☑ ◀ Show All Possible Responses

⊞ **Response is required**

1. PROGRAM OVERVIEW

⊞ **Program Title & Code**

Program Title

▏ Mathematics
(Max chars: 100)

Program Code

▏ 1701
(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

☑ Goal 1: Equity and Success--Chaffey College will be an equity-driven college that fosters success for all students.

☑ Goal 2: Learning and Completion--Chaffey College will ensure learning and timely completion of students' educational goals.

☐ Goal 3: Community Opportunities and Needs--Chaffey College will develop and maintain programs and services that maximize students' opportunities and reflect community needs.

☐ 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.

☐ 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: The mathematics program offers noncredit support courses for students in Math 25 and Stat 10 to improve the success of students in these transfer level courses. The mathematics program by encouraging students in all math courses to access the STEM Success Center for resources such as tutoring and supplemental learning activities. Both Math 25 and Stat 10 have a supplemental l the Course Outline of Record. The mathematics program also encourages students to attend sessions in the Supplemental Instruction program when available. Faculty in the mathematics departmen related professional learning on an ongoing basis.

Goal 2: In conjunction with all of the statements under Goal 1, the mathematics department also ensures learning by reflecting upon assessment results that incorporate all required content as stat of Record. Instructors use course SLOs to ensure that the main learning objectives are being taught in each class. At the end of each department meeting, our department sets aside time for a profe share teaching strategies to help improve student learning and success. Members of the mathematics department regularly attend (and host) Faculty Success Center, Distance Education, and Profes workshops/trainings centered on student learning and success. The mathematics department is in compliance with State Law AB705 by no longer offering pre-transfer mathematics courses, thereby path to completion.

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.).**

Previous VIP Goal #1: In an effort to increase and streamline the process of collecting valuable data for SLO evaluation purposes the department would like to reconstruct the systematic approach f performance in our courses. In order to collect a reasonable amount of effective and useful data from the SLO process, the department will initiate more successful communication techniques (i.e., docs, or via discussion board on Canvas), develop more consistency in the types of questions asked (i.e. formative and/or summative assessments) created by subcommittees within the departmen comprehensive and equitable grading rubrics, and implement more efficient procedures to report out SLO findings.

Progress of Previous VIP Goal #1: **Ongoing**

Our department changed the SLO process in the last PSR cycle by gathering data on all SLOs for almost every course during the same semester, rather than spread out over multiple semeste transitions to using ACES-ILOs assessments to collect data, the mathematics department will also transition to using the new ACES-ILOs to collect data.

Previous VIP Goal #2: In light of AB705 and the major changes in our pre-transfer math courses, the math department needs to better understand how our students learn and to understand the eff has on students, with the goal of improving student learning and shortening the path to transfer or completion of certificates. The courses we will investigate and research will be the following: Math Foundations), Math 550 (Introduction to Algebra), Math 417 (Statway I), Math 420 (Essentials of Intermediate Algebra), and Math 450 (Intermediate Algebra).

Progress of Previous VIP Goal #2: **Concluded**

The department was directed to discontinue all of the courses listed except Math 650, with which the department complied. These pre-transfer level courses were not offered as a result of the Law AB705. Although members of the department attended professional learning events to better understand how our students learn with the intent to complete this goal, this goal is conclud are no longer offered.

Previous VIP Goal #3: Stat 10 students are disadvantaged relative to students who have passed other colleges' Elementary Statistics courses, in that some colleges and universities do not give stat who have successfully passed Stat 10 at Chaffey College because our Course Outline of Record does not mandate that students work with statistical software in a data analysis lab. We will remedy t implementing a computer lab component in our Stat 10 course and then revise our COR to reflect the statistical software usage with a lab component. This will also require that Chaffey College allo Department a room and computers that will be a dedicated Math and Statistics lab.

Progress of Previous VIP Goal #3: **Concluded**

The mathematics department was not able to obtain a dedicated Math and Statistics computer lab in the last PSR cycle. However, this VIP Goal can be labeled as complete because students v the Statistics-with-lab requirement can do so by taking SCSCI-10 Statistics for Social Science.

