

## PROGRAM REVIEW UPDATE 2016-2017

---

**Program: Biology**

**Division: MSEPS**

**Date: 8/29/16**

**Writer(s): Ann Hight, Segal Boaz, Jill Carbone, Michal Shuldman, Barbara Zingg**

**SLO/SAO Point-Person: Ann Hight**

---

**Audience:** Deans, Vice Presidents of Student Services and Academic Services, All Planning and Allocation Committees. This document will be available to the public.

**Purpose:** To document significant program accomplishments, plans and needs between Triennial Program Reviews. This update should provide a snapshot of your program.

**Uses:** This update will be used to inform the campus and community about your program. It will also be used in the processes of creating Dean's Summaries, determining College Planning Priorities and allocating resources.

**Time Frame:** This update should reflect on program status during the 2015-16 academic year. It should describe plans starting now and continuing through 2017-18.

**Topics:** The first section of this Program Review Update focuses on general program reflection and planning. The second, third and fourth sections focus on reflection and planning regarding Student Learning Outcomes. Only instructional programs need to complete Sections 2, 3, and 4.

**Scope:** While this Program Review Update does ask for some analysis of data, detailed data reports in the form of appendices should be reserved for the Triennial Program Review.

**Instructions:**

- 1) Please fill in the following information as completely as possible.
  - 2) If the requested information does not apply to your program, please write "Not Applicable."
  - 3) Optional: Meet with your dean to review this document before October 10, 2016.
  - 4) Send an electronic copy of this form to the Program Review Committee Chair and your Dean by October 10, 2016.
- 

### Part One: Program Snapshot

**A. Have there been any significant changes to your program, your program's data or your program's needs since the previous Program Planning Update?**

**If there are any changes, describe the relevant information and its significance in the space below.**

These changes might have originated from within the program or because of an external source (the institution or the state, for example). Possible sources of relevant information might include, but are not limited to, the following:

- Data generated by your program
- Data from the Office of Institutional Research (<http://goo.gl/Ssfik2>)
- CEMC Data
- Retirements
- State Mandates
- Labor Market Data
- SLO/SAO Data

Since our last Program Review we have increased class offerings by five sections: Bio 40 and Bio 1A over the summer, Bio 1B to fall, and Bio 7B to fall and spring. We hired a new full-time General Biology faculty member, and temporarily lost one faculty member who became interim dean for the
--

fall semester.

**B. What objectives, initiatives, or plans from the 2015 Program Review Update have been achieved and how?**

1. Hired a full-time faculty member for General Biology
2. Biology AS-T was submitted to the state and approved.
3. Hired a replacement lab technician
4. Acquired a second cadaver
5. Created a stop-gap measure to provide Alka-seltzer to the Bio 1C students so they do not have to pay for it themselves
6. Many of the Biology books that were stored in the labs are now in the library
7. Instructional Equipment funding was used to purchase 25 microscopes and 3 digital cameras
8. To maximize space in the BLC we moved the printer and other equipment, and added more chairs and a small study table
9. Acquired a class set of binoculars
10. Added five sections to the schedule: Bio 40 and Bio 1A over the summer, and Bio 1B to fall, and Bio 7B to spring and fall.

**C. Discuss at least one example of how students have been impacted by the work of your program since the last program review update (if you did not already answer this in Question B).**

The anatomy program purchased a second cadaver to expand the number of structures available for demonstration in the anatomy class. Additionally, this provided the advanced independent study students with more hands-on experience with the cadaver, and the demonstrations they produced are essential for modeling ideal anatomical structures and relationships in other classes (Bio 50, Bio 7A).

