Show All Possible Responses

Response is required

1. PROGRAM OVERVIEW

Program Title & Code

Program Title
Computer Information Systems
(Max chars: 100)

Program Code
0701
(Max chars: 100)

Is this a CTE program?

(●) Yes ( ) No

1a. Select the Chaffey Goals that directly relate and are MOST relevant to your program.

Goals are numbered for the purpose of making reference points so that PSR writers can identify and locate which Chaffey Goals relate to their program. Goal numbers do not represent priority numbers.

- [x] Goal 1: Equity and Success--Chaffey College will be an equity-driven college that fosters success for all students.
- [x] Goal 2: Learning and Completion--Chaffey College will ensure learning and timely completion of students' educational goals.
- [x] Goal 3: Community Opportunities and Needs--Chaffey College will develop and maintain programs and services that maximize students' opportunities and reflect community needs.
- [x] Goal 4: Technology--Chaffey College will optimize the use of technological tools and infrastructure to advance institutional efficiency and student learning.
- [ ] Goal 5: Efficiency--Chaffey College will efficiently and effectively manage systems, processes, and resources to maximize capacity.
- [x] Goal 6: Agility--Chaffey College will responsively adapt to changes in students' academic and career needs.
- [ ] Goal 7: Professional Learning--Chaffey College will prioritize and align professional learning for all employees to support the achievement of Chaffey Goals.

1b. Describe how your program aligns with the Chaffey Goals. Please provide supporting statements and/or examples.

Refer back to the Chaffey Goals marked above (e.g., Goal 4: Provide supporting statements of how the program aligns with this goal).

Goal 1: Equity and Success.

CIS strives to promote equity for all students to succeed. One way we do this is through our stackable certificates that start with Computer Foundations. Students who do not have basic computer skills can take the foundation courses to enable a starting point equivalent to those whose background has provided access to resources and skills before attending Chaffey. Through instructor guidance and department clubs students can be introduced to, mentored, and experience shared experiences, knowledge, and growth. The department includes cyber security, game, and programming clubs to encourage students to work together to achieve success. Courses are taught using many different resources, pedagogical styles, and tools in order to ensure the success of students regardless of learning style. These resources and tools can include simulations, discussion, closed-caption video, role playing, interactivity such as Kahoot, and others. Instructors encourage all students to contact them through Canvas, Zoom, or Office time to ask questions. Our Game, Programming, and Security instructors work with students to participate in regional competitions which promotes equity and success by students working together for success.

Goal 2. Learning and Completion.

CIS offers many different completion points (1 semester, 1 year, 2 years) with its 'stackable' certificate and degree programs--most designed to build on each other. All certificates lead to immediate job skills. Courses are offered in multiple modalities and terms in order to increase availability to meet student needs. The members of the department communicate with students to provide encouragement and guidance. Instructors also recommend communication with CTE counselors for additional

guidance. Full-time instructors are now beginning to explore and plan to use ACES to evaluate learning and completion. Instructors are eager to begin issuing badges which they believe will encourage completion. Several of the full-time instructors have attended ACES Web sessions and/or enrolled in the ACES Canvas course.

Goal 3. Community Opportunities and Needs.

The CIS department maintains communication and meets annually with our Advisory Committee. The Advisory Committee consists of community members, employers, CIS faculty, and industry advisors. The committee reviews the current CIS courses and programs, recommends changes and updates, and communicates the needs of community, employers, and industry. The new Cyber Security degree and certificate programs reflect the needs recommended by the Advisory Committee and employment data as demonstrated by 25 of our Cyber Security Students receiving jobs or internships in this vital field from February 2019-2022. The Committee has also recommended the development of Cloud Computing curriculum beyond AWS, to include Microsoft Azure and Google Cloud which is now being developed.

Goal 4. Technology

As part of the Cyber Security program, we have developed a Cyber Security Hub and Lab to advance student learning. Our courses integrate simulations and practice labs reflecting real-word experiences. These simulations provide programming, networking, cyber security, Web development, and other vital skills to our computer competency and advanced students. The simulations work from basic foundations for beginning students through advanced skills. The instructors also provide additional lectures and demonstrations in the classroom and/or online for further instruction. Our Cyber Security instructor gives online seminars on security for all students and staff through FSC.

Goal 6. Agility.

Through Advisory Committee recommendations and industry connections/partnerships, CIS programs are constantly adapting to changes in industry needs for employee skills. This agility is also reflected as mentioned in our responding to community needs as in the new Cyber Security degree and certificate programs where 25 of our Cyber Security students received jobs or internships in this vital field in 2021. The program is also responding and adapting to student career needs through adding Cloud Computing classes. The ability to make changes to curriculum and courses with in response to the changes is vital to students for employment and our local community so employers can meet the job demand of their organizations. Technology is constantly changing, and Chaffey must keep up with these changes to remain a leader and source of success for out students and employers.

PRIOR VIP GOALS STATUS/PROGRESS

1c. Please list the program's VIP Goals from the last PSR cycle and report on the progress (complete, ongoing, etc.).

