

Merritt College

2017-2018 Annual Program Update Template

Merritt College Data Profile: Fall 2016 and Spring 2017

*Note: Headcount is unduplicated number of students per term. Retention and Success is based on Enrollments, which are duplicated.

<i>Headcount by Gender</i>	<i>Fall 2016</i>		<i>Spring 2017</i>	
<i>Female</i>	4514	64%	4742	64%
<i>Male</i>	2396	34%	2485	34%
<i>Unknown/Unreported</i>	133	2%	132	2%
<i>Headcount by Race/Ethnicity</i>				
<i>American Indian</i>	29	0%	26	0%
<i>Asian</i>	1129	16%	1227	17%
<i>Black / African American</i>	1903	27%	1864	25%
<i>Hispanic / Latino</i>	2064	29%	2195	30%
<i>Pacific Islander</i>	47	1%	42	1%
<i>Two or More</i>	369	5%	384	5%
<i>Unknown / NR</i>	341	5%	381	5%
<i>White</i>	1161	16%	1240	17%
<i>Headcount by Age</i>				
<i>Under 16</i>	38	1%	100	1%
<i>16-18</i>	808	11%	764	10%
<i>19-24</i>	2430	35%	2552	35%
<i>25-29</i>	1186	17%	1255	17%
<i>30-34</i>	766	11%	775	11%
<i>35-54</i>	1296	18%	1401	19%
<i>55-64</i>	327	5%	315	4%
<i>65 & Above</i>	192	3%	197	3%

Total Headcount

7043

7359

	<i>Fall 2016</i>		<i>Spring 2017</i>	
Gender	Retention %	Success %	Retention %	Success %
Female	78%	66%	79%	70%
Male	78%	65%	79%	68%
Unknown/Unreported	83%	72%	82%	75%
Race/Ethnicity	Retention %	Success %	Retention %	Success %
American Indian	83%	77%	74%	60%
Asian	83%	76%	84%	78%
Black / African American	73%	57%	74%	60%
Hispanic / Latino	76%	65%	80%	70%
Pacific Islander	79%	69%	80%	74%
Two or More	77%	65%	78%	66%
Unknown / NR	82%	69%	83%	72%
White	85%	78%	85%	78%
Age Range	Retention %	Success %	Retention %	Success %
Under 16	82%	82%	94%	89%
16-18	78%	65%	82%	74%
19-24	75%	62%	76%	65%
25-29	77%	66%	79%	70%
30-34	82%	71%	81%	71%

35-54	81%	70%	82%	74%
55-64	83%	71%	85%	73%
65 & Above	84%	78%	85%	72%

**Distance
Education**

Retention and Success by Distance Ed	Fall 2016		Spring 2017	
	Retention %	Success %	Retention %	Success %
100% online	70%	62%	74%	59%
Hybrid	69%	53%	74%	61%
Face to Face	80%	69%	81%	72%

I. Program Information

Purpose: This section will identify basic information about your program. 2015-2016 Program reviews and 2016-2017 APU can be found at:
<http://www.merritt.edu/wp/institutional-research/program-review/>

Program Name: BIOLOGY

Date: 10/23/2017

Program Type (circle or highlight one): **Instructional** Non-Instructional Student Services or Special Programs Administrative Unit

College Mission Statement: The mission of Merritt College is to enhance the quality of life in the communities we serve by helping students to attain knowledge, master skills, and develop the appreciation, attitudes and values needed to succeed and participate responsibly in a democratic society and a global economy.

Program Mission:

Biology Department Program Mission:

The mission of the Biology Department is to provide, using evolution as our paradigm, a supportive, challenging, and stimulating environment in which students are able to acquire a strong foundation in biology. This foundation is to include instruction, development of critical thinking skills, and training on cutting-edge equipment so as to prepare students for transfer to 4-year institutions or provide access to fulfilling careers in medical, nursing, radiological sciences and other biology-related areas. We also wish to promote natural history both locally and internationally.

Natural History Certificate of Proficiency and Bay Area Master Naturalist Certificate of Proficiency, Programs Mission:

The Mission of these Natural History programs is to enhance this community's understanding of the natural world and provide a minimal background in natural history for possible employment in areas such as naturalist guides, visitor center personnel and national or state park rangers.

Date of Last Comprehensive Program Review: 10/5/2015

Date of Comprehensive Program Review Validation: 03/15/2016 (Validation Team Chair signature)

II. Reporting Progress on Attainment of Program Goals

Purpose: In this section, you will look at your goals stated in the 2015-2016 program review and 2016-2017 APU, align the program goals with the District and College Goals, and report on the progress, revision, or completion of the program goals.

<p>Program Goal *Copy the Goals Reported from Program Review Question 10 or Appendix B, or 16-17 APU Section II or input the new/revised goal. These are suggested categories of goals.</p>	<p>Which institutional goals will be advanced upon completion? (PCCD and MC Goal Mapping)</p>	<p>Progress on Goal (indicate date next to the appropriate status for the goal)</p>	<p>Goal Detail and Measurement – How did you/will you evaluate this Goal? (If your goal was completed: How did you evaluate or determine the outcome? If your goal is ongoing: What is your measure and target? If your goal is new or revised: What is your measure and target?)</p>
<p>Assessment The Biology Department will review and revise all SLOs in active courses and assess 100% of SLOs in active courses on a three-year cycle. We will discuss assessment results among all department members on a regular basis to encourage development and sharing of innovative and effective teaching strategies. Assessment will be a standing agenda item for our department meetings.</p>	<p>1. PCCD Goal: __C__ 2. Merritt Goal __C__</p>	<p>Completed: _____ (date) Revised: _____ (date) Ongoing: <u>10/23/2017</u> (date) New Goal _____ (current date)</p>	<p>The Biology department has been meeting on a regular basis and assessment has persisted as a standing item on meeting agendas. Faculty members have been in regular contact with each other in person or via email to coordinate assessment efforts. The Biology Department is on track to maintain its three-year cycle of SLO assessment in all courses that are regularly scheduled. Plans are in development to address the natural history course offerings, many of which are currently offered so infrequently as to present a challenge to adhering to our three-year assessment cycle. Curriculum modifications as well as a reexamination of the natural history certificate structure are forthcoming.</p>
<p>Curriculum (if applicable) The Biology Department will perform course content review of all active biology courses on a three-year cycle. We will use assessment</p>	<p>1. PCCD Goal: _C_____ 2. Merritt Goal __C__</p>	<p>Completed: _____ (date) Revised: _____ (date) Ongoing: <u>10/23/2017</u></p>	<p>The Biology Department has submitted over 50 course proposals to the Curriculum and Instructional Council (CIC) for content update or deactivation. The Bay Area Master Naturalist CP was updated to remove deactivated courses from</p>

<p>Program Goal *Copy the Goals Reported from Program Review Question 10 or Appendix B, or 16-17 APU Section II or input the new/revised goal. These are suggested categories of goals.</p>	<p>Which institutional goals will be advanced upon completion? (PCCD and MC Goal Mapping)</p>	<p>Progress on Goal (indicate date next to the appropriate status for the goal)</p>	<p>Goal Detail and Measurement – How did you/will you evaluate this Goal? (If your goal was completed: How did you evaluate or determine the outcome? If your goal is ongoing: What is your measure and target? If your goal is new or revised: What is your measure and target?)</p>
<p>results and student surveys to determine if new curriculum or changes in advisories or requisites should be pursued.</p> <p>The Biology Department will, using data collected by the college and district, and with the help of the college curriculum specialist, develop a Biology AS-T Degree, if possible within the confines of the Transfer Model Curriculum template for the AS-T in Biology</p>		<p>(date) New Goal _____ (current date)</p>	<p>its listing. Additional course update proposals will be submitted to CIC before the end of this current (Fall 2017) semester, to complete our goal of 100% curriculum review. At the moment the majority of students taking classes in our department are doing so to satisfy prerequisites to Allied Health and CTE programs When the State Chancellor’s office announced a model template for the AS-T degree in Biology, we were deterred initially by the restrictive unit maximum described in that template. However, representatives of the Chancellors office have encouraged all California colleges to submit AS-T proposals even if we can’t exactly meet the criteria (go over the unit maximum), to possibly guide changes to the template. Given that encouraging advice, we would like to work with the college curriculum committee to build an AS-T in Biology, as a part of a plan to build a culture of transfer in our Biology department.</p>
<p>Instruction (if applicable)</p> <p>The Biology Department will use assessment results to identify resources and facilities needed in the classroom and for faculty work</p>	<p>1. PCCD Goal: ___E___ 2. Merritt Goal ___E___</p>	<p>Completed: _____ (date) Revised: _____ (date) Ongoing: <u>10/23/2017</u> (date) New Goal _____ (current date)</p>	<p>In our department meetings we are discussing ways to make our assessment methods stronger, and we are optimistic that our assessment results will guide our decision making regarding allocation of resources or interventions to assist students in mastering content in which they struggle. We have also enlisted the help of the SLOAC members to find ways to translate our</p>

<p>Program Goal *Copy the Goals Reported from Program Review Question 10 or Appendix B, or 16-17 APU Section II or input the new/revised goal. These are suggested categories of goals.</p>	<p>Which institutional goals will be advanced upon completion? (PCCD and MC Goal Mapping)</p>	<p>Progress on Goal (indicate date next to the appropriate status for the goal)</p>	<p>Goal Detail and Measurement – How did you/will you evaluate this Goal? (If your goal was completed: How did you evaluate or determine the outcome? If your goal is ongoing: What is your measure and target? If your goal is new or revised: What is your measure and target?)</p>
<p>environment to enhance student learning and improve teaching.</p>			<p>assessment results into requests for resources, as we have struggled as a department to obviously link these two or to distinguish between ongoing operating costs of running a program vs. new resources to improve upon existing curriculum.</p>
<p>Student Success and Student Equity The Biology Department will use assessment results and student surveys to identify challenges to student learning. We will request resources from the campus, if needed, to develop strategies to improve student success by 2% in all courses that have had student success values lower than 70% in the last three years (BIO 10, 20A, 24, 3 and 4)</p>	<p>1. PCCD Goal: __A__ 2. Merritt Goal __A__</p>	<p>Completed: _____ (date) Revised: _____ (date) Ongoing: __10/23/2017_____ (date) New Goal _____ (current date)</p>	<p>This work is ongoing. As a department with among the highest number of FTES in the college, we are challenged by the fact that many of our faculty are hourly without the time to do as much deep reflection and innovation as they would like. With a new hire of a new full time faculty member (search is in progress), the Biology Department may be in a better position now to take a close look at collective assessment results and explore best practices to strengthen our student success. We continue to pay particular attention to these courses and are encouraged by the small improvements we are already seeing in success rates of recent semesters correlated to our smaller lab sizes, as the consequence of moving to S building.</p>
<p>Professional Development, Institutional and Professional Engagement, and Partnerships The Biology Department will continue to maintain its existing partnerships to enrich student</p>	<p>1. PCCD Goal: __B__ 2. Merritt Goal __B__</p>	<p>Completed: _____ (date) Revised: _____ (date) Ongoing: __10/23/2017_____ (date)</p>	<p>The Biology Department continues working with its partners including UC Berkeley Extension, and is hoping to work with the College to use data to identify the needs of the community and local high schools, to enhance our offerings to build</p>

