What is an Instructional Program?

An Instructional Program or program of study is comprised of selected courses that lead to a degree or certificate. We have several types of instructional programs—the Associate of Arts (AA) degree, the Associate of Science (AS) degree, the Associate of Arts Transfer degree (AA-T), the Associate of Science Transfer degree (AS-T), and the Certificate.

All Instructional Programs are situated within a specific Guided Pathway that consists of a community of related disciplines. For example, the Biology AS-T is part of the STEM Pathway, which includes the disciplines of Science, Technology, Engineering, and Mathematics.

Program Name

Indicate the type of program here: \square AA; \square AS; \square AA-T; \square AS-T; \square Certificate

Program Name: Cyber Security Specialist

Academic Year: 2023

Name of Faculty Submitter(s): Marie Downing

I. Program Description

The purpose of this section is to provide the reader and/or reviewer with a brief snapshot of the program. This section should be kept short, a few paragraphs at the most, and address the following:

A. What is the program mission and how does it support the institutional mission? The primary mission of the Cyber Security Specialist program is to provide students with the knowledge to configure, install, diagnose, and support hardware and software issues and design, analyze, and support computer networks. After completion of the program, students will be prepared for opportunities of employment in the information technology industry with an emphasis in computer and cyber security for potential positions as information security specialists, information security technicians, information assurance technicians, networking security technicians, and cyber security technicians. These activities support the mission of the college in terms of providing the educational tools needed to achieve personal goals and professional growth, utilizing advances in technology, working with the community, working with other educational institutions, and designing programs relevant to the diverse communities served.

B. What is the program vision and how does it support the institutional vision? The vision of the Cyber Security Specialist program is to assist students in gaining employment in the field of cyber security. The program supports the institutional vision of the college by empowering students to achieve their personal best.

C. Please provide a short program description:

This program is designed to prepare students for entry level employment as information security specialists, information security technicians, information assurance technicians, networking security technicians, and cyber security technicians. The program also provides skills to upgrade current skills to assume greater responsibility in a current employment position.

D. How does your program align to and/or support one or more of the following BCC Strategic Priorities?

The Cyber Security program is designed to enable equitable student success. As such, the department will continue to oversee metrics such as student retention and program completion rates and work towards ensuring all students in the program have the tools necessary to be successful. The program faculty work to inspire learning, innovation and a culture of continuous improvements.

- Innovate to Achievable Equitable Student Success
- Ignite a Culture of Learning and Innovation
- Build Community
- Achieve Sustainable Excellence in all Operations

II. Program Effectiveness

The purpose of this section is to evaluate the program holistically by reviewing and analyzing data in the areas of Students, Courses, Program, and Faculty.

For each item below, review the data provided. As you examine the data, be on the lookout for trends and outliers while also considering how the data connects to fostering student success, helping students reach their goals, and furthering the mission of BCC.

Provide a short analysis (2-3 sentences) for each item. If data are not available (i.e., student satisfaction surveys), please indicate that on the form.

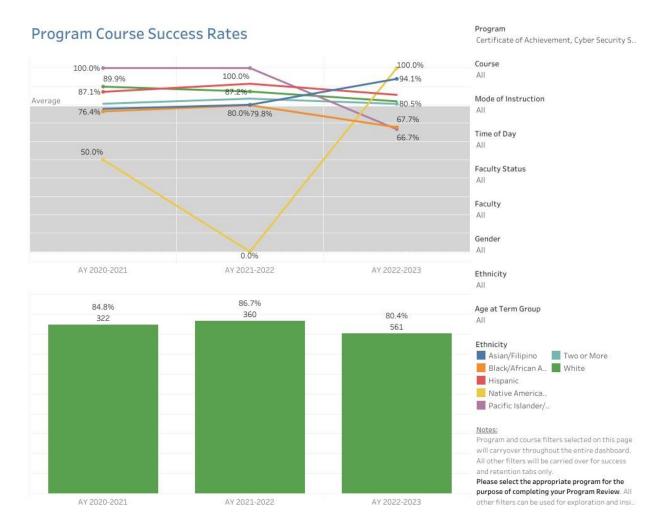
Course Data and Analysis

A. Course Success Rate by

- Mode of instruction
- Scheduling
- Faculty Status (PT vs FT)

Success rates in the program for the academic years 2020-21, 2021-2022, and 2022-2023 are above 80%. It appears that one student has skewed the results. Additionally, the enrollment numbers in 2022-2023 have increased by 200 students.

