

# A CLOSER LOOK

## BAS Cyber Operations



THE UNIVERSITY OF ARIZONA  
UA South

### Cyber Operations

The BAS in Cyber Operations is designed specifically to prepare graduates for entry into a number of cyber-related occupations in defense, law enforcement, and private industry. The curriculum includes content in both offensive and defensive cyber security and will provide students with a critical baseline of technology skills, critical thinking skills and detective-like thought processes that enable students to analyze problems and render solutions. Students can choose between two tracks within the program, a **Defense/Forensics** track and an **Engineering** track. The Engineering track requires more advanced skills in mathematics and programming and is designed to meet the requirements established by the National Security Agency Center of Academic Excellence in Cyber Operations.



### What are the Requirements to Enter the Program?

The Cyber Operations program has additional requirements for admission to The University of Arizona:

- Minimum 2.5 GPA in your transferrable coursework
- Resume
- Goal Statement
- Defense/Forensics Track: Recommended AAS degree in Cyber Security or related field (employment in the field and/or technical certifications are also acceptable)
- Engineering Track: Associates degree in Programming or Computer Science

Contact us if you have any questions about the transferability of your credits, your admissibility to the program, or the application process. For full application instructions, please visit <http://uas.arizona.edu/admissions>.

### About the Program:

The program was developed in consultation with leading Cyber experts in defense, industry, and academia, and is currently working toward designation as a National Security Agency Center for Academic Excellence in Cyber Operations. Most of the courses are delivered through our Cyber Virtual Learning Environment (VLE), which offers interactive, hands-on learning in both face-to-face and fully online formats. The VLE includes a virtual city, CyberApolis, inhabited by 15,000+ highly-detailed virtual personas with extensive supporting infrastructure, specifically designed to support the scenarios necessary for our students to gain the Cyber Security knowledge, skills, and abilities required to be successful. <http://www.cyberapolis.com>

### Sample Courses in the Program

Courses combine hands-on cyber activities in a Virtual Learning Environment with a strong academic educational experience. Required courses include:

- Cyber Ethics
- Active Cyber Defense
- Wireless Networking & Security
- Malware Threats & Analysis
- Cyber Warfare
- Investigations & Forensics
- Computational Thinking & Doing

### Academic Advisors

Sierra Vista – (520) 458-8278

Online – (218) 536-9265

Santa Cruz County – (520) 287- 8632

Pinal/Mesa – (520) 840-4878

Douglas – (520) 439-6882

Pima County – (520) 206-7445

Yuma- (928) 271-9560

### Questions?

For more information, reach out to a UA South representative.

You can find one in your area by visiting our website at:

<http://www.uas.arizona.edu>

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### Career Outlook

This degree prepares graduates for career opportunities with potential employers in:

- US Military
- Defense Contractors
- Department of Homeland Security
- National Security Administration
- Department of Justice
- Other US and State Government Agencies
- Financial Institutions
- Health and Insurance Corporations
- Retail and Industry

### Average Job Salary Range

According to the Department of Labor's Bureau of Labor Statistics, the cyber security/cyber operations occupation is predicted to grow by at least 18% over the next two decades. The chart below shows the 2014 national wage averages for Cyber/Information Security professions:

Percentile	10%	25%	50% (Median)	75%	90%
Hourly Wages	\$24.18	\$32.23	\$42.74	\$54.80	\$67.53
Annual Wages	\$50,300	\$67,030	\$88,890	\$113,990	\$140,460



**1.5 Million**

**MORE** cybersecurity professionals will be needed to accommodate the predicted global shortfall by 2020

Source: (ISC)<sup>2</sup> 2015 Global Information Security Workforce Study



On average, **52%**

of IT professionals surveyed stated fewer than **25%** of all applicants were qualified

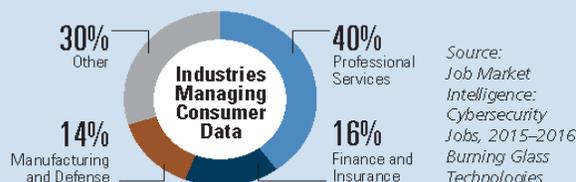
Source: State of Cybersecurity: Implications for 2015: An ISACA and RSA Conference Survey

The biggest skill gaps of today's cybersecurity professionals



Source: State of Cybersecurity: Implications for 2015 An ISACA and RSA Conference Survey

Fastest cybersecurity demand sectors are in industries managing consumer data



Source: Job Market Intelligence: Cybersecurity Jobs, 2015-2016 Burning Glass Technologies

**Cybersecurity**

job postings took **8%** longer to fill than IT job postings overall

Source: (ISC)<sup>2</sup> 2015 Global Information Security Workforce Study

Expertise required for various cybersecurity roles in demand

- Information Security
- Network Setup
- Auditing
- Network Protocols
- Core Database, Coding and Scripting
- Systems Administration



Source: Job Market Intelligence: Cybersecurity Jobs, 2015

Approximately **10%**

of the current cybersecurity workforce are comprised of women



Source: (ISC)<sup>2</sup> 2015 Women in Security: Wisely Positioned for the Future of InfoSec

**18% Growth**

Computer and mathematical occupations will grow much faster than the average job during 2012-2024

Source: Bureau of Labor Statistics, U.S. Department of Labor

Fastest growing skills in cybersecurity job postings

- Python
- HIPAA
- Risk Management
- Internal Auditing
- Audit Planning

Source: Partnership for Public Service

Hardest to fill skills in cybersecurity job postings

Source: Job Market Intelligence: Cybersecurity Jobs, 2015-2016 Burning Glass Technologies



- Software Architecture
- Network Attached Storage (NAS)
- Software Issue Resolution
- Internet Security
- Legal Compliance
- Data Communications
- Platform as a Service (PaaS)
- Computer Forensics
- Internal Auditing
- Apache Hadoop