**D. What obstacles has your program faced in achieving objectives, initiatives, or plans?**

1. We created a stop gap measure to provide Alka-seltzer to the Bio 1C students so they do not have to pay for their own but the method is inefficient. Currently the lab technician is driving to the store to buy the Alka-seltzer with her own money and then getting reimbursed. This is an inefficient use of a highly skilled lab technician's time; we are looking into other solutions.
2. We were not successful in hiring the second General Biology Faculty position needed for leadership in the general biology and non-majors classes.
3. By continuing to add more classes to the schedule we face increased scheduling challenges, mostly due to impacted lab and lecture space. This is particularly difficult for full-time faculty to make load when teaching the Bio 30 classes.
4. The general budget for supplies doesn't match the growth of our course offerings (five sections added since last Program Review). We also don't have a budget for Honors and Independent Study Projects. Faculty are currently using left over supplies and/or paying out of their own pockets for these projects. One of our PSLOs is: Students are able to demonstrate proficiency in standard biology lab techniques and lab safety procedures. Our students clearly accomplish this PSLO; in the fall of 2015, 99% of biology students scored a three or four out of four for this PSLO. In order to maintain these high standards, we need adequate laboratory supplies to meet the needs of the growing course offerings.
5. We still do not have a system in place for students to check out supplies such as insect nets and binoculars.

6. We need Human Resources to recruit and maintain a pool of adjuncts instructor applications. This is especially important as we expand our course offerings. This fall we had to hire two faculty last minute due to staffing changes and lack of an adjunct faculty pool. Last minute hiring does not allow for appropriate vetting of candidates or enough time for the new faculty to prep their courses.
7. We have done some space adjustments to the BLC but it still limited on space. We expect the BLC to be further impacted this semester with an additional section Bio 1B. The BLC requires faculty oversight but due to the overcrowding there is not enough space for many faculty to effectively hold office hours in the BLC.
8. Due to an increase in sections (Bio 1A), honor's projects and independent studies there is increased student use of the Microbiology workroom. This impacts the ability of the Microbiology students to effectively use the space and complete their course objectives.
9. We continue to have limited space for the Anatomy students to use anatomical models outside of class. The students and the anatomical models take up space in the BLC and contribute to overcrowding. The anatomy models are large and require our highly trained prep staff to continually stop their work to bring models in and out of the BLC. A new dedicated space for anatomy students could house the models, freeing up much needed space in the current BLC and minimizing the interruptions to the prep staff. Extra time with the models in the BLC is correlated with student success, as the anatomy students earning A's and B's are the same students using the BLC to study.
10. Food used in many labs (Bio 1A, Bio 7B, Bio 1B, Bio 30, Bio 50) is temporarily stored room 1813 but needs a permanent location.
11. In Fall 2017 Biology and Chemistry plan to request a new lab technician for 20 hours a week. Since the last program review the biology and chemistry departments have both increased their offerings and the workload for the prep staff has increased. Our departments are in two different buildings. We have worked to use the buildings more efficiently to accommodate the increased number of laboratory sections. There are now many times where multiple labs across the two buildings need to be broken down and set up at the same time. This means that sometimes one of the buildings has extremely low technician coverage.

**E. What are your most important plans (either new or continuing) for next year?**

1. We will resubmit a faculty position request for a full-time General Biology instructor
2. As our lab and lecture rooms continue to be more impacted by increased number of sections we will need to explore more scheduling and room use alternatives.

**F. Instructional Programs: Detail your department's plans, if any, for adding DE courses, degrees, and/or certificates. For new DE degrees and/or certificates (those offered completely online), please include a brief rationale as to why the degree/certificate will be offered online.**

N/A

**G. Do plans listed under Question E or Question F connect to this year's planning priorities (listed below)? If so, explain how they connect.**

***Planning Priorities for 2016-17***

- A) Establish regular and ongoing processes to implement best practices to meet ACCJC standards***

- B) Provide necessary institutional support for curriculum development and maintenance**
- C) Develop processes to facilitate ongoing meaningful assessment of SLOs and integrate assessment of SLOs into college processes**
- D) Expand tutoring services to meet demand and support student success in Basic Skills, CTE and Transfer courses.**

**Biology plan #1 connects to Planning Priority A** as ACCJC standards emphasize excellence in teaching. The hiring process for a full-time faculty member is rigorous in order to select the best candidate for student learning.