VIP 1. Create Cyber Security A.S Degree meeting Metropolitan Service Area (MSA) and community need for cyber security professionals.

Completed.

VIP 2. Develop a Database Certificate. Explore advisory committee recommendation that we develop a Database Management Certificate.

Completed.

VIP 3. Reevalate Web Development Certificates. Advances in Web development technologies require students to learn new skills.

Completed.

VIP 4. Maintain Technological Currency in Curriculum. Maintain and update Curriculum currency based on Industry LMI and Advisory Committee standards & Recommendations.

Completed.

OTHER RESOURCES REQUESTS

1d.1 At any point during the past PSR cycle (last three years), did you have "other resources requests" that were funded by the Resource Allocation Committee?

If yes, proceed to questions 1d.2. If no, skip to section 2.

If you have items that were funded by Strong Workforce and Perkins, please mark "yes."

- (●) Yes
- ( ) No

1d.2 If yes, did those purchases meet the program's intended purpose. Please explain.

> Yes, the purchases helped us to complete VIP 1. Create Cyber Security A.S Degree meeting Metropolitan Service Area (MSA) community needs for cyber security professionals.
>
> The degree and certificates were completed with classes being offered for the first time. Students have earned degrees and certificates. In addition, several of our students have achieved internships in the industry as they progress through the program.

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2. EVIDENCE

The evidence section comprises of the following: (a) equity, (b) learning and completion, (c) CTE data if applicable, and (d) learning outcomes.

EQUITY DATA

Please reference the "Equity" Institutional Research data file to evaluate the following areas.

2a.1 Concerning GENDER/IDENTITY, identify important EQUITY developments and trends.

Review data from the last six years and indicate whether the number of enrollments, success rates, and retention rates in the following categories have increased, decreased, not changed (plus or minus 2%), or there is insufficient data available.

Response Legend:
1 = Increase **2** = Decrease **3** = No Change (plus or minus 2%) **4** = Insufficient Data Available

	1	2	3	4
Number of enrollments by males		✔		
Number of enrollments by females		✔		
Success rate by males		✔		
Success rate by females			✔	
Retention rate by males		✔		
Retention rate by females			✔	

2a.2 Concerning RACE/ETHNICITY, identify important EQUITY developments and trends.

Review data from the last six years and indicate whether the number of enrollments, success rates, and retention rates in the following categories have increased, decreased, not changed (plus or minus 2%), or there is insufficient data available.

Response Legend:
1 = Increase **2** = Decrease **3** = No Change (plus or minus 2%) **4** = Insufficient Data Available

	1	2	3	4
Number of enrollments by African American		✔		
Number of enrollments by Asian	✔			
Number of enrollments by Caucasian		✔		
Number of enrollments by Hispanic		✔		
Number of enrollments by other race/ethnicity		✔		
Success rate by African American		✔		
Success rate by Asian		✔		
Success rate by Caucasian		✔		
	1	**2**	**3**	**4**
Success rate by Hispanic		✔		
Success rate by other race/ethnicity	✔			
Retention rate by African American		✔		
Retention rate by Caucasian			✔	
Retention rate by Asian			✔	
Retention rate by Hispanic		✔		
Retention rate by other race/ethnicity	✔			

2a.3 Concerning AGE GROUP, identify important EQUITY developments and trends.

Review data from the last six years and indicate whether the number of enrollments, success rates, and retention rates in the following categories have increased, decreased, not changed (plus or minus 2%), or there is insufficient data available.

Response Legend:
1 = Increase **2** = Decrease **3** = No Change (plus or minus 2%) **4** = Insufficient Data Available

	1	2	3	4
Number of enrollments by age group, 19 or younger		✔		
Number of enrollments by age group, 20-24		✔		
Number of enrollments by age group, 25-29		✔		
Number of enrollments by age group, 30-39		✔		
Number of enrollments by age group, 40-49	✔			
Number of enrollments by age group, 50 or older		✔		
Success rate by age group, 19 or younger			✔	
Success rate by age group, 20-24		✔		
	1	**2**	**3**	**4**
Success rate by age group, 25-29		✔		
Success rate by age group, 30-39		✔		
Success rate by age group, 40-49			✔	
Success rate by age group, 50 or older		✔		
Retention rate by age group, 19 or younger			✔	
Retention rate by age group, 20-24			✔	
Retention rate by age group, 25-29			✔	
Retention rate by age group, 30-39		✔		
Retention rate by age group, 40-49			✔	
Retention rate by age group, 50 or older		✔		

2a.4 Concerning OTHER CHARACTERISTICS, identify important EQUITY developments and trends.

Review data from the last six years and indicate whether the number of enrollments, success rates, and retention rates in the following categories have increased, decreased, not changed (plus or minus 2%), or there is insufficient data available.

