



Instructional Program Review – Annual Update
2021

Date:	April 16, 2021
Program and Department:	Biology Program – Life and Physical Sciences Department
CTE Program?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Additional programs included in this review:	
Date of last comprehensive review:	2015-2016
Submitted By:	Biology FT Faculty and Lab Specialists
Attachments (* as needed):	<input type="checkbox"/> 6-year assessment plan – All programs, when applicable <input type="checkbox"/> 2-year scheduling plan <input type="checkbox"/> Justification for Resource Requests (if needed)

I. Alignment of the Program with the AHC Mission

AHC Mission: Allan Hancock College fosters an educational culture that values equity and diversity and engages students in an inclusive learning environment. We offer pathways that encourage our student population to achieve personal, academic, and career goals through coursework leading to associate degrees, certificates, transfer, and skills building.

a. Have there been any changes that would require a change to your Program Mission?

No change.

b. Explain how your program mission aligns with the college mission.

The college mission and values can be found here: <https://www.hancockcollege.edu/about/mission.php>

The Biology Program is committed to providing excellent college-level education in biology at the freshman and sophomore level in support of students seeking academic and professional degrees and certificates. The Biology Program mirrors the Allan Hancock College mission and strategic plan to provide quality educational opportunities that enhance student learning and the creative, intellectual, cultural, and economic vitality of the diverse Santa Maria community. The Biology faculty is committed to incorporating innovative instructional techniques and current technologies to enhance student achievement and instill life-long learning.

II. Student Success, Program Accessibility and Program Capacity

*NO data analysis required this year.

- a. Describe how the program works to promote student success (completions job placement, transfer). Include teaching innovations and use of academic and student support.

The Biology program has AA and transfer degrees as well as several courses that serve as prerequisites for the nursing program or other health careers. Our general education life science courses are also in high demand. Biology students have access to tutoring through the LRC and MESA/STEM Center. Some courses are utilizing embedded tutoring as part of a Title V grant.

- b. List any notable accomplishments of the program (student awards, honors, or scholarships can be listed here also)

Biology faculty have shown tremendous dedication to maintaining a high level of academic quality and integrity during this time of remote instruction. This modality takes significantly more time to prepare than in person instruction. We have learned new software, recorded demonstrations, and redesigned assignments for lecture and lab material. Our course enrollments remain high and grading written assignments online takes longer than grading on paper. We have also been completing the course review process before our comprehensive program review next year.

III. Quality and Innovation in the Program and Curriculum Review

- a. Are you on track in your assessment plan for course and program SLOs? If not, please explain why.

We are planning to assess two program SLOs this year. During our comprehensive program review next year, we will update our six-year plan to assess all program SLOs.

- b. Have you shared your assessments or improvement plans with your department, program or advisory committee? If so, what actions resulted? If not, how do you plan to do so in the future?

We shared our course SLOs but we are now transitioning to program SLO assessment. We plan to look at the first year of data from program SLOs during our department retreat in August 2021.

- c. Did any of section, course or program improvement plans indicate that your program would benefit from specific resources in order to support student learning and/or faculty development? If so, please explain.

- d. In reviewing your outcomes and assessments have you identified any and all that indicate a modification should be made to the course outline, the student learning outcomes or the program outcomes? Please state what modifications you will be making.

BIOL 100 Introductory Biology has modified the student learning outcomes during the course review process. Other course reviews are in progress.

- e. Have all course outlines been reviewed within the last 5 years? If not, please explain the plan to bring course outlines up to date and include timelines for the review and submission to AP&P.

We are currently undergoing the course review process in preparation for our six-year program review next year.

- f. For **CTE courses/programs only**, as per §55003, have prerequisites, corequisites and advisories (PCAs) for courses and/or programs been reviewed within the last 2 years?

IV. Focus and Engagement of the Program

- a. Summarize major trends and opportunities as well as challenges that have emerged in the program

Even during the pandemic, our classes are full and several have waitlists. All faculty are working above and beyond to accommodate the current demand but it is not feasible to consider adding sections without hiring another full-time faculty member in Biology. Demand is particularly high in Human Physiology. Almost 30 students picked up lab supplies for Human Physiology at LVC and we don't offer the course at that campus. We added sections of Human Anatomy in Fall 2020 when teaching remotely and two additional sections filled. It is not possible to offer so many sections of Human Anatomy in person because there is not enough lab space or qualified faculty to teach more. A recent look at part-time applications showed no applicant with experience teaching Human Anatomy or Human Physiology. To offer Human Physiology at LVC and maintain high quality instruction in both Human Anatomy and Human Physiology, a new full-time faculty member in Biology is required. We have also continued to add extra sections of our Biology major courses, with a full-time Biologist teaching close to a 2.0 load this semester. The administration should not expect this type of workload to continue for our Biology faculty or any science faculty member.