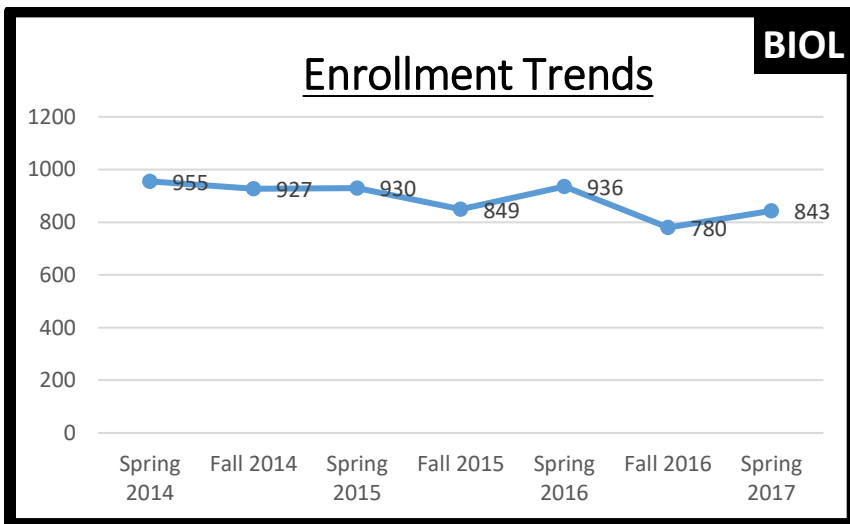
<p>Program Goal *Copy the Goals Reported from Program Review Question 10 or Appendix B, or 16-17 APU Section II or input the new/revised goal. These are suggested categories of goals.</p>	<p>Which institutional goals will be advanced upon completion? (PCCD and MC Goal Mapping)</p>	<p>Progress on Goal (indicate date next to the appropriate status for the goal)</p>	<p>Goal Detail and Measurement – How did you/will you evaluate this Goal? (If your goal was completed: How did you evaluate or determine the outcome? If your goal is ongoing: What is your measure and target? If your goal is new or revised: What is your measure and target?)</p>
<p>learning, enhance curriculum, and increase funding resources to support student learning. As new opportunities become available, the department will use assessment results and student survey results to determine ways to use these partnerships to benefit the needs of our student population to support their specific learning needs, when appropriate.</p>		<p>New Goal _____ (current date)</p>	<p>new partnerships and build/strengthen our programs to match those needs.</p>
<p><i>Other Goals</i></p>	<p>1. PCCD Goal: _____ 2. Merritt Goal _____</p>	<p>Completed: _____ (date) Revised/New: _____ (date) Ongoing: _____ (date)</p>	

III. Data Trend Analysis

Purpose: In this section, you will report, review and reflect on your program data. You may copy and paste the tables that were provided to you in your data packet via email.

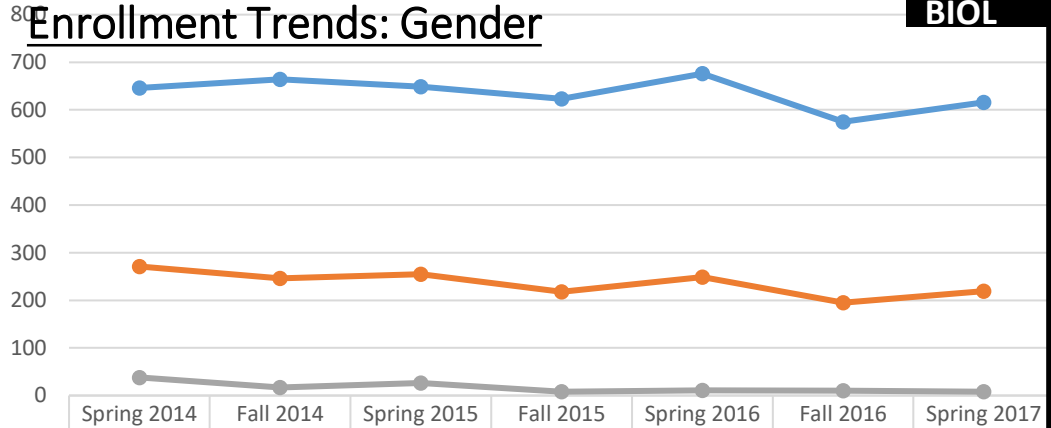
Please review and reflect upon the data for your program that was sent via email or Dropbox. You will be asked to comment on significant changes in the data and/or achievement gaps. Focus upon the most recent academic year and/or the years since your last comprehensive program review. *If you have questions or concerns regarding your data, please contact Samantha Kessler, Research and Planning Officer: skessler@peralta.edu.

Student Enrollment Demographics: (Copy/paste enrollment tables from data file)



Enrollment Trends: Gender

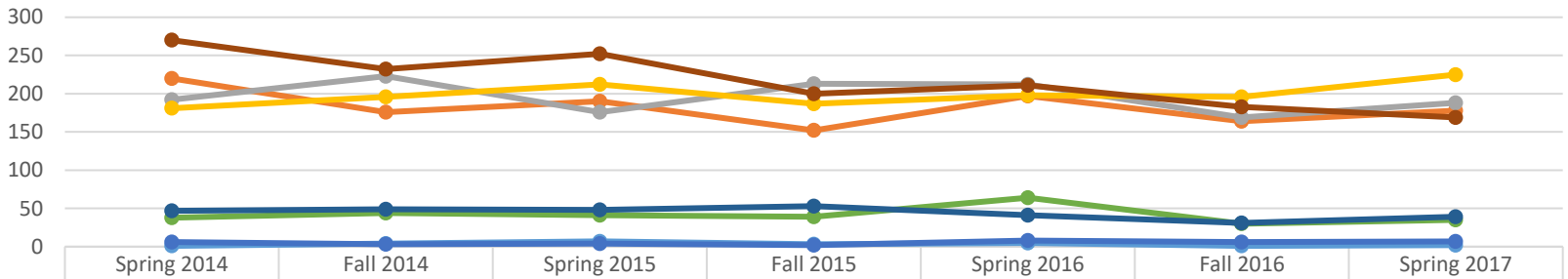
BIOL



Female	646	664	649	623	676	575	616
Male	271	246	255	218	249	195	219
Unknown/Not Reported	38	17	26	8	11	10	8

Enrollment Trends: Race/Ethnicity

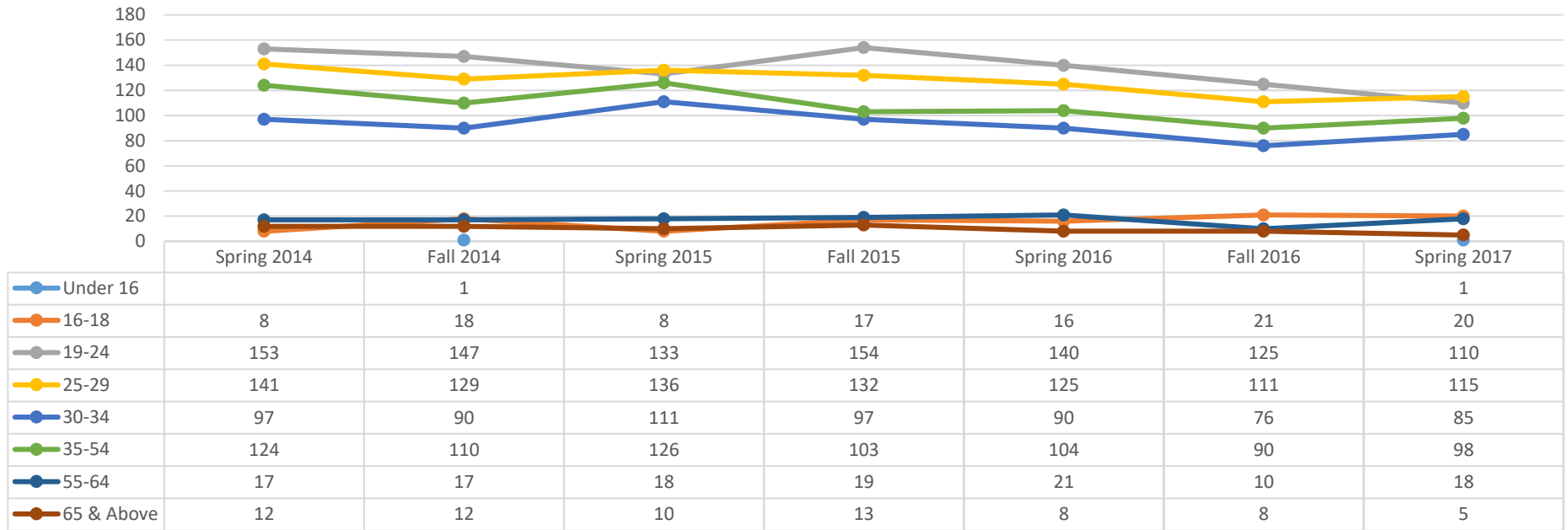
BIOL



	Spring 2014	Fall 2014	Spring 2015	Fall 2015	Spring 2016	Fall 2016	Spring 2017
American Indian	1	4	7	3	5	1	2
Asian	220	176	190	152	197	164	178
Black / African American	192	223	176	213	212	169	188
Hispanic / Latino	181	196	212	187	198	196	225
Pacific Islander	6	3	4	2	8	6	7
Two or More	38	44	41	39	64	30	35
Unknown / NR	47	49	48	53	41	31	39
White	270	232	252	200	211	183	169

Enrollment Trends: Age

BIOL



1. What changes have occurred in enrollment since 2015-2016 program review?

Overall the department has experienced a very slight enrollment decline. The reason for this is not certain and may reflect outside influences including economy strength, and other factors that drive student interest in careers related to our discipline.

Course Sections and Productivity: (Copy/paste tables from data file)

Course	Spring 2014		Fall 2014		Spring 2015		Fall 2015		Spring 2016		Fall 2016		Spring 2017	
	# Sections	Prod.	# Sections	Prod.	# Sections	Prod.	# Sections	Prod.	# Sections	Prod.	# Sections	Prod.	# Sections	Prod.
10 INTRO TO BIOLOGY	1	30.00	3	21.30	2	22.78	3	15.37	3	18.57	2	18.18	3	27.27
1A GENERAL BIOLOGY	1	21.35	1	17.88	1	11.54	1	15.58	1	9.00	1	13.27	1	11.54
1B GENERAL BIOLOGY	1	13.85											1	8.65
2 HUMAN ANATOMY	4	18.87	5	16.08	5	19.25	5	15.64	4	14.75	4	13.01	3	14.95
20A HUMAN ANATOMY & PHYS	2	26.02	3	27.27	2	29.47	3	23.62	3	19.28	5	19.50	4	21.25
20B HUMAN ANATOMY & PHYS	2	23.46	2	16.58	2	21.67	2	16.35	2	24.86	1	18.29	2	27.24
24 BASIC HUMN ANAT/PHYS	1	21.67	2	17.78	2	21.39	2	18.33	2	17.50	2	16.82	2	13.89
25 HUMAN BIOLOGY	1	17.91	1	15.50			1	15.50	1	14.00				
3 MICROBIOLOGY	3	16.19	3	18.41	3	17.94	3	14.04	3	16.36	3	15.72	2	15.66
4 HUMAN PHYSIOLOGY	2	20.49	2	17.73	2	17.27	2	19.57	3	18.47	2	16.12	3	12.86
42 BASIC PATHOPHYSIOLOGY	2	10.10	2	8.39	2	11.17	2	12.44	1	17.50	1	15.24	1	21.00
49 I/S - BIOLOGICAL SCIENCES	1		1				1		1					
60B NAT HIST MT DIABLO	1	14.15												
60C NATURAL HIST: HERPETOLOGY					1	19.70								
60D NAT HIST/FALL HERPETOLOGY							1	8.10						
61G NAT HIST: MAMMALS/BAY AREA			1	0.00										
61H NAT HIST: BUTTERFLIES/BAY AREA									1	11.86				
62E NAT HIST/SUTTR BUTTE					1	13.41								
62L ECOLOGY/CA REDWOOD PARKS	1	12.12												
62M NATURAL HISTORY/WARNER MTS.			1	6.94										
62Q Ecology of the CA Cascades											1	12.14		
64F NAT HIST/BLACK DIAMOND MINES									1	0.84				
64H NAT HIST/DON EDWARDS REFUGE					1	0.00								
64I NAT HIST/POINT REYES									1	11.30				
64L NAT HIST/ANTIOCH DUNES	1	11.64												
64N NAT HIST/MORGAN TERRITORY					1	22.26								
64Q NAT HIST/COYOTE HILLS	1	11.91												
65B NATURAL HISTORY OF ICELAND							1	18.66						
80A RAPTORS/CCA/BAY AREA			1	0.00										
80B BIRD SONGING													1	0.00
80D ECOLOGY/CALIFORNIA CONDOR									1	8.90				
Total Sections and Productivity by Subject and Term	25	19.92	28	18.26	25	19.76	27	17.17	28	17.45	22	16.47	23	17.86