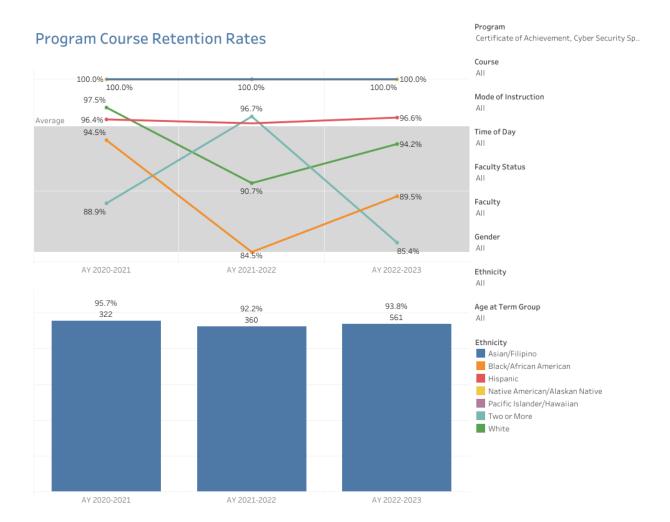
In this cohort, the vast majority of students were enrolled in online classes and there does not appear to be a difference in the success of the student when taught by full-time or part-time faculty. There is however one ethnic group (Native American) that to date has not been as successful as the other groups. Also in the same AY, students 50+ had a lower success rate. These may be an areas where instructors can focus if equipped with this data prior to teaching a course.



B. Retention Rate by

- Mode of instruction
- Scheduling
- Faculty Status (PT vs FT)

The program has an exceptional retention rate for the academic years 2020-2021 and 2022-2023 with retention being above 90% with the lowest retention being for one ethnic group (Black/African American) enrolled online. good information for instructors to have prior to teaching a course.



C. Section Count by

- Mode of instruction
- Schedule
- Faculty Status (PT vs FT)

The section count shows that the majority of students in the program are enrolled in online classes. There was one student enrolled in both Hybrid and Evening classes. The remainder of the enrollment was on-line. Enrollment in the program continues to grow each Academic Year.

Program

Certificate of Achievement, Cyber Security Specialist

Course

All

Section Count by Instructional Method

	AY 2020-2021	AY 2021-2022	AY 2022-2023	Grand Total
Hybrid/ITV/Web Conferencing			1	1
Online	10	11	15	36
Grand Total	10	11	16	37

Section Count by Time of Day

	AY 2020-2021	AY 2021-2022	AY 2022-2023	Grand Total
Evening			1	1
Online			15	36
Grand Total	10	11	16	37

Section Count by Faculty Status

	AY 2020-2021	AY 2021-2022	AY 2022-2023	Grand Total
Full-Time				21
Part-Time	3	4		16
Grand Total	10	11	16	37

D. Enrollment Count by

- Mode of instruction
- Schedule
- Faculty Status (PT vs FT)

The enrollment count shows that the majority of students in the program are enrolled in online classes. There eleven students enrolled in both Hybrid and Evening classes. The remainder of the enrollment was on-line. The on-line enrollment increased by 200 students in Academic Year 22-23. This speaks to the popularity and relevancy of the program in todays business environment.

Program

Certificate of Achievement, Cyber Security Specialist

Course

ΔП

Enrollment Count by Instructional Method

	AY 2020-2021	AY 2021-2022	AY 2022-2023	Grand Total
Hybrid/ITV/Web Conferencing			11	11
Online	326		547	1,235
Grand Total	326	362	558	1,246

Enrollment Count by Time of Day

	AY 2020-2021	AY 2021-2022	AY 2022-2023	Grand Total
Evening			11	11
Online			547	1,235
Grand Total	326	362	558	1,246

Enrollment Count by Faculty Status

	AY 2020-2021	AY 2021-2022	AY 2022-2023	Grand Total
Full-Time	214	217	211	642
Part-Time	112	145	347	604
Grand Total	326	362	558	1,246

E. Class Size Average by

- Mode of instruction
- Schedule
- Faculty Status (PT vs FT)

The largest classes are the online courses. The college may want to review this and make more online courses available to the students.

