homework and written assignments

This is worth half of your grade. All lessons will have homework assignments that are taken from the presented material.

Many lessons will include a written assignment. Students should submit professionally written responses using correct grammar, spelling, and sentence structure.

Homework is due on **Sunday evening at 11:55 p.m.**

Module Quizzes

This category is worth 50%. Roughly half of the questions will cover the lecture topics in a unit and the remainder will cover the labs and exercises. Any question on a quiz will have been covered in the class material.

Asking Questions and Communicating with course instructors:

I monitor the Q&A forums daily Monday-Friday and check email regularly. I will respond within 24 hours Monday – Friday, and often within a shorter timeframe than 24 hours.

Disability Statement

The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors, and the Office for Disability Equity (ODE). If you anticipate or experience barriers based on disability, please contact the ODE at: (406) 243-2243, ode@umontana.edu, or visit www.umt.edu/disability for more information. Retroactive accommodation requests will not be honored, so please, do not delay. As your instructor, I will work with you and the ODE to implement an effective accommodation, and you are welcome to contact me privately if you wish.

Scholarly Conduct

- All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with the Student Conduct Code. <https://www.umt.edu/missoula-college-learning-center/testing/student-code-of-conduct-2021-pdf>
- Plagiarism, cheating, or direct use of online resources without proper attribution will result in a deduction of points no less than 20% of the total points for the assignment to a zero on the assignment at the instructor's discretion.
- All students are expected to respect the opinions and dignity of all members of the class and act in a dignified manner.
- Using the Internet to research materials and concepts is an integral part of learning in the twenty-first century. Studying with other students is a productive method of learning. A certain amount of collaborating on concepts with other students and using resources found on the Internet in an assignment is recommended. However, copy and paste is not acceptable.

Professionalism

All work performed in the course should be completed in a professional manner and be of business quality. Think of this semester as a dry run for your life in the business world. In addition to doing your 'job' correctly and on time, demonstrate professionalism through your attention to detail and in particular, through your efforts in all written communications. Use complete sentences, avoid slang and texting shorthand (no lols, please), and use proper grammar.

Employers often ask for writing samples or give you a writing test as part of the application/interview process, so use your assignments as an opportunity to practice this skill.

Tentative Course Schedule Spring 2023

Week	Dates	Unit	Activity/Due Dates
1	Week of September 18, 2023	Privacy Basics Lesson 1	Lab Privacy Basics1: Firefox Dashboard Assignment Privacy Basics 1: What are your privacy safeguards? <hr/> Lab/Assignment due September 24, 2023 at 11:55 p.m.
2	Week of September 25, 2023	Privacy Basics Lesson 2	Assignment Privacy Basics 2: IoT Analysis Report Privacy Basics Unit Quiz <hr/> Assignment/Quiz due October 1, 2023 at 11:55 p.m.
3	Week of October 2, 2023	Computer Ethics Lesson 1	Assignment Computer Ethics 1: Ethics Infographic <hr/> Assignment due October 8, 2022 at 11:55 p.m.
4	Week of October 9, 2023	Computer Ethics Lesson 2	Assignment Computer Ethics 2: Fair Use: How Much is Too Much? <hr/> Assignment due October 15, 2023 at 11:55 p.m.
5	Week of October 16, 2023	Computer Ethics Lesson 3	Assignment Computer Ethics 3: Intellectual Property Computer Ethics Unit Quiz <hr/> Assignment/Quiz due October 22, 2023 at 11:55 p.m.
6	Week of October 23, 2023	Essential Networking Lesson 1	Lab Essential Networking 1: Linux Capture the Flag <hr/> Lab due October 29, 2023 at 11:55 p.m.
7	Week of October 30, 2023	Essential Networking Lesson 2	Lab Essential Networking 2: Network Diagram <hr/> Lab due November 5, 2023 at 11:55 p.m.
8	Week of November 6, 2023	Essential Networking Lesson 3	Lab Essential Networking 3: Wireshark Analysis Essential Networking Unit Quiz <hr/> Lab/Quiz due November 12, 2023 at 11:55

			p.m.
9	Week of November 13, 2023	Cyber Attacks Lesson 1	Lab Cyber Attacks 1: Reconnaissance Lab due November 19, 2023 at 11:55 p.m.
10	Week of November 20, 2023	Cyber Attacks Lesson 2	Lab Cyber Attacks 2 Cross Site Scripting Cyber Attacks Unit Quiz Lab/Quiz due November 26, 2023 at 11:55 p.m.
11	Week of November 27, 2023	Cyber Defense Lesson 1	Lab Cyber Defense 1 Digital Forensics Lab due December 3, 2023 at 11:55 p.m.
12	Week of December 4, 2023	Cyber Defense Lesson 2	Lab Cyber Defense 2 Cryptography Cyber Defense Unit Quiz Lab/Quiz due December 10, 2023 at 11:55 p.m..
Finals Week	Week of December 11, 2023	Final Exam	Final Exam Final Exam due FRIDAY December 15, 2023 at 11:55 p.m.

Any changes to the schedule will reflected in the course shell.