1. **Please comment on changes that have occurred in productivity since the 2015-2016 program review.** (e.g. increase, decrease or no change)

Overall the department's productivity remains quite high and within reasonable target given the limitations of laboratory space for enrollment due to safety considerations (no more than 24 students in microbiology lab space, no more than 28 students in anatomy and physiology/general biology spaces). There does not seem to be significant change in productivity since the last annual program update. The 2016 program update stated a notable drop in productivity since the 2015 program review, most likely due to the lower capacity of rooms in the new science building (per recommended safety enrollment advisories for college laboratories).

Student Success: (copy/paste the course retention and course (successful) completion tables)

Course Description	Success %						
	Spring 2014	Fall 2014	Spring 2015	Fall 2015	Spring 2016	Fall 2016	Spring 2017
BASIC HUMN ANAT/PHYS	79%	73%	57%	85%	81%	74%	72%
BASIC PATHOPHYSIOLOGY	79%	82%	73%	86%	91%	67%	86%
BIRD SONGING							90%
Ecology of the CA Cascades						69%	
ECOLOGY/CA REDWOOD PARKS	83%						
ECOLOGY/CALIFORNIA CONDOR					88%		
GENERAL BIOLOGY	79%	74%	75%	63%	72%	87%	91%
HUMAN ANATOMY	70%	58%	68%	64%	71%	68%	60%
HUMAN ANATOMY & PHYS	69%	66%	65%	80%	69%	68%	73%
HUMAN BIOLOGY	81%	55%		58%	57%		
HUMAN PHYSIOLOGY	81%	88%	67%	84%	77%	79%	78%
I/S - BIOLOGICAL SCIENCES	100%	100%		100%			
INTRO TO BIOLOGY	86%	55%	56%	66%	65%	73%	70%
MICROBIOLOGY	68%	62%	62%	83%	64%	67%	75%
NAT HIST MT DIABLO	88%						
NAT HIST/ANTIOCH DUNES	96%						
NAT HIST/BLACK DIAMOND MINES					100%		
NAT HIST/COYOTE HILLS	92%						
NAT HIST/DON EDWARDS REFUGE			0%				
NAT HIST/FALL HERPETOLOGY				89%			
NAT HIST/MORGAN TERRITORY			68%				
NAT HIST/POINT REYES					92%		
NAT HIST/SUTTR BUTTE			79%				
NAT HIST: BUTTERFLIES/BAY AREA					84%		
NAT HIST: MAMMALS/BAY AREA		100%					
NATURAL HIST: HERPETOLOGY			92%				
NATURAL HISTORY OF ICELAND				62%			
NATURAL HISTORY/WARNER MTS.		67%					
RAPTORS/CCA/BAY AREA		81%					
Total Rates by Subject and Term	76%	67%	66%	75%	72%	71%	74%

Retention %								
Course Description	Spring 2014	Fall 2014	Spring 2015	Fall 2015	Spring 2016	Fall 2016	Spring 2017	
BASIC HUMN ANAT/PHYS	90%	94%	73%	92%	89%	77%	78%	
BASIC PATHOPHYSIOLOGY	85%	85%	80%	92%	91%	70%	93%	
BIRD SONGING							90%	
Ecology of the CA Cascades						100%		
ECOLOGY/CA REDWOOD PARKS	91%							
ECOLOGY/CALIFORNIA CONDOR					92%			
GENERAL BIOLOGY	82%	74%	75%	81%	72%	87%	91%	
HUMAN ANATOMY	75%	63%	77%	69%	77%	75%	68%	
HUMAN ANATOMY & PHYS	74%	72%	70%	85%	79%	78%	78%	
HUMAN BIOLOGY	94%	65%		68%	71%			
HUMAN PHYSIOLOGY	85%	92%	73%	85%	86%	81%	83%	
I/S - BIOLOGICAL SCIENCES	100%	100%		100%				
INTRO TO BIOLOGY	91%	66%	71%	76%	75%	83%	76%	
MICROBIOLOGY	80%	70%	67%	85%	79%	72%	85%	
NAT HIST MT DIABLO	92%							
NAT HIST/ANTIOCH DUNES	96%							
NAT HIST/BLACK DIAMOND MINES					100%			
NAT HIST/COYOTE HILLS	92%							
NAT HIST/DON EDWARDS REFUGE			0%					
NAT HIST/FALL HERPETOLOGY				89%				
NAT HIST/MORGAN TERRITORY			94%					
NAT HIST/POINT REYES					92%			
NAT HIST/SUTTR BUTTE			90%					
NAT HIST: BUTTERFLIES/BAY AREA					84%			
NAT HIST: MAMMALS/BAY AREA		100%						
NATURAL HIST: HERPETOLOGY			92%					
NATURAL HISTORY OF ICELAND				78%				
NATURAL HISTORY/WARNER MTS.		95%						
RAPTORS/CCA/BAY AREA		88%						
Total Rates by Subject and Term	82%	75%	74%	81%	81%	78%	79%	

1. Describe the course retention and successful course completion rates and any changes since the 2015-2016 program review

Since the retirement of two faculty who taught Human Anatomy, we have seen a decrease in retention and student success for the human anatomy courses. Since the hiring of a new full-time instructor we have seen an increase in retention and student success for the General Biology courses she has been teaching. Retention and success of other courses remained similar to the previous year. A large percentage of our faculty is adjunct status, which generally limits the amount of time outside of class that faculty can dedicate to Merritt students, as economic reality of adjunct status is that the faculty member must address other duties from other part-time or full time work outside of Merritt College. The key to increasing our retention and successful course completion rates lies in hiring more full-time faculty who will be shepherded through the tenure review process, a more rigorous and structured mentoring process than what our adjuncts currently receive through spotty professional development during flex days offered a few days per semester by the district.

2. Describe any achievement gaps present in your disaggregated enrollment, retention and successful course completion data. (Your data is disaggregated by Gender, Race/Ethnicity, Age, and student populations: DSPTS, Low Income, Foster Youth and Veterans)

No obvious changes present in disaggregated enrollment, retention and successful course completion data since the last APU submitted in Fall 2016. We still need to work towards developing events and activities to increase our STEM- transfer student population at Merritt College as our biology transfer classes do not seem to attract the African American and Hispanic/Latino students on our campus. We would like to address this problem in our department by planning augmentations and interventions to improve success in biology classes and to host events showcasing the biological sciences to increase participation. These will be taking place over the next two years if funding can be obtained to support these efforts. Some possible activities include events, such as “biology night” to showcase transfer pathways, careers in biology to the broader surrounding community. The Barbara Lee Science and Allied Health Center is an excellent venue for such events, and would provide an opportunity for the people of the surrounding communities to “discover” us, or “rediscover” us if they were previous students who haven’t been on our campus for a long while. We would like to also explore partnerships with high schools and four-year colleges to build the “teacher-teacher” connections needed to bring students to and through our classes for transfer. To help build a sense of community, we may try to implement a Peer Mentoring model so that some aspects of this program become self-supporting – alumni can come and serve as guest speakers and new students can be mentored by continuing students. We currently lack the adequate full-time faculty workforce to implement these innovations, but would like to hire more faculty so we can make these ideas reality.

Student Success in Distance Education/Hybrid classes versus face-to-face classes: (copy/paste the Distance Ed retention and course completion data here.)

1. Describe any difference in the Retention and Success of face-to-face and distance education courses.

The Biology Department and Natural History programs do not offer distance education courses.

Other program specific data. Other data could include: departmental research via survey or special projects that significantly supports the goals or future plans for the program.

IV. Aligning Program Goals, Activities and Planning

Purpose: In this section, you will align your program, department or unit goals with the Educational Master Plan goals. You will also be asked to comment on how your department, unit or program is helping the College to achieve the targets set by the Equity, SSSP and Basic Skills Plans.

1. Educational Master Plan Alignment: Please use the following matrix to demonstrate how your program goals align with the 2015-2020 Educational Master Plan Goals.

2015-2020 EMP Goals

Foundations:

1. Assess students' strengths and needs thoroughly to accelerate completion of certificates, degrees and transfer readiness.
2. Support and develop programs, curriculum and services that increase completion of courses, certificates, degrees and transfer.
3. Establish an organizational structure that promotes coordination, innovation, and accountability, and which embeds basic skills development across the campus.

Career Technical Education:

1. Develop opportunities for CTE students to engage in campus and community experiences that enhance learning and student success (program-level clubs/enterprises, activities that develop soft skills, etc.) by contextualizing and proactively engaging students.
2. Create a Merritt-wide infrastructure that streamlines and develops employer partnerships, including offering High quality internships, serving on advisory boards, and engaging in curriculum development.
3. Strengthen Merritt College's "on ramps" to our CTE pathways by enhancing distance education, dual enrollment, adult education, contract education, etc., and provide differentiated supports that ensure student success for targeted population.
4. Create proactive strategies to engage faculty, students, and employers to support program success and sustainability that increase student-level academic and career outcomes.

Transfer:

1. Establish fully functioning transfer center.
2. Acquire more and better data (Higher granularity) on transfer rates. Collect transfer data to include UC, State, and Private institutions.
3. Augment and strengthen specific partnerships with academic departments in CSUs, UCs, and privates to develop transfer pipelines.

4. Augment and strengthen support services for transfer students campus-wide.
5. Augment and strengthen support for transfer students within academic programs.

Directions: 1) input your program and department goals. 2) Identify which area of the Ed Master Plan this Goal aligns to – Foundations, Transfer and/or CTE. Describe the activities your department or program will complete to meet the goal. 5) What standard or goal do you think the activities will help the college achieve as a measurable outcome (Completion rate, degree/cert completion, transfer, remedial rates). Place and X in the standard(s) and/or goal(s) your program activity will impact.