Program

Certificate of Achievement, Cyber Security Specialist

Course

All

Students per Section by Instructional Method

	AY 2020-2021	AY 2021-2022	AY 2022-2023	Grand Total
Hybrid/ITV/Web Conferen			11.00	11.00
Online	32.60	32.91	36.47	34.31
Grand Total	32.60	32.91	34.88	33.68

Students per Section by Time of Day

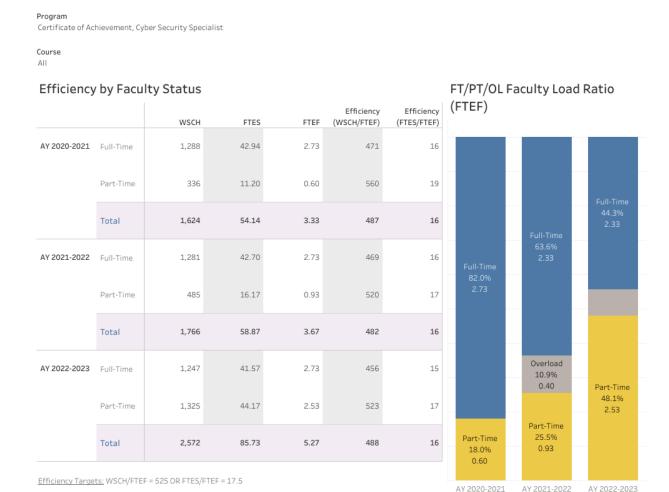
	AY 2020-2021	AY 2021-2022	AY 2022-2023	Grand Total
Evening			11.00	11.00
Online	32.60	32.91	36.47	34.31
Grand Total	32.60	32.91	34.88	33.68

Students per Section by Faculty Status

	AY 2020-2021	AY 2021-2022	AY 2022-2023	Grand Total
Full-Time	30.57	31.00	30.14	30.57
Part-Time	37.33	36.25	38.56	37.75
Grand Total	32.60	32.91	34.88	33.68

F. Efficiency: WSCH, FTES, FTEF

Reviewing the efficiency numbers, it might be of value to hire another part-time instructor and decrease the load for the full time instructors.



Student Equity Course Data

- A. What equitable practices are being performed by most or all courses within the program (ACCJC Standard 2.2, 2.6, 2.7, 2.8, 2.9)? Please review the following equitable practices and check all that apply.
- ☑ Provides students an □ Presentation of resources knowledge acquisition opportunity for feedback on from campus departments instruction ⋈ ADA compliant materials ☐ OER materials □ Use of Early Alert ☐Use of graphic organizers and backgrounds are represented in the classroom ☐ Audio files as video □ Promotes peer and the curriculum community building and alternatives support

⊠ Seeks multiple perspectives		□ Creates space for students to ask for help	□ Provide reminders to students throughout course about resources available
real-life	elates learning with e experience oing and clarifying jues	☐ Utilizes learning pact ☐ Includes resources in syllabus	☐ Collaborative note-taking ☐ Other: Click or tap here to enter text.
В.	With the exception of one st	ry gaps that have surfaced in the data udent, equity gaps, or disparities in elethnicity, socioseconomic status, genthe program.	ducational outcomes and
C.	Faculty in the program need and find innovate ways to be	ojects will help to close these gaps? to look away from looking at underse etter cultivate their learning. Faculty n e workforce after completion of the p	nust ensure that students are
Curric	ılum		
A.		en peer reviewed within the last 5 yea e and when it is scheduled for peer re No	
В.		t at least once within a two-year time been taught within the last two acade	
	☐ Yes I'm not sure where to find th	□ No sis data.	
C.	review? What changes and v	s to the curriculum (courses or progravhy? Deen completed for the program.	ım) since the last full program
D.	 If you feel there are any relevant curriculum details not covered in the above three question please list them here (optional). Click or tap here to enter text. 		
Progra	m Learning Outcome Asse	ssment Data (Standard 2.9, 4.3)	

Use the section and questions below to summarize findings, trends, and future action for the PLO assessment data.

Program Learning Outcom	Assessment Results – Summary of Data	Please list any future plans based on results
A. Configure, install, diagnose, and support hardware and softw issues and design, analyze, and support computer networks.	I believe mapping still needs to be done for these. When I look at past instructional reviews for the program, I don't see any that have been completed.	I need to see the past results to determine the need for future changes.
B. Utilize identifying to and methodologies in hackers, use to brea into a network computer and defend computer and local in networks against a variety of different types of security attactions a number of hands-on technique.	Click or tap here to enter text. that k d a area acks	Click or tap here to enter text.
C. Apply problem-solvi programming, and application development including the ability to design, test, debug, and implement complex computer programs.	ing	Click or tap here to enter text.
D. Read and interpret technical informatio as well as communic with and write clear for wide ranges of audiences.	Click or tap here to enter text. n, rate	Click or tap here to enter text.
E. Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.