**Biology plan #1 connects to Planning Priority B** as the new hire would help with curriculum development and maintenance in the Bio 30 and GE classes.

**Biology plan #1 connects to Planning Priority C** as full-time faculty help lead and implement best practices in the SLO process. Full-time faculty help lead meetings and workshops with adjunct faculty to create meaningful SLOs.

**Biology plan #2 connects to Planning Priority A** because ACCJC encourages the creation of appropriate degrees for student transfer. This is also a state mandate.

**Biology plan #2 connects to Planning Priority B** as the creation of the Biology AS-T degree requires extensive vetting through the curriculum process.

**Biology plan #3 connects to Planning Priority A** as ACCJC emphasizes the importance of student access to courses and student completion of degrees. Thoughtful scheduling increases access opportunities for students, and decrease the expected completion time for the biology degrees offered.

**H. Instructional programs: Did your program meet its program-set standard for successful course completion? yes no**

(This data can be found here: <http://goo.gl/XVi1J>)

**If your program did not meet your program-set standard, discuss possible reasons and how this may affect program planning or resource requests.**

**I. Units with SAOs: Using SAO data from last year, describe the impacts of SAO practices on student learning, achievement, or institutional effectiveness. Describe the practices which led to the success. (Copy the box below if you would like to discuss multiple examples).**

SAO:
Describe the quantitative or qualitative results:
Discuss any actions taken so far (and results, if known):
Discuss your action plan for the future:

**Part Three: Assessment Results  
(Instructional Programs Only)**

1. Describe an example of how your program used **course SLO data (SLOs)** from last year (2015-16) to impact student learning or achievement. (Copy the box below if you would like to discuss multiple examples).

Course: Bio 7B - Physiology
Course SLO: Students will be able to solve basic math-based physiology problems
Describe the quantitative or qualitative results: In Fall 2015 54.9 % earned a 3 or 4 (out of 4 possible).
Discuss any actions taken so far (and results, if known): In the past we assessed math skills only within the first quarter of the semester. Starting in Fall 2016 we are giving weekly worksheets and bi-monthly math quizzes so that students can practice throughout the semester and gradually build their math skills. A final assessment will be given at the end of the semester.
Discuss your action plan for the future: A much higher percentage of students need to earn a 3 or 4 on this SLO in order to achieve success in the allied health fields. About 50% of the students are not achieving this goal. After gathering more data we will determine if practicing math throughout the semester improves students math skills.

2. Degree/Certificate granting programs only: Describe an example of how your program used **program-level SLO data (PSLOs)** from last year (2015-16) to impact student learning or achievement. (Copy the box below if you would like to discuss multiple examples).

Degree/Certificate: AA - Biology
Program SLO: Be able to demonstrate proficiency in standard biology lab techniques and lab safety procedures.

Describe the quantitative or qualitative results: In fall 2015, 99% of students earned a 3 or 4 (out of 4) on this PSLO.

Discuss any actions taken so far (and results, if known): To maintain this high level of achievement and our rigorous we invested time and effort in maintaining supplies and equipment for the laboratory. Last year we devoted resources to upgrading the microscopes and providing student supplies. We were able to use Best of the Best financial resources as a one-time addition to our supply budget. For example, we used those funds to provide copies of scientific atlases in the lab as well as student supplies (e.g. safety goggles, lab coats)

Discuss your action plan for the future:

We continue to request increased funding to meet the needs of our students.

## Part Four: Program Curriculum Map (Instructional Programs with Degrees/Certificates Only)

### Background: Program-level Student Learning Outcomes

Program-level Student Learning Outcomes (PSLOs) are defined as the knowledge, skills, abilities, or attitudes that students have at the completion of a degree or certificate. Faculty within a discipline should meet to discuss the expected learning outcomes for students who complete a particular series of courses, such as those required for a certificate or a degree. PSLOs should be the big things you want students to get out of a degree or certificate. PSLOs should be developed throughout the program and in multiple courses. Discussions might also involve colleagues in other programs regarding prerequisites and transfer courses or community stakeholders regarding job expectations.

