

## INSTRUCTIONAL COMPREHENSIVE PROGRAM PLANNING AND REVIEW (CPPR) FOR 2021

Only to be completed by those programs scheduled for the year according to the institutional comprehensive planning cycle for instructional programs (i.e., every four years for CTE programs and five years for all other instructional programs), which is produced by the Office of Instruction. Faculty should meet with their dean prior to beginning this process. Training is available to support faculty completing this work.

**Cluster:** HAMS

**Program:** Biology

**Current Academic Year:** 2020-2021

**Last Academic Year CPPR Completed:** 2017-2018

**Current Date:** Jan 24, 2021

### NARRATIVE: INSTRUCTIONAL CPPR

Please use the following narrative outline:

#### GENERAL PROGRAM INFORMATION

Program Mission (optional)

The mission of the Division of Biological Sciences is to offer courses in biology that satisfy requirements of 4-year Biology Transfer students, Biology Associate Degree Transfer (ADT) students, Allied Health prerequisite students and General Education requirements.

Brief history of the program

*The Division of Biological Sciences at Cuesta College began in 1963 with only one full-time biology instructor. The classes were conducted in the old barracks of Camp San Luis Obispo. Biology moved to the newly completed science buildings of the current SLO campus in 1974. There were 4 full-time biology instructors at that time. Biology offered classes at the newly constructed Paso Robles (NCC) campus in the early 1990's. During the intervening years courses were offered at Templeton High School, Paso Robles High School, and Arroyo Grande High school. Biology continues to offer one course (Human Biology) at the Arroyo Grande campus (SCC). There are currently 7 full-time faculty and 14 part-time faculty.*

Significant changes/improvements since the last Program Review

*Biology had one Full-time faculty retire and added 3 new Part-time faculty. Three part-time faculty have resigned.*

*No courses were added to biology since the last CCPR. No courses were removed although Bio 224 (Principles of Natural History) and Bio 210I (Island Biology) have not been taught since the last CPPR.*

Current faculty and staff

*Fulltime Instructors: Ron Ruppert                      Dr. Silvio Favoreto  
Dr. John Veres    Dr. Elizabeth Lobo  
Dr. Ann Maliszewski                                      Dr. Christopher Machado  
Dr. Laurie McConnico*

*Parttime Instructors: Nancy Mann                      Lisa Schicker  
Dr. Dave Bowlus    Megan O'Neill  
Azalia Dillard    Dr. Robert Schroeter  
Jane Donaldson     Robb Tibstra  
Steve Hendricks    Emily Resner  
Dave Kirkhart    Crystal Castillo  
Dr. Derrick Lavoie    Anneka Pisula*

*Laboratory Technicians: Cheyenne Winn (SLO) April Anderson (NCC)*

Building Assistant: Cathie Babb

Program Review process and participants

*Biology began the process of examining our Unit Plan during the division meeting in December 2020. Ron Ruppert created most of this document and a rough draft was edited and reviewed during a division meeting on January 2021. A final draft was sent to all Biology faculty and staff in late January and the final version was examined by all faculty and staff in February 2021 before it was submitted to the Dean.*

**PROGRAM SUPPORT OF DISTRICT'S [MISSION STATEMENT](#), [INSTITUTIONAL GOALS](#), [INSTITUTIONAL OBJECTIVES](#), AND/OR [INSTITUTIONAL LEARNING OUTCOMES](#)**

Support of the [District's Mission Statement](#).

*Biology courses effectively support students in their efforts to improve foundational skills, earn certificates or associate degrees, and transfer to four-year institutions.*

*Biology courses prepare students to become engaged and informed citizens in our increasingly complex communities and world.*

Support of the [District's Institutional Goals and Objectives](#).

*The Biology program offers courses that meet transfer needs for Biology majors and for general education and courses that satisfy the prerequisites for Allied Health programs. A primary institutional goal is to increase the number of students that transfer to 4-year institutions, to increase the number of AS degrees awarded and to increase the number of students completing vocational education degrees. The Biology program helps the institution meet these goals by offering a variety of courses that satisfy these objectives.*

Support of the [Institutional Learning Outcomes](#).

