

BASHA HIGH SCHOOL

INSTITUTE OF CYBER OPERATIONS AND NETWORKING



PATHWAY PARTNERSHIPS



Chandler-Gilbert
Community College

Associates Degree



The University of
Arizona at
Chandler

Bachelor of
Applied Science in
Cyber Operations



Advanced Business
Learning

Industry
Certification
Employment



THE NEW FRONTIER

INDUSTRY

Security is needed in every domain – if it connects to the Internet or stores data it must be protected

“If you know cybersecurity, then you have a job for life” – Robert Herjavec



CYBER MARKET OPPORTUNITY

\$74,561

Average Salary

Salary.com 1/26/23

The unemployment rate for cyber security is zero 2/1/2022.
(cyberseek.org)

Entry cyber security positions are well paying, there is something for every level of education! (6) Range 51k – 110k DOE and Certifications

3.4m

Open Positions

- “3.4 million unfilled positions in the industry by 2022” (ISC)2 Cybersecurity Workforce Study. (4)



JOB MARKET GLANCE

755,743 cyber job
Arizona's job
openings = ~19,000

Fastest-growing
career nationally –
33%
7x faster than
national average
growth rate

Employers want
hands-on
experience, soft skills,
certifications, and
continual learners.

Job
Openings



Cyberseek.org & BLS
2/14/2023

Job Growth

9/7/2022

BLS & Forbes.com



Job Desires



UCSD & Dice



EMPLOYMENT OPTIONS

Security Job Openings

- “While highly technical roles are key, on average they make up *less than a third* of a healthy cybersecurity organization ⁽⁷⁾
- Non-technical careers in cyber are *aided* by a solid technical foundation
 - Risk and Compliance
 - Law
 - Policy Writer
 - Product Manager
 - In addition to technical careers



PREPARING FOR TODAY AND BEYOND

16 February 2023



CURRICULUM

Your Students' BHS Options with ICON

HIGH SCHOOL ADVANTAGE

TAKING THESE COURSES AT THE HIGH SCHOOL ALLOWS
STUDENT STAY AT HOME SCHOOL AND TAKE ADVANTAGE OF
OTHER PROGRAMS AND ACTIVITIES OFFERED

Entry Point(s)

Students may enter the program at any point in high school. *Program* entry point is CIS 105, BCP 170 and BCP 270.

Other Programs

Students may still participate in athletics, drama, AF JROTC, band and other school clubs.

CTE Advantages

Hands-on learning, industry advisory, competitions, speakers, leadership and career development.

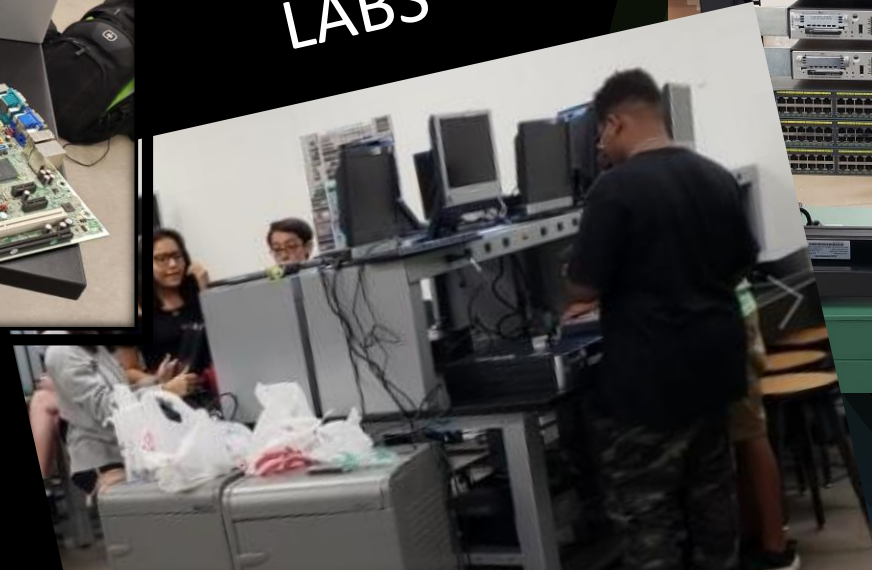




Hands-On



LABS



30 Stations
one per
student



CERTIFICATION EXAMS

INDUSTRY LEVEL CERTIFICATIONS ALLOW STUDENT TO
DEMONSTRATE ABILITIES TO POTENTIAL EMPLOYERS

Completer Track – 2yr

IT Fundamentals

A+

Network+

Linux +

Technology Only – 3yr

Security Pro

PCEP (Python
Certified Entry-level
Programmer)