Response Legend:
1 = Increase **2** = Decrease **3** = No Change (plus or minus 2%) **4** = Insufficient Data Available

	1	2	3	4
Number of enrollments by students with disabilities		✔		
Number of enrollments by first generation				✔
Number of enrollments by economically disadvantage		✔		
Success rate by students with disabilities			✔	
Success rate by first generation				✔
Success rate by economically disadvantage		✔		
Retention rate by students with disabilities	✔			
Retention rate by first generation				✔
Retention rate by economically disadvantage		✔		

2a.5 Over the last three years, has the number of course sections offering zero-cost textbooks increased, decreased, or remained the same?

Response Legend:
1 = Increase **2** = Decrease **3** = No Change

	1	2	3
Number of sections with zero-cost textbooks			✔

2b. IDENTIFY EQUITY STRENGTHS

a. First, summarize "equity" data from Institutional Research that describes your program strengths.
b. Second, if applicable, summarize internal or external data/evidence/research the department has (e.g., surveys, interviews, focus groups, external assessment techniques). Programs may provide additional information or data that has not been included in their Institutional Research files.
c. Considering the evidence, explicitly identify specific “equity” strengths.

a. Program Strengths.

Even though the number of females enrolled in over the six years has decreased, the number of Females enrolled has remained level since 2018-19. This is promising as the number of women in IT careers nationwide has been historically low compared to men. This is a societal problem as girls are told from a young age that they can't succeed in STEM careers like computing. Chaffey CIS instructors have been working toward greater equity of females in our program through outreach to middle and high schools through their counselors and participating in career days to recruit girls at an early age. In addition we remind all of our students in CIS-1--male and female--that women have an equal place in IT through speakers, class videos featuring woman, and other career information. We have students complete group projects with teams consisting of male and female students. We also enourage all students to participate in our department student clubs.

The number of CIS enrollments by Asian students has increased. This increase is consistent with the increase in Asian students in the Chaffey College institutional data.

The retention rate of CIS students with disabilities has increased. CIS instructors work with the students to provide assistance with the class requirements and to communicate and coordinate assistance with the DPS office.

The number of enrollments by students ages 40-49 has increased. This students usually tell instructors that they are returning to take CIS classes to upgrade skills, to meet an employer request, or to change careers. Our Advisory Committee members often tell us how they encourage their employees to enroll in Chaffey CIS class to upgrade skills. This increase is consistent with the increase in this student age group in the Chaffey College institutional data.

NOTE: The numbers in the equity data that showed decreases in the information above were increasing until 2019-20 which is when the effects of Covid began. We hope to revive these increases as we assume a sense of "normalcy" once again.

b. Evidence of strength.

Race/Ethnicity characteristics of the twenty-five 2021 Cyber Security Program students who received jobs or internships provided by Chaffey IR Office show numbers close to the Chaffey enrollment numbers.

- Asian - 8.0%

- Black - 8.0%
- Latino - 64%
- Two or More Races - 4.0%
- White - 16%

c. Equity Strengths.

Women. Chaffey IR numbers shows the following percentage of CIS enrollemnts:

- Male - 66%
- Women - 31%
- Unknown/Decline to State - 3%

Nationwide, women are 21% of college enrollments in B.S. computer programs. Chaffey is 10% higher.

Gender characteristics of the twenty-five 2021 Cyber Security Program students who received jobs or internships provided by Chaffey IR Office.

- Male - 64%
- Female - 36%

The number of female student s in the group receiving jobs or internships at 36% exceeds the 31% of women enrolled in Chaffey CIS courses. It appears that our recruiting efforts have been successful.

The faculty plan to continue our efforts to recruit women through our outreach, campus, and classroom efforts and activities.

2c. IDENTIFY DISPARITIES IN EQUITY

a. First, summarize "equity" data from Institutional Research that describes areas of improvement.
b. Second, if applicable, summarize internal or external data/evidence/research the department has (e.g., surveys, interviews, focus groups, external assessment techniques). Programs may provide additional information or data that has not been included in their Institutional Research files.
c. Third, considering the evidence, identify disparities in equity.
If there is a disparity in equity, DO NOT discuss responsive strategies in this section. You will be able to address responsive strategies in the STRATEGIC PLANNING section (item 4d).

*If the data shows favorable results for equity, answer the following question instead: How will the program maintain excellence in equity?

a. Areas of improvement:

- Asian students. Number of Enrollments change after 1 year was down 4.3%, after 2 years it was up 10%, and after 5 years it was up 31.5%.
- Other Race/Ethnicity: Success rate change after 1 year was up 11.7%, after 2 years it was up 9.8%, and after 5 years it was up 18.8%.
- Other Race/Ethnicity: Retention rate change after 1 year was up 2.0%, after 2 years was up 0.6%, and after 5 years was up 4.4%.
- Age Group 40 to 49 years old: Number of Enrollments change after 1 year was up 7.2%, after 2 years it was down 5.9%, and after 5 years it was up 3.7%.
- Age Group 40-49 years old: Success Rate change after 1 year was down 5.7%, after 2 years it was down 11.5%, and after 5 years it was down 0.2%. (No change.)
- Students with disabilities: Success rate change after 1 year was down 2.0%, after 2 years it was down 2.1% and after 5 years it was up 1.3%.
- Students with disabilities: Retention rate change after 1 year was up 0.5%, after 2 years it was up 0.3% and after 5 years it was up 3.1%.

b. Internal or external data/research. None at this time. We are currently creating a survey for our Adisory Committee.

c. Disparities of equity. Enrollments, success rates, and retention rates of African American students show a great and disappointing disparity.

