

## 2023 INSTRUCTIONAL ANNUAL PROGRAM PLANNING WORKSHEET

CURRENT YEAR: 2023

CLUSTER: STEM

NEXT SCHEDULED CPPR: 2025-26

PROGRAM: BIOLOGY

LAST YEAR CPPR COMPLETED: 2020-21

CURRENT DATE: 3/1/2023

The Annual Program Planning Worksheet (APPW) is the process for:

- reviewing, analyzing and assessing programs on an annual basis
- documenting relevant program changes, trends, and plans for the upcoming year
- identifying program needs, if any, that will become part of the program's Resource Plan ([download from this folder](#)) (Please review the [Resource Allocation Rubric](#) when preparing the resource plan)
- highlighting specific program accomplishments and updates since last year's APPW
- tracking progress on a Program Sustainability Plan if established previously

**Note:** Degrees and/or certificates for the *same* program *may be consolidated* into one APPW.

This APPW encompasses the following degrees and/or certificates:

Biology AS-T

### GENERAL PROGRAM UPDATE

Describe significant changes, if any, to program mission, purpose or direction.

NONE

### PROGRAM SUSTAINABILITY PLAN UPDATE

Was a Program Sustainability Plan established in your program's most recent Comprehensive Program Plan and Review?

Yes  If yes, please complete the Program Sustainability Plan Progress Report below.

No  If no, you do not need to complete a Progress Report.

If you selected yes, please complete the Program Sustainability Plan Progress Report below after you complete the Data Analysis section. That data collection and analysis will help you to update, if necessary, your Program Sustainability Plan.

### DATA ANALYSIS AND PROGRAM-SPECIFIC MEASUREMENTS

Your responses to the prompts for the data elements below should be for the entire program. If this APPW is for multiple degrees and/or certificates, then you MAY want to comment on each degree and/or certificate or discuss them holistically for the entire program being sure to highlight relevant trends for particular degrees and/or certificates if necessary. Responses in this document need only reference the most recent year's available data.

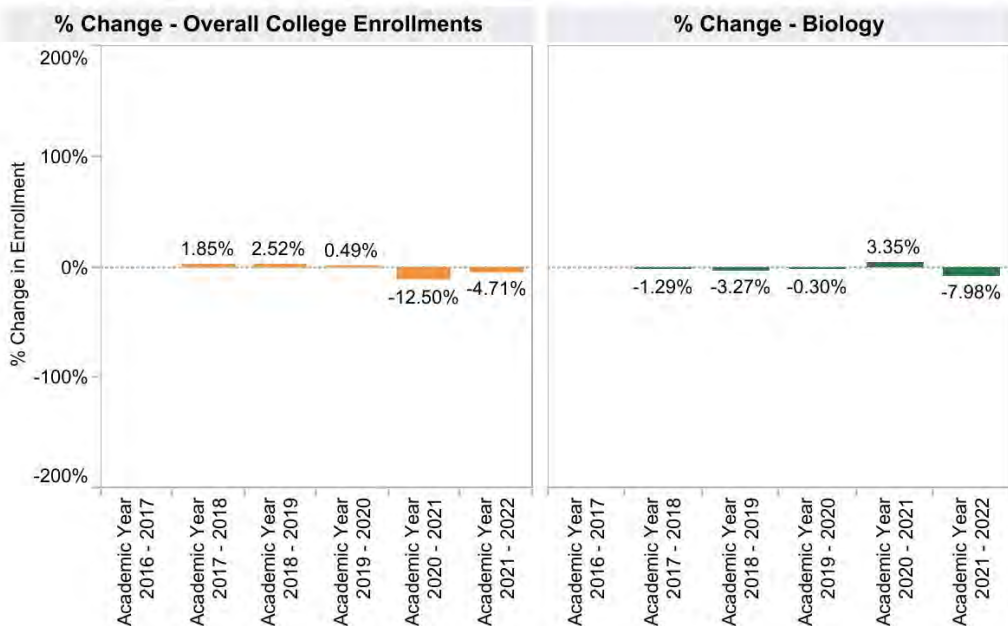
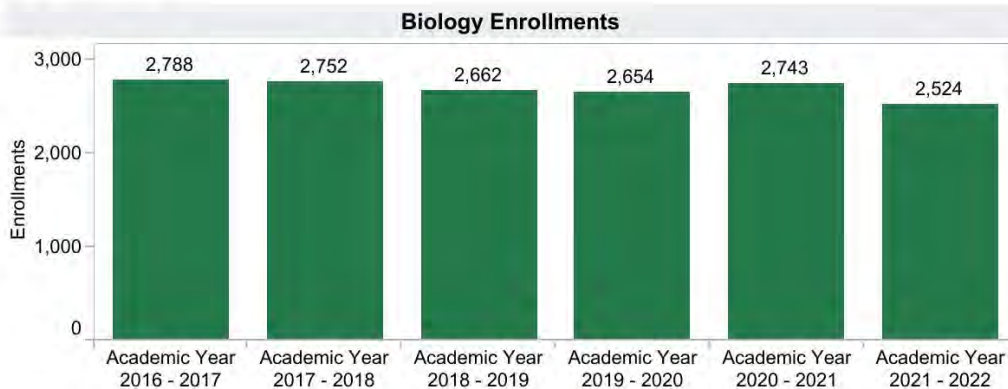
A. General Enrollment