Post-Secondary Option

Close to their AAS
degree from CGCC
with transferable
credit to UArizona or
into a career



TESTING VOUCHERS

CTE will purchase ONE testing voucher per student during the length of the program

Program is four years, in the four-year period your student would receive one prepaid voucher from us

YOU can purchase vouchers for your student at ~half price as well, because we are a CompTIA Academic Partner

Imagine paying an average of \$150/voucher * 200 students each year that would be \$22,000 just in testing vouchers – not sustainable





PARTNERSHIPS

CHANDLER GILBERT COMMUNITY COLLEGE

16 February 2023



Make cyber security happen at Chandler- Gilbert



CHANDLER-GILBERT
COMMUNITY COLLEGE
A MARICOPA COMMUNITY COLLEGE

Introducing the
Cyber Security
Partnership
program with
Chandler-Unified
School District,
Basha High
School, and The
University of
Arizona



BASHA
HIGH SCHOOL



The University of Arizona
2022-2023



CHANDLER-GILBERT
COMMUNITY COLLEGE
A MARICOPA COMMUNITY COLLEGE

What is Dual Enrollment and how is it Different from Concurrent Enrollment?

Dual Enrollment

The credits students earn through Dual Enrollment are treated the same as regular college credit (i.e. they can be transferred to other Maricopa Community Colleges, Arizona's state universities, and even some out-of-state colleges).

Concurrent Enrollment

The credits student earn through Concurrent Enrollment are taught at the college or online and are not affiliated with the high schools

How Does Dual Enrollment Differ From Concurrent Enrollment?

Dual Enrollment classes meet at the high school during the regular high school day and are taught by college-certified high school instructors and Concurrent Enrollment classes are taught online or at the college and are not affiliated with the high schools



Program Benefits

The Associate in Applied Science (AAS) in Cybersecurity & Certificate of Completion (CCL) in Cybersecurity Fundamentals

- Students will leverage dual enrollment and transfer program benefits to earn an Associate's of Applied Science in Cybersecurity, Specialization I: Cyber Operations and Certificate of Completion in Cybersecurity Fundamentals
- 75 credits completed under the benefit of CGCC tuition cost
- Dual Enrollment Tuition Assistance, based on financial need
- Dual Enrollment, Online or Concurrent Enrollment course offerings
- All cyber core courses (ITS) incorporate Industry Certifications as a final



Program Benefit Cybersecurity Program Partnership

Benefit Basha High School * Chandler-Gilbert Community College * The University of Arizona

Basha High School Cyber Academy		
Course	Course Title	Credits
*CIS105	Survey of Computer Information Systems	3
*BPC170	A+ Exam Prep: Computer Hardware Configuration & Support	3
*BPC270	A+ Exam Prep: Operating System Configuration & Support	3
*CIS126DL	Linux Operating System	3
*CNT140AB	Introduction to Networks	4
*CIS238DL	Linux System Administration	3
*ITS110	Information Security Fundamentals	3
*CIS156	Python Programming: Level I	3
*CIS111	Ethics in Information Technology	3
Chandler-Gilbert Community College Associate in Applied Science (AAS) in Cybersecurity, Specialization I: Cyber Operations Certificate of Completion (CCL) in Cyber Operations		
Course	Course Title	Credits
**ITS291	Computer Forensics Foundations	4
**ITS292	Advanced Computer Forensics	4
**ITS240	Ethical Hacking and Network Defense	3
**CIS290AC or CIS298AC	Computer Information Systems Internship (3) OR Special Projects (3)	3
*ENG101	First Year Composition	3
*ENG102	First Year Composition	3
**CRE101 or test exempt	College Critical & Evaluative Reading or Exemption by Assessment	0-3
***Mathematics	Any approved general education course in the Mathematics area (Dual Enrollment MAT151, MAT187, MAT220 or MAT221, or Online or concurrent MAT141 or MAT142)	3-5
**Oral Communication	COM100, 110, 225, or 230	3
*HU	Any approved Humanities, Arts, & Design course (Dual Enrollment ENH110)	3
**SB	Any approved Social-Behavioral Sciences course	3
*SQ/SG	Any approved Natural Science course (Dual Enrollment BIO105, BIO181 or PHY111)	4
**FYE101 or FYE103	Introduction to College, Career and Personal Success (1) OR Exploration of College, Career and Personal Success (3)	1-3

