



THE UNIVERSITY OF ARIZONA
College of
Information Science

CYBER OPERATIONS

Bachelor of Science in Cyber Operations



2

ways to study:
on campus and online

#1

Bachelor's in Cybersecurity
Degree Programs
academicinfluence.com

\$88K

average salary for cybersecurity
graduates as cyber analysts*

STEP INTO THE FUTURE OF CYBERSECURITY AND AI.

Offered on main campus and online, the STEM-designated Bachelor of Science in Cyber Operations prepares you to lead in high-stakes environments.

Choose an emphasis in **Artificial Intelligence** or **Security** as you build skills in reverse engineering, network analysis, penetration testing and low-level programming—gaining a deep understanding of how modern systems and networks operate. Through hands-on virtual labs, you'll hack systems, analyze real malware and simulate cyber warfare in a safe, controlled environment.

Artificial Intelligence Emphasis – CAE-CyberAI Designation

1. Apply core concepts of artificial intelligence and machine learning (including supervised and unsupervised learning, machine learning, neural networks and deep learning) to analyze cybersecurity problems and evaluate potential solutions.
2. Implement AI-driven security solutions: develop and deploy AI-driven tools and algorithms that enhance the detection, prevention and response to cyber threats.

Security Emphasis – CAE-CO Designation

1. Perform static and dynamic analysis to identify software vulnerabilities to strengthen future software releases.
2. Plan and execute cyber operations in simulated contested environments to discover network-based vulnerabilities to identify necessary protective measures.



CORE SKILLS

- Evaluate **network architectures and protocols** to identify and assess security risks
- **Analyze the motivations and methods** of threat actors to develop effective defenses
- **Apply legal and ethical principles** to make informed decisions in complex cybersecurity scenarios

ARTIFICIAL INTELLIGENCE EMPHASIS

- **Apply AI and machine learning techniques**—including neural networks and deep learning—to solve cybersecurity challenges
- **Build and deploy AI-driven tools** to detect, prevent and respond to cyber threats

SECURITY EMPHASIS

- **Conduct static and dynamic analysis** to identify software vulnerabilities
- **Plan and execute cyber operations** in simulated environments to uncover and mitigate network vulnerabilities

* Average bachelor's degree in cybersecurity for cybersecurity analysts according to Zippia, December 2025.

CYBER OPERATIONS COURSES

Whichever emphasis area you choose, the BS in Cyber Operations combines hands-on, real-world training with the skills and insight to launch your career in cybersecurity.

CORE COURSES:

- Active Cyber Defense
- Cloud Computing
- Cryptography for Cyber Operations
- Cyber Ethics
- Networking for Cyber Operations
- Principles of Cyber Operations
- Scripting for Cyber Operations
- Cyber Operations Capstone

EMPHASIS COURSES:

Artificial Intelligence

- Advanced Analytics for Security Operations
- Artificial Intelligence in Cyber Operations
- Data Analysis and Visualization
- Data Engineering
- Deep Learning in Cyber Operations
- Machine Learning in Cyber Operations
- Statistics in the Information Age
- Violent Python

Security

- Assembly Language Programming for Security Professionals
- C Programming
- Cyber Investigations and Forensics
- Introduction to Security Programming
- Malware Threat and Analysis
- Offensive Cyber Operations
- Operating Systems for Security Professionals

This is not a complete list of required or available courses, and course offerings may vary, so be sure to meet with your academic advisor to plan the path that works best for you.

INTERNSHIPS

Internships are optional in your InfoSci degree, but strongly encouraged. With support from our Career Center, students gain hands-on experience with organizations like Amazon, CyVerse, Intel, Mayo Clinic, Deloitte, Raytheon and Tucson Electric Power, turning classroom learning into career-ready skills.

LAUNCH YOUR CAREER IN CYBER OPERATIONS

Information security analysts job growth is projected to increase 33% over the next seven years, much faster than the average for all occupations, according to the US Bureau of Labor Statistics. According to Zippia, the average salary for a Bachelor's in Cyber Operations graduate serving as a **cybersecurity analyst is \$88,400 per year**, while according to ZipRecruiter, the average salary for **cybersecurity in general is \$132,900 per year**.

BSCO graduates are ready to excel in high-demand positions across industries, including:

- Cloud security specialist
- Cyber network defender
- Cyber threat intelligence analyst
- Cybersecurity analyst or engineer
- DevSecOps engineer
- Digital forensics analyst
- Incident responder
- Information security analyst
- Intelligence analyst
- Intrusion detection analyst
- Penetration tester
- Malware analyst
- Python programmer
- Security architect
- Social engineer
- Systems or network administrator
- Vulnerability researcher

Ready to step into the future of cybersecurity and AI?

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