*Biology courses help students achieve institutional learning outcomes #2, Critical Thinking and Communication and #3, Scientific and Environmental Understanding.*

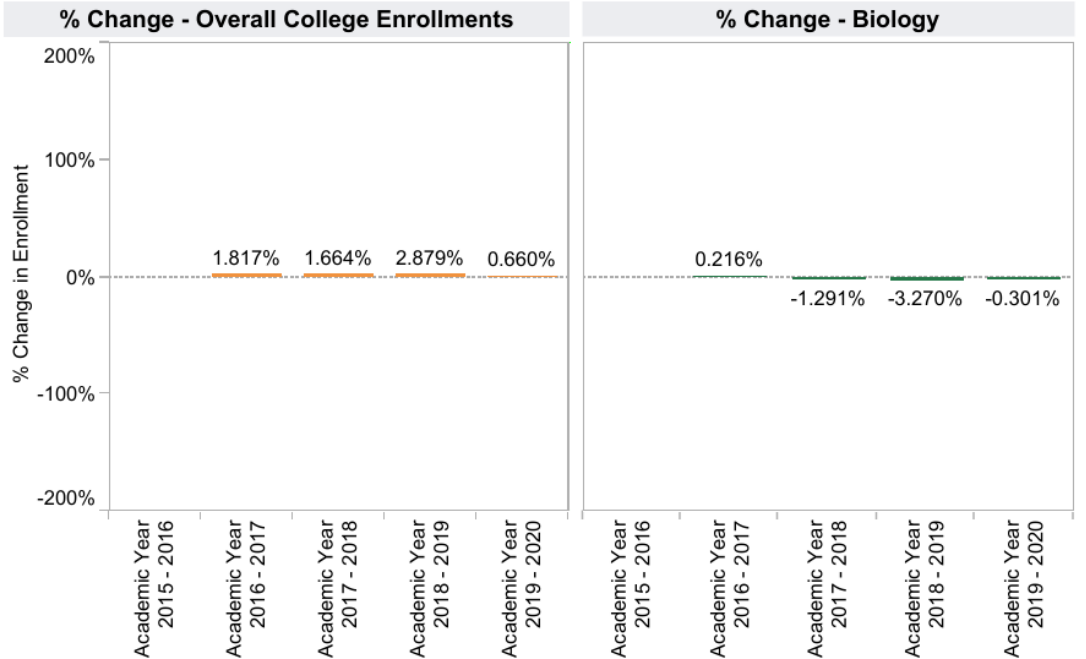
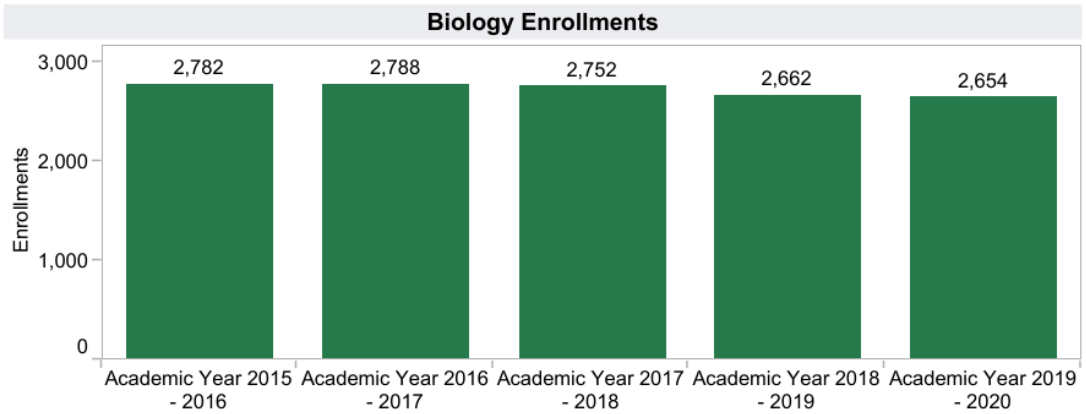
**PROGRAM DATA ANALYSIS AND PROGRAM-SPECIFIC MEASUREMENTS**

General Enrollment

When examining the chart below it is noted that total enrollment in biology courses fell from 2,788 in 2017 to 2,654 in 2020. This is a decline of about 4%. The decline in Biology courses is about the same as the decline in overall enrollment over those years. Most of the decline continues to be in general education courses for non-major students.