- African American students--Number of Enrollments: Change after 1 year was up 31.1%, after 2 years it was down 21.5%, and after 5 years it was down 42.15%.
- African American students--Success Rate: Change after 1 year was down 25.2%, after 2 years it was down 27.6%, and after 5 years it was down 16.6%.
- African American students--Retention Rate: Change after 1 year was down 11.9%, after 2 years it was down 5.1%, and after 5 years it was down 8.1%.

LEARNING AND COMPLETION DATA

Please reference the "Learning and Completion" Institutional Research data file to evaluate the following areas.

2d.1 Identify important LEARNING and COMPLETION developments and trends.

Review data over the last six years.

Response Legend:
1 = Increase **2** = Decrease **3** = No Change (plus or minus 2%) **4** = N/A **5** = Insufficient Data Available

	1	2	3	4	5
Overall Enrollment		✔			
Overall Retention			✔		
Overall Course Success		✔			
FTES		✔			
All ADT degrees awarded				✔	
All AA degrees awarded				✔	
All AS degrees awarded	✔				
All degrees awarded	✔				
	1	**2**	**3**	**4**	**5**
All Certificate Completion		✔			
Average units earned, ADT degree				✔	
Average units earned, AA degree				✔	
Average units earned, AS degree	✔				
Average units earned, all degrees	✔				
Average units earned by certificate(s)	✔				

CTE PROGRAMS: Labor Market Information (LMI): Regional Job Outlook (If Applicable)

OCCUPATIONAL GROWTH

2d.2 Identify important CTE PROGRAM developments and trends.

For the most up-to-date data about projected occupational growth, please visit the Center for Excellence Labor Market Demand data. The CoE Labor Marker Demand data is available at: COE - Supply and Demand | Centers of Excellence (coeccc.net)

Response Legend:
1 = Middle Skill **2** = Above Middle Skill

	1	2
CTE: Projected Occupational Growth		✔

2e. IDENTIFY LEARNING AND COMPLETION STRENGTHS--ASSESSMENT OF PROGRAM HEALTH

a. First, summarize "learning and completion" data from Institutional Research that describes your program strengths. Be sure to address any items marked “increase” and/or “no change," if "no change" is a positive reflection of the program (e.g., provide data for stable or increased enrollment, retention, success patterns, or data for increased number of certificates/degrees). If applicable, summarize data related to program strengths for “projected occupational growth.”
b. Second, if applicable, summarize internal or external data/evidence/research the department has (e.g., surveys, interviews, focus groups, external assessment techniques). Programs may provide additional information or data that has not been included in their Institutional Research files.
c. Third, considering the evidence, explicitly identify specific “learning and completion” strengths.

a. Program strengths. Even though the data shows an overall decrease in Learning and Completion for programs as a whole, there were some specific certificates under which completion did increase--Computer Information Systems, Microsoft Network, Web Page Developer Level 1, and Computer Game Development Certificates. In addition, the new Cyber Security Defender Certificate and Cyber Security Analyst Certificate (starting in 2019-20) had many students earning the new certificates.

The new Cyber Security Professional A.S. Degree has also had many successful A.S. degree earners since starting in 2019-20. The number of Computer Information A.S. degree earners had been decreasing from 2015-16 through 2018-19. However the numbers have increased each of the past two years. (2019-20 and 2020-21).

b. Other evidence. The Cyber Security certificates and degree are generating incredible interest from our Chaffey community including students and employers. In 2021, twenty-five Cyber Security students received Jobs or Internships because they were part of Chaffey's Cyber Security programs. (See attached Chaffey College Cyber Security Program Demographic Characteristics of Students Who Received Jobs or Interships February 2019-March 2022.) In addition, Cyber Security students must enroll in networking and other CIS courses which motivates the students to seek additional CIS certificates.

c. Learning and completion strengths. The greatest strength is the growth in student interest and success in Cyber Security. Industry demand is very high along with the high salaries. As we become a National Center of Academic Excellence (a VIP Goal) we will gain even higher recognition. In addition, our movement in Cloud Computing will only enhance the strength of our CIS program. As these two programs grow in popularity, the other CIS courses that feed into this program will increase in enrollment as well.