Total enrollment in biology courses recovered to a pre-pandemic level in 2020-2021, while the overall college enrollment experienced a 12.5% drop. The following year, however, there was a nearly 8% drop in biology enrollment while the college lost an additional 4.7% in overall enrollment. Investigating the data further, it becomes clear that this loss in enrollment is largely tied to dropping distance education enrollment. Biology lost 24% of its distance education enrollment, while the college lost 28.4% over the 2021-2022 school year.

**SLOCCCD Program Review Data - Enrollment**

Department: Biology Course: All Dual Enrollment: All Prison: All

Region: All



B. General Student Demand (Fill Rate)

Looking at data covering the last six years, the fill rate for Biology courses have been shy of the college fill rate by anywhere from 1 to 6% during the first five years. In the 2021-2022 academic year, that trend reversed and the Biology fill rate was about 2% higher than the college fill rate. Relying, alone, on the fill

rate data of the Biology Division is misleading because we teach a number of large lecture sections. For example, a 100-capacity class with 75 students enrolled would bring down our average fill rate. Yet a class of 75 is great for the college efficiency. One must consider efficiency alongside fill rate to develop a complete understanding of the Biology Division.

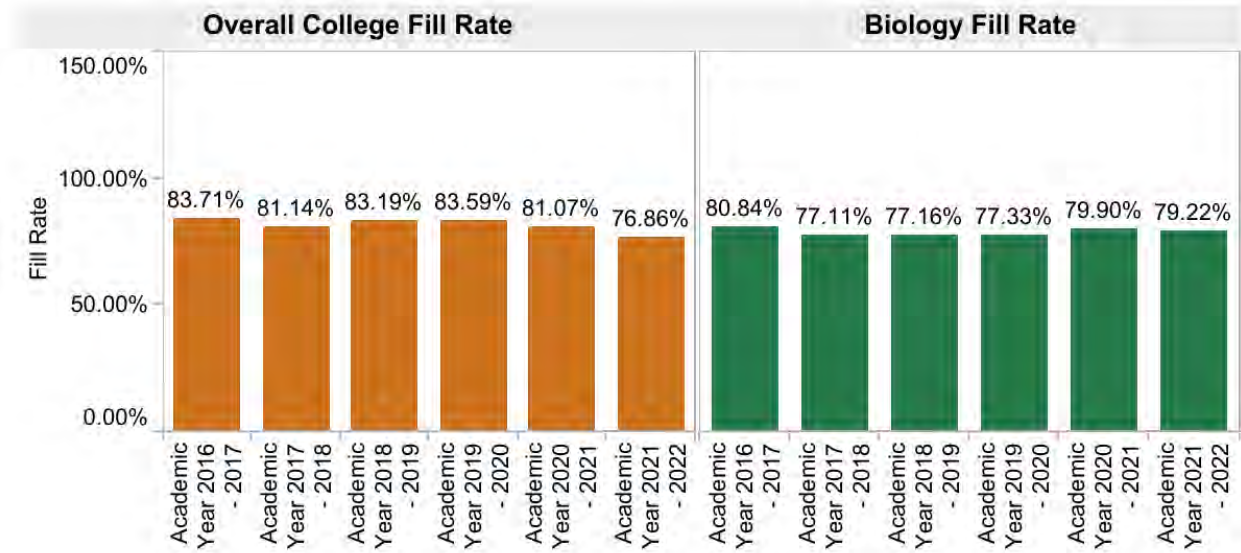
### SLOCCCD Program Review Data - Student Demand (Fill Rate)