**SLOCCCD Program Review Data - Enrollment**

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



Enrollment: Duplicated count of students who completed greater than 0 units in positive attendance courses or were present on census for all other accounting methods.

## General Student Demand (Fill Rate)

*By examining the chart below, one can see that the fill rate in biology courses has declined over the past 5 years. Although that fill rate has held steady over the past 3 years. This decline has been mostly in large-lecture (100 student), non-major courses. Fill rate is clouded in Biology due to the fact that we teach so many large lecture sections. For example, a class of 75 students would be considered below our average fill rate and below the college fill rate. Looking just at fill rate is meaningless unless one also examines the efficiency of the program. Biology maintains a high efficiency due to teaching many large-lecture courses.*

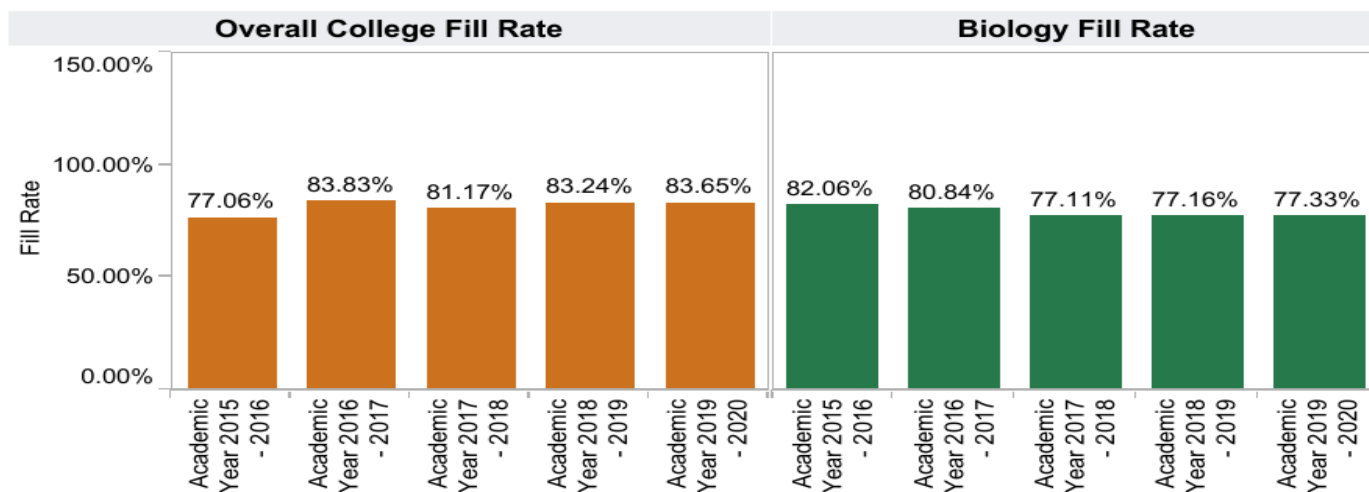
### SLOCCCD Program Review Data - Student Demand (Fill Rate)