Previous VIP Goal #4: Current research in mathematics education (e.g. AMATYC) shows the importance of developing and implementing student-centered approaches to teaching. The department v evidence-based teaching strategies in all pre-transfer courses to improve student learning and shorten the path to transfer or completion. These strategies of technology enhanced lessons using mu iPads, writing surfaces on all walls, and collaborative learning space need to be in every class. Currently, only a few classrooms are equipped to deliver these new instructional approaches. Activities group settings which require flexible classroom seating arrangements in every classroom that allows students to be mobile and interactive throughout that classroom. Ongoing faculty support and tr order to ensure the success of this transformation in pedagogy.

Progress of Previous VIP Goal #4: **Concluded**

The mathematics department no longer offers any pre-transfer courses, so this goal has concluded.

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.

The "other resource requests" funded by the Resource Allocation Committee in the past PSR cycle were one classroom set of modular furniture and dry erase whiteboards.

While teaching face-to-face prior to the pandemic, these resources did meet their intended purposes. However, with no access to these resources while we have been teaching exclusively online, the
served their purpose for the last two years.

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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 increas
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
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 increas
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
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
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 increas
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
Number of enrollments by age group, 19 or younger		✔	
Number of enrollments by age group, 20-24		✔	

	1	2	3
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
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 increas... 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
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
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 assessme... 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. Mathematics Success Rates by Other Student Characteristics (**Students with Disabilities**, **First Generation**, and **Economically Disadvantaged**) had a positive percent change for all three gr... Since 2018-2019, mathematics Success Rates by Age Group showed the most positive change for the **19 or Younger**, **40-49 Years Old**, and **50 or Older** groups, although the 2-Year Percentage ... positive increase in success rates for every age group! The Success Rates by Race/Ethnicity described positive change in the **Unknown Race/Ethnicity** group.

b. N/A

c. Success Rates by Other Student Characteristics: The math department has seen an increase in the success rates of **students with disabilities** since the last PSR cycle. The 1-Year, 2-Year, and 5-... Changes for this subgroup were 6.1%, 36.0%, and 10.8%, respectively. The percentage changes for **first generation** students were 1.9% and 6.5% for the 1-Year and 2-Year Percentage Changes ... available for the 5-Year Percentage Change). **Economically disadvantaged** students saw a 0.7% and 8.7% increase for the 1-Year and 2-Year Percentage Changes, respectively.

Success Rates by Age Group: The math department has seen an increase in the success rates of students by age group since the last PSR cycle. The 2-Year Percentage Change showed an **increase ... every age group,** giving an overall 2-Year Percentage Change of 7.5%. The **19 or Younger** group demonstrated a 1-Year and 2-Year Percentage Change of 12.6% and 9.8%, respectively. The **40 ... Old** group demonstrated a 1-Year, 2-Year, and 5-Year Percentage Change of 6.8%, 24.0%, and 2.1%, respectively. The **50 or Older** group demonstrated a 2-Year and 5-Year Percentage Change of ... respectively.

Success Rates by Race/Ethnicity: The **Unknown Race/Ethnicity** group demonstrated a 1-Year, 2-Year, and 5-Year Percentage Change of 30.0%, 14.8%, and 4.5%, respectively.

The math department's participation in different professional development workshops and trainings, which have been consistently infused with equity-related activities, along with the fact that more ... recorded and posted their own instructional videos in Canvas (allowing students to re-watch lessons multiple times), may have contributed to the increase in success rates for these specific populati...

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 assessme... 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 PLANN... 4d).

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

a. The equity data describes areas of improvement in all categories except for those explicitly stated above in Section 2b. However, even though success rates improved for the categories mentione... there is still a need to **improve** the **overall success rates** for all students in all categories. There has also been a heavy **decline** in **enrollment** within almost every category since 2018-2019. The... **retention rates** compared to 2015-2016, but retention rates have remained more consistent within the last couple years.

b. Institutional Research provided our department with equity data specifically for students in Math 25 and Stat 10. In Math 25, the success rates of students are drastically lower than the overall M... for all of our courses. Based on race/ethnicity, success rates in Math 25 range from 29.1-50.7% compared to 42.5-66.8% for Mathematics overall. Based on gender, success rates in Math 25 range ... compared to 51.6-52.6% for Mathematics overall. Success rates in Math 25 based on age group and other student characteristics also are much lower than the overall Mathematics success rates fo...

