Show All Possible Responses

Response is required

1. PROGRAM OVERVIEW

Program Title & Code

Program Title
Computer Science
(Max chars: 100)

Program Code
0706
(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: Computer Science courses are taught using many different resources, pedagogical styles, and technical tools in order to ensure the success of students regardless of learning style. Courses are taught using classroom instruction, group discussion and projects which encourage interaction and social learning, and multiple methods of assessment which include standard tests, hands on assessment, and critiquing projects. Instructors in the Computer Science program have created short videos for the topics for programming for review in all course modalities that can be shared between instructors and sections. Course assignments include topic review, current events, programming practice projects and examples, and real world applications of complex programming and computer science ideas.

Goal 2: Computer Science courses are offered in multiple modalities and terms in order to increase availability. All courses within the program are approved for in person instruction, hybrid instruction, and online instruction. Over the course of several semesters, each of the classes have been offered in varying modalities to determine what is most successful for the students. In addition to varying modalities, the Computer Science program is also offering fast track and short term courses (14 weeks) to meet the needs of the students.

Goal 3: Computer Science and related jobs are highly in demand. US News and World Report Most recent job rankings list Software Development as the #5 of the top 100 jobs, with a projected number of new jobs over 400,000 and an average projected salary of over $110,000/yr. Our Computer Science programs offer the foundation of these careers. The Computer Science program at Chaffey prepares students for transfer degrees in Computer Science and assists in other programs and certificates, helping students in areas of security and information systems.

Goal 4: The Computer Science program is constantly reviewing the use of technical tools and program infrastructure with the goal of continuous updating the way that the types of technology/software/hardware are used. We are currently using online labs to record student assessment and progress. This helps students who might have difficulty with equipment practice the skills necessary and also helps prepare students for certification testing and careers. We are implementing new methods of instruction using tools to help aid learning and are always looking for additional options.

Goal 6: The Computer Science Associates Degree for Transfer matches the standards that are set within the State of California for student transfer but also complements stand alone certificates and programs within the CIS department to offer students programming and Computer Science skills. By aligning with the California standards, we are helping students achieve goals of transfer to get degrees in Computer Science, but by also keeping our courses within local certificates, we can adapt to student needs by giving them a program for Computer Science education even if they don't plan to transfer. We continue to create new certificates and programs to help support the needs of the industry.

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. Develop mentorship programs between beginning and advanced Computer Science students through the development of a Makerspace. Completed.

VIP 2. Create a partnership with local Middle and High Schools. Completed.

VIP 3. Participate in Chaffey STEM academy and events to increase campus visibility of the Computer Science Program. 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.

N/A

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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. Based on the Institutional research, it appears that the number of enrollments have significantly increased for both males and females, for all ethnicities, for all ages, and for those that are economically disadvantaged. The success rate has increased for females, for Caucasian students, and for students that are 19 and under. The Retention Rate has increased for African Americans

b. Additional evidence has not been collected

c. The growth of the program and the increase in careers in this field may account for the increase in growth in these populations.

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. Institutional Research indicates that the Success Rate is generally decreased especially among males, Asian students, African American students, Hispanic students, and students between 20 and 39 and the Retention Rate is down for Hispanic students and for those students age 20-24 and age 30-39

b. Additional quantitative research has not been collected for this program

c. The decline in success rate may have correlation with the pandemic and subsequent transition to limited contact with students and the inability to provide students with equipment.

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.

> Based on the information provided by Institutional Research, enrollment is up significantly for Computer Science ADT programs. The number of enrollments have increased by 12% in the past year and over 92% in the last five years. During this time, the College as a whole has experienced a decline in enrollment which makes this even more significant. Courses offered within the Computer Science program are filling quickly and so are their wait lists. Often, students are turned away from courses because of the inability to give them a space. There are limited instructors available to teach these courses, and while each of the courses in the program are offered as often as possible, every semester there are not enough sections to meet the demand.

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?

> According to the data provided by Institutional Research, Success and Retention are down for Computer Science. An analysis of the data shows that the average success rate for the program over the last five years is 71%. In the last complete year (20-21), the success rate for Computer Science was 65%, showing a decline and the lowest success rate in the five year average. The average retention rate for Computer Science over the last five years is 91%, and was 86% last year.
>
> However, these changes are not statistically significant in themselves as they do fall within a standard deviation of the mean for the time analyzed. They do however, indicate that success and retention may be on the decline.

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

> COMPSCI 401

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

- [ ] 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 Computer Science program was originally created as a pathway to transfer with the applicable degree as an Associates Degree for Transfer according to the C-ID standards. The courses have been offered for three years and the data was evaluated based on the outcomes as set by the course template and evaluated by exams, labs, and projects in each of the four courses that make up the focus of the degree - COMPSCI 1, 2, 3, and 4.
>
> COMPSCI 4 - Discrete Structures- is meeting or exceeding each learning outcome measured and the scores are increasing with each subsequent measurement. Data from the previous semesters show an average over the last three years that 87% of students are meeting the expected outcomes. In the previous year, that number was 91% overall for the student learning outcomes.
>
> COMPSCI 1 - Programming - does not have a history of measurement for comparison due to a change in the course to incorporate online labs and the subsequent evaluation of the course using these labs to measure outcomes. The measurements from the single semester semester that has concluded using the new course requirements, however, are very high. 90% of the students are meeting the expectations for student learning 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.