Sample Curriculum subject to change

Additional AGECE-A Requirements		
Course	Course Title	Credits
*SQ/SG	Any approved Natural Science course in SQ area or SG if SQ previously completed	4
**HU	Any approved Humanities, Arts, & Design course	3
**SB	Any approved Social-Behavioral Science (COM100, 110, or 230 recommended)	3
**L	If CRE101 is tested Exempt, complete any approved general education course in Literacy and Critical Inquiry (COM225 recommended)	3
***H or G	Any approved Historical (H) Awareness or Global OR (G) Awareness course (Dual Enrollment SPA101, OR Online or concurrent with CGCC)	0-3
*C	Any approved Cultural (C) Awareness course (Dual Enrollment ENH110)	0-3
University of Arizona- Chandler Bachelor of Applied Science in Cyber Operations, Emphasis in Defense & Forensics		
Course	Course Title	Credits
APCV320	Computational Thinking & Doing	3
BASV314	Math for Applied Science	3
CYBV301	Fundamentals of Cybersecurity	3
CYBV326	Introductory Methods of Network Analysis	3
CYBV329	Cyber Ethics	3
CYBV385	Introduction to Cyber Operations	3
CYBV388	Cyber Investigations & Forensics	3
CYBV400	Active Cyber Defense	3
CYBV435	Cyber Threat Intelligence	3
CYBV473	Violent Python	3
CYBV480	Cyber Warfare	3

CYBV498	Cyber Operations Senior Capstone	3
CYBV	Elective (Suggestions: 436, 460, 477, or 481)	3-6
ENGV306	Advanced Composition	3
Foreign Language	*2 nd Semester Foreign Language Proficiency (Dual Enrollment SPA101 & SPA102)	0-8

- *Dual Enrollment
- ** Online or concurrent with CGCC
- ***Dual Enrollment or Online or concurrent with CGCC



CHANDLER-GILBERT
COMMUNITY COLLEGE

A MARICOPA COMMUNITY COLLEGE

Determine Placement

Students must meet the [college prerequisites](#) for their courses, which are listed on the class list, and provide proof or documentation, or you will not be able to add classes.

Our colleges utilize multiple options to determine course placement. Students will be able to submit the following:

Freshman and Sophomores:

- Critical Reading and Thinking EdReady Placement Test

Juniors and Seniors

- 2.6 or higher Cumulative Unweighted GPA
- OR AzMerit ELA Proficient
- OR 720 or higher on PSAT
- OR 720 or higher on SAT
- OR 12 or higher on SAT
- OR Completion of the EdReady Critical Reading and Thinking Placement



Meet Your CGCC Embedded High School College Advisor

Krysten Marshall

Ms. Marshall is here to help with...

- Navigating the college admissions process
- Answering any questions you may have, regarding Early College Programs including:
 - Dual Enrollment
 - Concurrent Enrollment
 - ACE Scholarship
 - Hoop of Learning
- Evaluating your program options
- One-on-One advising on career and educational path for CGCC
- FAFSA and Scholarship information

Connect with Ms. Marshall in the Career Center or Scan the QR Code to Learn More



Krysten.marshall@cgc.edu



CHANDLER-GILBERT
COMMUNITY COLLEGE
A MARICOPA COMMUNITY COLLEGE

Meet Scott Miller

Education/Experience

- Network administrator / IT technology analyst/ IT professional for 8 years (before teaching full time)
- Residential Faculty - 7th year with CGCC
- 14 years with Yavapai College
- Certifications: CompTIA 's A+, Network+, Security+, Server+, Cisco Certified Network Associate (CCNA), Cisco Certified Academy Instructor (CCAI -21 years), Certified Wireless Network Associate (CWNA), Microsoft Certified Professional (MCP)