In order to ensure the highest quality of instruction in the Biology program we require classroom space to accommodate at least 60 students (M311 is limited to 56), adequate laboratory support, budget augmentation to respond to higher costs and increased enrollment in labs (operational supplies and maintenance), and sufficient full-time faculty.

- b. List any (internal or external) conditions that have influenced the program in the past year.

Transitioning all science lectures and labs to a remote format took an immense amount of time. Several faculty members worked all summer to prepare remote classes for Fall 2020. We have focused on both the course material and academic integrity that is essential to succeed as a scientist. We look forward to returning to the classroom, especially labs, and in person exams.

Data for Program with Vocational TOP Codes (CTE):

<https://misweb.cccco.edu/perkins/main.aspx>

Please review the data and comment on any trends.

- c. Current industry employment and wage data (please cite sources)

- d. Industry employment and wage trends

- e. TOP code employment CORE indicator report

- f. Advisory committee recommendations

V. Continuous Improvement of the Program

a. Status of Final Plan of Action – Post Validation

Summarize the progress made on the recommendations from your last comprehensive program review plan of action

PLAN OF ACTION	ACTION TAKEN/RESULT AND STATUS
Improve Student Learning	MESA/STEM Center provides student support with tutoring and review sessions. New center facilities should be available in Fall 2021.
Curriculum	All biologists are updating course outlines of record through the course review process this year.
Community	This part has been the hardest to maintain during COVID. Our department-wide Science Night event was cancelled in 2020 and 2021.
Facilities	Still in need of adequate lecture space for classes with 60 students.
Equipment	Received several items through equipment prioritization in 2020-2021. Items still needed are listed in the summary part d. below.
Staffing	Continue to request an additional full-time faculty member in Biology, additional full-time lab specialist, and budget augmentation for student workers. See summary part d. below.

b. List any new resources that the program received in the past year and the results

Source	Specific Resource	Est. Amount \$	Impact on program or course outcomes
COVID Funds	6 CX33 Olympus microscopes with cameras	\$23,700	Each Biology lab room in Santa Maria and the LVC labs now have a microscope with camera for projecting slide images.
Equipment Prioritization	Bio-Rad T100 Thermal Cycler (X2)	\$10,000	More efficient PCR experiment completion for Cellular Biology.
Equipment Prioritization	iWORX	\$39,767	Upgrade to most recent software for Human Physiology instruction in Santa Maria
Equipment Prioritization	Vascular Foot Model (X2)	\$777 ea.	LVC Human Anatomy instruction
Equipment Prioritization	Somso Disarticulated Skull	\$1,577	For student use in LRC at LVC
Equipment Prioritization	Somso Circulatory System Model	\$1,125	For student use in LRC at LVC

Equipment Prioritization	Somso Ear with Pinna (X2)	\$1,789 ea.	LVC Human Anatomy instruction
Equipment Prioritization	Somso Head and Neck Model	\$4,930	For student use in LRC at LVC
Equipment Prioritization	Somso Hinged Human Skin Model (X2)	\$968 ea.	LVC Human Anatomy instruction
Equipment Prioritization	Somso Median Section of the Cavities of the Nose, Mouth and Throat	\$760	For student use in LRC at LVC
Equipment Prioritization	Somso Muscles of the Foot Model (X2)	\$1,716 ea.	LVC Human Anatomy instruction
Equipment Prioritization	Microanatomy of the Liver	\$315	LVC Human Anatomy instruction
Equipment Prioritization	Somso Nervous System Model	\$876	LVC Human Anatomy instruction
Equipment Prioritization	Mammary Gland Model Life Size (X2)	\$310 ea.	LVC Human Anatomy instruction
Equipment Prioritization	Fertilization and Development of the Ovum	\$1600	LVC Human Anatomy instruction

c. List any new or modified recommendations below, including rationale for these in the table.