The Stat 10 data shows some disproportionately impacted groups to have lower success rates than our department is content with (49% for African American students, 48.9% for 19 or Younger stu...
First Generation students).

c. Success Rates: Despite the positive changes in success rates noted above in Section 2b, there are still large achievement gaps when focusing on race/ethnicity and age groups. In 2020-2021, Afr...
only had a success rate of 42.5% compared to Asian students who had a success rate of 66.8%. Hispanic students and Other Race/Ethnicity students also had lower success rates in 2020-2021 (49...
respectively). In 2020-2021, students in the 40-49 Years Old group had a success rate of 64% compared to students in the 19 or Younger group who only had a success rate of 51%. Although there...
differences in success rates by gender in 2020-2021, the overall success rates for males, females, and unknown students were all approximately 52%. Similarly, for each group in the Other Student...
2020-2021, the success rates for all categories were approximately 50%.

Number of Enrollments: The math department has experienced a huge decline in enrollment. Enrollment by Race/Ethnicity, by Gender, and by Age Group all have a 1-Year, 2-Year, and 5-Year TOTAL...
decline of -23.6%, -49.2%, -50.5%, respectively (these percentages are the same across all categories).

Retention Rates: The math department has experienced some decline in retention rates as well. Retention by Race/Ethnicity, by Gender, and by Age Group all have a 1-Year, 2-Year, and 5-Year TOTA...
decline of -1.0%, -0.8%, -8.2%, respectively (these percentages are the same across all categories). Despite the 5-Year Percentage Change of -8.2% which shows a greater decline in retention con...
some categories have begun to show a slight increase in retention rates within the last year or two. Specific groups that modeled an increase in retention are the 1-Year Percentage Changes for Afri...
(3.8%) and for Unknown Race/Ethnicity (5.3%), 1-Year Percentage Change for Unknown/Decline to State students (5.6%), and both 1-Year and 2-Year Percentage Changes for 19 or Younger (1.7%...
Old (4.6%, 9.6%), and 50 or Older (3.0%, 5.6%) students.

State Law AB705 went into effect in 2018-2019, which drastically changed our math course offerings because our department is now able to enroll students directly into transfer level courses. The C...
State Law AB705 were contributing factors that affected success rates, enrollment, and retention rates.

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**
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**
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 De...
available at: COE - Supply and Demand | Centers of Excellence (coeccc.net)

	Response Legend: 1 = Middle Skill 2 = Above Middle Skill	
	1	
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 "i...
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 inc...
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 assessme...
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. Since 2018-2019, the math department has seen a **slight increase in success rates** while the **retention rates have stayed roughly the same**. The math department considers these slight i...
strength considering the circumstances of the COVID pandemic. The number of reported sections using Zero Cost Textbooks is small but has slightly increased. The number of Math for Transfer deg...
doubled since 2015-2016.

b. N/A

c. Success and Retention Rates: Since 2018-2019, the success rates improved from 48.9% to 52.6% (a 1-Year and 2-Year Percentage Change of -0.1% and 7.5%, respectively). During this same ti...
rates stayed roughly the same around 80.8% (a 1-Year and 2-Year Percentage Change of -1.0% and -0.8%, respectively). The Math department views this as a strength due to the fact that there w...
enrollment due to the pandemic, but the students who remained enrolled in the college and were taking math courses persevered in their math classes through the end of the term. This helped the...
consistent for math courses despite the decline in enrollment.

Zero Cost Textbooks: The reported number of sections using Zero Cost Textbooks slightly increased from two to four sections. However, the actual number of sections using Zero Cost Textbooks is h...
classes have no textbook or material costs, and this alone is more than four sections in Fall 2021. As our department was discussing this data, a few full-time math faculty commented that they use...
did not know that they needed to report this data. Some part-time faculty may not have known that they needed to report this data either. Therefore, the actual number of sections using Zero Cos...
only four sections.

