

Program or Area(s) of Study under Review:

BIOLOGY

Summary of Program Review:

A. Major Findings

1. Strengths:

Although enrollments are down across the institution, demand for Biology courses is still relatively strong. The department maintains a high level of academic rigor. The department has well qualified faculty, both adjunct and full-time.

2. Areas for Improvement:

Equity analysis shows the retention rate among African American/Black and the successful course completion rate for African American/Black students, Latinx/Hispanic and first-generation students were lower than the institutional average.

3. Projected Program Growth, Stability, or Viability:

The biology program is currently in a relatively stable phase and this trend is likely to continue into the foreseeable future.

B. Program's Support of Institutional Mission and Goals

1. Description of Alignment between Program and Institutional Mission:

The Biology Department offers courses for transfer students in biology, prerequisite courses for pre-health science students, and general education courses in life sciences. The department faculty and staff are dedicated to providing excellent instruction and academic support to meet the diverse needs of our students.

2. Assessment of Program's Recent Contributions to Institutional Mission:

Provided quality instruction, preparing students for transfer, during a pandemic.

3. Recent Program Activities Promoting the Goals of the Institutional Strategic Plan and Other Institutional Plans/Initiatives:

The Biology Department offers classes which prepare students for transfer, health sciences and general education. In addition, two new Associates degrees, the AS in Natural Science (effective 2020-2021 academic year) and the AS in Natural Science (effective 2021-2022 academic year) were introduced. Since the introduction, 331 of these AS degrees have been conferred.

C. New Objectives/Goals:

Continue to improve the student success rates and retention among all equity groups

D. Description of Process Used to Ensure "Inclusive Program Review"

This report covers the following program, degrees, certificates, area(s) of study, and courses (based on the Taxonomy of Programs on file with the Office of Academic Affairs):

Program	Biology
Area of Study	Biology
Degree(s)/Certificate(s)	Natural Science: AS Pre-Health Science: AS
Courses	BIOL 103
	BIOL 105
	BIOL 110
	BIOL 112
	BIOL 117
	BIOL 120
	BIOL 199
	BIOL 218
	BIOL 219
	BIOL 220
	BIOL 240
	BIOL 241

Taxonomy of Programs, July 2022

I. PROGRAM DATA

A. Demand

1. Headcount and Enrollment

RPIE Analysis:

return to in person laboratories and comply with COVID restrictions. Biol 220 remained in person instruction throughout the pandemic but reduced class size to 12 students per section. In 2020-21 the number of sections was increased to accommodate more students but this was not feasible in 2021-2022 due to limited staffing. Biol 218 and 219 returned to in-person laboratories in Fall 2021 but with a reduced class capacity of 24.

Human Biology (Biol 105) showed a modest gain in enrollments, this is a prerequisite course for the rest of the pre-health science courses. The gain in this course will likely lead to a gain in the subsequent courses in this track.

- *BIOL-220* (-39.9%)
- *BIOL-218* (-25.4%)
- *BIOL-241* (-22.2%)
- *BIOL-240* (-18.5%)
- *BIOL-219* (-12.6%)

Program Reflection:

Although head counts were down-8.4 reHET@15 (e)wets

of 14.2 is lower than the target level of 17.5, which reflects 1 FTEF (full-time equivalent faculty) accounting for 17.5 FTES (full-time equivalent students) across the academic year. (This target reflects 525 weekly student contact hours for one full-time student across the academic year.)

Program Reflection:

The Biology program carefully plans the number of sections offered each semester, this is reflected in our high class fill rates. Even though the fill rates decreased in 2021-2022, they remained relatively high.

As we engage in outreach strategies to increase enrollments and student success, this should also b (a)2.8 (g)5.6

ASAC 2.63 (a)(e)-7 (f)28 (b)2 Bre W (BT) (944.9f-3)(h)2 (i)6087(i)-3.0281337 (e)-8 (f)4.84 reW nBT/T(e) 1 Tf-76 Tm() -9.6 (u)-0.7 (



Another course that still has low rates but has made improvements is Biol 103. This was offered online prior to the pandemic, the increase in success rates may be due, in part, to the students gaining experience taking online classes during the pandemic. Other courses that showed increases in student success from the previous program review include: Biol 110, 219, 240 and 241. This may be due to the creation of additional material including videos of the lecture material.