A. Since the previous program review, what changes or actions, if any, have been taken to improve outcomes?

Click or tap here to enter text.

B. Please reflect on the PLO data above and discuss any possible strengths the program has based on the data.

Click or tap here to enter text.

- C. Please reflect on the PLO data above and identify areas for student-centered growth or improvement.
 - Are there specific courses/SLOs that the program would like to focus on for growth and improvement?

Click or tap here to enter text.

- What actions can help grow or improve these areas moving forward? Click or tap here to enter text.
- D. Please reflect on assessment data trends based on ethnicity, race, and gender.
 - What actions can the program take to support equitable outcomes? Click or tap here to enter text.
 - Are there specific student groups the program would like to focus their efforts on? Click or tap here to enter text.

Program Data and Analysis

A. Demographics

Ethnicity	Total 2020/2021	Total 2021/2022	Total 2022/2023
	322	360	561
Asian/Filipino	9	5	17
Black/African American	55	84	124
Hispanic	139	152	233
Native American/Alaskan Native	2	0	2
Pacific Islander/Hawaiian	2	2	6
Two or More	36	30	41
White	79	86	138

B. Award Count

I'm not sure where to find this data.

C. Student Equity Program Data

• Specifically discuss any equity gaps that have surfaced in the data.

Equity gaps appear for students who are above 40 years of age.

• What innovative plans or projects will help to close these gaps?

Suggest that faculty spend more time contacting students in this age group. Determine how instructors can provide these students with what they need to be successful in the program.

D. Student or Program Satisfaction Survey Results

I do not have access to this data.

E. CTE-specific data

- CTE Advisory Boards
- Labor Market data
- Program Viability

Over the next 5 years, community college-level cybersecurity employment needs in the Inland Empire/Desert Region (Riverside and San Bernardino counties) are expected to increase by 8% with a median hourly salary of \$27.85 – \$41.63. The Inland Empire/Desert Centers of Excellence recommends an expansion of cybersecurity programs to meet the growing needs in the area.

F. Comparative data (compared to BCC and/or compared to other programs)

I'm not sure on this data.

G. Institution-Set Standards and the Big Picture

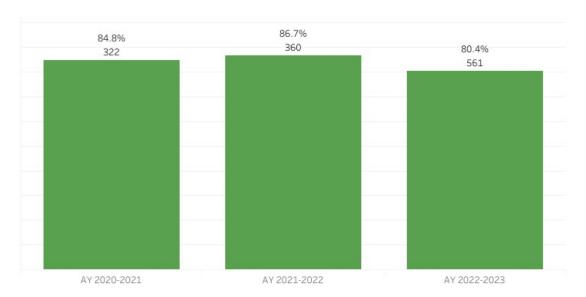
This section provides an opportunity to tie in all the data about the program to tell the story behind the numbers. Be sure to consider what an outsider to your program or career technical field may not know about current trends or changes.

How is your program doing overall based on observation of program data?
 Click or tap here to enter text.

2. Provide an analysis of the "big picture" by reflecting on how your program data compares to the <u>Institution-set Standards</u> below.

	Institution Set (Floor)	Stretch Goal (Aspirational)	Program Data
Course Completion Rates	74%	76%	
Certificates	81	97	
Degrees	437	524	
Transfers	213	287	
*Licensure Exam Pass Rates	70%	79%	
*Employment Rates	60%	73%	

AY 2020-2021 AY 2021-2022 AY 2022-2023



^{*}Applicable to CTE

Guided Pathways and Response

- A. Name of the Guided Pathway that your program is a part of I'm not sure about this.
- B. List the other programs (clusters) that are part of your Guided Pathway Click or tap here to enter text.
- C. Provide a summary of how your program collaborates with other programs (clusters) in your Pathway.

Examples of collaboration: meetings, projects, conferences, other cross-disciplinary professional development, etc.

