

Cybersecurity



Live Cyber Threat Map

**Miller Career and Technology Center
Spring 2026**





Contact Information

Instructor: Jay Thapar

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Prerequisites for Cyber Security

- Principles of IT (8th grade) or
- Intro to Computer Science (9th-11th) or
- AP Computer Science Principles (9th-11th) or
- AP Computer Science A (9th-11th) or
- Computer Technician (11th) @ MCTC or
- Network Engineering (11th) @ MCTC

2025-2026 Bell Schedule

AM Students

1st Period **7:15 – 8:03**

2nd Period **8:07 – 8:54**

3rd Period **8:58 – 9:45**

4th Period **9:49 – 10:40**

PM Students

5th Period **12:20 – 1:06**

6th Period **1:10 – 1:56**

7th Period **2:00 – 2:45**

Scheduling Information

- ❖ Students are scheduled to attend Miller for 3 to 4 class periods. This means most students will take a core class while they are here.
- ❖ Please be sure your contact information is correct. The MCTC Counselor may contact you if there are questions about scheduling.
- ❖ Student schedules will be available in HAC before the first day of school.
- ❖ Students may email MCTC@katyisd.org with scheduling questions.

Expectations



WHAT WE KNOW NOW

Cyber News

Teen accused of hacking Las Vegas casinos, causing \$100M in damages



How the Louvre Jewelry Heist Unfolded



Change Healthcare
discloses USD 22M
ransomware payment

Overview of Cyber Security Topics



Risk Assessments and Management

Hacker and Attack Types

Network, Physical, Host, Application, & Data Security

Ethical Hacking

Social Engineering, Phishing

Firewalls, VPNs, Routers, Switches, Servers



Cloud Services

Vulnerability Assessments

Virtualization

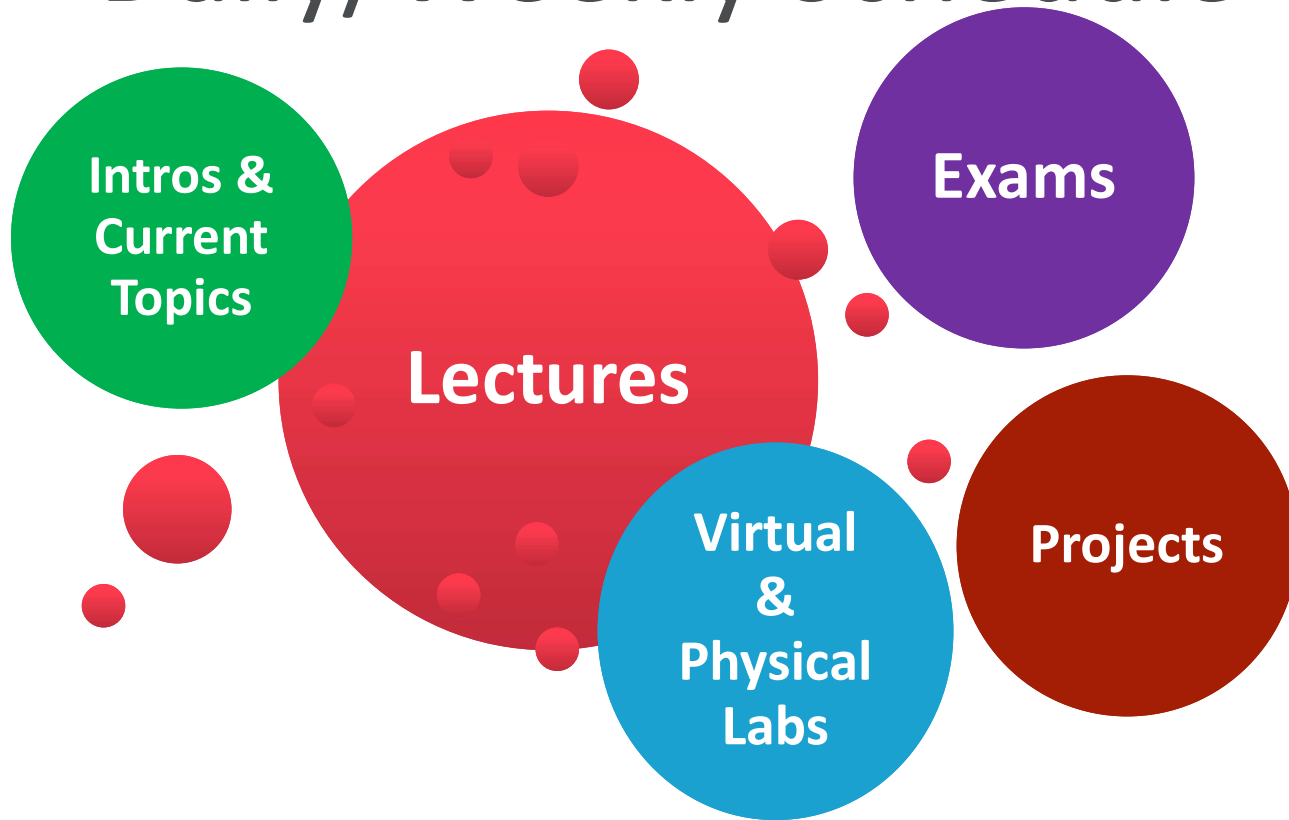
Password Cracking

Cryptography (Encryption, hashing, etc)

Kali Linux



Daily/Weekly Schedule





Course Curriculum



1.0 Security Concepts

2.0 Threats, Vulnerabilities, and Mitigations

3.0 Cryptographic Solutions

4.0 Identity and Access Management

5.0 Network Architecture

6.0 Resiliency and Site Security

7.0 Vulnerability Management

8.0 Network and Endpoint Security

9.0 Incident Response

10.0 Protocol, App, and Cloud Security

11.0 Security Governance Concepts

12.0 Risk Management Processes

13.0 Data Protection and Compliance

Virtual Labs

TestOut

Floor 1 OverviewIT AdministrationITAdminScore Lab

Scenario

You have installed Hyper-V on ITAdmin. You're experimenting with creating virtual machines.

In this lab, your task is to create two virtual machines named VM1 and VM2. Use the following settings as specified for each machine:

VM1:

- Virtual machine name: VM1
- Virtual machine location: D:\HYPERV
- Generation: Generation 1
- Startup memory: 1024 MB (do not use dynamic memory)
- Networking connection: External
- Virtual hard disk name: VM1.vhdx
- Virtual hard disk location: D:\HYPERV\Virtual Hard Disks
- Virtual hard disk size: 50 GB
- Operating system will be installed later

VM2:

- Virtual machine name: VM2
- Virtual machine location: D:\HYPERV
- Generation: Generation 1
- Startup memory: 2048 MB (use dynamic memory)
- Networking connection: Internal
- Virtual hard disk name: VM2.vhdx
- Virtual hard disk location: D:\HYPERV\Virtual Hard Disks
- Virtual hard disk size: 250 GB
- Operating system will be installed later
- Minimum RAM: 512 MB

Hyper-V Manager

File Action View Help

Hyper-V ManagerITADMIN

Hyper-V Manager provides the tools and information you can use to manage a virtualization server.

Introduction

A virtualization server is a physical computer that provides the resources required to run virtual machines. You can use Hyper-V Manager to create, configure, and manage the virtual machines on a virtualization server.

You can use virtual machines to run different workloads. Each virtual machine runs in an isolated execution environment, which gives you the flexibility to run different operating systems and applications on one physical computer.

Actions

Hyper-V Manager

Connect to Server...

View

Help

ITAdmin

Type here to search10:04 AM1/23/2025

Certifications



- CompTIA Security + certification exam
- Students can work full or part-time using this certification.
- Entry level salary: \$50,000-\$70,000



Certification Exam for MCTC Cybersecurity Students



- Student requirements:
 - Minimum average course grade
 - Minimum score on practice exam
- Exam Date for 2025-2026 School Year
 - Last week in April (22nd-24th)

Security+ Certification Pass Rate

Results for 2022 - 2025



Exam score range: 100-900

Passing score: 750 (83.33%)

Students tested: 146 (48 – 2025)

Students passed: 136 (44 – 2025)

Low/Average/High: 703/767/807

PASS RATE 93%



Course Fees

- Online Curriculum
- Online Virtual Labs
- Practice Questions
- Practice Tests
- Certification Exam

Course Fees & Value

**Security+ eLearning
Bundle**

Total Value: \$1,288

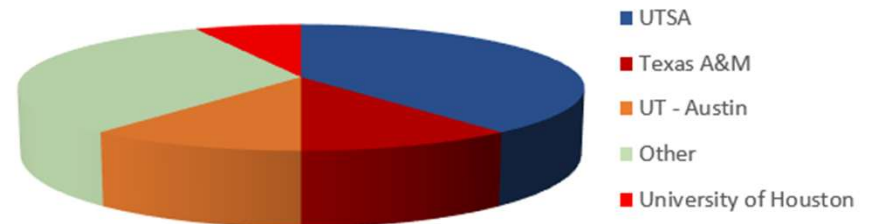


Your Cost: \$0.00

Cybersecurity in College



College Choice for Cyber Students



- 96% of MCTC Cybersecurity Students plan to attend college
- Over 90% plan on majoring in cybersecurity or computer science

