



# WAR GAMES

THREATCLOUD INTELLIGENCE

TIME	ATTACK	SOURCE
15:43:41	Trojan.WIN32.XMRig.A	Germany
15:43:41	Trojan.WIN32.XMRig.A	Germany
15:43:41	Trojan.WIN32.XMRig.A	Netherlands
15:43:40	Emotet.TC.chtc	NJ,USA

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# BASHA HIGH SCHOOL

INSTITUTE OF CYBER OPERATIONS AND NETWORKING





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# Welcome to *CyBear* Night

On behalf of the Chandler PD and BHS

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# Welcome Detective Jason Alnas

Chandler Police Department

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# YOUR TEAM



**Chandler Unified  
School District**



**Basha High  
School**



**Chandler-Gilbert  
Community  
College**



**University of  
Arizona**

# WHY CYBER?

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What you need to know



# The New Frontier

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## PURPOSE

To protect computer systems, software, data, and people, from attacks, disruptions, theft, unauthorized access and damage

## INDUSTRY

Security is needed in *every* domain – education, private sector, corporate, government, medical, financial, automotive, infrastructure, military – if you can connect it or it stores data it must be protected



# Number of U.S. data breaches 2013 – 2018 by Industry

	Banking/ Credit/Financial	Business	Educational	Government/ Military	Medical/ Health care
2013	35	194	54	60	271
2014	38	263	57	91	332
2015	71	312	58	63	275
2016	51	497	97	72	373
2017	134	907	128	79	384
2018	135	572	77	100	367

SOURCE: STATISTA/IDENTITY THEFT RESOURCE CENT





Number of data breaches and exposed records in US from 2005 to 2018 (in millions)

## CYBER CRIME: NUMBER OF BREACHES AND RECORDS EXPOSED 2005-18

Annual number of data breaches and exposed records in the U.S. from 2005 to 2018 (in millions)

	Data breaches	Records exposed
2005	157	66.9M
2006	321	19.1M
2007	446	127.7M
2008	656	35.7M
2009	498	222.5M
2010	662	16.2M
2011	419	22.9M
2012	447	17.3M
2013	614	91.98M
2014	783	85.61M
2015	781	169.07M
2016	1,093	36.6M
2017	1,632	197.61M
2018	1,244	446.52M

SOURCE: STATISTA/IDENTITY THEFT RESOURCE CENTER

Source: Identity Theft Resource Center (2)



# More Recent Statistics

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Cyber  
Attacks are  
not going  
away

Predicting that voicemail phishing attacks (vishing) could become a daily occurrence in 2020 (infosecurity-magazine.com, Sarah Coble)

A new organization will fall victim to ransomware every 14 seconds in 2019, and every 11 seconds by 2021. (Source: Cyber Security Ventures)

1.5 million new phishing sites are created every month. (Source: webroot.com)

Ransomware attacks have increased over 97 percent in the past two years. (Source: Phishme)





# CAREER FOR THE FUTURE

WHERE YOUR STUDENT FITS IN

15 April 2019

# EMPLOYMENT OPTIONS

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## CURRENT FACTS

- 2018 – 2019: “53% of organizations report a problematic shortage of cybersecurity skills” <sup>(3)</sup>
- “Global shortage of two million cyber security professionals.” Annually in US, “40,000 jobs for information security analysts and 200,000 other cyber-security related roles go unfilled” <sup>(5)</sup>

## THE FUTURE

- “3.5 million unfilled positions in the industry by 2021” <sup>(4)</sup>



# CYBER MARKET OPPORTUNITY

The unemployment rate for cyber security is negative. In 2017 there were 350,000 open jobs, today there are 504,000 openings in the United States – a growth of 69% in two years (cyberseek.org)

\$64,474

## Average Salary

Entry cyber security positions are well paying, there is something for every level of education! (6)

28%

## Projected Job Demand

Cybersecurity may be the fastest-growing career field today, with the Bureau of Labor Statistics estimating that the field will grow 28 percent between 2016 and 2026 (average growth for all jobs is about 7 percent)



# CURRICULUM

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## Your Students' BHS Options



# EDUCATION FLEXIBILITY

TAKING THESE COURSES AT THE HIGH SCHOOL LEVEL LETS YOUR STUDENT STAY AT THEIR HOME SCHOOL AND TAKE ADVANTAGE OF OTHER PROGRAMS OFFERED