**Department:**  
Biology

**Course:**  
All

**Dual Enrollment:**  
All

**Prison:**  
All





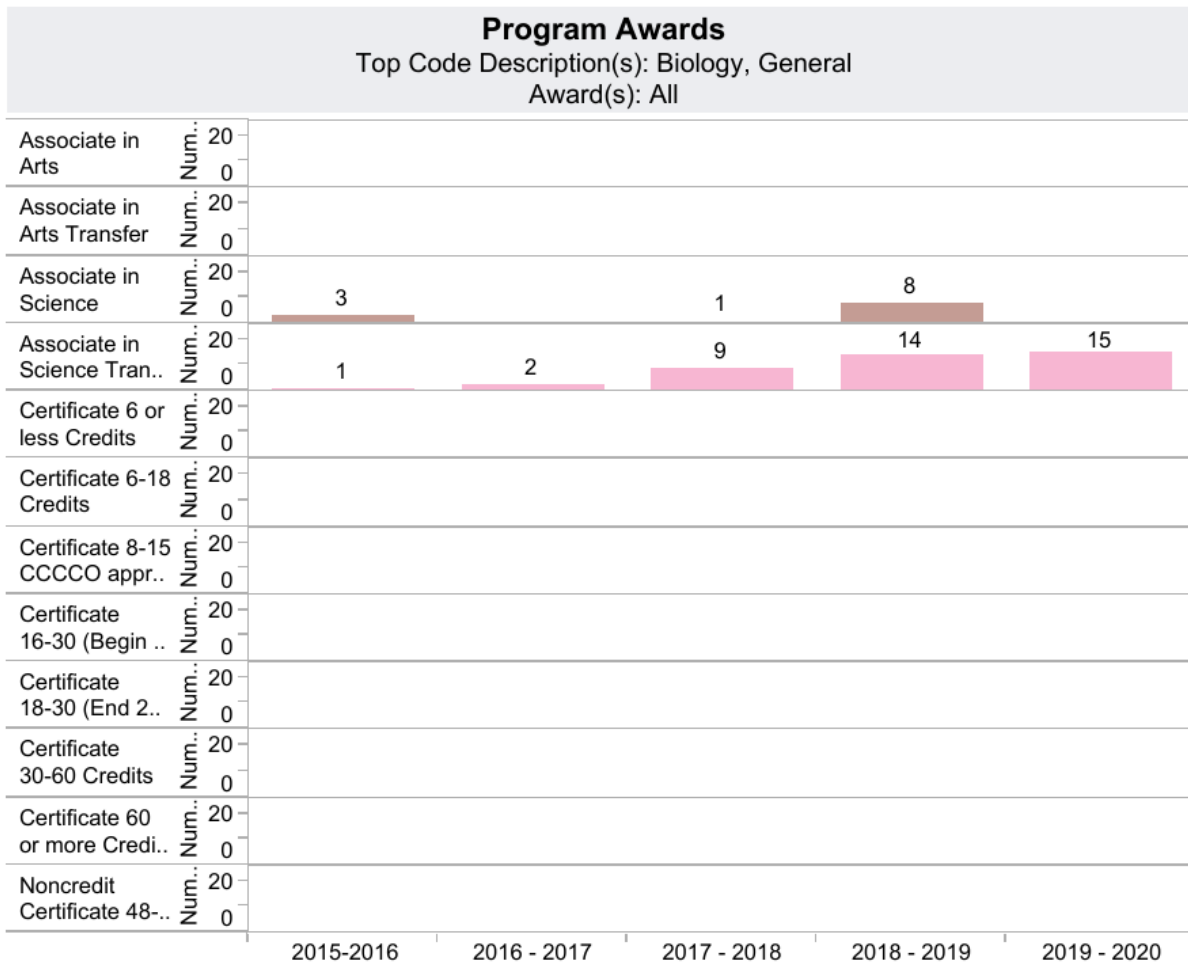
## Degrees and Certificates Awarded

*The number of Transfer Degrees earned has dramatically increased as students are made aware that they qualify for these degrees and that earning a degree might help them enter the 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



## General Student Success – Course Completion

As one examines the chart below one can see that student success in biology courses has remained steady over the past 5 years. As we switched to online courses in Spring 2020 due to Covid19 the student success rate increased at the same rate as the college student success rate. This may have been due to the fact that students were allowed to chose to withdraw from courses at a much later date without it appearing on their transcripts. Success in Biology courses is right at the college average for all years. This is somewhat surprising due to the fact that science courses are perceived to be more challenging than non-science courses.