<u>Program/ department or unit Goal</u>	<u>Foundations</u>	<u>Transfer</u>	<u>CTE</u>	<u>How does this goal or the program activities align with the Educational Master Plan Strategic Directions and/or Goals?</u>	<u>Measurable Outcomes: Institution Set Standards and IE Goals</u>					
					<u>Successful Course Completion Rate</u>	<u>Retention Rate (F to F Persistence)</u>	<u>Degree or Cert. Completion</u>	<u>Transfer</u>	<u>Remedial Rate Math (Basic Skill Success)</u>	<u>Remedial Rate English (Basic Skills Success)</u>
Example: Expand counseling COUN course delivery option to include hybrid and/or online course. (from 15-16 Program Review)	x		x	<i>The Objective of these activities is to provide student with more options and increase enrollment. Offering courses at the high school also strengthens partnerships with the high schools and can build a pipeline from the HS to Merritt to improve HS to college transition and student success.</i>	X	x				

<p>BIOLOGY: 1. Biology department will perform course content review of all active biology courses on a three-year cycle. 2. Use assessment results and student surveys to determine if new curriculum or changes in advisories or requisites should be pursued. 3. Assess SLOs in active courses, 100% on a three-year cycle.</p>		Goal 4, 5	Goal 3	<p>Many of our students are taking our courses as the prerequisites for CTE programs (Nursing, Biotech, Histotech, Genomics, Microscopy, Radiology) at Merritt College or elsewhere in the SF Bay Area. Thus, our activities align with both CTE and Transfer goals. For the latter, we intend to strengthen our transfer pathway by developing an AS-T Biology degree and enlisting the help of the campus to conduct research of our surrounding community to identify how to better develop our Biology transfer student “culture” at Merritt.</p>	X	X	X	X		
<p>BIOLOGY: 1. The Biology Department will use assessment results to identify challenges to student learning and develop strategies to improve student success by 2% in all courses that have had student success values lower than 70% in the last three years.</p>	Goal 2, 3	Goal 4, 5	Goal 3	<p>Student success is an important part of our EMP.</p>	X	X	X	X		
<p>BIOLOGY: The Biology Department will continue to maintain its existing partnerships to enrich student learning, enhance curriculum, and increase funding resources to support student learning (UCB Extension, UCB NIH Bridges programs)</p>		Goal 3, 4, 5	Goal 2	<p>We intend to use our partnerships to strengthen the pipeline for transfer students, but enrichment of student learning benefits all programs connected to our courses including the Allied Health and Biotech CTE disciplines mentioned above.</p>	X	X	X	X		

2. Student Equity, Student Success and Support Program (SSSP), and Basic Skills Target Groups: These plans analyzed student success outcomes and disproportionately impacted student populations. The chart below outlines the results of this analysis, and is a summary of the student populations and focused outcomes that the College indicated it would like to increase as a result of the Student Equity Plan (E), SSSP Plan (S), and Basic Skills Plan (B).
 - a. As a program, department or unit, review your data and describe any activities you are doing to address student equity gaps and special populations in the table below. Describe the target or focused student population, the problem/observation, the activity/intervention, and the intended outcome. How does your activity align with the College's Equity, SSSP and Basic Skills Goals (list the target group and indicator in the last box below)? In your description, please note if the activity or intervention was funded by one of these grants in the past academic year (15-16).

2015-16 Student Equity Plan, Student Success and Support Program Plan (SSSP), and Basic Skills Goal Summary

The Student Equity Plan, SSSP Plan, and Basic Skills Plans outlined goals and activities to increase the following indicators, with special focus on the student populations below:	Access (Headcount)	Successful Course Completion (All Subjects)				Basic Skills			Number of Degrees	Number of Certificates	Number of Transfers to UC and CSU
			Math Course Completion	English Course Completion	Fall to Spring Retention	BS Math Course Completion	BS English Course Completion	BS ESL Course Completion			
Males	E S	E	S								
African American	E S	E	E S	E	E			E	E S	E S	E S
Hispanic/Latino	E S	E			E			E	E	E S	E S
Native American								E	E S	E S	E
Hawaiian/Pacific Islander		E									
Foster Youth	E	E						E	E	E	E
Disabled	E										
Veterans	E										
Low Income		E									
All Students		S	B	B		E S B	E S B	S	S	S	

***S = SSSP, E=EQUITY, B=BASIC SKILLS**

Directions: 1) Describe a challenge, achievement gap or observation you made in your program data. 2) Describe an activity or intervention your program does to address the data. 3) Note which student populations this activity or intervention targets. 4) describe the intended measurable outcome of the activity. Think about which indicator, from the summary chart below, this activity will help to impact. 5) Note which Plan and Goal this activity aligns to (SSSP, Equity, or Basic Skills)

<u>Is your program planning for changes, improvements or initiatives that align with Student Equity, SSSP or Basic Skills Initiative? Please report on the PLANNING for 2017-2018.</u>				
<u>Problem, Achievement Gap or Observation (data)</u>	<u>Activity/Intervention</u>	<u>Target Student Population</u>	<u>Outcome (or intended outcome from the list of indicators above: access, course completion, retention, BS course completion, degree, cert. transfers)</u>	<u>Relevant College Equity/SSSP/BS Goal</u>
<i>Example: Lack of program diversity</i>	<i>Looking at diversity partnering with Oakland unified for pathways</i>	<i>African American and Hispanic/Latinos</i>	<i>Increase headcount/enrollment of these populations</i>	<i>SSSP and Equity Plan – Access for African Americans and Latinos</i>
BIOLOGY: Lack of students enrolled and lack of diversity in transfer classes – General Biology 1A and General Biology 1B	Strengthening STEM culture at Merritt College (to implement over the next two years, but to begin this year) Host events, such as “biology night” to showcase transfer pathways, careers	All underrepresented groups in the biological sciences All students (by community building, inviting everyone)	Increase headcount/enrollment of these populations in our transfer classes Increase the transfer rate of biology students at Merritt College	SSSP and Equity

	<p>in biology to the broader surrounding community.</p> <p>Partner with high schools and four-year colleges to build the “teacher-teacher” connections needed to bring students to and through our classes for transfer.</p> <p>Build a community of biology scholars (transfer path) with field trips, guest speakers, workshops and other events to build a “community of scholars” among biology transfer students. Incorporate peer mentoring so culture is self-sustaining.</p>			

b. Are additional resources required to facilitate the activities or interventions related to this area? If yes, make sure to discuss with your Dean.

BIOLOGY: Biology department would need support from the campus (approximately 10 hours per semester as reassigned or stipend time) for a team of biology faculty, counsellors, and other key campus personnel to begin planning and determining the budget required for campus events and activities to make the community more aware of our Biology department and the programs with which our courses are

linked. Planning may begin this year, and implementation of events in two years. For the events themselves we anticipate needing a modest budget for light refreshments and raffle prizes (Merritt swag, etc.), when hosting events in the Barbara Lee Science and Allied Health Center to members of our surrounding areas to learn more about our classes, programs, and transfer-related opportunities. For the students already taking classes here, we will need some small funds (to be determined) to build a “culture of transfer” by hosting lunches featuring guest speakers from nearby universities (careers in Biology), or field trips to biology-related laboratories or research centers. At this time we are only asking for the campus to support the planning effort.

3. Student Equity, Student Success and Support Program (SSSP), and Basic Skills Funding: In addition to identifying focused student populations and targets for improving student outcomes, these plans outlined activities the College would engage in to improve the indicators above. **Did your program receive funding from any of the sources below in 2016-2017? What was the outcome of this funding?**

No. There are no outcomes to report as the department did not receive any funding from these sources.

<u>Please report on the outcomes from 2016-2017 funding.</u>				
<u>Plan</u>	<u>What was funded?</u>	<u>Was this part of a larger activity or initiative?</u>	<u>What need did this address?</u>	<u>What measurable outcome resulted in this funding?</u>
<u>Student Equity Plan</u>				
<u>SSSP Plan</u>				
<u>Basic Skills Plan</u>				

<u>Strong Workforce</u>				
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V. Curriculum and Assessment Status

Purpose: In this section, you will plan for curriculum review and discuss assessment plans and findings. If your Program, Department or Unit does not have a curriculum component, please put N/A. You should reference the *CurricUNET META*, and *Taskstream*.

Curriculum Review Plan

In preparation for the implementation of structured curriculum review in the 2018-2019 academic year, departments and programs are being asked this year to submit curriculum review plans, indicating when all courses and programs shall be reviewed. One-third of non-CTE curriculum should be reviewed each year, resulting in all non-CTE courses and programs being reviewed within the three-year program review cycle. Half of CTE curriculum should be reviewed each year, resulting in all CTE courses and programs being reviewed every two years in conjunction with the program review/annual program update cycle.

Directions

All department chairs, program directors, and full-time faculty members should have access to CurricUNET META to view the active curriculum inventory. If you don't have access, contact LaShaune Fitch, Curriculum Specialist, at lfitch@peralta.edu.

- List all active courses, certificates, and degrees.
- Indicate which year each course, certificate, or degree shall be reviewed (including deactivations and reactivations).
- Add more rows to each table as needed.

Course Number	Course Name	2018-2019	2019-2020	2020-2021
<i>Examples:</i> <i>ART 1</i>	<i>Introduction to Art History</i>	<i>X</i>		
<i>ART 4</i>	<i>History of Modern Art</i>		<i>Deactivate</i>	
<i>ART 7</i>	<i>History of African-American Art</i>			<i>Reactivate</i>
BIOL 001A	General Biology			X
BIOL 001B	General Biology			x

BIOL 002	Human Anatomy			X
BIOL 003	Microbiology			X
BIOL 004	Human Physiology			X
BIOL 005	Botany			X
BIOL 009	Marine Biology			X
BIOL 010	Introduction to Biology			X
BIOL 013	Principles of Ecology			X
BIOL 013L	Principles of Ecology and Sustainable Systems Lab			X
BIOL 015	Environmental Biology			X
BIOL 020A	Human Anatomy and Physiology			X
BIOL 020B	Human Anatomy and Physiology			X
BIOL 022A-B	Human Dissection Laboratory			X
BIOL 023	Introduction to the Human Body			X
BIOL 024	Basic Human Anatomy and Physiology			X
BIOL 025	Human Biology			X
BIOL 029	Biology of the Living World			X
BIOL 035	Introduction to Microscopy			X
BIOL 036	Human Genetics			X
BIOL 037	Genomics Theory			
BIOL 038	Practical Genomics			
BIOL 042	Basic Pathophysiology			X
BIOL 047	Strategies for the Biology Teaching Assistant		X	
BIOL 048NU	Waterbirds of Central California and the Bay Area		X	
BIOL 048OC	Natural History of Costa Rica, Part I		X	
BIOL 048OZ	Natural History of the Maritime Provinces and Newfoundland, Canada		X	
BIOL 048PC	Natural History of Switzerland and the Swiss Alps		X	
BIOL 049	BIOL 049		X	
BIOL 050	Natural History: Geotectonic Biology of the Greater Bay Area		X	
BIOL 053	Mathematic Applications for Field Biology		X	
BIOL 054	Field Notes and Field Journals for the Master Naturalist		X	