**Department:**  
Biology

**Course:**  
All

**Dual Enrollment:**  
All

**Prison**  
All



#### C. General Efficiency (FTES/FTEF)

Biology has increased its efficiency over the past several years, while the overall college efficiency has declined. Our high efficiency is due to the large lecture sections that we teach. We are not turning away students from our courses and hope to capture any increase in overall enrollment by adding students to the large sections. We carefully examine low efficiency sections to consider whether we should change the schedule or cancel low-enrollment courses to improve our efficiency. The exception to this is our field-studies courses that operate best when enrollment is lower. We appreciate that administrators support this plan.

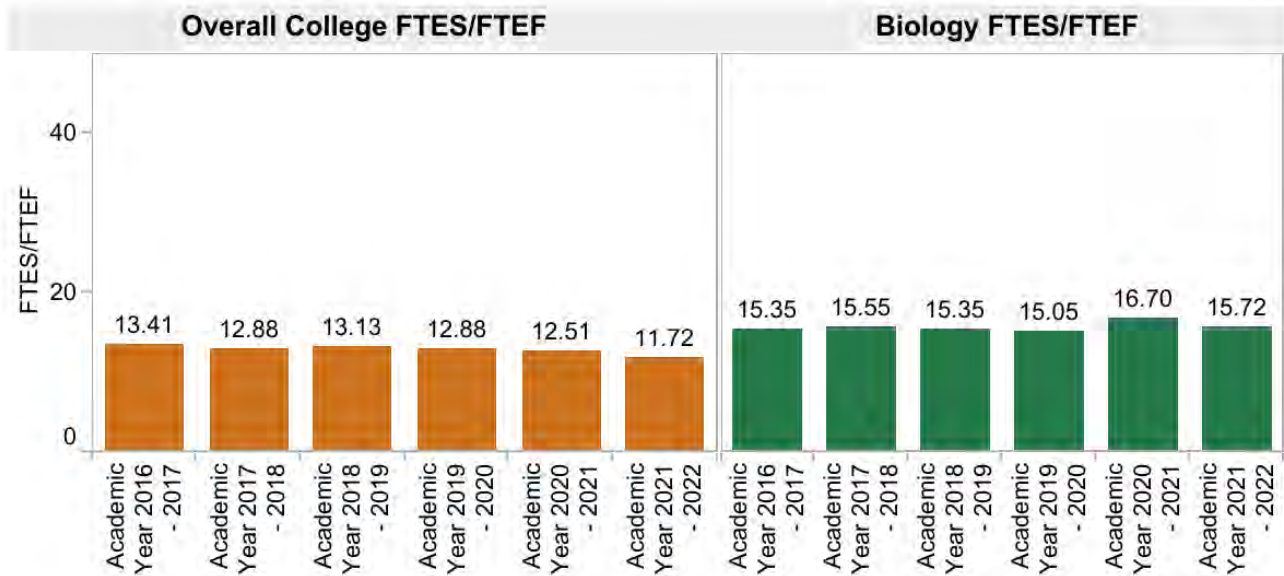
## SLOCCCD Program Review Data - Efficiency (FTES/FTEF)