Careers in Cybersecurity

Current need worldwide: 3.5 million

Current openings in the United States: over 750,000



Information Security Analyst

 #4 in 100 Best Jobs

As concern about cybersecurity grows, so does the demand for information security analysts. It is the duty of these professionals to prepare and carry out security measures that protect a company's computer networks and systems. [Read More »](#)

Projected Jobs

52,100

Median Salary

\$124,910

Education Needed

Bachelor's

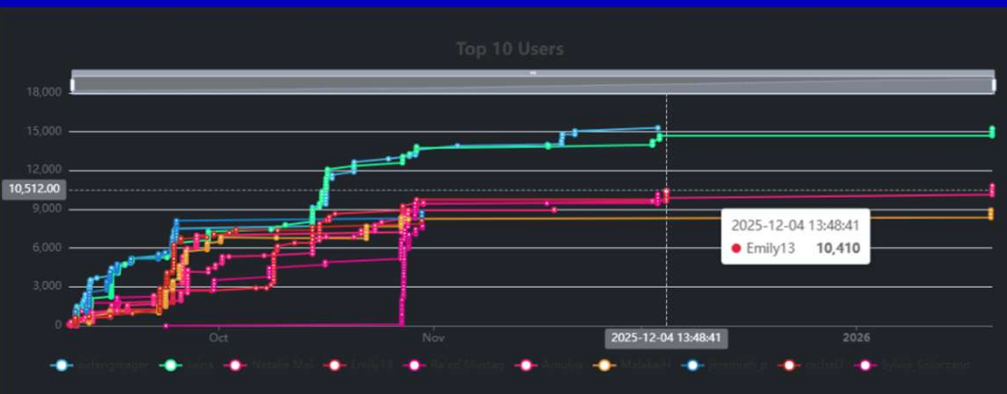
13.4 % increase in jobs from 2024

7.1 % increase in salary from 2024

Competitions and Internships

- CTF Challenges (created by year 2 students)
- **Advisory Council – need volunteers**
- Internships

Scoreboard



Challenges

Thanksgiving

TurkeyTalk 10	Grandma's Secret Recipe 50	Cherry Pi 100	follow the steps 200
Thanksgiving Cryptography 200	Turkey hunt 200	TANKGIV!!! 250	Thanksgiving Receptes 250
Stuffed with Junk	Str@ng3 Turk3y	Pumpkin Pi	Maybe a simple Thanksgiving c



- SkillsUSA – IT competitions
- **CURRENT STATE CHAMPIONS IN CYBER**
 - **3rd Place @ Nationals**

District / State / National / World

- IT Competitions include:
 - Cyber Security, Networking
 - Programming, Game Design
 - Quiz Bowl, IT Services
 - IOT Smart Home
 - Various Leadership Contests



MCTC Cyber Security vs AP Cyber Security

	AP Networking (year 1 home campus)	MCTC Cyber Security I/II (year 1 Miller)	AP Cyber Security (Year 2 home campus) <i>AP Networking required</i>	MCTC Practicum in Cyber Security (Year 2 Miller) <i>MCTC Cyber I/II required</i>
CompTIA Security+ Certification	No	Yes	Yes	(earned year 1)
CompTIA Network+ Certification	Yes	No	(earned year 1)	No
CompTIA CySA+ Certification	No	No	No	Yes
SkillsUSA Chapter	No	Yes	No	Yes
CTF challenges	No	Yes	No	Yes
Hands On Labs & Special Projects	No	Yes	No	Yes
Credits	1.0	2.0	1.0	2.0
5.0 GPA Scale	Yes	No (GPA Exempt)	Yes	No (GPA Exempt)



Frequently Asked Questions

- Why Cyber Security at MCTC?
Security+ Certification (year 1)
Possible internships
- Which pre-requisite do you recommend?
(Networking I or Computer Technician)



Frequently Asked Questions

- Do I need to know a programming language?

No

- What programming language should I be learning?

Python

Linux (OS)

Thanks for Visiting Cyber Security