Program Improvement Plan (Program ,Priority Number, year)	Anticipated Outcome (Goal)	Program Goal Status (Indicate if this goal is ongoing from a previous Annual Or Comprehensive Program Review or new this year).	Alignment to Strategic Directions and planning goals (see " Alignment to Strategic Directions" Attached	Activities	Justification (Evidence of need)	Resource Request (From table Below)	Anticipated Completion Date or On-going

No change.							

d. Summary of request for resources. Please list the type of request (facility, technology, staffing, equipment, other) and rank their priority.

Resource Requests (Program, RRX year)	Item	Program Goal	Type	One-time cost	On-going cost (per fiscal year)	Anticipated Completion Date or On-going
Biology RR1 2021 Priority 1	Full Time Faculty	SLS2, IR1	Staffing		\$70,000 + benefits	On-going
Biology RR2 2021 Priority 1	Full Time Lab Specialist	SLS2, IR1	Staffing		\$40,000 + benefits	On-going
Biology RR3 2021 Priority 1	Budget Augmentation for PPE Supplies (Gloves, Lab Coats, Goggles, Wipes, etc...)	SLS2, IR2	Other		\$20,000	On-going
Biology RR4 2021 Priority 1	Budget Augmentation to Operational Supplies	SLS2, IR2	Other		\$5000 (prices and shipping charges have increased)	On-going
Biology RR5 2021 Priority 1	Budget Augmentation to Maintenance and Repairs for	SLS2, IR2	Other		\$6500 (SM campus), \$3500 (LVC)	On-going

	Existing Equipment					
Biology RR6 2021 Priority 1	Budget Augmentation for Instructional Supplies in LVC	SLS2, IR2	Other		\$3500 (unrestricted)	On-going
Biology RR7 2021 Priority 2	Replacement desks for LVC 2-212	IR3, IR4	Facility	\$200 ea.		On-going
Biology RR8 2021 Priority 1	Additional Lecture Space with 60-90 Seating Capacity	IR3, IR4	Facility	\$100,000-500,000 depending on whether old facilities are upgraded or new facilities are built		On-going
Biology RR9 2021 Priority 2	Improved Under Cabinet Lighting for LVC 3-101 and 3-102	IR3, IR4	Facility	\$500		On-going
Biology RR10 2021 Priority 1	Increase Equipment Rental Budget at LVC for Deionized Water Tanks	SLS2, IR3	Equipment		\$200	Fall 2021
Biology RR11 2021 Priority 1	iWORX (Human Physiology at LVC)	SLS2, IR3	Equipment	\$90,000 (15 units at \$6,000 ea.)		Fall 2022
Biology RR12	Pneumotrac spirometer	SLS2, IR3	Equipment	\$3,900		Fall 2022

2021 Priority 1	w/3 L calibration syringe and standalone installation					
Biology RR13 2021 Priority 1	Ambco 650A audiometers	SLS2, IR3	Equipment	\$3,600 (3 at \$1,200 ea.)		Fall 2022
Biology RR14 2021 Priority 1	Ohaus balance readability 0.01g w/620g capacity a quantity	SLS2, IR3	Equipment	\$3,600 (3 at \$1,200 ea.)		Fall 2022
Biology RR15 2021 Priority 1	Hematocrit	SLS2, IR3	Equipment	\$2,200		Fall 2022
Biology RR16 2021 Priority 1	Stirring hotplates	SLS2, IR3	Equipment	\$2,775 (3 at \$925 ea.)		Fall 2022
Biology RR17 2021 Priority 2	Vascular Hand Model (X2)	SLS2, IR3	Equipment	\$645 ea.		Fall 2022
Biology RR18 2021 Priority 2	Somso ¾ Male Musculate Natural Size (X2)	SLS2, IR3	Equipment	\$22,088 ea.		Fall 2022
Biology RR19 2021 Priority 3	Dolphin Skull	SLS2, IR3	Equipment	\$504.69		Fall 2022
Biology RR20 2021 Priority 3	Sea Lion Skull	SLS2, IR3	Equipment	\$403.75		Fall 2022

Biology RR21 2021 Priority 3	Puffer Fish	SLS2, IR3	Equipment	\$235		Fall 2022
Biology RR22 2021 Priority 3	Parrot Fish Skull (Not Found Yet)	SLS2, IR3	Equipment			Fall 2022