2f. LEARNING AND COMPLETION AREAS OF IMPROVEMENT

a. First, summarize "learning and completion" data from Institutional Research that describes areas of improvement. Be sure to address any items marked “decrease” and/or “no change,” if “no change” reflects an area needing improvement (e.g., provide data for decreased enrollment patterns or the number of certificates/degrees earned). If applicable, summarize data related to areas of improvement for “projected occupational growth.”
b. Second, if applicable, summarize internal or external data/evidence/research the department has (e.g., surveys, interviews, focus groups, external assessment techniques). Programs may provide additional information or data that has not been included in their Institutional Research files.
c. Third, considering the evidence, explicitly identify specific areas in which the program can improve over the next three years.

You are only be asked to identify areas of improvements. You will be asked to address the strategies that the program plans to implement in the STRATEGIC PLANNING section (item 4d).

*If the data shows favorable results for learning and completion, answer the following question instead: How will the program maintain excellence in learning and completion?

a. Learning and Completion. There has been an overall decrease in degrees and certificates after the suspension of the Cisco program courses due to the retirement of our Cisco Academy instructor in 2018 and the resulting re-evaluation of the Cisco Academy program due to changes in the industry and employer requirements that have shifted to emphasis on Cyber Security and Cloud skills. Cisco certificates were the majority of all CIS certificates earned prior to that time, accounting for 85.2% in 2015-16; 60.4% in 2016-17; 72.9% in 2017-18; 49.7% in 2018-19; and 57% in 2019-20 whic has resulted in the decrease in certificates.

b. We are in the process of creating a survey to be sent to our Advisory Committee members about their needs for entry level required computer skills and employee needs now and projected. We will then use this data as would be applicable to generating revisions to our certificates that have had a decline. Some may need revision, and some may need to be deleted, and we may need to begin planning for new, emerging areas.

c. Areas of improvement over next three years. Overall enrollment, course success, and FTEs could be improved. The number of Certificate earners for Programming Foundations, Project Management, Computer Support Technician, and Computer Foundations could improve.

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3. EVIDENCE--LEARNING OUTCOMES

Learning Outcomes represents the third element of the EVIDENCE component of the PSR evaluation. If you have questions about the learning outcomes requirements in section 3, please contact Shannon

Jessen at shannon.jessen@chaffey.edu or Laura Picklesimer at laura.picklesimer@chaffey.edu.

3a. MANDATORY COMPONENTS: Please identify which of the following MANDATORY components have been completed by checking the appropriate boxes.

The Outcomes and Assessment Committee will verify if mandatory components have been fulfilled.

- [x] COURSE LOs (CLOs) have been revised/updated as needed and entered in the course SLO Taskstream workspace.
- [x] COURSE LOs (CLOs) have been mapped to Program or Institutional Learning Outcomes in each course's Taskstream workspace.
- [x] PROGRAM LOs (PLOs) for each degree/certificate have been revised/updated as needed, and entered in the Program Learning Outcomes (PLO) Workspace.
- [x] PROGRAM LOs (PLOs) for each degree/certificate have been mapped to Institutional Learning Outcomes in the Program Learning Outcomes (PLO) Workspace.
- [x] Each Degree and Certificate has a Curriculum Map that aligns Courses to PROGRAM LOs in Taskstream's Program Learning Outcomes (PLO) Workspace.

Three Year Cycle

3b.1 List any courses from your department that were not offered during the previous three-year cycle (from fall 2018 through fall 2021). Enter NONE if all courses were offered.

There is NO SCORING for element 3b.1

> CISCO courses. CIS-431 Project Management. CIS 496ABCD.

3b.2 Did you evaluate learning outcomes for all courses other than those listed in 3b.1 within the previous three-year period? Note: evaluating courses for ACES-ILO (formerly New World of Work, or NWOW) counts for this component.

- (●) Yes
- ( ) No

Assessment Results and Reflection

3c.1 Is there ACES-ILOs assessment data (formerly known as NWOW employability skills) for courses in your department?

There is NO SCORING for element 3c.1.

- (●) Yes
- ( ) No

3c.2 Are all COURSE LO assessment results (other than ACES-ILO/NWOW data) from fall 2018 through fall 2021 entered into Taskstream?

- (●) Yes
- ( ) No

3c.3 Mark all applicable approaches to illustrate how your department currently uses course learning outcome (CLO) results. Mark all that apply.

- [x] Review & share results as a department
- [x] Revise CLOs
- [x] Change instructional strategies
- [x] Attend professional development
- [x] Change methods of assessment
- [x] Modify criteria for measuring success

☐ Other:

3c.4 PROGRAM STRENGTHS

Describe how your department is using CLO assessment results to draw thoughtful conclusions regarding the strengths of your program(s). Use data from course learning outcomes assessments to support your answer. If applicable, include data for ACES (formerly NWOW) employability skills that have been assessed in your program.

The CIS program offers many courses that make up our A.S. degree and certificate programs. Many of the courses are required for most of our programs. We use the CLO assessment results to look at the strengths of these course and how they provide the foundation for each of the programs.

Examples of Assessment results for three foundation courses required for most degrees and certificates in the CIS program:

CIS-4 Fundamentals of Microsoft Windows. For the past two evaluations, the students have met or exceeded the criteria for success of 70% after starting to use the TestOut simulation software. The instructors recommend continuing with the TestOut simulation software.