Human Anatomy (Biol 218) continues to have low success rates, but this is not surprising. This is a challenging course and is designed to prepare students for a career in nursing. This goal is to give the students the knowledge and preparation to succeed at the next level of their career path. This rigorous course became even more challenging for students during the pandemic when much of the instruction was given online. Anatomy is a hands-on course where the students benefit from the interactive labs with models and dissections. General Biology (Biol 120) also has a relatively low success rate (67.4%) but this i

RPIE Analysis: Over the past three years, three courses within the Biology Program have been offered through at least two delivery modes within the same academic year. In 2021-2022, BIOL-110, BIOL-112, and BIOL-117 were offered through hybrid and online formats. This analysis focuses on program-level rates. Details for the course level are reported in the table above.

Within the Biology Program:

- o The retention rate in online sections was lower than the retention rate in hybrid sections. (The difference was not statistically significant.)*
- o The successful course completion rate in hybrid sections was lower than the successful course completion rate in online sections. (The difference was not statistically significant.)*

Program Reflection:

The data from online vs hybrid is from three courses offered Fall 2021 and Spring 2022. During this time, we were transitioning back to in-person/hybrid instruction. The instructional methods are being reviewed to determine the practices that were most successful for in-person, hybrid and online instruction.

C. Student Achievement

1. Program Completion

conferral year). Among 2018-



II. CURRICULUM

A. Courses

Subject	Course Number	Date of Last Review <i>(Courses with last review dates of 6 years or more must be scheduled for immediate review)</i>	Has Prerequisite* Yes/No & Data of Last Review	In Need of Revision <i>Indicate Non-Substantive (NS) or Substantive (S) & Academic Year</i>	To Be Archived (as <i>Obsolete, Outdated, or Irrelevant</i>) & Academic Year	No Change
BIOL						

Complete the table below to outline a three-year plan for the program, within the context of the current state of the program.

PROGRAM: BIOLOGY

Plan Years: 2023-2024 through 2025-2026

Strategic Initiatives Emerging from Program Review	Relevant Section(s) of Report	Implementation Timeline: Activity/Activities & Date(s)	Measure(s) of Progress or Effectiveness
Continue to improve the student success rates and retention among all equity groups particularly in the pre-health science courses Biol 105 and 218.	Section I.B. 1.	Training to Biology faculty in strategies to increase student success with an emphasis on promoting equitable outcomes in student success. The training should be from an outside trainer with experience in training specifically in the sciences. The request has been made in the 2023/24 Unit Plan. Training to be completed in 2024/25	Student success rates in Biol 105 and 218

Describe the current state of program resources relative to the plan outlined above. (Resources include: personnel, technology, equipment, facilities, operating budget, training, and library/learning materials.) Identify any anticipated resource needs (beyond the current levels) necessary to implement the plan outlined above.

Note: Resources to support program plans are allocated through the annual planning and budget process (not the program review process). The information included in this report will be used as a starting point, to inform the development of plans and resource requests submitted by the program over the next three years.

Description of Current Program Resources Relative to Plan:

Training to Biology faculty by outside trainers with expertise in the sciences.

IV. PROGRAM HIGHLIGHTS

The program-level plan that emerged from the last review (Spring 2020) included the following initiatives:

- Analyze new AS degrees.
-

online discussions, pre-lab exercises and assignments. These resources are now being used in the in-person and hybrid courses.

C. Effective Practices

- The Biology department maintains high academic standards and high quality laboratory programs.
- The department's full-time faculty, adjunct faculty, and support staff work cooperatively to maintain continuity and excellence in the biology program.
- The department evaluates and updates the biology curriculum regularly.
- Student Learning Outcomes are assessed regularly and the result are used for program improvements.
- The department has effectively utilized Supplemental Instruction in several of our courses to the benefit of many students.
- Biology faculty actively engage students and maintain a high level of instructor-student interaction in labs and discussions.

FEEDBACK AND FOLLOW-UP FORM

BIOLOGY SPRING 2023

Completed by Supervising Administrator:

Robert Van Der Velde, Senior Dean

Date:

4/25/23

Strengths and successes of the program, as evidenced by analysis of data, outcomes assessment, and curriculum:

Biology is a strong department, with a well-established curriculum and a steady stream of students. Like other lab sciences, it was impacted by the COVID-19 pandemic, but adapted quickly and returned (at least for labs) sooner than other areas, with a resulting rebound in enrollments. The program enjoys good resources, an attractive albeit occasionally uncomfortable new building, and exceptional doctorally-qualified faculty.

Areas of concern, if any:

As identified above, student success among disparately impacted students, in particular the Black/African-American student population, and in the more rigorous pre-health perquisites is a concern.

Personnel: Admin/Confidential	
Instructional Equipment	

Instructional Technology

Current technology plans call for replacement of classroom