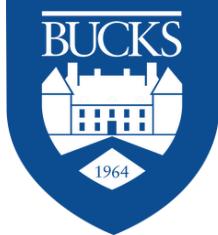




# Bucks County Community College Cybersecurity Program

AN OVERVIEW



# Overview

- ▶ What is Cybersecurity?
- ▶ Cybersecurity Implementation
- ▶ SecOps Tactics
- ▶ Current Challenges
- ▶ Cybersecurity Program at Bucks



# What is Cybersecurity?

- ▶ **Cybersecurity** is the practice of implementing defensive systems to protect Information Technology (IT) resources from outside attacks.
- ▶ Cybersecurity helps protect valuable information (data) on various computer systems from malware that can ultimately undermine the system's ability to work properly.



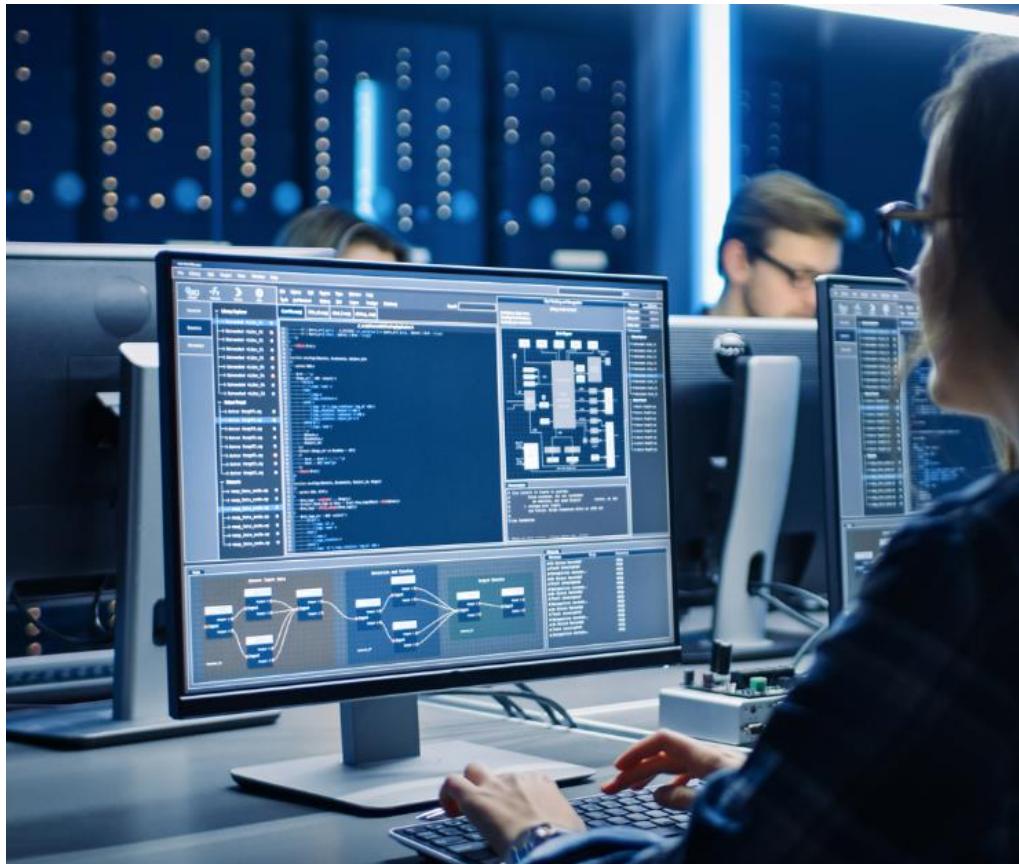
# Cybersecurity Implementation

- ▶ **Operational security:** the policies and protocols put in place to protect and handle data assets.
- ▶ **Information security:** implemented to protect the privacy and integrity of data.
- ▶ **Network security:** used to secure computer networks from threats.