1

## Entry Point(s)

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

2

## Other Programs

Students may still participate in athletics, drama and other school clubs

3

## Special Options

Students who participate will have further opportunities through our CTE program: career development & CyberPatriot Club



# EDUCATION OPTIONS

OUR PARTNERSHIPS WITH CHANDLER-GILBERT COMMUNITY COLLEGE AND THE UNIVERSITY OF ARIZONA PROVIDE YOUR STUDENTS WITH THESE TREMENDOUS OPPORTUNITIES

1

## Completer Track

This route is our two-year completer option. The student is taking two years of dual credit **technology** classes. At the end of the two years, students will be prepared to take four different industry recognized certifications.

2

## Technology Only

At this level the student is committed four years. They are taking dual credit **technology** courses all four years. At the end, they will be prepared to take five different industry recognized certifications and their final class will be an on-site internship / industry project-based assignment.

3

## College Route

The final track is available to students who are college-bound. Students are taking dual credit **core** and **technology** classes. At the end of this option, students will be one semester from their AAS degree from CGCC.





# CERTIFICATION EXAMS

INDUSTRY LEVEL CERTIFICATIONS ALLOW YOUR STUDENT TO DEMONSTRATE THEIR ABILITIES TO POTENTIAL EMPLOYERS

1

## Completer Track

IT Fundamentals      A+  
Network+            Linux +  
CSX

2

## Technology Only

All prior listed certifications  
Security+  
PCEP (Python Certified  
Entry-level Programmer)

3

## College Route

All prior listed certifications  
Students will be one semester from their AAS degree from CGCC with transferable credit to UofA



# COST OF PROGRAM

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Completer  
Track

Total # of Classes: 7 Dual Enrollment - \$1,785  
Year 1: \$ 765  
Year 2: \$ 1,190

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Four Year  
Track

Total # of Classes: 11 Dual Enrollment - \$2,805  
First two years: \$1,955  
Year 3: \$ 510  
Year 4: \$ 510

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College  
Bound

Total # of Classes: 11 Dual Enrollment - \$2,975  
Dual Enrollment Core Class Option: \$2,550 (10 classes)  
Total Credits: ~70                      Total Cost: \$5,525

# HOW TO GET INVOLVED IN THE PROGRAM

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HERE IS A SHORT LIST OF WAYS YOU CAN JOIN US

- Advisory Board
- Guest Speakers
- Volunteers for CyberPatriot
- Tours at your place of employment
- Internship Opportunities
- Capstone Projects
- Field Trip Chaperone
- Tax Credit





**THANK YOU!**

City of Chandler Police Department  
Basha High School

# RESOURCES

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- (1) Number of Data Breaches: Identity Theft Resource Center, January 2019, Original Source: ITRC 2018 End-of-Year Data Breach Report, page 23, [website link](#), 2019 April 8
- (2) Number of data breaches and exposed records in US from 2005 to 2018: Identity Theft Resource Center, Additional Info: US, Identity Theft Resource Center; 2005 – 2018, 2019 April 8
- (3) 2018-2019 stat: CSO form IDG, ESG Annual Survey, Jon Oltsik, ESG Senior Principal Analyst, January 10, 2019, 08:20 AM PT, [website link](#), 2019 April 8
- (4) Future stat: Forbes Technology Council, Brian NeSmith, CEO & Co-Founder of Arctic Wolf Networks, August 9, 2018, 07:30 AM, [website link](#), 8 April 2019
- (5) Current stat: Forbes, Jeff Kauflin, Forbes Staff, March 16, 2017, 06:46 PM, [website link](#), 8 April 2019
- (6) Average Entry-Level Info Security Analyst Salary, Payscale, 2019, [website link](#), 14 April 2019



# CAREER OPTIONS – Ongoing Job Certifications are Encouraged (CISSIP), Work Experience and Masters Needed for Management

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Completer  
Track

Penetration (Pen) Tester  
Ethical Hacker  
Junior Linux Administrator / Network Administrator

IT Security Consultant  
IT Security Specialist

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Four Year  
Track

Security Analyst  
Vulnerability Analyst  
Computer Forensics Tech  
Linux Database Administrator

Security Engineer  
Cybersecurity Specialist  
Cybersecurity Analyst

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College  
Bound

Security Director  
Security Manager  
Security Auditor

IT Project Manager  
Security Architect  
CISO – Chief Info Security Officer