Certifications for Cyber and Networking

- EC Council Ethical Hacking
- EC Council Forensic
- Comp TIA Security +
- CompTIA 's A+
- Network+
- Server+
- Cisco Certified Network Associate (CCNA)
- Cisco Certified Academy Instructor (CCAI -21 years),
- Certified Wireless Network Associate (CWNA),
- Microsoft Certified Professional (MCP)



Industry Certifications



Career Opportunities

- Cybersecurity Analyst
- Security Analyst
- Cyber Threat Analyst
- Penetration Tester
- System Analyst
- Network Architect
- Computer Systems Information Manager



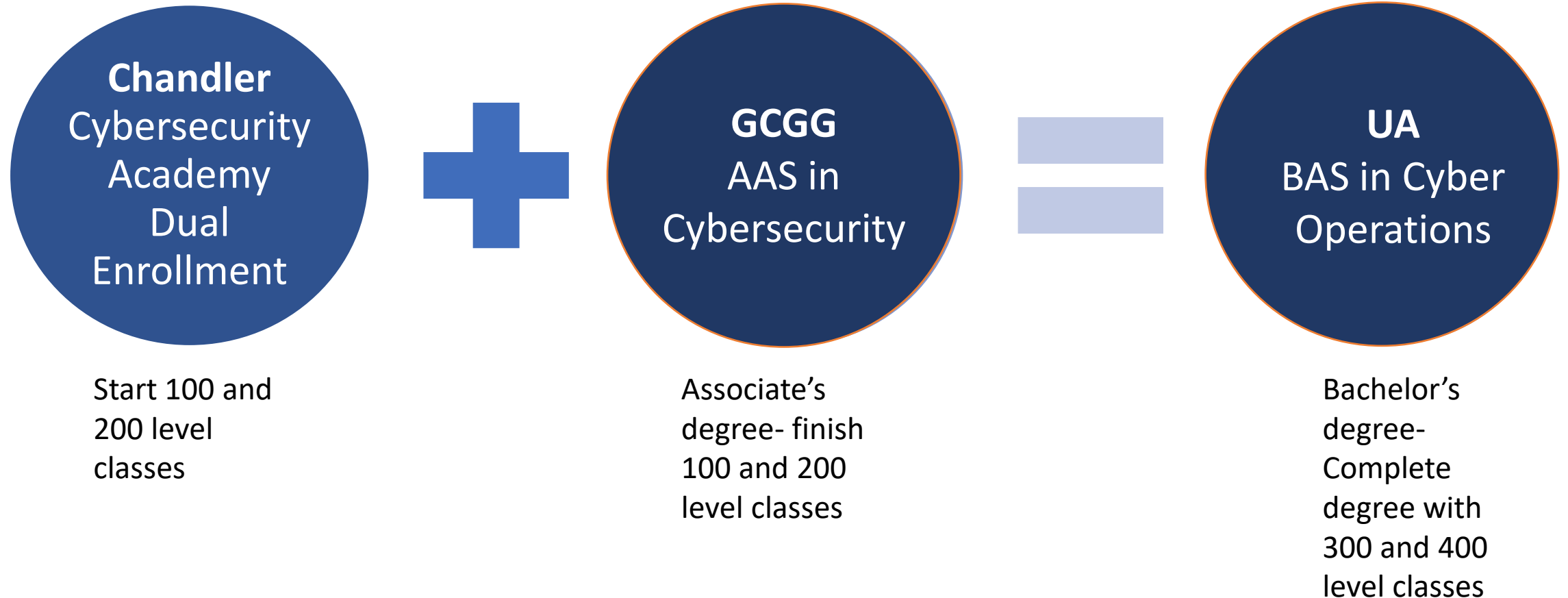
PARTNERSHIPS

THE UNIVERSITY OF ARIZONA - CHANDLER



>>> Cyber Pathway

Seamless Cyber Pathway





College of Applied Science & Technology

**The college within the University of Arizona that will award
your diploma and provide your cyber operations
instruction.**

CAST is the *College of the Future*

Innovative approach to 21st Century Education

- Accessible
- Affordable
- Attainable

CAST is *Future-Focused, Career-Ready*

- Science-Driven majors, minors, and certificates
- Employees in high demand
- Cyber Defense and Forensics pathway

CAST Cyber Operations Program

- **Center of Academic Excellence
– Cyber Operations (CAE-CO)**
- **Intelligence Community
Center of Excellence (IC CAE)**
- DoD Partnerships
- DoJ Partnerships
- Department of State University
Champion
- Industrial & Commercial
Partnerships



Cyber Defense and Forensics

What is Defense & Forensics?