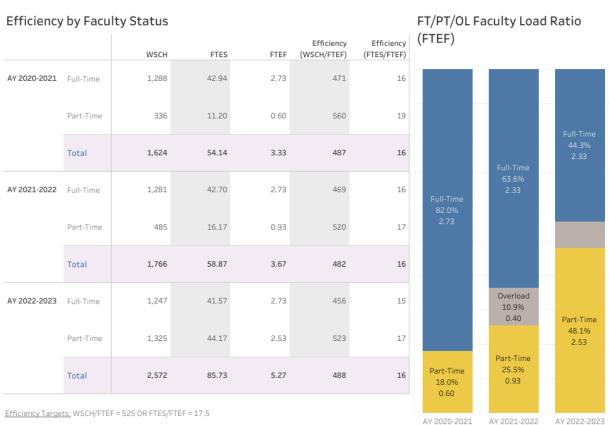
Click or tap here to enter text.

Faculty/ Program Staff Data and Analysis

A. Faculty Load (FTEF)

According to the data, the full time faculty are only slightly overloaded. The department might consider giving more of the load to the part time faculty.

Program
Certificate of Achievement, Cyber Security Specialist
Course
All



B. FT/PT/OL Faculty Ratio

Click or tap here to enter text.

C. Faculty Professional Development

- 1. Please list any professional development that faculty members have participated in (Standard 3.2)
 - In-house eLumen training.
- Please list any professional development that faculty members would benefit from (Standard 3.2)
 Click or tap here to enter text.
- 3. Does the program have sufficient staffing and support? Please discuss. (Standard 2.7) Faculty should develop a list of training opportunities they believe would keep them current in the field of cybersecurity. Once identified, a request should be submitted to the college.
- 1) Instructors have expertise in the curriculum in which they teach. Our instructors have experience in their appropriate fields, many still work or teach similar courses at other institutions.
- 2) CBIS has a strong staff of part-time instructors. These staff members are timely in their submissions of SLO reports, grading and student response.

D. Overall Observation of Data on Faculty

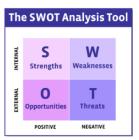
This section provides an opportunity to tie in all the data about faculty to tell the story behind the numbers. Be sure to consider what an outsider to your program or career technical field may not know about current trends or changes.

Provide an analysis of the "big picture." Click or tap here to enter text.

SWOT Analysis

Conducting a SWOT Analysis (Strengths, Weaknesses, Opportunities, Threats) is another tool that can help areas evaluate themselves. The SWOT Analysis not only looks internally, but externally as well.

The SWOT Analysis provides a way for areas to highlight their accomplishments and also identify possible gaps or issues that need to be addressed.



Positive/ Helpful	Negative/ Harmful

Internal	STRENGTHS 1) Instructors have expertise in the curriculum in which they teach. Our instructors have experience in their appropriate fields, many still work or teach similar courses at other institutions. 2) Dedicated faculty in the program. These staff members are timely in their submissions of SLO reports, grading and student response.	WEAKNESSES The program needs to assure it is staying current with trends in the industry. 1) Participation in the DOING WHAT MATTERS for Jobs and the economy Business Information Worker Career pathway and certificate for entry-level office workers. This is a statewide directory in which students can access a portal that will allow them to acquire critical job skills. Completing this pathway will provide job opportunities as well as fundamental knowledge that can lead them into a certificate program. 2) Increase the number of students pursuing the AS degree in CBIS. 3) Help students finish their CBIS program of study.
External	OPPORTUNITIES 1) Participation in the DOING WHAT MATTERS for Jobs and the economy Business. This is a statewide directory in which students can access a portal that will allow them to acquire critical job skills. Completing this pathway will provide job opportunities as well as fundamental knowledge that can lead them into a certificate program. 2) Increase the number of students pursuing the the cyber security certificate. 3) Promote the program at high school career fairs.	THREATS Not enough marketing for the program.

III. Program Goals, Objectives, and Outcomes

The purpose of this section is to use data to develop goals and objectives for the next three years. Reflect on the responses to all the previous questions and the SWOT analysis in Section Two.

As you develop goals and objectives,

- Formulate **two to three Program Goals** to maintain or enhance program strengths, or to address identified weaknesses (cite evidence from assessment data and/or other student achievement data, course, faculty, etc).
- indicate the **status** of the Program Goal (ex: is the goal new, a carry-over from the previous program review cycle, etc.)
- Indicate how each Goal is **aligned** with the College's <u>Strategic Priorities</u>.
- Indicate how each goal is aligned with the <u>Pillars of Guided Pathways</u>.
- List at least one **objective** for reaching each goal.
- Develop an **outcome** statement for each objective.
- Explain how you will **measure** the outcome.
- List any **resources** that will be needed to achieve the goal.

