Assessment: Assessment Unit Planning

Program Review 2014-15

YC - Biology & Ecology Program Review

Year Under Review : 2014-15
Type of Review:
Program Description : The Biology program offers an Associates in Science degree that is designed to prepare students for transfer to four-year institutions for pre-professional studies in medical, dental and pharmacy programs or preparation for further study in Biology leading to a BA, BS, MA, MS and/or PhD degrees.
The courses offered by the program meets the needs of students who have a variety of educational objectives. There is a series of general education courses for non-majors (Biology 10, 10L, 11, 15, 24, 25, 35 Ecology 10, 11 and 12). All of these courses provide transfer credit to UC and/or CSU campuses. The program offers prerequisite classes for students entering programs in the health care industry (Biology 4, 5, 6 and 15). Some or all of these are prerequisites for students planning to apply to the Radiation Technology, Veterinary Technology, and Nursing Programs. Finally, the program offers a series of courses that fulfill the lower division requirements for biology majors intending to transfer to four-year institutions (Biology 1, 2 and 3). Occasionally, an Independent Study is offered (Biol. 48) to provide opportunities to dissect the human cadavers used in the anatomy course.

The program offers courses in the online format as well. Ecology 12 and Biology 10, 11, 24 and 25 are only taught online. Biology 5 is taught face to face and also as a hybrid course combining online and face to face instruction in the course. The department is considering a hybrid anatomy course.

Currently the department is considering three new general education and online offerings. The department would also like to offer more field biology courses. One unit course that cover the habitat of the region or of a particular species.

Biology department classes are taught by five full time professors, plus a variable number of adjunct faculty, depending on need and availability. The total FTEF for the program in 2014 – 15 is 10.17 with 4.6 assigned as contract FTEF and 5.57 as non-contract. Thus, fifty-five percent of the courses are taught by adjunct or non-contract load.
At the Marysville campus, the number of full-time faculty is not adequate to lead major portions of the biology curriculum. Each course a biology faculty member teaches represents not just the curriculum in the lecture but a laboratory program, facilities and all the equipment and specimens associated with that course. Currently, we have no fulltime faculty member to provide leadership for the curriculum, facilities and equipment associated with Biology 10L and Ecology.
The program also offers courses at the Sutter Center in which we offer general education laboratory. As the need for more laboratory classes increases at Sutter there will be a need to hire full-time faculty and support staff. Also, the college will need to invest in equipment to be used at Sutter.
The success percentage was measured to be 62.72% in 2014-15 and the retention rate was measured to be 83.7% Both of the indicators have appeared to peak. As a way to address improving success, department faculty are considering a 1 unit preparatory course to teach student how to learn science. At all levels of program instruction, students have difficulty learning biology for a variety of reasons. One reason is assimilating information and being active in the learning process. A course designed to model how good students learn, use science textbooks, symbols, figures and other problem solving skills could be of benefit to many students.

There is one full-time instructional assistant at Marysville, who prepares laboratory materials and handles clean-up for all classes. The instructional assistant is also responsible for; ordering, inventory and maintenance of supplies and equipment; care of lab animals; supervision of student help; setup and cleanup of all laboratories; and chemical and lab safety issues. District funds have been available for many years to hire student help for microbiology and anatomy preparation, and for student workers to help with general lab prep and cleaning. Several years ago student help funding was reduced by 50%. Thus, a total of 18 hours in student help to maintain the cadaver, microbiology preparation, as well as the assisting with the preparation of all the other lab sections from a 30+ hours we typically use for lab preparation. . In the past, microbiology requires at least 20

hours per week to prepare the lab. Anatomy requires about 4 – 6 hours per week. The IA has required another 18 hours per week. The reduction in student help results in our current IA consistently working over 40 hours/week. An additional IA is needed to maintain the program facilities, equipment, lab set-up, ordering and other matters. Our current IA is going to retire and the end of this academic year. If her position is not replaced, you will essentially prevent biology labs from being taught.

Executive Summary (Include a list of team members): The Biology & Ecology Program Recommendations were reviewed by the Dean of Library Services, Distributive Education and Media Services in Nov. 2013 in lieu of a dedicated MESH Dean.

The Biology & Ecology PR clearly defines academic curricula and program improvement initiatives which reflect District and College goals. There is a identified need for additional faculty, support staff (IA's), refreshed equipment, and a restored budget for instructional supplies and equipment replacement which are critical to maintaining operational labs and hands-on student experiences. No replacement budget currently exists to properly maintain and replace equipment, in some cases hampering the ability to offer certain curriculum which jeopardizes articulation agreements. Faculty recommend restoration of the replacement and repair budgets by 50%,

Biology represents a broad demographic and reaches across various majors, career technical fields, and serves students with varied levels of college readiness. Student support services are offered in collaboration with other campus departments, including the College Success Center (Tutoring Center), Open Labs available on Fridays, and the MESA program, Technology is employed to support online web forums, elearning and self-organized study groups. All support services and the use of technology are being evaluated for impact on the success and retention of students in Biology and Ecology courses.