Math for Transfer Degrees: In 2015-2016, the total number of Math for Transfer (AS-T) degrees awarded was 19. In 2020-2021, that number more than doubled to 44. There was a spike in the num...
awarded in 2017-2018 (65 degrees), but the number of degrees awarded has leveled out over the last three years to between 38 and 44 degrees. The math department considers this a completion...
the number of Math for Transfer degrees being awarded has been holding steady since 2018-2019 despite the COVID pandemic.

a. First, summarize "learning and completion" data from Institutional Research that describes areas of improvement. Be sure to address any items marked "dec change," if "no change" reflects an area needing improvement (e.g., provide data for decreased enrollment patterns or the number of certificates/degrees earne 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 assessme 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 PL (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 a

a. Program Enrollments and FTES slightly decreased in 2018-2019, which coincided with the implementation of State Law AB705. **Program enrollments** and **FTES** then **significantly decreased** i emergency shift to online instruction due to COVID and then declined again in 2020-2021.

b. N/A

c. <u>Program Enrollments</u>: In 2018-2019, program enrollments slightly declined to 12,892 (compared to 13,737 the previous year). Then in 2019-2020, program enrollments dramatically declined to even further in 2020-2021 to 6,545. The 1-Year, 2-Year, and 5-Year Percentage Changes for Program Enrollments were -23.6%, -49.2%, and -50.5%, respectively.

<u>FTES</u>: In 2018-2019, FTES dipped slightly to 1,803.09 (compared to 1,896.04 the previous year). Then in 2019-2020, FTES dramatically declined to 1,118.28. In 2019-2020, FTES declined even fu Year, 2-Year, and 5-Year Percentage Changes for FTES were -29.1%, -56.0%, and -56.3%, respectively.

Despite the COVID pandemic's impact on program enrollments and FTES, the mathematics department recognizes that these are areas where improvements are needed.

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 requirem 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.

☑ COURSE LOs (CLOs) have been revised/updated as needed and entered in the course SLO Taskstream workspace.

☑ COURSE LOs (CLOs) have been mapped to Program or Institutional Learning Outcomes in each course's Taskstream workspace.

☑ PROGRAM LOs (PLOs) for each degree/certificate have been revised/updated as needed, and entered in the Program Learning Outcomes (PLO) Workspace.

☑ PROGRAM LOs (PLOs) for each degree/certificate have been mapped to Institutional Learning Outcomes in the Program Learning Outcomes (PLO) Workspace.

☑ 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

None

⊞ **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 N 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.**

☑ Review & share results as a department
☐ Revise CLOs
☐ Change instructional strategies
☐ Attend professional development
☐ Change methods of assessment
☐ 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 cour outcomes assessments to support your answer. If applicable, include data for ACES (formerly NWOW) employability skills that have been assessed in your prog

Before the pandemic, the mathematics department would discuss course SLO results as a large group and would share which strategies were used to teach SLOs that had a high success rate. With ILOs (in this PSR cycle prior to Spring 22), our department now has ACES data for Stat 10, Math 25, and Math 65A, which is a step in the right direction.

The Math 65A data shows very high success rates in the Collaboration, Communication, and Digital Fluency skills (100%, 72.7%, and 74%, respectively). In Math 25, 86.2% of the Digital Fluency a criteria for mastery. The mathematics department views this as a strength because it is above the 70% criteria for success that we used when evaluating course SLOs.

⊞ 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 learning outcomes assessments to support your answer. If applicable, include data for ACES (formerly NWOW) employability skills that have been assessed in y

Before the pandemic, the mathematics department would discuss SLO results as a group and share which strategies were used to teach SLOs that had a high success rate. During and after the pand not continued regularly. No SLO data was collected for Math 650 or Stat 610 due to the chaos of the pandemic, and it was an oversight that data did not get collected for these two courses. To colle courses during a PSR cycle is an area of improvement.

The Stat 10 data shows that for the Analysis Solution Mindset skill, 44.6% of ACES assessments (Different Viewpoints/Problem Solving Outcome, N=33) resulted in mastery. For the Resilience skill, assessments (Stress Management Outcome, N=7) resulted in mastery. Both of these percentages are really low, so our department can discuss ways to improve these skills in future classes.

⊞ 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
- ☑ Develop a department Canvas shell to share discipline-specific ACES-ILO resources
- ☑ 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 Learning Outcomes (ILO). Academic, Career/Community, & Employability Skills (ACES, formerly New World of Work/NWOW) were subsequently introduced to co coursework to skills valued by employers and advanced programs of study. The ACES skills have been aligned with ILOs, creating opportunities to directly assess 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 leas 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 leas 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, https://www.chaffey.edu/outcomes/digital-badges.php.