**Department:**  
Biology

**Course:**  
All

**Dual Enrollment:**  
All

**Prison:**  
All



### D. Student Success—Course Completion by Modality

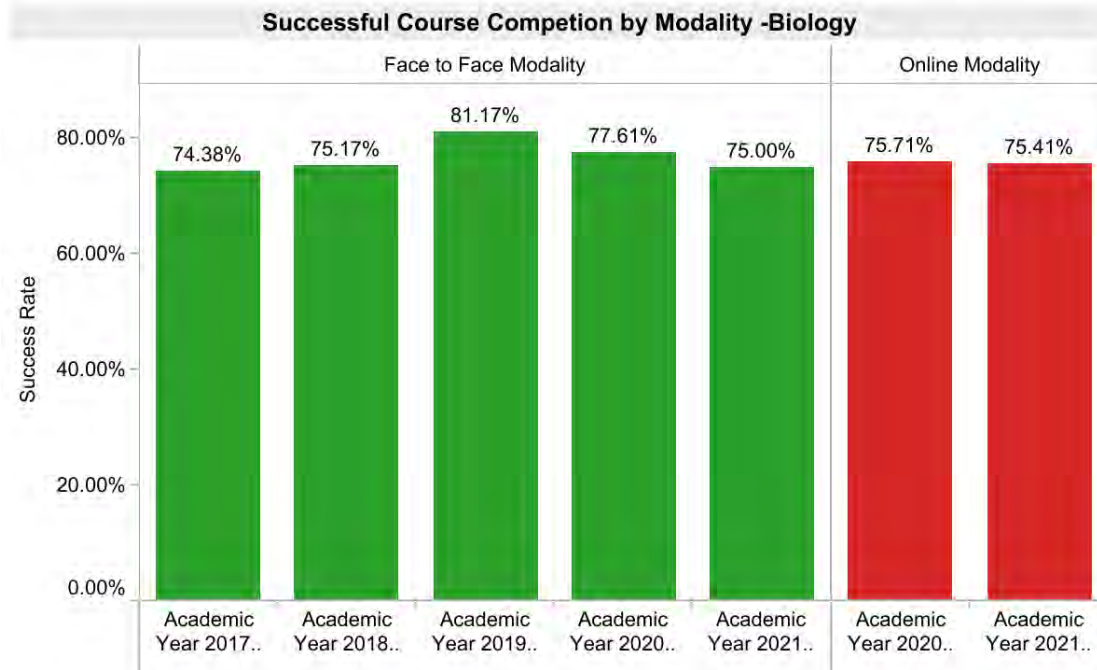
The course completion rates for the Biology Division, with the exception of a bump during the 2019-2020 and 2020-2021 academic years, have consistently hovered around 75%. There is a negligible difference between the Biology course completion rates when comparing the face to face versus online modalities. The overall college course completion rates, likewise, show a bump during the COVID lockdown years (2019-2020 and 2020-2021) but consistently trend (1-4%) higher than Biology for the face to face modality. Curiously, the online modality for the college overall shows the opposite trend, with the Biology course completion rate consistently trending higher than the college by about 3%. The disparity between face to face and online modality course completion rates, which is seen across the college, is not apparent in Biology. When the course completion rates are investigated without disaggregating the face to face from the online modalities, the course completion rates are nearly the same between the Biology Division and the College overall. See section F, General Student Success – Course Completion, below for the data.

## SLOCCCD Program Review Data: Successful Course Completion

Select Department:  
Biology

Course:  
All

Legend:  
■ Face to Face Modality  
■ Online Modality



**Successful Course Completion by Modality Table - Biology**

		Academic Year 2017 - 2018	Academic Year 2018 - 2019	Academic Year 2019 - 2020*	Academic Year 2020 - 2021	Academic Year 2021 - 2022
Face to Face Modality	Department Success Rate	74.38%	75.17%	81.17%	77.61%	75.00%
	Total Department Enrollments	2,757	2,666	2,658	272	644
Online Modality	Department Success Rate				75.71%	75.41%
	Total Department Enrollments				2,482	1,897

### E. Degrees and Certificates Awarded

The number of Biology AS-T degrees has steadily increased as students are made aware that they qualify for these degrees and that earning a degree might help them enter the advanced college of their choice or earn points toward entry into programs such as nursing. We continue to advise students to apply for and earn degrees in biology.

**SLOCCCD Program Review Data: Degrees and Certificates Awarded**

**Program:**  
Biology, General

**Award Type:**  
All

**Area of Study**  
All

**Program Awards**

Top Code Description(s): Biology, General  
Award(s): All



**Program Awards Table**

Award Type	Award	2016	2017	2018	2019	2020	2021	2022
AS	Biological Science (AS)	2		1	6		3	6
	<b>Total</b>	2		1	6		3	6
AST	Biology (AST)	1	2	9	13	15	21	16
	<b>Total</b>	1	2	9	13	15	21	16
<b>Grand Total</b>		3	2	10	19	15	24	22

Program Awards: The number of degrees and certificates awarded by program type

**F. General Student Success – Course Completion**

See the notes in Section D, Student Success - Course Completion by Modality, above for discussion.