BIOL 060A	Natural History of the Bay Area: The State Parks, Part I		x	
BIOL 060A-H	Natural History of the Bay Area		x	
BIOL 060B	Natural History of the Bay Area: Mt. Diablo State Park		x	
BIOL 061B	Natural History: Spring Herpetology of the Bay Area		x	
BIOL 061C	Natural History of the Bay Area: Herpetology		x	
BIOL 061D	Natural History: Fall Herpetology of the Bay Area		x	
BIOL 061E	Natural History of the Tide Pools of the Greater Bay Area		x	
BIOL 061F	Natural History: Freshwater Fishes of the Greater Bay Area		x	
BIOL 061G	Natural History: Mammals of the Greater Bay Area		x	
BIOL 061H	Natural History: Butterflies of the Greater Bay Area		x	
BIOL 061I	Natural History: Bryophytes of the Greater Bay Area		x	
BIOL 061K	Natural History: Lichens of the Greater Bay Area		x	
BIOL 061M	Natural History: Insects of the Greater Bay Area		x	
BIOL 061R	Nudibranchs of the Greater Bay Area		x	
BIOL 062A-H	Natural History of California		x	
BIOL 062D	Natural History of Devils Postpile and the Eastern Sierra		x	
BIOL 062E	Natural History of the Sutter Buttes		x	
BIOL 062F	Natural History of the Klamath-Siskiyou Mountains		x	
BIOL 062J	Natural History of Mt. Whitney and the Southern High Sierra		x	
BIOL 062L	Ecology of California Redwood National and State Parks		x	
BIOL 062P	Ecology of Mineral King, Sequoia National Park		x	
BIOL 062Q	Ecology of the California Cascades and Mount Shasta		x	
BIOL 062S	Natural History of the Islands of California		x	
BIOL 062T	Ecology of Mono Lake and the Mono Craters		x	

BIOL 062U	Natural History of the Giant Sequoia in Yosemite and Sequoia/Kings Canyon National Parks		x	
BIOL 062V	Ecology of the Mammoth Lakes Sierra and the Ritter Range		x	
BIOL 062W	Natural History of the Ice Age National Scenic Trail and Ice Age National Scientific Reserve, Wisconsin		x	
BIOL 062X	Natural History of Headwaters Forest		x	
BIOL 062Y	Natural History of Arches National Park		x	
BIOL 063A-H	Wildlife of North America		x	
BIOL 064E	Natural History of Ano Nuevo State Park		x	
BIOL 064F	Natural History of Black Diamond Mines		x	
BIOL 064G	Natural History: Parklands of the Solano Land Trust		x	
BIOL 064H	Natural History of Don Edwards San Francisco Bay National Wildlife Refuge		x	
BIOL 064I	Natural History of Point Reyes National Seashore		x	
BIOL 064J	Natural History of the Jepson Prairie	x		
BIOL 064K	Natural History of the McLaughlin Reserve	x		
BIOL 064L	Natural History of Antioch Dunes	x		
BIOL 064M	Natural History of the Mt. Hamilton Reserve	x		
BIOL 064N	Natural History of Morgan Territory	x		
BIOL 064O	Natural History of Grizzly Island	x		
BIOL 064P	Natural History of Salt Point State Park	x		
BIOL 064Q	Natural History of Coyote Hills Regional Park	x		
BIOL 064R	Natural History of Mt. Tamalpais State Park	x		
BIOL 064S	Natural History of Mt. St. Helena	x		
BIOL 064T	Natural History of San Bruno Mountain State Park	x		
BIOL 065C	Natural History and Gaucho Culture of Uruguay	x		
BIOL 065D	Natural History of New South Wales, Australia	x		
BIOL 065E	Natural History of the Japan Alps	x		
BIOL 065F	Natural History of Tahiti (French Polynesia)	x		
BIOL 070D	Natural History of the Owyhee River and the High Desert of Eastern Oregon	x		

BIOL 070E	Natural History of the Ozark National Scenic Riverways and Ozarks of Missouri	x		
BIOL 080A	Raptors of Central California and the Bay Area	x		
BIOL 080A-H	Birds of Central California and the Bay Area	x		
BIOL 080B	Bird Singing: The Ecology of Bird Songs and Identification by Ear	x		
BIOL 080C	Fundamentals of Ornithology and Birding in Central California/Bay Area	x		
BIOL 105	Pinnacles Natural History	x		
BIOL 260	Biology Success Skills	x		
BIOL 348NB	Biology Review for Pre-Nursing Students	x		
BIOL 802A	Birds of Southeast Arizona	x		
BIOL 848 QA	Natural History of Switzerland Field Study I	x		
BIOL 848 QD	Natural History of the Swiss Alps Field Study II	x		
BIOL 848NI	Natural History of Papua New Guinea – Field Studies	x		
BIOL 848NO	Natural History of Hokkaido, Field Studies 1	x		
BIOL 848NP	Natural History of Hokkaido, Field Studies 2	x		
BIOL 848NQ	Natural History of Costa Rica, Part III	x		
BIOL 848NT	Natural History of Newfoundland, Canada-Field Study 2	x		
BIOL 848NU	Natural History of Costa Rica: Pacific Northwestern Region	x		
BIOL 848NV	Cadaver Dissection	x		
BIOL 865B	Natural History of Iceland Field Study	x		
BIOL 870A	Natural History of the Owyhee River and the High Desert of Eastern Oregon-Field Study I	x		

Program Type	Program Name	2018-2019	2019-2020	2020-2021
<i>Certificate of Proficiency</i>	<i>Art Foundation</i>	X		
Certificate of Proficiency	Bay Area Master Naturalist	X		
Certificate of Proficiency	Natural History	X		

Upcoming Curriculum Developments:

BIOLOGY: We are still exploring the possibility of building a Biology transfer degree (AS-T) in accordance with the policies of the California Community Colleges Chancellor's Office (CCCCO) Transfer Model Curriculum. However due to recent retirements in the department and delays in hiring new full-time faculty, we did not spend much time on this project last year as intended.

NATURAL HISTORY PROGRAMS in general: New courses are always being developed which continues the availability of potentially viable (by enrollment) courses in a broad range of areas geographically (e.g., Iceland and its geographic importance) and specifically to organisms, such as the California Condor, coming back from the brink of extinction. Examples of planned additional courses are Islands of California, Yosemite Valley, Headwaters Forest, Ice Age Trail in Wisconsin. However the program certificates are going to be modified in upcoming semesters to address the issue of scheduling and difficulty in students completing the certificate within a reasonable (2 year) period of time. The faculty are working together this semester (Fall 2017) and will continue through the Spring 2018 semester to develop a modified program and create new certificates, possibly with collaboration with Environmental Management (under the Landscape Horticulture department). All the instructors developing curriculum in the Natural History discipline are adjunct faculty. They would benefit from some load/reassign time to develop curriculum. As some of these certificates will be eligible as CTE, we hope some of their hours working on curriculum could be covered by Strong Workforce funds.

Special comments from the faculty with regard to **The Bay Area Master Naturalist Program**. The nature of the classes offered by this program require small groups, and the administration insists on enrollment of 25 students or more in any course for it to avoid cancellation. This number of students (25 or more) is impossible to instruct in the field. Years of experience has taught the lead Natural History faculty member, Hank Fabian, that learning wanes at a maximum of 15 students. There are several reasons for this: animals move, trails are narrow, students cannot hear, and the students, who do not feel they are getting anything out of the field lecture, wander off making it difficult for the instructor to keep track of the class. There is also a safety element at play here. Revamping the program is necessary which would require combining classes and having separate labs as field trips. This change however, may also have its own consequences as part of the appeal of our courses is the fact that they often meet for only one weekend – especially those that are one half unit. This is another issue that is being worked out as the adjuncts in Natural History meet to modify their curriculum.

Student Learning Outcomes Assessment

Use the following table to document the results of the student learning outcomes assessment completed in 2016-2017. Please discuss which courses and PLO's were assessed, the results, changes that were made or plan to be made.

Learning Outcomes Assessed in 2016-2017		Results	Changes Made (or to be made)	Status (Completed or planned date)
Course/Program	Learning Outcome Assessed			
BIOL 001A	Apply knowledge of cell biology, genetics, organ systems, and animal diversity to support learning in advanced biological, medical, pharmacy, and veterinary studies.	<p>A total of 20 students' pre- and post- course questionnaires were analyzed. One student in my group of 21, that completed the course, missed the pre-course survey so that questionnaire was not included in the analysis (See attached Excel file for tables and details on the questions included in the questionnaire). The itemized statistical analysis of the questionnaires pre- and post- course revealed that:</p> <ul style="list-style-type: none"> -In average, students got 59.5% correct answers pre-course, compared to a 93% post-course. -The percentage of students that answered 80% of the 10 questions correctly pre-course was 25% and after-course was 95%. -Overall, questions post-course were answered in more detail even if the student had provided correct answers in the pre-course questionnaire. -By reviewing how clearly the students answered the questions, it appeared to me that the topics that presented more difficulty for the students post course were: differences between DNA and RNA, and the precise definition of proteins and protein structure. 	Faculty will ask/require the DSPTS students to work closely with a dedicated tutor as closely as possible to provide them with a better learning experience. Faculty will ask the student(s) to keep a log of tutoring time that should be signed by tutor(s) in the Learning Center.	completed

BIOL 001A	Relate lab procedures to understanding of cellular processes and body systems.	<p>All of the students were very engaged in this new laboratory as they were curious about finding GMOs' DNA in three types of food that we tested.</p> <p>Out of the nineteen students 18 turned in the lab report and only one student missed two questions. This means that 89% of the students obtained the totality of points in their lab report.</p>	<p>-Faculty will add a laboratory that includes DNA extraction, electrophoresis DNA visualization, and the use of molecular models for DNA and RNA.</p> <p>1) Faculty would like to use the 'GMO investigator kit' that uses PCR and DNA electrophoresis to test for the presence of two different GMO-associated DNA sequences usually present in our plant derived food.</p> <p>2) Faculty would include molecular models of DNA and RNA that the students can manipulate during the lab.</p> <p>For the new lab to visualize and model DNA/RNA molecules I would need the GMO investigator kit from BioRad that costs \$234 + tax</p> <p>The molecular model DNA discovery kit can be purchased from Carolina \$325 + tax (2 for all the class)</p> <p>And the Molymod® Advanced RNA Model Set from Carolina \$51+ tax each (1 per group, for 6 lab groups)</p>	Spring 2017 (completed and ongoing)
BIOL 001A	Catalog information, think independently, and solve critical thinking problems.	<p>A total of 19 students gave their presentations and 89% obtained more than 30 points over 40.</p> <p>This is an activity that the students enjoy as they get to actively research, learn and interpret scientific news in a variety of scientific topics. Ten minutes was a sufficient amount of time for their presentation, most of the students rehearsed before hand as suggested and used power point slides.</p> <p>The overall students group demonstrated that they could understand and interpret biological concepts and scientific literature as the instructor or their peers posed questions about</p>	<p>Faculty will research on how to request that the library expands accessibility to databases or research magazines that the students can use for their assignments. Students usually have free access to the summary of the research papers but not to the complete articles.</p>	Fall 2017