### SLOCCCD Program Review Data: Successful Course Completion

Select Department:  
Biology

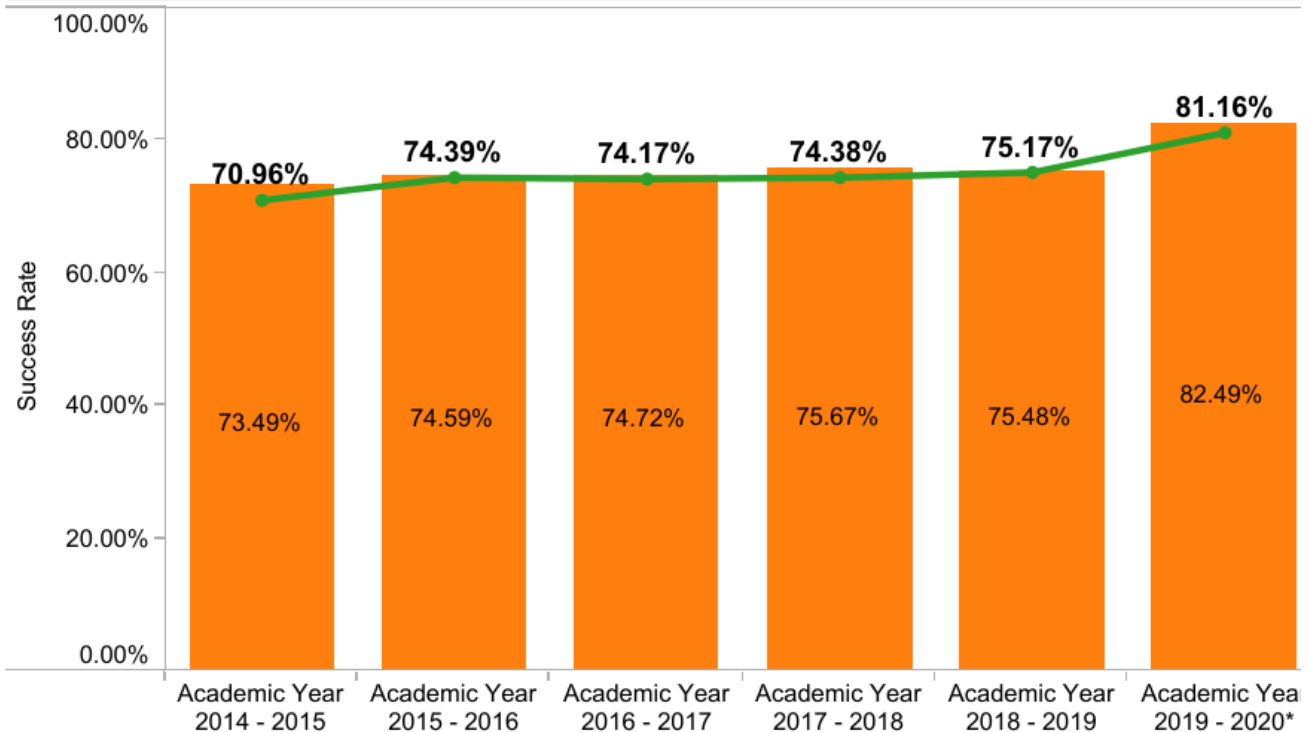
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#### Measure Names