## SLOCCCD Program Review Data: Successful Course Completion

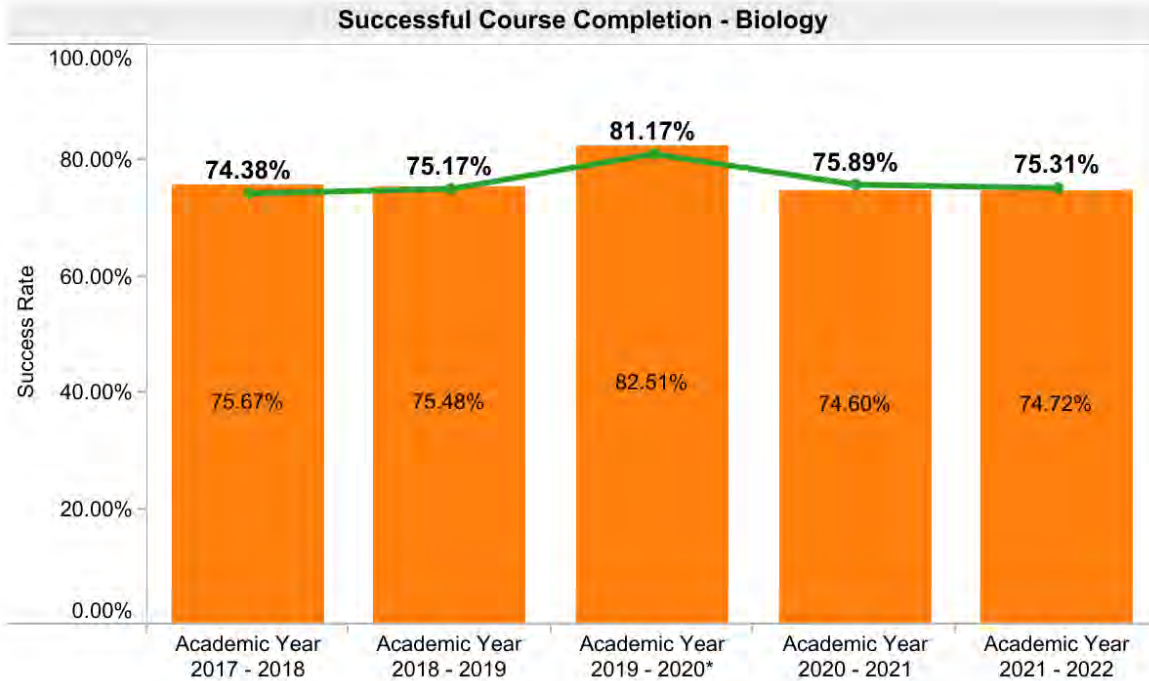
Select Department:  
Biology

TERM  
All

Measure Names

- Department Success Rate
- Overall College Success Rate

COURSE  
All



**Biology Success Rate Table**

	Academic Year 2017 - 2018	Academic Year 2018 - 2019	Academic Year 2019 - 2020*	Academic Year 2020 - 2021	Academic Year 2021 - 2022
Department Success..	74.38%	75.17%	81.17%	75.89%	75.31%
Total Enrollments	2,757	2,666	2,658	2,754	2,541