CISPROG-1 Introduction to Computer Programming Concepts. For the past two evaluations, the students have met or exceeded the criteria for success of 70%. The instrucors reccommend coninuing to monitor outcomes.

CIS-68 Internet Technologies. For the past two evaluations, the students have met or exceeded the criteria for success of 70%. The instructors recommend continuing to monitor the outcomes.

3c.5 PROGRAM AREAS OF IMPROVEMENT

Describe how your department is using CLO assessment results to draw thoughtful conclusions to address areas for improvement in your program(s). Use data from course learning outcomes assessments to support your answer. If applicable, include data for ACES (formerly NWOW) employability skills that have been assessed in your program.

The department instructors meet often to discuss the outcome results for all courses in relation to how the students have performed to meet the objectives of the individual courses in the many subject areas we include. The average succes rate of each outcome is reviewed to see the range of results. Instructional materials including textbooks, software, simulations, projects, and other are discussed. Current employment/industry demand and requirements are included in this discussion.

Examples of changes made as a result of of assessment results:

CIS-1. Introduction to Computer Information Systems. This course is required for most of the certificates and the CIS A.S. Degree. It also serves as the computer competancy course required for other majors at Chaffey; and is also required for transfer to colleges and universities throught the U.S. The CIS-1 course has been meeting expectations for the five Learning Outcomes that had been evaluated over past years. However, after the last review of the Outcomes the instructors decided to consolidate the six outcoes into three outcomes that more directly address and assess the Outcomes for student learning and success. The instructors found the students were viewing the new Objectives as being easier to understand.

CIS-413 TCP/IP. This course was deactiviated during this past cycle. The Learning Outcomes were not covering the material adequately and students were not meeting the Outcomes, and it was decided to deactivate and instead cover the subject in units within other networking classes.

Course Success

Certificate Completion

FTES

3c.6 Identify next steps that will help address gaps in achievement of the Program Learning Outcomes.

- ☑ Revise program learning outcomes
- ☑ Embed ACES-ILOs outcomes and assessments into the curriculum
- ☑ Attend professional development/training in embedding ACES-ILO) formerly New World of Work/NWOW) outcomes and assessments into the curriculum

- [x] Develop a department Canvas shell to share discipline-specific ACES-ILO resources
- [x] Schedule a department meeting with members of the OAC and/or the ACES-ILO team for Q&A and coaching
- [ ] Implement changes to course assignments and/or curriculum
- [ ] Other (please specify):

Institutional Learning Outcomes ACES-ILO Assessment Plan

In previous PSR cycles, courses were mapped (aligned) to Program Learning Outcomes (PLO, introduced/practiced/mastered), which were also mapped (aligned) with Institutional Learning Outcomes (ILO). Academic, Career/Community, & Employability Skills (ACES, formerly New World of Work/NWOW) were subsequently introduced to connect college coursework to skills valued by employers and advanced programs of study. The ACES skills have been aligned with ILOs, creating opportunities to directly assess ILOs and measure student progress longitudinally.

Develop a three-year plan that identifies one or more ACES-ILO skills and provides opportunities for students to demonstrate their level of competency in at least THREE (of the 40 possible) ACES-ILO (formerly New World of Work/NWOW) outcomes in Canvas. For statistically valid results, a good goal is to obtain assessment data for at least 50% of all sections for each course over the three year PSR cycle. Please specify one or more specific objectives and action items for each of the next three years.

3d.1 Identify the ACES-ILO skill(s) for which your department will assess outcomes over the next three years.

If it is helpful, refer to the ACES-at-a-Glance document, located at https://tinyurl.com/za9b3kps, or refer to the Top 3 ACES by Academic & Career Community, located at https://www.chaffey.edu/outcomes/digital-badges.php.

- [x] Adaptability
- [x] Analysis / Solutions Mindset
- [x] Collaboration
- [ ] Communication
- [x] Digital Fluency
- [ ] Empathy
- [ ] Entrepreneurial Mindset
- [ ] Resilience
- [ ] Self Awareness
- [ ] Social / Diversity Awareness

3d.2 What specific objectives or actions will be taken each year to ensure at least three of the 40 possible ACES-ILO outcomes are assessed in all courses (at least 50% of sections) for the next three years? NOTE: During the three year cycle, a minimum of three different outcomes MUST be assessed.

ACES-ILO YEAR 1 ACTIONS

> Identify applicable ACES-ILO outcomes by section course assignments.
>
> - Most of the full-time instructors have attended the ACES information meetings. Those who haven't plan to attend a future meeting and/or join the ACES Canvas course.
> - Instructors from each teaching area in CIS will meet to review each course in that area to identify the assignments.
> - The full department will meet to describe the progress as courses in CIS are related to one another.

ACES-ILO YEAR 2 ACTIONS

> Access current rubrics, revise (if necessary) and implement rubrics to record student mastery level on ACES-ILO outcomes.