- Department Success Rate
- Overall College Success Rate

COURSE  
All

#### Successful Course Completion - Biology



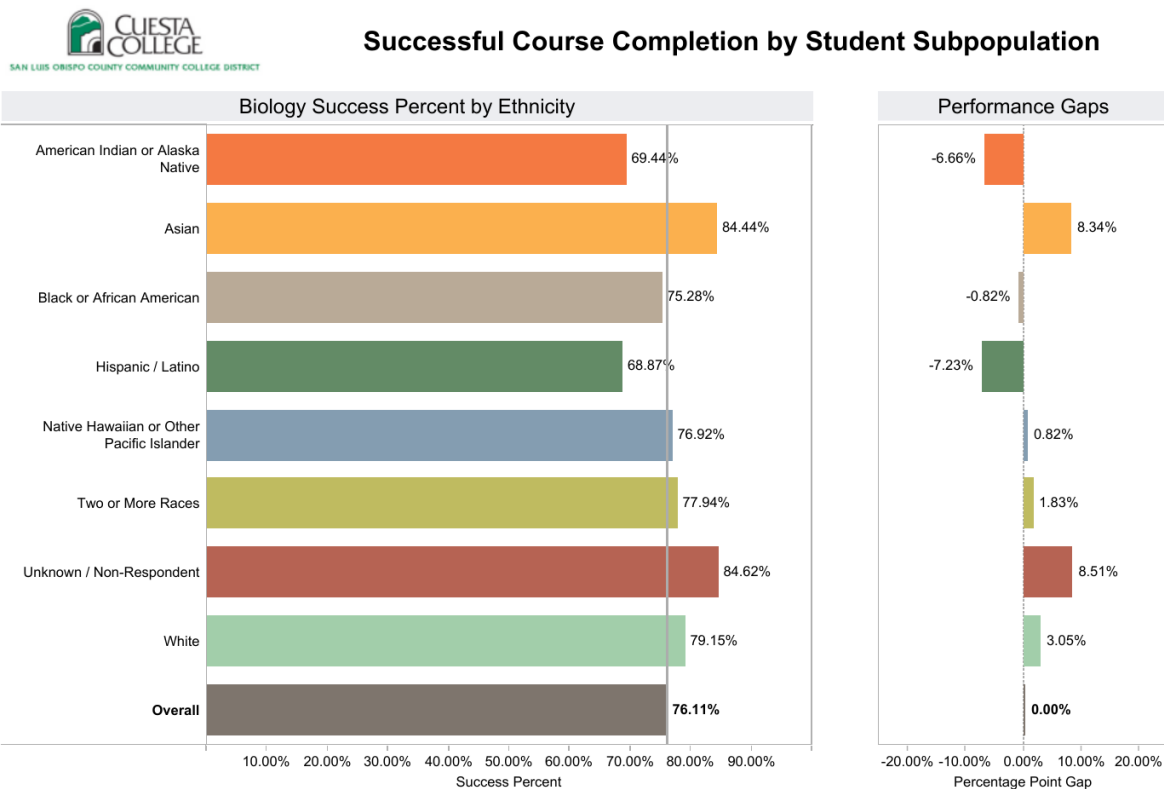


## Success in Biology courses by ethnicity

The chart below shows data over the past 5 years. It is somewhat difficult to fully analyse the data due to the fact that the group with the highest success reports as 'unknown'. Of those who self-identified, Latinx and Native showed the lowest success. Biology faculty are interested in participating in programs that help address this disparity.

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.



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.

## **CURRICULUM REVIEW**

Bio 201A (General Biology)- Textbooks updated and SLOAs updated to CurricuNet.

Bio 201B (General Biology)- Textbooks updated and SLOAs added to CurricuNet.

Bio 202 (Botany)- Textbooks updated and SLOAs updated to CurricuNet.

Bio 204 (Microbiology)-Textbooks updated and SLOAs added to CurricuNet.

Bio 205 (Anatomy)- Textbooks updated and SLOAs updated to CurricuNet.

Bio 206 (Physiology)- Textbooks updated and SLOAs added to CurricuNet.

Bio 210I (Island Biology)- Course has not been taught in last 5 years.

Bio 210R (Biology of Coast Ranges)- Course activated

Bio 210M (Micro/Marine)- Course created, SLOAs added to CurricuNet.

Bio 211 (Life Science)- Textbooks updated and SLOAs updated to CurricuNet.

Bio 212 (Human Biology)- Textbooks updated and SLOAs added to CurricuNet.

Bio 213 (Genetics in Society)- Textbooks updated and SLOAs updated to CurricuNet.

Bio 216 (Plants and People)- Textbooks updated and SLOAs updated to CurricuNet.

Bio 220 (Environmental Biology)- Textbooks updated and SLOAs added to CurricuNet.

Bio 221 (Ecology)- Textbooks updated and SLOAs updated to CurricuNet.

Bio 222 (Marine Biology)- Textbooks updated and SLOAs updated to CurricuNet.

Bio 224 (Natural History)- Course has not been taught in last 5 years.

Bio 240 (Bio Teaching Assistant)- Course created, SLOAs added to CurricuNet.

Bio 241 (Bio Lab Assistant)- Course created, SLOAs added to CurricuNet.

Bio 242 (Bio Research Assistant)- Course created, SLOAs added to CurricuNet.

PROGRAM OUTCOMES, ASSESSMENT AND IMPROVEMENTS

Attach or insert the assessment calendar for your program for the next program review cycle.