		<p>the subjects at the end of the presentations.</p> <p>Some of the topics that were developed included: Bioluminescence, brain-gut axis, the gut as a second brain, nanoparticles as medical and drug devices, CRISPR-CAS9 gene editing, amongst others.</p>		
BIOL 001B	Demonstrate the relationships of species, and explain the history of life in terms of the evolutionary mechanisms of mutation and natural selection at various levels.	<p>A total of 14 students' pre- and post- course questionnaires were analyzed. (See attached pdf file for tables and details on the questions included in the questionnaire). The itemized analysis of the questionnaires pre- and post-course revealed that:</p> <ul style="list-style-type: none"> -In average, students got 33% correct answers pre-course, compared to a 74% post-course. -The percentage of students that answered 80% of the 10 questions correctly pre-course was 0% and after-course was 64%. -In general, questions post-course showed that the students had more clarity while expressing concepts and a better usage of the biological terminology. -The questions related to concepts in Evolution, species, and natural selection, specifically questions 2,5 and 9, showed an overall improvement, since at least 71% of the students were able to correctly answer these concepts in the post-course survey. -By reviewing how clearly the students answered these questions, the concepts that presented more difficulty for the students in the post-course survey was the definition of fitness of a species and natural selection. 	<p>Faculty will use more interactive computer simulation programs where the students can see real life cases of the action of natural selection in species of plants or animals.</p> <p>Faculty will also use more concept-map exercises so that the students connect concepts like species fitness, natural selection and evolution.</p>	Spring 2018
BIOL 001B	Examine and explain the exchange of biomass and energy at various ecological levels, and identify the diverse forms of plants, fungi,	A total of 14 students' pre- and post- course questionnaires were analyzed. (See attached pdf file for tables and details on the questions included in the questionnaire). The itemized	Faculty will acquire and use more of the fresh specimens of unicellular and multicellular algae and other fresh cultures of unicellular Protists so that the students	Spring 2018

	protists and microbes in the context of their ecological roles.	<p>analysis of the questionnaires pre- and post-course revealed that:</p> <ul style="list-style-type: none"> -In average, students got 33% correct answers pre-course, compared to a 74% post-course. -The percentage of students that answered 80% of the 10 questions correctly pre-course was 0% and after-course was 64%. -In general, questions post-course showed that the students had more clarity while expressing concepts and a better usage of the biological terminology. -The questions related to concepts in Ecology, plants, and microorganisms, specifically questions 3,4,7,8 and 10, showed an overall improvement, at least 57 or 79% of the students were able to correctly answer these concepts in the post-course survey, depending on the question. -By reviewing how clearly the students answered these diverse questions, it appeared to me that the topic that presented more difficulty for the students post course was related to the characteristics of the group Protista. 	can better appreciate the variety of organisms that form this group. Faculty will also incorporate a laboratory that includes the use of DNA or protein sequences to establish phylogenetic relatedness in plant or animal species, that will also illustrate for the students how modern taxonomic groups are established.	
BIOL 001B	Catalogue information, think independently and solve critical thinking problems.	<p>A total of 14 students' gave their presentations and 13 obtained more than 25 points over 30.</p> <p>This is an activity that the students enjoy as they get to learn the latest developments and scientific news in a variety of scientific topics. Fifteen minutes resulted to be a good amount of time that they learned how to properly use, most of the students rehearsed their presentation and used power point slides.</p> <p>The overall students group demonstrated that they could understand and interpret biological</p>	Faculty will research on how to request that the library expands accessibility to databases or research magazines that the students can use for their assignments.	2018

		<p>concepts and scientific literature as the instructor or their peers always asked questions about the subjects at the end of the presentations.</p> <p>Some of the topics that were developed included: Species interactions, antibiotics resistance and new drugs discoveries, ecological implications of plastics, new anti-malarial vaccines amongst others.</p>		
BIOL 002	Differentiate types of cells and tissue and analyze their functions.	<p>Question #26 was the identification of Simple Squamous epithelial tissue. 77.7 % of the students named the type of tissue and its function. Question #27 was Areolar Connective Tissue. 61% of the students gave the correct response. Question 28 was Reticular Connective Tissue. 38.8 % with the correct response. Question 29 was Pseudostratified Ciliated Columnar epithelial tissue. Students with the correct answer was 59%</p>	<p>1. Use of a camera on the microscope projecting the image of the slides on the white board during class allowing faculty to explain the details of the tissue and its function to the class as a whole. 2. Asking for additional microscope slides as needed so each student has the tissue slide to view through their own microscope. 3. Requesting an Instructional Aide for the lab period to assist in getting around to all the students, especially those having trouble using the microscope. 4. Requesting that the microscopes are serviced on a regular basis so they are in good working order for the students. 1. Camera that attaches to a trinocular microscope \$200.00 2. Replace missing part to the trinocular microscope the biology department loaned to Biotech \$300 3. Additional slides so each student has one \$ 150 4. Instructional Aide for 4 hours/week for 16 weeks \$1500.00 5. General microscope maintenance \$500.00</p>	2018
BIOL 002	Differentiate types of cells and tissue and analyze their functions.	<p>Out of 28 students, 23 scored 100% 3 scored 75-85%</p>	<p>Struggling students would benefit significantly from 1:1 support from instructor AND tutor as well as additional access to slides and models. All students will be required to come to one office hour of instructor prior to each test AND visit course</p>	2018

			tutor for support. Funding request is to allow for department tutor with access to additional set of slides and models	
BIOL 002	Describe the anatomical structure and basic organization of the human body systems and predict effects of disease, injury and aging.	22 of 29 students successfully completed the assignment. 19 students completed all 5 of the criteria successfully. 2 students completed 4 ½ of the criteria successfully. 1 student completed 4 of the criteria successfully.	This assignment has some variability built into its premise. Right now faculty will continue to use it “as is”. They will change it when they feel the students are not gaining any knowledge or skills from doing it. The students will become more aware of the many diseases and disorders the human body will possibly be subjected to throughout a lifetime. This applies to their own personal health as well as their patient’s health. They will recognize how different diseases or disorders affect different organ systems at the organ, tissue and cellular level.	2018
BIOL 003	Demonstrate comprehension, synthesis, critical analysis, and recall of the content and concepts which are the foundation of modern microbiology as presented through lecture and college-level textbook reading.	Results: On the first exam, the students’ scored an average of 60% on the exam, and 50% of the students’ answered the bonus question correctly.	1. More practice questions during class. 2. A practice test that better reflects the actual test. 3. Encourage struggling students to come to office hours.	2018
BIOL 010	Compare and contrast features of living systems that acknowledge a common origin while recognizing evolutionary differences.	70% of students obtained a passing grade in the multiple choice exam (3rd exam, close to end of course).	At the end of the class review the content using a personalized clicker system for students to have an opportunity to review the material right before the lab to increase participation, open an opportunity to discuss misunderstandings and identify students who are having difficulty with the course material. Also, utilize embedded tutors during the class so that they can address individual students' questions or areas of difficulty.	2018

BIOL 020A	Identify and explain components of basic biochemistry and cellular biology as they relate to the functioning of the human body	<p>Four instructors, Em Segmen , Maria Suarez, Miguel Angeles and Nancy Rauch, gave the assessment exam to their students. For Em Segmen's class, the class average was 84% with 45 students taking the exam. In Maria Suarez's class the average was 50% with 21 students taking the exam. Miguel Angeles' class averaged 59% with 30 students taking the exam. For Nancy Rauch's class, the class average was 73% with 35 students taking the exam. The class averages, when weighted by the number of students receiving that grade, averaged out to 70%.</p> <p>Instructor McCray: Exceeded standard: 42 out of 69 students filled in the protein paragraph entirely correctly or missing one word (scored 90-100%). Met standard: 2 students answered the protein fill-in question missing only 2-3 words (scored 70% to 90%) 44 out of 69 students met or exceeded the standard (64% of the class) Did not meet standard: 21 students missed more than 3 words (scored less than 70%) in the protein fill-in question, 4 students left the question blank. 25 students out of 69 did not meet the standard (36% of the class).</p>	Students will be able to better learn the subject of anatomy and physiology if they had easy access to tutors in the Learning Center. Supporting the Learning Center will increase student learning. Also, in the case of Rauch's class, some of the topics being assessed were not included on the final exam which meant that they weren't studied at that time. Rauch will evaluate whether the topics on the final exam should be amended. In addition, models relating to the topics would help increase understanding. In particular, Suarez would like to have the animal cell model item # 563957 from Carolina Biological Supply in sufficient number for her class.	2018
BIOL 020A	Relate laboratory models, specimens, procedures, and data to understanding of normal and abnormal functioning of body systems.	Item analysis was performed on the student Scantrons. The results were that 70% of the questions were answered correctly. The criteria for success were met, but not by a lot!	It is essential that our microscopes be in good working order so that the students have the best image of the slides possible and that there is no frustration working with the microscopes. We need to be able to hire a microscope specialist to check, clean and repair our microscopes every year since they get a lot of use from all our biology classes. In addition we need to replace broken slides and update our slide collection constantly.	2018

BIOL 020A	Relate laboratory models, specimens, procedures, and data to understanding of normal and abnormal functioning of body systems	The % correct for each assessed question was tallied and the average for all questions determined. The percentage of correct responses for the questions involving microscope analysis and understanding of tissue specimens was 74%.	It is very important for students to know the microscopic anatomy of the organs of the body. The functioning of the organ is based on its structure. Microscopic anatomy is a very important aspect of this structure. In order for students to study this aspect of anatomy we need to have our microscopes in good working condition and we need keep up and in fact expand our microscope slide collection. We need a budget that allows us to have maintenance performed on our microscopes every year or so, and we need to be able to buy more slides to replace broken ones and to update our collection. It is also important that our microscope cameras for projecting images of the slides to the students, be kept in good working order and that we have a sufficient number of these cameras	2018
BIOL 020B		For Lab Exam 2 the results were as follows: Number of students who answered 90-100% correctly: 12 Printed on: 10/22/2017 2:46:16 AM Number of students who answered 80-89% correctly: 6 Number of students who answered 70-79% correctly: 10 Number of students who answered 60-69% correctly: 5 Number who answered 50-59% correctly: 3 Number who answered less than 50% correctly: 3 For Lab Exam 3 the results were as follows: Number of students who answered 90-100% correctly: 12 Number of students who answered 80-89% correctly: 5 Number of students who answered 70-79% correctly: 2 Number of students who answered 60-69% correctly: 7 Number who answered 50-59% correctly: 4 Number who answered less than 50% correctly: 8	The room in which faculty taught this class had only 3-4 models for each topic, giving each student very little time individually to handle and learn from the models. Since the lab exams refer heavily to structures identifiable from lab models, students were not as successful as the faculty thought they would have been in linking structure to functions if they had adequate models in the classroom. Faculty would like to see the lab rooms equipped with full sets of anatomy models so that individual students have opportunities to spend meaningful time in class working with them. The models range in price from \$200 to \$3000 each, so estimated cost to fully stock each classroom is \$150,000 over the next few years.	2018

BIOL 020B	Catalog information, think independently, and solve critical thinking problems.	For Lab Exam 2 the results were as follows: Number of students who answered 90-100% correctly: 12 Printed on: 10/22/2017 2:46:16 AM Number of students who answered 80-89% correctly: 6 Number of students who answered 70-79% correctly: 10 Number of students who answered 60-69% correctly: 5 Number who answered 50-59% correctly: 3 Number who answered less than 50% correctly: 3 For Lab Exam 3 the results were as follows: Number of students who answered 90-100% correctly: 12 Number of students who answered 80-89% correctly: 5 Number of students who answered 70-79% correctly: 2 Number of students who answered 60-69% correctly: 7 Number who answered 50-59% correctly: 4 Number who answered less than 50% correctly: 8	Students can increase their learning with support. I can see two actions that will help improve student success. A major support for students is having access to good tutoring at the Learning Center. The Learning Center has very good tutors in Biology now. This must be maintained and perhaps extended. Hiring professional tutors to oversee tutoring and be a continuous presence at the Learning Center has been very effective for my students. In addition, students are aided by having copies of the textbook and lab manual in the library, including having enough copies so they can borrow the books on 3-day loan.	2018
BIOL 020B	Relate laboratory models, specimens, procedures, and data to understanding of normal and abnormal functioning of body systems.	All 27 students participated in this 50 points graded assignment. 23 students answered 8 out of 10 questions correctly. Therefore 85% students got their answers correct.	Getting histology slides for the normal microanatomy of the bone as well as the osteoporotic bone would help in comparison and understanding of the micro anatomy and structurally changes, in a much better way. Quite a few classes share these slides and many of them are outdated, under stained and broken. Additionally, at present there are no 3D models to explain the osteoporotic changes that occur in the bone anatomy. I strong recommend that these types of m0dels should be made available. As it will greatly enhance the student's ability to perceive the specific function of that tissue/organ. Thereby making the knowledge of Anatomy / Physiology, both interesting and easy to retain. Faculty recommends more input by adjunct	