ACES-ILO YEAR 3 ACTIONS

Review data to identify strengths and weaknesses in the Learning Outcomes. Revise as necessary and identify additional appropriate Learning Outcomes.

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4. STRATEGIC PLANNING

Perhaps the most important piece in the PSR process is strategic planning. Here you will create your Visionary Improvement Plan (VIP) Goals. VIP Goals is an opportunity for all faculty (not just primary writers) to get together to analyze data, discuss the overall self-study, and identify area improvement goals for the next three years. You will then develop an action plan, which outlines how your area plans to achieve your VIP Goals.

4a. Do you have any plans to modify a degree or certificate in your program?

- [x] Yes
- [ ] No

4b. Are you planning to initiate a new program?

- [ ] Yes
- [x] No

4c. Please identify specific factors that have contributed to or have influenced program areas of improvement?

Refer to the following elements to help you answer this question:
2c. Identify disparities in equity
2f. Learning and completion areas of improvement
3c.3. Learning Outcomes Areas of Improvement

2c. Disparities in Equity.

Women in IT. The gender of CIS students compared to college-wide number is as follows: Male college-wide 36.1%, CIS 66.8%; Female college-wide 62.3%, CIS 31.3%; Unkown college-wide 1.6%, CIS 1.9%. This 35.5% lower enrollment for women in CIS courses does not surprise us, but it does continue to concern us very much as this this is a continuing issues for computer most educational institutions and the industry. This is a societal issue for many other STEM areas as well. We are continuing to pursue ways a to turn this around at Chaffey, which we believe must start with educating all students in our college district starting with K-12 to understand that is OK for girls to like and be successful in the technical fields such as Computer Information Systems. Chaffey women do have higher enrollment numbers in CIS-1 and Web development courses; however, they still view areas such as networking, hardware, game development, and programming as fields for men, wich leads to this greater difference in enrollment. There has been an interest in the Cyber Security area of Chaffey women students, and we are pleased that the percent of women receiving jobs or internships from our Cyber Security from 2019-2022 was 36% which was almost 5% higher than the percent of women enrolled in CIS classes.

African American students. 7.4% of students enrolled in CIS courses are African American and therefore consistent with the college number of 7.35.%. However, the number of African American students enrolled in CIS courses has decreased by the very large number of 42.1% over the time period of the study. In addition, the success rate African American students for this time period has decreased by 16.6% for those enrolled in CIS classes while decreasing by 3.3% for all African American Chaffey students.

2f. Learning and completion areas of improvement.

Changes in technology and industry needs require continuous monitoring and changes to courses and programs.

3c3. Changes in technology require changes to expected outcomes so students will be learning new skills to meet the needs of industry and/or transfer.

Instructors keep up with changes through professional organizations, our industry advisory committee, transfer instruction contacts, and LMI information. Current LMI information projects an increase in the number of jobs that will be available through at least 2023. The LMI projects are attached to this report. The highest projection of job openings at this time is for Cyber Security and Cloud Computings positions.

DEVELOP AN ACTION PLAN

4d. What is your program's action plan to make improvements?

An effective action plan is descriptive and has well-defined steps. Within the three-year plan, an action plan may include yearly milestones or incremental deadlines that help the program to achieve their VIP goal(s).

> Our first action plan is to earn designation as a National Center of Academic Excellence in Cybersecurity. The Center of Academic Excellence in Cybersecurity (CAE-C) designation is a prestigious designation awarded to regionally accredited U.S. institutions of higher education that meet rigorous requirements in their commitment to producing cybersecurity professionals who will reduce vulnerabilities in our national infrastructure. The NSA awards CAE-C designations to institutions that commit to producing cybersecurity professionals that will reduce vulnerabilities in our national infrastructure. While the CAE-C program initially formed to address the shortage of intelligence community professionals, the program later expanded to address the lack of qualified cybersecurity professionals in the workforce. Becoming a CAE-C is a rigorous, multi-year process. Colleges achieving the CAE-C designation are eligible for many grants for the college. Students enrolled in a cybersecurity program at a CAE-C may be awarded scholarships as well as internships.
>
> Year 1: Review and make any required curriculum changes.
>
> Year 2: Complete the extensive application process.
>
> Year 3: Program alignment of approved application and curriculum.
>
> Our second action plan is to expand Cloud Computing course offerings and pathways. CIS hired a new full-time Cloud instructor who started teaching courses this current (Spring, 2022) semester. Cloud computing professionals are in high employment demand. A comprehensive Cloud program must include the current major Cloud implemenations of Amazon Web Services as we do now (AWS), and also Microsoft Azure, and Google Cloud. Our new instructor will be developing additional courses and certificate and degree pathways in Microsoft Azure and Google Cloud.
>
> Year 1: Review employment demand by business and industry and requirements for Cloud certifications set by prominent services such as Microsoft, Google, and any newly emerging ones.
>
> Year 2: Develop and submitting curriculum for courses, certificates, and degrees.
>
> Year 3: Offering the new courses and evaluating student outcomes.