<b>Biology Assessment calendar</b>								
<b>Course</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>	<b>2026</b>	<b>2027</b>	<b>2028</b>
Bio201A	+	+	+	+	+	+	+	+
Bio201B			+			+		
Bio202	+	+	+	+	+	+	+	+
Bio204	+	+	+	+	+	+	+	+
Bio205	+	+	+	+	+	+	+	+
Bio206			+			+		
Bio209C	+			+			+	
Bio209D	+	+	+	+	+	+	+	+
Bio209S	+	+	+	+	+	+	+	+
Bio210M	+			+			+	
Bio210R	Not offered							
Bio211	+	+	+	+	+	+	+	+
Bio212	+	+	+	+	+	+	+	+
Bio212L	+	+	+	+	+	+	+	+
Bio213	+	+	+	+	+	+	+	+
Bio216	+	+	+	+	+	+	+	+
Bio220	+	+	+	+	+	+	+	+
Bio220L		+			+			+
Bio221		+			+			+
Bio222		+			+			+
Bio222L		+			+			+
Bio224	Not offered							

*All courses have been completed in eLumen as per the above assessment calendar. Fourteen of the twenty courses offered in biology will be assessed during the spring 2021 semester as per the assessment calendar.*

PLO Summary Map by Course. Course-level SLOs mapped to the Program-level SLOs.

See files attached:

PLO Summary Bio201A & Bio201B

PLO Summary Bio 202 & Bio 204

ILO Summary Map by Course. Course-level SLOs mapped to the Institutional Learning Outcomes.

See file attached:

ILO Summary Biology

Highlight changes made at the course or program level that have resulted from SLO assessment. Please include the evidence of dialog that prompted these changes.

*We have made improvement to exams as a result of assessment of Student Learning Outcomes. One example is including more exams covering less material per exam. This has improved student success on the exams. Labs have also been modified as a result of assessment of Student Learning Outcomes. For example the purchase of additional models for Anatomy as allowed students to have more access to models while studying for lab exams. This has resulted in improved success.*

Identify and describe any budget or funding requests that are related to student learning outcome assessment results. If applicable, be sure to include requests in the [Resource Plan](#) Worksheet.

N/A

## **PROGRAM DEVELOPMENT**

*The Biology program will continue to present courses that allow students to transfer to 4-year institutions and to enter vocational programs such as in nursing, allied-health and kinesiology. We will meet the student demand for our courses as measured by the degree to which students are able to register for our courses. We will use fill rate, percent fill, and length of wait lists to measure this objective. We will consider cancelling (or not scheduling) sections that have a history of low enrollment except where that course is a field study or specialized course that requires low enrollment. Sequence courses will be preserved as often as possible. Courses with only one section will be preserved if warranted.*

*Biology anticipates the need for at least one additional full-time faculty due to the retirement of a full-time faculty, effective June 2018.*

*Our current lecture classroom needs have been met with the opening of the new instructional building on the SLO campus. This has allowed us to use rooms 2205 and 2606 as additional classroom space. However, we need more lab space and we would like to add facilities on the SLO campus to house a human cadaver.*

**After completing and submitting this document, please complete the [Overall Program Strength and Ongoing Viability Assessment](#) with your Dean before May 14, 2021.**

## SIGNATURE PAGE

Faculty, Director(s), Manager(s), and/or Staff Associated with the Program

**Instructional Programs: All full-time faculty in the program must sign this form. If needed, provide an extra signature line for each additional full-time faculty member in the program. If there is no full-time faculty associated with the program, then the part-time faculty in the program should sign. If applicable, please indicate lead faculty member for program after printing his/her name.**

**Instructional Programs: All full-time director(s), managers, faculty and/or classified staff in the program must sign this form. (More signature lines may be added as needed.)**

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Division Chair/Director Name	Signature	Date
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Name	Signature	Date
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Name	Signature	Date
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**APPLICABLE SIGNATURES:**

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**Vice President/Dean**

**Date**

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**Division Chair/Director/Designee**

**Date**

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**Other (when applicable)**

**Date**

The above-signed individuals have read and discussed this review. The Director/Coordinator, Faculty, and staff in the program involved in the preparation of the CPPR acknowledge the receipt of a copy of the Vice President/Dean's narrative analysis. The signatures do not necessarily signify agreement.