- ☐ Adaptability
- ☑ Analysis / Solutions Mindset
- ☐ Collaboration
- ☐ Communication
- ☐ 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 sectio years? NOTE: During the three year cycle, a minimum of three different outcomes MUST be assessed.

ACES-ILO YEAR 1 ACTIONS

- Encourage all math faculty to participate in an ACES-ILOs training/workshop.
- Create a schedule identifying which three outcomes will be assessed each year for the next three years:
  - **ACES-ILOs Collection Schedule**:
    - <u>Year 1 Outcomes</u>: 2b. Different Viewpoints/Problem Solving, 7c. Synthesize, 8a. Perseverance
    - <u>Year 2 Outcomes</u>: 2d. Implements Solutions, 7a. Motivated to Learn, 9d. Growth Mindset
    - <u>Year 3 Outcomes</u>: 2a. Evidence, 7b. Creative Thinking, 9a. Self-Directed
- In each course, math faculty identify existing assignments in Canvas that can assess the Year 1 Outcomes.
  - If desired, faculty can add more ACES outcomes (other than the three identified for Year 1) into their courses.
- Faculty add or edit existing Canvas rubrics to **assess the Year 1 Outcomes:** 2b. Different Viewpoints/Problem Solving, 7c. Synthesize, 8a. Perseverance
- Faculty grade the assignments using the 1-4 rubric scale.

⊞ ACES-ILO YEAR 2 ACTIONS

- In each course, math faculty identify existing assignments in Canvas that can assess the Year 2 Outcomes.
- Faculty use Canvas rubrics to **assess the Year 2 Outcomes**: 2d. Implements Solutions, 7a. Motivated to Learn, 9d. Growth Mindset
- Faculty upload assessments with rubrics that were used during Year 1 into the Math Department Canvas course.
  - As faculty continue to create new assessments with rubrics for their own courses, they can continue to add them to the pool of assessments/rubrics in the Math Department Canvas cou
- Messaging is extended to part-time faculty (through emails, department meetings, advertisements of ACES-ILOs trainings) about how to incorporate ACES-ILOs into their Canvas assignments

⊞ ACES-ILO YEAR 3 ACTIONS

- In each course, math faculty identify existing assignments in Canvas that can assess the Year 3 Outcomes.
- Faculty use Canvas rubrics to **assess the Year 3 Outcomes**: 2a. Evidence, 7b. Creative Thinking, 9a. Self-Directed

- Faculty upload assessments with rubrics that were used during Year 2 into the Math Department Canvas course.
  - As faculty continue to create new assessments with rubrics for their own courses, they can continue to add them to the pool of assessments/rubrics in the Math Department Canvas cou
    - The pool of ACES questions in the Math Department Canvas course should now contain sample assessments/rubrics for all nine outcomes.
- Faculty reflect upon the three-year ACES-ILOs Collection Schedule to reuse/revise the schedule to collect future data.

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 op 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. Yo 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
☑ No

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

☐ 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

After a review of all of the data, the areas that the mathematics department have identified as needing improvement are success rates, number of enrollments, and FTES. The success rates for all d (around 50% for most groups). The number of enrollments and FTES dramatically declined campus wide in 2019-2020 due to the COVID pandemic. Retention rates are not included as needing impr data showed retention rates remained consistent around 80%.

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 dead program to achieve their VIP goal(s).