CURRICULUM

4e. How does (or will) your department's degree and certificate programs incorporate opportunities for students to explore careers?

Information will be forwarded to the Curriculum Office. There is NO SCORING for curriculum question, 4e.

> Our classes all include units on careers in the appropriate areas of IT. All CIS courses include information on future career prospects an required skills. These are incorporated through the use of current events, discussion of industry and real-life situations, and speakers and professionals from within the industry to make presentations. We also refer students to the career office and its resources.

PROFESSIONAL DEVELOPMENT SUGGESTIONS

4f. What topics, skills or types of professional learning would help you or your program execute future plans?

Information will be forwarded to the Faculty Success Center, Distance Education, Classified Success Network, and the Professional Development Committee to inform future professional development planning.

There is NO SCORING for item 4f.

> Our faculty want to attend conferences/webinars devoted to equity, pedagogy, regional information, and related.

VIP GOALS

- **4g.1 What are your Three-Year Visionary Improvement Plan Goals (1-3 goals recommended)?**

VIP Goals should align with the Chaffey Goals, and should be clear, specific, measurable, action-oriented, realistic, and time bound.

> VIP Goal 1. Earn designation as a National Center of Academic Excellence in Cybersecurity.
>
> VIP Goal 2. Expand Cloud Computing course offerings, certificates, degrees, and pathways.

4g.2 Select the Chaffey Goals that directly relate and are MOST relevant to your VIP GOALS (please select all that apply):

VIP goals should relate to Chaffey Goals.

- [x] Goal 1: Equity and Success--Chaffey College will be an equity-driven college that fosters success for all students.
- [x] Goal 2: Learning and Completion--Chaffey College will ensure learning and timely completion of students' educational goals.
- [x] Goal 3: Community Opportunities and Needs--Chaffey College will develop and maintain programs and services that maximize students' opportunities and reflect community needs.
- [x] Goal 4: Technology--Chaffey College will optimize the use of technological tools and infrastructure to advance institutional efficiency and student learning.
- [ ] Goal 5: Efficiency--Chaffey College will efficiently and effectively manage systems, processes, and resources to maximize capacity.
- [x] Goal 6: Agility--Chaffey College will responsively adapt to changes in students' academic and career needs.
- [ ] Goal 7: Professional Learning--Chaffey College will prioritize and align professional learning for all employees to support the achievement of Chaffey Goals.

4g.3 Explain the rationale that led your program to develop each VIP Goal. How does each VIP Goal align with the Chaffey Goals?

VIP Goal 1--Rationale and how it aligns with the Chaffey Goals
VIP Goal 2--Rationale and how it aligns with the Chaffey Goals
VIP Goal 3--Rationale and how it aligns with the Chaffey Goals

> VIP Goal 1. Work toward earning designation as a National Center of Academic Excellence in Cybersecurity. This process will meet the yearly goals set by the National Center of Academic Excellence in Cybersecurity. Chaffey Goals 1, 2, 3, 4, 6.
>
> - Chaffey Goal 1: Equity and Success. Being designated a Center of Excellence enables us to pursue grants and directs students to our college due to the designation. We will also be able to recruit from all areas of our community. This also directs our curriculum development as we pursue pathways that help with equity.
> - Chaffey Goal 2: Learning and Completion. As a Center of Excellence will continually receive up-to-date information on industry changes which will give us even greater guidance on how we should be updating our courses and programs to assist students in moving toward their goals.
> - Chaffey Goal 3: Community Opportunities and Needs. As at Center of Excellence we will be able to work with other Centers of Excellence as well as community leaders in Cyber Security. We will also be able to offer more courses through Dual Enrollment with our local High Schools as students are very interested Cyber Security careers.
> - Chaffey Goal 4. Technology. We will be levering new technology to advance student learning.
> - Chaffey Goal 6. Agility. We will be up-to-date in making changes as they occur in industry as we work within the National Center of Excellence.
>
> VIP Goal 2. Expand Cloud Computing course offerings, certificates, degrees, and pathways.
> Chaffey Goals 1, 2, 3, 4. 6
>
> - Chaffey Goal 1: Equity and Success: Cloud Computing is very high-demand field. The opportunity is there for all students who complete the programs and will promote equity.
> - Chaffey Goal 2: Learning and Completion. Explanded pathways will assist students in completion for this important career.
> - Chaffey Goal 3: Community Opportunities and Needs. Th plan will offer more courses in developing Cloud platforms to keep up with industry demand for employees with up-to-date technological skills. Cloud Computing trained completers are being hired with A.S. degrees and certificates. The requirement of Cloud professionals is very high and offers great opportunity. We will also be able to offer more courses through Dual Enrollment with our local High Schools as students are very interested Cloud Computing careers.
> - Chaffey Goal 4. Tecnology. We will be levering new technology to advance student learning.
> - Chaffey Goal 6. Agility. As a newer, evolving field we will be able to adapt this new program to meet new needs in our community.