- Cyber Defense & Forensics provides a holistic foundation across the spectrum of Cybersecurity.
- Options to focus on specific concentration within the field
- Gain in-depth expertise by adding on an undergraduate certificate or come back for future training and education.

BAS Cyber Operations Degree

BAS CORE COURSES

ENGV306 – Advanced Composition
BASV314 – Mathematics for Applied
Sciences (Statistics)
CYBV326 – Intro Methods of Network
Analysis
CYBV329 – Cyber Ethics
APCV 320 – Computational Thinking &
Doing
CYBV498 – Cyber
Operations Senior Capstone

CYBER OPERATIONS MAJOR COURSES

CYBV301 -Fundamentals of Cybersecurity
CYBV385 -Intro to Cyber Operations
CYBV388 – Cyber Investigations &
Forensics
CYBV400 - Active Cyber Defense
CYBV 480 – Cyber Warfare
CYBV435 - Cyber Threat Intelligence
CYBV473 – Violent Python
CYBV 312 – Intro to Security Scripting

CYBER OPERATIONS ELECTIVE COURSES

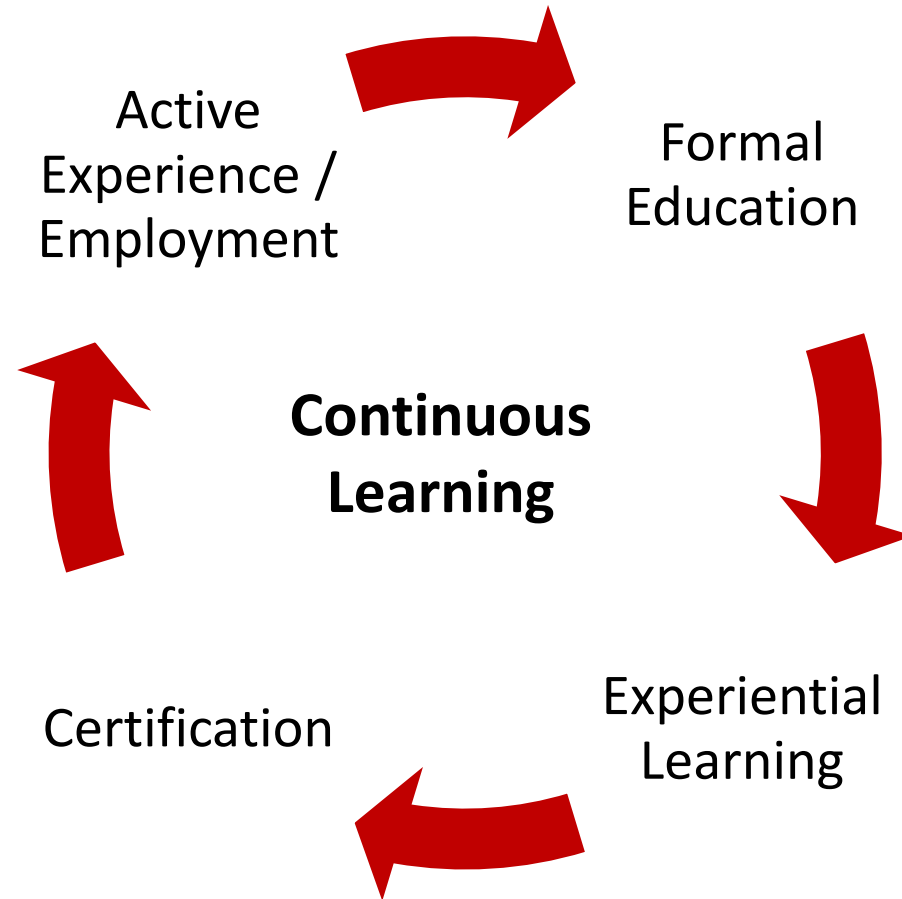
CYBV474 – Advanced Analytics for
Security Professionals
CYBV 475- Cyber Deception Detection
CYBV479 – Wireless Networking &
Security
CYBV 477 – Advanced Computer
Forensics
CYBV 460 – Principles of Zero Trust
Networks
CYBV481 – Social Engineering Attacks