## Successful Course Completion by Student Subpopulation

Academic Year:  
All

Department:  
Biology

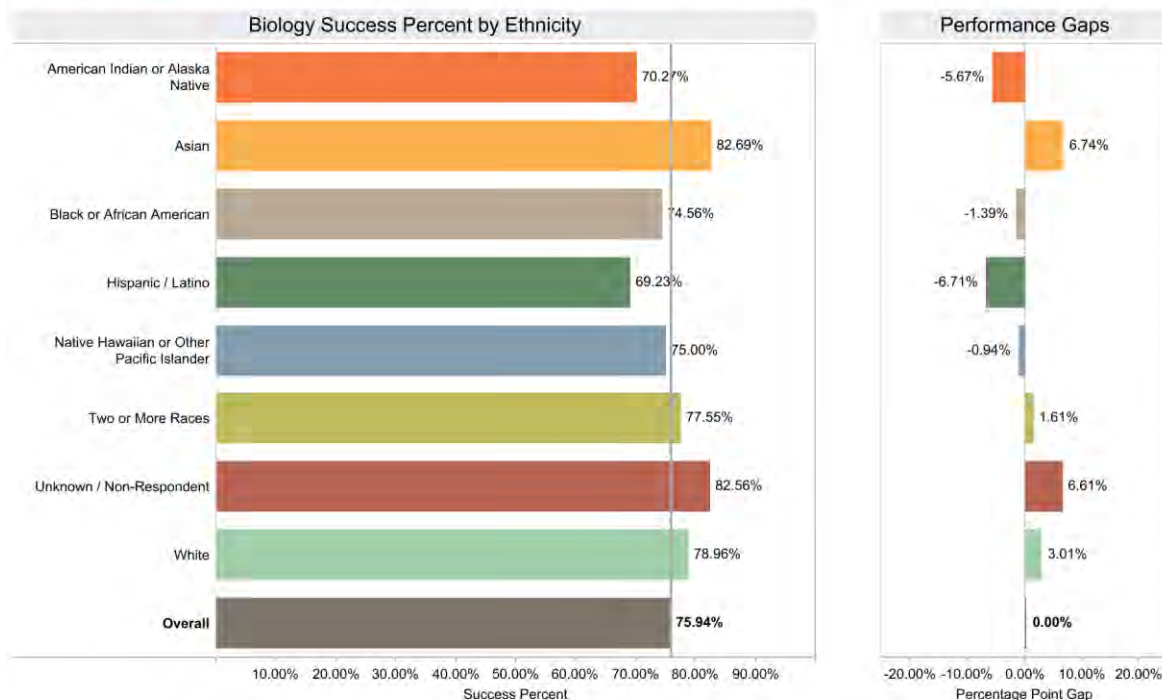
Region:  
All

Enroll Status:  
All

Dual Enrollment:  
All

Prison:  
All

Disaggregate By:  
Ethnicity



**Note:** Successful Course Completion is the ratio of enrollments resulting in a final grade of A, A-, B+, B, B-, C+, C, CR or P to all valid grades.

- Considering the past six years of Biology Course Completion data, there is a lower Biology course completion success rate apparent for students who self-identify as American Indian or Alaskan Natives (75 students) of 5.67% or as Hispanic / Latino (4,989 students) of 6.71% as compared to the average (16,157 students).
- The course completion rates for American Indian or Alaskan Native students (and some other populations) vary greatly year by year. This is due to there being smaller populations represented at Cuesta College. Error bars would be useful to ascertain the significance of this gap.
- The course completion rate for Hispanic / Latino identifying students has remained consistently lower than the average by about 7% below average year by year, with the exception of 2021-22 school year which saw this percentage improve to 4.15% below the average. This population has greater representation than some other ethnicities at our college, and this larger sampling size shows less variation year by year.
- Our faculty are committed to resolving these disparities and have attended training, developed opportunities, and participated in outreach to serve our underrepresented students.
  - Faculty in the Biology Department (McConnico and Favoreto) have partnered with colleagues in Physical Science, Engineering and Economics to submit a grant proposal to National Science Foundation (\$300K) that was funded and supports undergraduate research initiatives at Cuesta College. The core goal of the grant is to improve STEM education for all students, while providing research opportunities at the community college. As a Hispanic Serving Institution, we have engaged with students from traditionally underrepresented groups at Cuesta College to recruit and retain them in STEM fields, particularly Biology.



- Additionally, the Biology Department now offers Marine Biology Lecture and Lab (Bio 222/222L) in Baja California, Mexico. This alternate class location offers students the opportunity to study abroad, affordably, while at community college. Students will learn not only marine biology, but will have the opportunity for Spanish language immersion in Mexico. Participants reflect ethnicities or groups that are traditionally underrepresented, including women, Latinas and those of Central and South American descent.
- Our Division, together with the STEM-SST, will be hosting scientist speakers from the Quantitative Biosciences Institute (QBI) of UC San Francisco in the Spring and Fall semesters. This is part of their DEI outreach initiative and grant funding. We are excited to bring this opportunity to our STEM students and hope to inspire curiosity and develop in them the confidence to pursue DEI fellowship opportunities at the QBI institute.
- Our Division will participate in STEM outreach through the STEM-SST, STEM social gatherings, and through presentations to local visiting High School students and new Cuesta students at STEM Day.
- Our Division has offered presentations for Shandon and Los Osos Middle School visitation days at the North County and San Luis Obispo campuses, respectively, and will continue to as the opportunity arises.