> COMPSCI 2 and 3 are meeting expectations, but are starting to show some evidence of decline on one of the learning objectives for each course.
>
> COMPSCI 2 - Programming II - learning outcome addressing primitive data types has declined and the course is being evaluated for consideration of an inclusion of an online lab to help with student understanding.
>
> COMPSCI 3 - Computer Architecture - has had mixed results with learning outcomes. Students have continued to meet expectations for demonstrating that they understand Assembly programming. They have demonstrated an increase in percentage of students that understand how Boolean algebra works, identify ISA level flow of controls and virtual memory. However, the expectation that students will demonstrate how high-level programming constructs are implemented at the machine-language level has shown a 5% decline over the last two years. New textbooks are being considered for the course to offer a better resource for students to understand this complex subject. Also, the Operating System and Platform upon which to implement machine language projects has been updated to a Raspberry Pi format for easier access to machine level hardware, but the pandemic made it difficult to get standardized equipment for all students. One consideration will be how to provide this for future courses.

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

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

> Each instructor teaching within the Computer Science program will be responsible to identify applicable available ACES-ILO outcomes by the courses they are teaching and then determine the applicable assessments within that course that will allow the student to demonstrate those outcomes. The course outcomes will then be discussed by the group of instructors for agreement and evaluated to ensure that all applicable outcomes are included.

ACES-ILO YEAR 2 ACTIONS

> Given an agreed upon list of ACES-ILO outcomes by course, instructors teaching within the Computer Science program will modify existing rubrics for assignments, projects, and exams to add an assessment of student work reflecting these ACES-ILO outcomes.

ACES-ILO YEAR 3 ACTIONS

> Review data to identify strengths and weaknesses in the Learning Outcomes. Weaknesses will be identified if few students are achieving the desired outcomes based on the population. Review and revise the assessment tools and determine if the projects, assignments, or exams are accurately relecting the expected outcome.
>
> Identify additional appropriate Learning Outcomes that would be applicable reflect other aspects of the course.

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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?

- [ ] Yes
- [x] No

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

- [x] Yes
- [ ] 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

> Even though Enrollment is on the rise, Success and Retention are down for Computer Science, especially among males, Asian students, African American students, Hispanic students, and students between 20 and 39. The program has been focused entirely on the Associates Degree for Transfer. The pandemic has had an affect on success and retention across campus and may have been partially the cause of the decline.
>
> COMPSCI 2 learning outcome addressing student understanding of primitive data types has declined.
>
> COMPSCI 3 has met the expectation for the measurement of the outcome about high level constructs into machine language.

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).

> With success and retention down in several areas, Computer Science will be evaluated for expansion into other programs and certificates. Not all students are interested in transferring to a University and are interested in learning skills that will lead to jobs. Some of the courses within this program will be included with the CIS and Cybersecurity degrees and additional courses to strengthen the offerings of Computer Science will be considered.
>
> First year: Identify courses within the Computer Science Transfer degree program that would provide students with skills necessary for employment without transfer
>
> Second year: Identify additional courses to reflect the needs of the community and industry that would complement existing Computer Science offerings.
>
> Third year: Combine existing courses with any new courses to create certificate programs in Computer Science that meet the needs of the industry.
>
> For those that are interested in transferring, the department will look in to strengthening relationships with universities for existing and upcoming programs, to create better pathways for students to succeed.
>
> First year: Identify and contact Universities to discuss pathways for student completion and transfer.
>
> Second year: Develop strategies for increased completion and transfer such as creating events for students to visit campuses, or have representatives come to speak to classes.
>
> Third year: Evaluate data to determine if increased effort for strengthening relationships has improved student success and transfer. Reevaluate as necessary.

The following action plan will occur this year and be evaluated when new data is available because these are based on ongoing course improvements: Learning outcomes suggest that in COMPSCI 2 and COMPSCI 3, there are lower scores in the measurement of outcomes. The materials for these courses are being evaluated for ease of understanding and new things are being considered, such as online labs and course specific equipment that will allow easier access to machine level instructions.

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.

All courses in Computer Science include information on future career prospects and required skills. This will be incorporated through the use of current events, discussion of industry and real life situations, and speakers and professionals that work within the industry to come and present to students.

We offer student clubs in Cybersecurity and Game Development, both of which are future careers of students in Computer Science. Within these clubs, students explore jobs and work on real life projects.

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.

Considering the significant increase in enrollment in Computer Science, it would be important to work on skills with how to expand the program without losing focus on what is important, and how to monitor instruction in advanced courses with multiple instructors to ensure that students will be successful. Also, since since there is some indication that success is related to gender and race, continued professional learning in providing equity in courses and programs

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.

1. Evaluate courses for inclusion in Computer Science program based on the skills taught and their relation to the goals of Computer Science. Identify which courses should be created or modified for inclusion within the program.

2. Create additional avenues for completion within Computer Science including a Data Science Certificate and Degree and the inclusion of Computer Science in other programs such as cybersecurity.

3. Establish and strengthen connections with Universities to create pathways for transfer in Computer Science and related programs

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 - Evaluate courses for inclusion in Computer Science program based on the skills taught and their relation to the goals of Computer Science. Identify which courses should be created or modified for inclusion within the program.

This will improve equity chance of success by providing alternatives to a transfer degree for students. By growing the program to suit the needs of the students, the program will also serve the needs of the community through certificates that meet community needs, that are quicker to achieve than transfer degrees. By providing additional options, we are adapting and meeting changes in students career and academic needs.

VIP GOAL 2 - Create additional avenues for completion within Computer Science including a Data Science Certificate and Degree and the inclusion of additional Computer Science courses in other programs such as cybersecurity.

This goal addresses the needs of technology in the community and in the workplace. Data Science is a career that will prepare students for careers in data and information or transfer to learn more about the field. By providing additional options, we are adapting and meeting changes in students career and academic needs.

VIP GOAL 3 - Establish and strengthen connections with Universities to create pathways for transfer in Computer Science and related programs

This goal addresses the need to improve equity and success by creating pathways to make it easier for all students to transfer to schools that we can partner with. The students will be better able to complete their goals with these stronger relationships.