Defense & Forensics

Conforms to the NSA Centers of Academic Excellence in Cyber Operations/Defense (CAE-CO/CD) requirements
Exceeds Office of Personnel Management's (OPM) 2210 job series (Information Technology Manager) requirements



Hands-on Continuous Learning



Opportunities & Employment

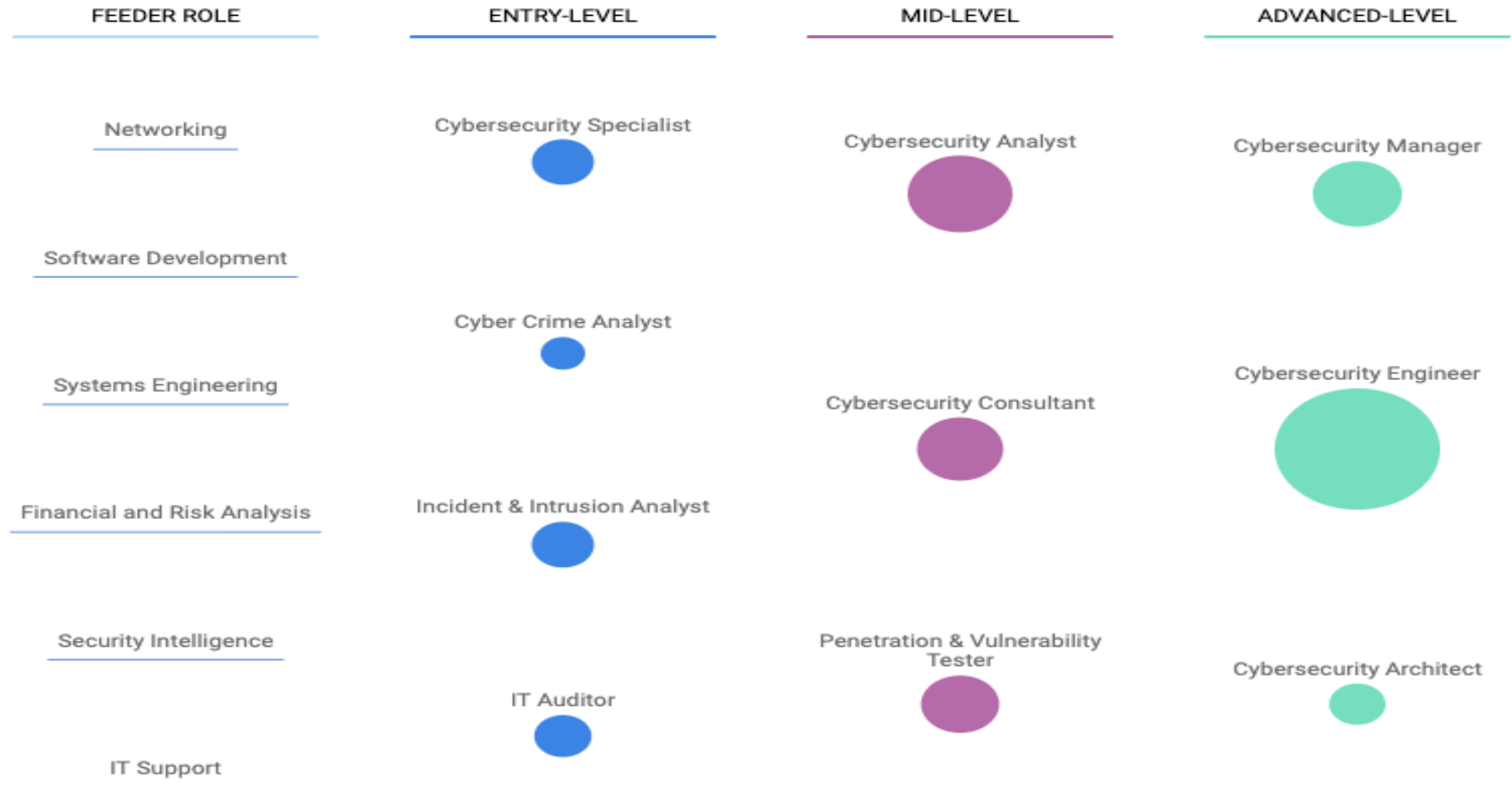
Opportunities

- Scholarships
- Internships
- Capstone
- Lab Spaces
- Cyber Saguaro
- Research – Saguaro Pod