It is recommended that each program have 3-6 PSLOs. Discipline faculty members might need to have a more comprehensive list based on the requirements of external stakeholders (employers, state requirements, etc.). For most programs, PSLOs are only assessed through linked course-level SLOs. You might assess PSLOs in a capstone project or capstone course that many students complete when earning a certificate or degree. Alternatively, you could assess development of a set of skills as students advance through different courses in your program (ENG 1A -> ENG 4 or 7).

Program-level outcomes should

1. **describe** what students are able to do after completing a degree or certificate;
2. be **limited** in number (3-6 outcomes);
3. be **clear** so that students and colleagues can understand them;
4. be **observable** skills (career-specific or transferable), knowledge, attitudes, and/or values;
5. be **relevant** to meet the needs of students, employers, and transfer institutions;
6. be **rigorous** yet realistic outcomes achievable by students

## Curriculum Map Directions

**Note: If you have multiple degrees/certificates, choose one to map. If you have already submitted mapping to the SLO committee and do not wish to make changes, you may copy that mapping into this chart or attach the map you already created.**

1. In the boxes across the top row, review all the non-GE courses required for your degree/certificate. (including those that aren't in your discipline). Make any desired changes to those courses. (Electives do not need to be included, though they may).
2. In the left column, write the program learning outcomes you have drafted for your program.
3. In the boxes in the center of the page, mark the course SLO that maps to the program SLO you have identified. Each program SLO should map to multiple courses in your program.

<b>Example: English Associate's Degree for Transfer</b>						
<b>Program Learning Outcomes</b>	<b>Required Courses in Degree/Certificate</b>					
	Eng 4	Eng 7	Eng 35	Eng 41	Electives* (Eng 20, 32, 45, 44)	MSCM 1*
1. Identify and evaluate implied arguments in college-level literary texts.	x					
2. Write an academic essay synthesizing multiple texts and using logic to support a thesis.	x	x				
3. Write a research paper using credible sources and correct documentation.	x	x				x
4. Analyze an author's use of literary techniques to develop a theme.			x	x	x	

\*Including electives is optional.



Your Program's Map

Degree or Certificate: Biology													
Program Learning Outcomes (3-6 recommended)	Required Courses in Degree/Certificate												
	Bio 1A	Bio 1B	Bio 1C	Chem 1A	Chem 1B	Phys 2A	Phys 2B	Math					
1. Be able to explain and apply basic principles of biology at different level, from the biochemical to the ecological	X	X	X	X	X	X	X						
2. Be able to design, conduct, analyze and/or report results of investigations, experiments in the laboratory and/or field.	X	X	X	X	X	X	X	X					
3. Be able to demonstrate proficiency in standard biology lab techniques and lab safety	X	X	X										
4.													
5.													
6.													

1. Did you make any changes to your existing mapping? (circle one)

Yes

No

**This degree/certificate did not have previous mapping**

2. If you answered "yes" to Question 1, explain what changes you made.

3. Reflection Questions: The following questions are for the consideration of your program as you look at your completed chart. You do not need to record your responses here. If you discuss these questions with others (for example, at a department meeting), you may want to take minutes documenting your discussion.

- a. How many courses help students achieve each program outcome? Do students have enough opportunities to achieve the outcome?

Outcome 1 = 7 out of 8 courses

Outcome 2 = 8 out of 8 courses

Outcome 3 = 3 out of 8 courses

Students have enough opportunities to achieve the outcomes. Each Biology course in the sequence allows students to build upon and develop unique aspects of the PLOs.

- b. In which course(s) are students likely to demonstrate satisfactory achievement of each program outcome? In other words, which courses(s) might be an official or unofficial capstone requirement?

In each Biology sequence course students develop and emphasize a component of each PLO. Therefore, there is no one capstone course.