			<p>faculty regarding selection and purchase of new models for the class. For teaching Physiology there should be relevant and new DVDs available to explain the functioning of a particular tissue. Students prefer visual learning to didactics and they tend to understand and recall them better.</p> <p>It would also be beneficial if the college counsellors have some sort of liaison with the biology instructors, so as to correctly counsel their students regarding the total work load and the content of the course.</p> <p>Students tutoring / coaching should also be arranged for those students who need individual assistance.</p>	
BIOL 020B	Utilize scientific/medical textbooks for understanding body structure and functioning	<p>For Lab Exam 2 the results were as follows: Number of students who answered 90-100% correctly: 12 Printed on: 10/22/2017 2:46:16 AM Number of students who answered 80-89% correctly: 6 Number of students who answered 70-79% correctly: 10 Number of students who answered 60-69% correctly: 5 Number who answered 50-59% correctly: 3 Number who answered less than 50% correctly: 3 For Lab Exam 3 the results were as follows: Number of students who answered 90-100% correctly: 12 Number of students who answered 80-89% correctly: 5 Number of students who answered 70-79% correctly: 2 Number of students who answered 60-69% correctly: 7 Number who answered 50-59% correctly: 4 Number who answered less than 50% correctly: 8</p>	<p>Students demonstrated ability to memorize textbook information linking number ranges to abbreviations representative of physiologic diagnostics (lung volumes in the case of this exam), however they struggled when presented with questions asking for the relevance or "plain" description of what these numbers represent or their relevance (to a potential patient). Faculty will be developing more practice for students to link these published numeric ranges to real-world applications, offer more opportunities to write short answer responses requiring more than just numeric answers or abbreviations - an answer that anyone could understand regardless of whether or not they had any science courses, a description "your granny" or "your nephew" would understand. Describing physiological processes and diagnostics in simple ways, and translating numeric results to words</p>	2018

			and relevance, are skills many of these students will need to apply in their future careers. More activities and assignments along these lines will be necessary to bring them to "exceed criteria" for this SLO	
BIOL 024	Relate introductory laboratory models, slides and specimens, to understanding of body systems	<p>Studying anatomy requires for the student to recall learned terms. To test this, we place stickers on models and ask them for the term. We encourage them to engage in retrieval exercises such as repetitive labelling or utilizing a flashcard system. Coloring activities are encouraged. Links to study apps are presented. We also make youtube study videos available. In class, we have students in groups draw the bones with muscles life size. They have to label the terms described during the lecture. We also quiz the class to prepare them for the exam. The goal of this class is two-fold. First we strive to educate students proficiently about their own body, so that they can better take care of themselves and their families. Secondly, we have around 80% of the students who are interested to work professionally in healthcare. For them, it is important to be well prepared for upper division A&P classes. My focus for this assessment is the academic proficiency of the 2nd group to prepare them well for upper division classes. It is my goal that 80% of the students pass the 2nd mid-term, which focuses on the musculoskeletal anatomy, with an 'A' (90% or more).</p> <p>Printed on: 10/22/2017 9:55:54 AM Over the past two semesters, 56% resp. 68% of the students passed with 90% or more.</p>	To implement improvements that achieve a higher success rate, faculty need help in the classroom. 1) faculty don't have enough models for each classroom and it takes quite some time to gather the necessary items on a given day. Help with the setup would be welcomed. 2) more important, help would be in the classroom, particularly during Lab, when faculty could have an assistant, who attended the class before or has prior anatomy knowledge, help faculty work with the students one-on-one so they can deepen their understanding of the material. Students today need more personalized help in classroom.	2018
BIOL 042	Describe common disorders of selected body systems in terms of pathogenesis, etiology, clinical manifestations, common	To assess this SLO, I will give take home exams which includes multiple choice and essay questions that test the students' knowledge of the concepts being presented on	To use more flow charts so the students will learn more effectively how to integrate material from different subjects.	2018

	diagnostic tests, complications, and treatment modalities.	a particular subject or subjects. The multiple choice questions are organized so that the student uses critical thinking to answer many of these questions. Along with the essay portion of the test, the student will be expected to “diagnose” a patient’s disease and “prescribe” a suitable course of treatment for the disease. • The multiple choice portion of the exam includes twenty nine multiple choice questions with seven essay questions. Both types of questions test the students’ ability to assimilate many concepts to solve real world problems Results: On the first exam, the students’ scored an average of 90% on the exam.		
BIOL 080B	The Ecology of Bird Songs and Identification by Ear Compare and contrast, then identify songbird order members from classroom instruction and by studying their vocalizations in the field - with students focusing on distinguishing unique elements specific to birds' songs and calls.	All students were able to meet the expectations: at least 10 for beginning students and 95% of advanced students were able to identify 25 or more birds. Small oral quizzes in the field supported the findings.	Instructor has found that learning outcomes expressed to students, then supported with visual, oral in classroom and field exposure improves short and long term memory. Two settings enhances and increases learning to meet outcome. Goal is to have classroom material and field experience.	Next time offered

1. What meaningful dialogue takes place in both shaping and assessing course and program level outcomes? Where can one find the evidence of the dialogue?

In department meetings (2 or 3 per semester), discussions involving assessment are encouraged at the course level with individuals reporting out from each cluster, depending on who attends the meetings. All department meeting agendas and minutes list assessment and SLO as an item for discussion. Between department meetings, instructors teaching multiple sections of a common course are expected to meet and form their assessment plans, compare results, and then share the groups’ findings at our next meeting as time permits. Emails are sent between individuals when face-to-face meetings cannot take place, and most of those include the Department Chair on the CC line as evidence that dialogue is taking place.

2. Attach the completed Fall Schedule Assessment Planning Template (due to CDCPD mid-September).
The report SLOAC provided to the BIOL/CHEM is attached but it should be noted that the report was pulled from Taskstream, which did not include the most updated SLOs for the majority of the courses that had been updated during the 2016-17 academic year and was missing corresponding assessment data for a number of reasons as of the time of this writing. The attached Fall Schedule Assessment Planning Template has been included in this APU but should be considered not up to date. The BIOL/CHEM department will likely join the pilot CurricUNET assessment module data entry effort during the Fall 2017 and Spring 2018 semesters, which will hopefully resolve some of the conflicting records as we move away from Taskstream as our primary data inventory tool for assessment

Course+M16 A1:M18A1: M28M1A1:M 13A1:M:	Course Title	Course Stat	# LOS	1	2	3	4	5	6	7	Assessed?	PLAN for 2017-18 Academic Year
BIOL 001A	GENERAL BIOLOGY	Active Fall 2017	3	16-17	16-17*	16-17	X	X	X	X	Y	Maria Suarez will assess new SLOs for BIOL 1A Fall 2017=18 Academic year.
BIOL 1B	GENERAL BIOLOGY	Active Spring 2017	3	16-17*	16-17*	16-17*	X	X	X	X	Y	Maria Suarez will assess new SLOs for BIOL 1A Spring 2018 (only offered in Spring)
BIOL 002	HUMAN ANATOMY	Active Fall 2017	3	16-17	0	16-17	X	X	X	X	Y	Melinda Downing, Javier Silva and Nadia Fouladian-Tabriz will be assessing new SLOs for BIOL 2 in Fall 2017. New FT instructor will assess in Spring 2018.
BIOL 003	MICROBIOLOGY	Active Fall 2017	3	15-16	15-16	16-17	X	X	X	X	Y	Steven Scott and Karen Bloom will assess BIOL 003 in Fall 2017 and Spring 2018.
BIOL 004	HUMAN PHYSIOLOGY	Active Fall 2017	4	15-16	14-15	14-15	16-17	X	X	X	Y	Carol Rooker and Victor Asemota will be assessing BIOL 004 SLOs in Fall 2017 and Spring 2018
BIOL 010	INTRODUCTION TO BIOLOGY	Active Fall 2017	3	16-17*	0	16-17	X	X	X	X	Y	Jennifer DeAngelis, Edwin Ochong and Judith Owiti will be assessing SLOs in BIOL 010.
BIOL 020A	HUMAN ANATOMY AND PHYSIOLOGY	Active Fall 2017	5	16-17	16-17	15-16	16-17	15-16*	X	X	Y	Nanch Rauch, Em Segmen and John Rodriguez will assess new SLOs in BIOL 020A in Fall 2017. Arja McCray will assess in Spring 2018.
BIOL 020B	HUMAN ANATOMY AND PHYSIOLOGY	Active Fall 2017	4	16-17*	16-17	16-17	16-17	X	X	X	Y	Arja McCray and Jessica Dame Carroll will assess new BIOL 20B SLOs in Fall 2017. Nancy Rauch, Em Segmen and John Rodriguez will assess in Spring 2018
BIOL 024	BASIC HUMAN ANATOMY AND PHYSIOLOGY	Active Fall 2017	4	0	16-17	0	0	X	X	X	Y	Christoph Muhlinghaus and Ruhina Najem will assess BIOL 24 SLOs in Fall 2017 and Spring 2018
BIOL 25	HUMAN BIOLOGY	Active Fall 2017	4	0	15-16	15-16*	15-16	X	X	X		Maria Suarez will assess SLOs in BIOL 25 in Fall 2017
BIOL 29	BIOLOGY/LIVING WORLD	Active Fall 2017	3	0	0	0						Bradley Balukjian will assess SLOs in BIOL 29 in Fall 2017 and Spring 2018
BIOL 36	HUMAN GENETICS	Active Fall 2017	3	0	0	0						Nanch Rauch, Em Segmen and John Rodriguez will assess new SLOs in BIOL 020A in Fall 2017. Arja Steven Scott will assess BIOL 042 SLOs in Fall 2017 and Spring 2018
BIOL 042	BASIC PATHOPHYSIOL	Active Fall 2017	4	14-15	16-17	14-15	14-15	X	X	X	Y	Steven Scott will assess BIOL 042 SLOs in Fall 2017 and Spring 2018
BIOL 60A	STATE PARKS, PART I FALL	Active Fall 2017										Brad Balukjian will develop and assess SLOs for this course in Fall 2017
BIO 61	HERPETOLOGY		4	15-16				X	X	X	Y	
BIOL 62P	ECOLOGY OF MINERAL KING	Active Fall 2017										Ron Felzer will develop and assess SLOs for this course in Fall 2017
BIO 80A	RAPTORS OF CENTRAL	Active Fall 2017	4	0	0	0	0	X	X	X	N	Daniel Edelstein will develop and assess SLOs for this course in Fall 2017
BIO 80B	ECOLOGY OF BIRD SONGS	Active Spring 2017	3	16-17*			X	X	X	X	Y	

VI. Additional Questions for CTE, Counseling, Library and Student Services/Admin Units

Purpose: In this section, certain programs or departments will answer questions specific to the program. **Leave the section blank if your program, department or unit is not CTE, Counseling, Library or Student Services/Administration.**

For CTE:

1. Please describe any recommendations resulting from advisory committee meetings that have occurred since your last program review.
2. Did your program work with a Deputy Sector Navigator and if so, how did this lead to program changes or improvements?
3. Is your discipline/department/program currently participating in any grants specific to the program? Please discuss your progress in meeting the stated goals in the grant.