General Cybersecurity Roles

- Digital Forensics Expert
- Security Analyst
- Security Specialist
- Incident Response
- Penetration Tester
- Security Auditor
- Security Architect

cyberseek.org



cyberseek.org

Incident & Intrusion Analyst

AVERAGE SALARY ⓘ

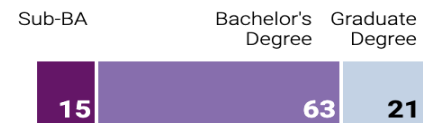
\$89,000



COMMON JOB TITLES ⓘ

- Senior Analyst, Information Security
- Disaster Recovery Specialist
- Network Technical Specialist
- Audit Project Manager - Information Security

REQUESTED EDUCATION (%) ⓘ



TOP SKILLS REQUESTED ⓘ

- 1 Information Security
- 2 Project Management
- 3 Information Systems
- 4 Linux
- 5 Network Security
- 6 Technical Support
- 7 Intrusion detection
- 8 UNIX
- 9 Security Operations

TOTAL JOB OPENINGS ⓘ

8,738



COMMON NICE CYBERSECURITY WORKFORCE FRAMEWORK CATEGORIES ⓘ

- Protect and Defend
- Analyze

TOP CERTIFICATIONS REQUESTED ⓘ

- GIAC Certified Incident Handler (GCIH)
- CompTIA Security+
- IT Infrastructure Library (ITIL) Certification

FUTURE SKILLS REQUESTED ⓘ

Skills	5-Year Projected Growth
Threat Hunting	104.55%
Security Information and Event Management (SIEM)	64.33%
Anomaly Detection	57.69%
Security Insider Threat Management	56.40%
Counter Intelligence	26.14%

Admissions

The College of Applied Science and Technology programs are designed for students transferring from a regionally accredited institution.

- Minimum 2.0 GPA
- Associate of Applied Science degree from accredited institution
 - 75/45 Block transfer option
- Specific course prerequisites as defined by each program

Admissions

- Connect with an Enrollment Counselor
- Submit your application
- Submit official transcripts

Marisa Saxton
CAST Manager,
Recruitment and Enrollment
CASTRecruitment@arizona.edu
520-626-8518

Cali Krietemeyer
CAST Student
Enrollment Specialist
CASTRecruitment@arizona.edu
520-621-0449

Financial Planning



Tuition Costs

[Read more](#)



Financial Aid

[Read more](#)



Scholarships

[Read more](#)



Scholarship Universe

[Read more](#)



Student Services Fee

[Read more](#)

Resources

- CAST website: <https://azcast.arizona.edu/>
- Cyber Operations: <https://cyber-operations.azcast.arizona.edu/>
- Admissions: <https://azcast.arizona.edu/admissions>
- Financial Planning: <https://azcast.arizona.edu/admissions/financial-planning>

QR Code for more information

1



2

Get Started, Stay Connected!

REQUEST INFORMATION

3



College of Applied
Science & Technology

Click to write the question text

Name

Email Address

Potential area of interest

Basha High School
Cyber Transfer Pathway

CONTACT US!



Meaghan Shaw – CAST Academic Advisor

***Contact for:** Transfer questions and inquiries about our Cyber and Applied Computing degrees*

meaghanshaw@arizona.edu



Paul Wagner – CAST Department Head

***Contact for:** Questions and inquiries about our Cyber, IIO, and Applied Computing degrees, scholarships, and careers*

paulewagner@arizona.edu

Thank
you

On behalf of:

- Chandler – Gilbert
- The University of Arizona – Chandler
- Advanced Business Learning