	Primary Areas that Will Improve	Year 1 (2022-2023)	Year 2 (2023-2024)	Year 3 (2024-2025)	Reso Achi
Linked Support Courses	Success Rates, Enrollments, FTES, Retention Rates, Student Interest in Math	Offer linked support courses for Math 25 and Stat 10. Request data to compare linked and unlinked sections of Math 25 and Stat 10.	Discuss in department meetings the effectiveness of the linked support courses. The department will discuss what is working and areas that still need to be improved with the linked classes.	Scale up the number of linked course offerings.	Modu furnit techn iPads penci time effect qualit cours
CCUE & GIA Projects	Success Rates, Enrollments, FTES, Retention Rates, Student Interest in Math	A subset of the department will commit to participate in either or both the Gardner Institute's Courses and Curricula in Urban Ecosystems (CCUE) Project and the Growing Inland Achievement (GIA) Math Regional Pathways Project. Both provide communities of practice and professional development opportunities to improve pedagogy, improve student success, and support equitable practices in gateway math courses (our Math 25 and Stat 10). These are 2-3 year commitments.	Review data collected through the CCUE and GIA Projects. Implement active learning strategies and other techniques learned through these communities of practice and professional development opportunities.	Determine which teaching strategies have been most effective in improving student success and scale up the number of sections that implement these best practices.	Modu furnit techn iPads penci time can c atten a par strate shown
ZTC/LCT Textbook Transformation Project (TTP)	Success Rates, Retention Rates	Emphasis on ZTC/LCT options for Math 25 (TTP will extend this to other math courses in the future). Through the TTP, the math department committed to provide zero- and low-cost textbook options for Math 25 for the next 5 years.	Emphasis on ZTC/LCT options for Math 25. The math department committed to provide zero- and low-cost textbook options for Math 25 for the next 4 years.	Emphasis on ZTC/LCT options for Math 25. The math department committed to provide zero- and low-cost textbook options for Math 25 for the next 3 years.	Hire facult the ti this T Trans
Potential New Math Course for Non-STEM Majors	Success Rates, Enrollments, FTES, Retention Rates, Student Interest in Math	Once the course is approved, a subcommittee will work to create the lesson plans for the course and inform the campus about which students will benefit from taking this class. Math Co-Coordinators will attend counseling department meetings to share information about the course.	Offer new transfer level math course for non-STEM majors. Share updates about the course and student performance in department meetings.	Continue offering this transfer level math course. Collect success and retention data and discuss as a department.	Modu furnit techn iPads penci time can te

	Primary Areas that Will Improve	Year 1 (2022-2023)	Year 2 (2023-2024)	Year 3 (2024-2025)	Reso... Achi...
ACES-ILOs	Success Rates, Enrollments, FTES	Create a plan to implement ACES-ILOs in at least 50% of all course offerings over the next 3 years. Collect ACES data for the first three outcomes as identified in the ACES-ILOs Collection Calendar.	Collect ACES data for the second three outcomes as identified in the ACES-ILOs Collection Calendar. Assess data collected through the new ACES-ILOs process to evaluate if enrollment and success rates are improving.	Collect ACES data for the last three outcomes as identified in the ACES-ILOs Collection Calendar. Continue assessing data collected through the new ACES-ILOs process to evaluate if enrollment and success rates are improving.	Hire r... facult... easily... and d... meeti... to inc... ACES... Canva...

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.

No answer specified

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 i... professional development planning.

There is NO SCORING for item 4f.

No answer specified

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: The math department will improve success rates by at least 5% for disproportionately impacted students in Math 25 and Stat 10.

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.

- ☑ Goal 1: Equity and Success--Chaffey College will be an equity-driven college that fosters success for all students.
- ☑ Goal 2: Learning and Completion--Chaffey College will ensure learning and timely completion of students' educational goals.
- ☐ Goal 3: Community Opportunities and Needs--Chaffey College will develop and maintain programs and services that maximize students' opportunities and reflect community needs.
- ☐ 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.
- ☐ 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: The math department will improve success rates by at least 5% for disproportionately impacted students in Math 25 and Stat 10.

The rationale that led our program to develop our VIP Goal is that Math 25 and Stat 10 have historically high failing rates. Data provided by Institutional Research showed an achievement gap... for disproportionately impacted students. A majority of students enroll into Math 25 or Stat 10 to fulfill their mathematics requirement, so improving success rates in these two courses will ha... on our mathematics program. The math department wants to find meaningful ways to improve all students' experiences in Math 25 and Stat 10 by incorporating active teaching strategies to ... will have a positive impact on success rates, retention rates, and student enrollment.

Our VIP Goal is in alignment with Chaffey Goal 1 (Equity and Success) because our VIP Goal focuses on improving success rates for disproportionately impacted students. Our VIP Goal is also... Chaffey Goal 2 (Learning and Completion) because increased success rates correlate to improved learning and shortened paths to completion.