For Counseling:

1. What has the counseling department done to improve course completion and retention rates? What is planned for the future?
2. What has the counseling department done to improve SSSP counseling services? Please discuss your progress in improving SSSP counseling services.

For Library Services:

1. Please describe any changes in the library services, collections or instructional programs since the last program review or APU and fill in the information below:

	<u>This Academic Year</u>	<u>Previous Academic Year (s)</u>	<u>Explanation of Changes</u>
Library Open Hours Per Week			
Library Visits (gate count)			
Other Library Usage			
Total Library Materials Expenditures			
Total Print Book Collection (Titles)			
Total E-book Collection (Titles)			
Total Database Subscriptions			
Total Media Collection (Titles)			
Total Print Periodical Subscriptions			
General Circulation Transactions			
Reserve Circulation Transactions			
In-house circulation Transactions (optional)			
Media Circulation Transactions (optional)			
E-book Circulation Transactions Describe (optional)			

Other circulations Transactions – Describe – (optional)			
Total circulation Transactions			

For Student Services and/or Administrative Units:

1. Briefly describe the results of any student satisfaction surveys or college surveys that included evaluation and/or input about the effectiveness of the services provided by your unit. How has this information informed unit planning and goal setting?

2. Briefly describe any changes that have impacted the work of your unit.

VII. New Resource Needs Not Covered by Current Budget

Purpose: In this section, programs will document new and repeat resource requests **not covered by current budget**, and document the support of the request with data or evidence.

Human Resources: If you are requesting new or additional positions, in any job classification, please explain how new positions will contribute to increased student success.

Human Resource Request(s)	Dollar Amount	Already Requested in Recent Program Review or APU? (yes/no)	What Program Goal does this request align to? (cut and paste from section II)	What data or evidence supports this request? (If discussed in a section above, please give a brief statement and page reference.)	How will this resource contribute to student success? (1-3 sentences)
BIOLOGY DEPARTMENT: At least 2 new Full Time, Tenure-Track Faculty members		Yes. (One faculty search is in progress)	The Biology Department will use assessment results and student surveys to identify challenges to student learning. We will request resources from the campus, if needed, to develop strategies to improve student success by 2% in all courses that have had student success values lower than 70% in the last three years (BIO 10, 20A, 24, 3 and 4).	Our student productivity, retention and success rates have seen a significant drop over the past four years due to the increased proportion of classes taught by adjunct faculty. Two of our Full Time Instructors, Hank Fabian and Melinda Downing retired.	Students will benefit by having permanent faculty who can invest more time to develop partnerships, innovative teaching strategies to improve student success. Adjunct faculty do not have as many office hours to use to support students compared to contract faculty, they are often in the position of having to

					commute long distances between jobs to earn a living wage and do not have the “luxury” to develop innovative teaching methods aimed to improve student success and retention. Our faculty are in “survival” mode in order to get work done, and may not feel supported to excel in their craft of student learning and reflective improvement in teaching and curriculum development.
BIOLOGY DEPARTMENT: One hourly bio lab technician who would work on Fridays only with models, slides and cadaver room exclusively.		Yes	Same as above	Same as above	The models, slides and cadavers require constant and time consuming care. Additionally, per contract with UCSF (our vendor) who supplies us with our cadavers, we are obligated to keep our cadaver room in clean and orderly manner on a continuous basis.

					With the high number of classes that use anatomy models, microanatomy slides and cadavers, and limited availability due to time constraints of the lab support staff we need to hire an additional hourly biology lab tech. who will work on Fridays (8 hours shift) and exclusively with anatomy related equipment and materials.
BIOLOGY DEPARTMENT: Instructional Aides (\$7000 per year, \$20,000 for three years)	\$7000		See assessment results (BIOL 002, 024, 20A and 20B)		Directly will benefit classroom learning.
NATURAL HISTORY PROGRAMS: Approx. additional 0.1 FTE hourly instructor to teach up to about 3 units per year in Certificate courses	0.1 FTE			Two courses per year are being taught in the Certificate. Added courses/instructor can enable students to complete Certificate sooner. The instructors would be able to develop and improve the curriculum and revise the program so that students can complete the certificate within a reasonable timeframe.	Students will be able to accumulate required units for Certificate sooner than at present

*New faculty and staff requests must be listed here.

FOR BIOLOGY DEPARTMENT: Two (2) FT Tenure-Track Faculty are requested in order to maintain the quality of the existing course offerings, to replace faculty lost to retirement, and to assist in the department’s efforts to increase enrollment, success and completion of biology courses at Merritt College. One faculty search is in progress. We also need additional lab stockroom staffing.

FOR NATURAL HISTORY PROGRAM: Approx. 0.1 FTE hourly for one or two additional courses to be taught per year in Certificate (about 3 units), plus some assigned load for curriculum development as the adjunct faculty in this area restructure existing certificates or build new ones.

Technology and Equipment: How will the new technology or equipment contribute to student success?

Technology and Equipment	Dollar Amount	Already Requested in Recent Program Review or APU? (yes/no)	What Program Goal does this request align to? (cut and paste from section II)	What data or evidence supports this request? (If discussed in a section above, please give a brief statement and page reference.)	How will this resource contribute to student success? (1-3 sentences)
BIOLOGY: Computer refresh for faculty – new computers and printers (\$10,000)	\$6400 computers \$1600 computer supplies	YES	The Biology Department will use assessment results to identify resources and facilities needed in the classroom and for faculty work environment to enhance student learning and improve teaching.	Basic workplace conditions for faculty (writing letters of recommendation, recording and calculating grades, etc) are required in order to support students in our daily functions as faculty.	This request is directly related to the work environment of the faculty members in the department, necessary to doing work related to teaching students.
BIOLOGY: Computers for genetics classes	\$5000 PC computers	NO	Same as above	Human genetics is a course needed as a requirement for many programs in the SF Bay Area and very few schools in the area offer this course. Our new faculty member would like to build this course as a part of our transfer-track alternative to allied health programs.	These computers would directly benefit the students taking the genetics course.

<p>BIOLOGY: Equipment repair (\$20,000 per year) This includes service of autoclave, microscopes, spectrophotometers.</p>	<p>\$9000 autoclave \$3500 microscope service</p>	<p>YES</p>	<p>Same as above</p>	<p>Some of these costs are the costs of operating a biology program and are required to maintain the level of quality instruction we have been offering for years.</p>	<p>Students will directly benefit as the equipment is needed for learning in the laboratory classrooms.</p>
<p>BIOLOGY: Classroom models for anatomy, physiology and general biology (\$40,000, or \$150,000 over the course of 3 years) to complete the sets needed for 2 additional rooms we acquired upon our move to the new science building. Otherwise we will need to transport these models between rooms on mobile carts,</p>	<p>\$40,000 (specific examples: bones \$2,000, intestinal models \$1,000 x 4, and torso models \$12,000)</p>	<p>YES</p>	<p>Same as above.</p>	<p>Yes, connected to assessment results related to using models to improve learning in courses such as BIOL 2, 24, 20A, and 20B Some of these costs are the costs of operating a biology program and are required to maintain the level of quality instruction we have been offering for years</p>	<p>Students will directly benefit as these items are in the classrooms where the students can study them as hands-on learning tools..</p>
<p>BIOLOGY: Ongoing laboratory experiments to support student learning also requires consumables (chemicals, kits, gloves). Approximate budget for consumable supplies is \$20,000 per year.</p>	<p>\$20,000</p>	<p>YES</p>	<p>Same as above.</p>	<p>Some of these costs are the costs of operating a biology program and are required to maintain the level of quality instruction we have been offering for years</p>	<p>Directly benefit students in the classroom.</p>

BIOLOGY: Cadavers (\$3000 per year)	\$3000	YES	Same as above.	Some of these costs are the costs of operating a biology program and are required to maintain the level of quality instruction we have been offering for years. SLO 3, BIOL 2 2012-13 Assessment results also support this request.	Directly benefit students learning Anatomy in the laboratory.
FOR NATURAL HISTORY: Digital cameras and memory cards for them.	\$500	YES	This is a cost of operating the natural history program and is required to maintain the level of quality instruction we have been offering for years. So far this has been covered at the instructor's personal expense.	Instructor currently and has for many years supplied his own cameras and film/memory cards for making photos for classroom use. The institution should cover some of these costs which directly benefit the classroom learning environment, especially for field-oriented courses.	Students expect digital images in lectures these days, for example in power point presentations, which are the modus operandi in the field program.

Facilities: Has facilities maintenance and repair affected your program in the past year? How will this facilities request contribute to student success?

Facilities	Dollar Amount	Already Requested in Recent Program Review or APU? (yes/no)	What Program Goal does this request align to? (cut and paste from section II)	What data or evidence supports this request? (If discussed in a section above, please give a brief statement and page reference.)	How will this resource contribute to student success? (1-3 sentences)
FOR THE NATURAL HISTORY PROGRAMS: Unbuilt shell space in new S Building is needed		YES		Very time consuming and awkward for instructor to access rock specimens for classroom use.	Less time is consumed in hauling specimens across campus; this

<p>near classroom S-220 for storage of rock specimens used as demos in the class room. Now these specimens are inconveniently stored in old storeroom in D Building</p>					<p>time could be better spent with students.</p>
<p>FOR THE NATURAL HISTORY PROGRAMS Portable bulletin boards on rollers needed for use in S-220 classroom where no bulletin boards were installed. These are needed for posting numerous maps and charts and posters utilized by instructor in teaching.</p>	<p>\$200</p>	<p>YES</p>		<p>Currently instructor must haul around old discarded bulletin boards from D-Building for each classroom session.</p>	<p>Wasted time will be less as boards with rollers will be more easily and efficiently made accessible in the classroom where needed.</p>

Professional Development or Other Requests: How will the professional development activity contribute to student success? What professional development opportunities and contributions make to the college in the future?

Professional Development	Dollar Amount	Already Requested in Recent Program Review or APU? (yes/no)	What Program Goal does this request align to? (cut and paste from section II)	What data or evidence supports this request? (If discussed in a section above, please give a brief statement and page reference.)	How will this resource contribute to student success? (1-3 sentences)
<p>BIOLOGY Opportunity during flex day to dialogue within disciplines and between disciplines to encourage partnerships and collaborations across programs.</p>				Feedback from faculty.	Staying in silos within our departments stifles creativity and innovation. Having opportunities built into flex day schedule to meet and discover common obstacles could be the first step towards collaborations and partnerships that otherwise might not form. Such partnerships could benefit student learning and lead to new programs beneficial to the entire college.
<p>BIOLOGY: Our faculty members need better</p>				Based on questions repeatedly asked but answers difficult for adjuncts to find.	Students will be confused and

<p>instruction on administrative procedures. We also need more workshops and opportunities to share best practices on how to teach to students of varying learning styles and skill levels, organization methods and time management.</p>					<p>frustrated by new faculty who are unfamiliar with proper procedures and administrative guidelines (drop, add, census, waitlist, etc). Having everyone on the "same page" will lead to better student satisfaction.</p>

Signatures

Discipline, Department or Program Chair

Arja MCCray _____

Print name

Signature

10/22/2017 (DRAFT 1)

Date

Dean

Print name

Signature

Date