### **OTHER RELEVANT PROGRAM DATA (OPTIONAL)**

Provide and comment on any other data that is relevant to your program such as state or national certification/licensure exam results, employment data, etc. If necessary, describe origin and/or data collection methods used.

### **PROGRAM OUTCOMES ASSESSMENT CHECKLIST AND NARRATIVE**

**CHECKLIST:**

- SLO assessment cycle calendar is up to date.
- All courses scheduled for assessment have been assessed in eLumen.
- Program Sustainability Plan progress report completed (if applicable).

**NARRATIVE:**

*NONE.*

### **PROGRAM PLANNING / FORECASTING FOR THE NEXT ACADEMIC YEAR**

Briefly describe any program plans for the upcoming academic year. These may include but are not limited to the following: *(Note: you do not need to respond to each of the items below). If there are no forecasted plans for the program, for the upcoming year, indicate: NONE.*

- A. New or modified plans for achieving program-learning outcomes: *NONE*
- B. Anticipated changes in curriculum, scheduling or delivery modality:

There are some large lecture classes (BIO205 and BIO211) which will be split in the coming academic year to avoid load instability for Part-Time Adjunct Instructors as well as a new Full-Time Tenure Track Faculty member.

Bio205 and BIO211 lectures that have been delivered only in an online format for a couple years now, will see the return to some face to face sections on both the San Luis Obispo and North County Campuses starting in the Fall.

C. Levels, delivery or types of services: N/A

D. Facilities changes: No changes planned.

E. Staffing projections:

We will be collaborating with Physical Sciences to hire a new Division Assistant as Cathie Babb retires.

We are in the process of conducting a search for Full-Time Tenure Track faculty for Anatomy and Physiology.

We will load a new hire from our Part-Time Faculty pool and may hire additional Part-Time Adjuncts. This possible hiring depends on a number of things including negotiation outcomes as well as the level of flexibility allowed with Part-Time adjunct loading because we face the loss of a number of faculty.

We will experience substantial changes and challenges in the coming year as we have two Full-Time faculty retiring, a Part-Time adjunct faculty member retiring, and another PT adjunct faculty member who is leaving Cuesta College.

F. Other

## PROGRAM SUSTAINABILITY PLAN PROGRESS REPORT

This section only needs to be completed if a program has an existing Program Sustainability Plan. Indicate whether objectives established in your Program Sustainability Plan have been addressed or not, and if improvement targets have been met.

**Not Applicable**

Area of Decline or Challenge	Identified Objective (Paste from PSP)	Planning Steps (Check all that apply)	Has the Improvement Target Been Met?
Enrollment		<input type="checkbox"/> Identified <input type="checkbox"/> Resources Allocated <input type="checkbox"/> Implemented	Select one
Student Demand (Fill Rate)		<input type="checkbox"/> Identified <input type="checkbox"/> Resources Allocated <input type="checkbox"/> Implemented	Select one
Efficiency (FTES/FTEF)		<input type="checkbox"/> Identified <input type="checkbox"/> Resources Allocated <input type="checkbox"/> Implemented	Select one
Student Success – Course Completion		<input type="checkbox"/> Identified <input type="checkbox"/> Resources Allocated <input type="checkbox"/> Implemented	Select one
Student Success – Course Modality		<input type="checkbox"/> Identified <input type="checkbox"/> Resources Allocated <input type="checkbox"/> Implemented	Select one
Degrees and Certificates Awarded		<input type="checkbox"/> Identified <input type="checkbox"/> Resources Allocated <input type="checkbox"/> Implemented	Select one

If Program Sustainability Plan is still necessary, provide a brief description of how you plan to continue your PSP and update your PSP to remove any objectives that have been addressed and include any new objectives that are needed.