GOAL #1

Regularly review the program to ensue that appropriate career and transfer options are being provided.

A.	This Go	This Goal is					
	\boxtimes	New					
		Continued					
		Modified					
If n	nodified	please list how and why.					
	Click or	tap here to enter text.					
В.	Alignment to BCC Strategic Priority (Select at least one but also choose all that apply – click Choose an item for the drop-down list to appear) Choose an item. Strategic Priority 1: Innovate to Achieve Equitable Student Success Choose an item.						
	Choose	e an item.					
C.	Relatio	nship to Guided Pathways					

		\boxtimes	Clarify the Path		
		\boxtimes	Entering the Path		
		\boxtimes	Staying on the Path		
		\boxtimes	Support Learning		
	D.	Please	list objective(s) for achieving this goal.		
			The objective is to offer a meaningful course curriculum.		
	E.	Please	list outcome statements for each objective.		
		prograi	Students will be able to successfully complete a more comprehensive cybersecurity m.		
	F.	Briefly	explain how you will measure the outcome.		
		Studen	t success rates for the program will be measured.		
	G.	Please	list resources (if any) that will be needed to achieve the goal.		
		Click or	tap here to enter text.		
GO	AL#				
		-	otential student's awareness of the program.		
	В.	This Go			
			New		
			Continued		
			Modified		
	If m	modified please list how and why.			
		Click or	tap here to enter text.		
	С.	Choose	ent to BCC Strategic Priority (Select at least one but also choose all that apply – click an item for the drop-down list to appear) ic Priority 1: Innovate to Achieve Equitable Student Success		
		Choose	an item.		

		Choose an item.				
		Choose	an item.			
	D.	Relation	nship to Guided Pathways			
			Clarify the Path			
		\boxtimes	Entering the Path			
			Staying on the Path			
			Support Learning			
	Н.	Please l	ist objective(s) for achieving this goal.			
			Increase marketing for the cybersecurity program.			
	I.	Please I	ist outcome statements for each objective.			
			Increased enrollment in the program.			
	J.	Briefly 6	explain how you will measure the outcome.			
		Student	enrollment rates will be measured.			
	K.	Please l	ist resources (if any) that will be needed to achieve the goal.			
		Click or	tap here to enter text.			
GO		#3 ick or tap here to enter text.				
	C.	This Goal is				
			New			
			Continued			
			Modified			
	If n	nodified _l	please list how and why.			
		Click or	tap here to enter text.			

D.	Alignment to BCC Strategic Priority (Select at least one but also choose all that apply – click Choose an item for the drop-down list to appear) Choose an item.				
	Choose an item.				
	Choose an item.				
	Choose an item.				
E.	Relationship to Guided Pathways				
	☐ Clarify the Path				
	☐ Entering the Path				
	☐ Staying on the Path				
	□ Support Learning				
L.	Please list objective(s) for achieving this goal.				
	Click or tap here to enter text.				
M.	Please list outcome statements for each objective.				
	Click or tap here to enter text.				
N.	Briefly explain how you will measure the outcome.				
Click or tap here to enter text.					
О.	Please list resources (if any) that will be needed to achieve the goal.				
	Click or tap here to enter text.				

Previous Goals/Outcomes

Were any outcomes discontinued or completed? Please speak to outcomes you are not carrying forward from the previous program review cycle and discuss why.

Click or tap here to enter text.

IV. Resource Requests:

What resources are needed for the program to meet its goals and objectives? Resource requests should be evidence-based and tied to goals and objectives stated above.

Resources may be requested from the following categories:

- Personnel/Staffing
- Technology Resource
- Facilities Resource
- Professional Development
- Other

For all resource requests programs should utilize the <u>Budget Allocation Proposal form</u> and submit with their program review. If needed, the Out-of-Cycle BAP form may be submitted for resource requests when completing an Annual Update in Years 2 and 3.

Goal #	Objective #	Resource Required	Estimated Cost	BAP Required? Yes or No	In No, indicate funding source
1	1	Technology Resources that will allow course developers to stay current with trends in cybersecurity.	Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.
2	2	Other. Increase marketing for the program.	Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.
Click or tap	Click or tap	Click or tap here to enter text.	Click or tap	Click or tap	Click or tap
here to enter	here to		here to enter	here to	here to
text.	enter text.		text.	enter text.	enter text.
Click or tap	Click or tap	Click or tap here to enter text.	Click or tap	Click or tap	Click or tap
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text.	enter text.		text.	enter text.	enter text.