# Cybersecurity Implementation (continued)

- ▶ **Application security:** used to keep devices and software threat-free.
- ▶ **Security Operations (SecOps):** the merger and collaboration between IT security and IT operations, helps prevent silos within the wider IT organization.
- ▶ *The objective is to meet organizational security needs without compromising IT performance.*



# SecOps Tactics

- ▶ **Continuous network monitoring:** covers everything in the IT environment, including public, private, and cloud infrastructures.
- ▶ **Incident response:** take the appropriate steps to contain any damage or take preventative measures at the first sign of suspicious activity.



# SecOps Tactics

- ▶ **Forensics and root cause analysis:** assess and analyze security incidents and other unexpected events to find the root cause.
- ▶ **Threat intelligence:** gaining knowledge about possible security threats, and planning methods to prevent or respond to events.



# Current Cybersecurity Challenges

- ▶ Security threats continue to grow and are more sophisticated.
- ▶ Lack of trained cybersecurity professionals.
- ▶ App development speed and adoption are prioritized over security.
- ▶ Innovation has outpaced security.
- ▶ The time needed to exploit vulnerabilities has decreased.



# Cybersecurity Program at Bucks

- ▶ Designed to meet the need for more trained Cybersecurity professionals
- ▶ Students pursuing this major develop an understanding of the challenges and solutions for securing information systems.
- ▶ A majority of the technical courses in the program map to industry-recognized certifications

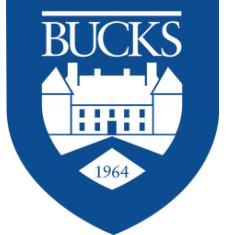




## Cybersecurity Program at Bucks (continued)

- ▶ Prepares students for upper-division course work leading to a bachelor's degree in:
  - ▶ Cybersecurity
  - ▶ Information Technology
  - ▶ Information Science.
- ▶ Parallels the first two years of study required by similar majors offered at four-year colleges and universities.

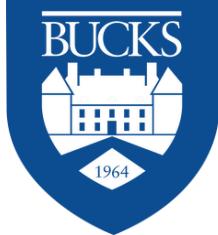




# Cybersecurity Program at Bucks (continued)

- ▶ Provides a firm foundation in IT infrastructure including hardware, operating systems, networking, and security
  
- ▶ Focused on key IT components:
  - ▶ **IT core** – networking, operating systems, database
  - ▶ **SecOps** – cybersecurity frameworks, defense, offence

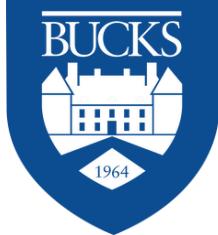




## Cybersecurity Program at Bucks (continued)

- ▶ How does the program provide opportunities for students?
  - ▶ Courses transfer to many 4-year institutions
  - ▶ Provides opportunities to gain industry-recognized certifications (A+, Network+, Security+, Linux+, PenTest+, CySA+)





## Academic Program Overview

- ▶ **Transfer degree:** Associates of Science (AS)
- ▶ **Total Credits:** 61 – 63 (depending upon Math sequence)
- ▶ **Learning Modes:** On Campus, Remote, Online
- ▶ **Coursework:**
  - ▶ Systems: 7 courses
  - ▶ Networking: 5 Courses
  - ▶ SecOps: 4 courses





## Additional Information

► **Cybersecurity Program:**

<https://www.bucks.edu/catalog/majors/stem/cybersecurity/>

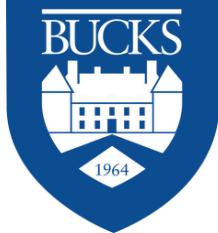
► **Admissions Website:**

<https://www.bucks.edu/admissions/>

► **Faculty Contact:**

Dr. Rory Butler - [rory.butler@bucks.edu](mailto:rory.butler@bucks.edu)





# Review

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- ▶ Cybersecurity Implementation
- ▶ SecOps Tactics
- ▶ Current Challenges
- ▶ Cybersecurity Program at Bucks