Several additional approaches to improving student retention and success are evident including reduction in the size of lecture classes, referral to student support services and an exploration of the 'flipped' classrooms where lecture content is offered virtually and class time emphasizes activities to develop critical thinking and applied scientific analysis.

This department actively support YC ADT target goals. Biology is developing a transfer degree specific to Biology which will aid retention and transfer of Biology majors. CORs are current. This department also provided assistance to Physical Education in the development of a Kinesiology ADT degree.

Both CSLOs and PLO's have been assessed within the last year. Fifteen of the 16 SLO's have been assessed at least once, including BIO and ECOL courses resulting in changes to instructional strategies. Faculty recommend additional instructional associates and an expanded budget for student assistants to support lab preparation and breakdown in order to maintain high levels of program support at Maryville, SCC, Clearlake and Beale.

Faculty are engaged in professional development and active with the BSI Committee. Collection of empirical data to support planning is being emphasized in 2013/2014.
01IP. Department Goals (Click '?' for Prompt): The Biology program as a whole mirrors and meets Yuba College goals.
Biology gathers, assesses and utilizes data to make faculty and staffing requests, program resource allocations, changes to curriculum and improvements for student success.
Biology considers itself part of the community and district whole in which we all thrive or none thrive. Thus our decisions are made for student success rather than for program perpetuation.
Changes and efficiency are made and evaluated. Continuation of the change is based on balancing teaching/learning to cost reduction, but not costs alone.
The availability, sequencing and support of courses is directed at making our student's education as efficient and successful as possible.
The Biology department strives to maintain high educational standards, while simultaneously responding to the needs of our diverse student body and the needs of the community, industry and transfer institutions.

Biology's foremost goal is to develop and maintain programs and facilities that best meet the needs of our students and communities, as stated in the YCCD District vision statement. Our department has a history of providing a diverse educational atmosphere while simultaneously supporting student success in a trusting, supporting environment. We work hard to provide this innovative and rigorous education while using our financial resources wisely.

02IP. Access to Support Services (Click '?' for Prompt): -DSPS, -EOPS, -Library Services, -Counseling Services, -Learning Communities
03IP. Follow up to question 02IP (Click '?' for Prompt): Yes, YCCD, including our department, provides good quality support services and seeks to provide it equally to all students who can make use of the services. We have open labs for Anatomy,

Botany and Zoology, and the Bioactive Café wherein faculty meet students for office hours. Faculty provide extra exam review sessions. However, in studying this question this year, we noted that not all courses have adequate tutoring services at the SSC due to lack of funding, lack of qualified tutors, and lack of requests. We recommend expanding tutoring to include all courses where there is sufficient need for tutoring, and especially improving tutoring for Ecology and DE. In order to do this, the SSC needs an increase in funding and tutors need to be paid more to compete with outside jobs that are available to them as well. We recommend setting up additional tutoring locations, such as within the department, in order to make better use of campus facilities.

04IP. Degrees/Certificates (Click '?' for Prompt): The Biology department does not, in itself, offer certification programs. Additionally, it has only had an Associate of Science Degree for three years, so there is not much data compiled yet regarding the completion of the degree. In the last 3 years since the inception of the degree, 18 Associate of Science Degrees in Biology have been awarded.

Regarding the prediction of future degree completions, approximately 125 students per year start the first Biology course in the major's series (Biology 1). Of those students, approximately 35-40 complete the second and third courses of the Biology sequence (Biology 2 and 3) each year. Based on those enrollment figures, and with the help of academic counselors, instructors, and the general student body publicizing the degree, we estimate that 25-30 students will complete, and therefore benefit from the program degree yearly.

05IP. Improve Completion (Click '?' for Prompt): The Biology department does not, in itself, offer certification programs. Our program has developed an Associate of Science degree in Biology which is more specific than the Associate of Science degree in Natural Science. This will help Biology majors who are transferring to the UC system. These students will now have a specific degree, mirroring their interests and future goals. Biology is currently developing an Associate of Science Degree for Transfer (ADT) specific for transfer to the State University system. Both degrees should aid in the retention and transfer of Biology majors.

To improve completion of degrees and transfers, the department is involved in the following student aid programs, procedures and activities:

1. The department now offers Biology 10, 24 and Ecol 10 at the Sutter facility in Yuba City. Biology 10 and Ecology 10 now have supportive laboratory offerings there as well. This should help to improve completion of degrees and transfers by providing more accessible courses for those students in the Yuba/Sutter areas.
2. PR data has been used to support the splitting of large lectures and data was again used to show that success rates were improved after the reduction in class sizes. For example, Biology 15, an extra-large lecture section of 140+ students, and a course critical in the sequence of many health field careers, was split into two large lecture sections. In the fall, due to classroom availability, one section enrolled 80 students and the second 65. In the spring, both sections were enrolled to 72. An analysis of the fall retention and success rate show there is a statistically significant difference between the single extra-large lecture class versus the 2 large lecture section. The data show for both retention and success, students improved by 11% in the smaller courses. Given this result, the department faculty will continue to evaluate retention and success rates. Additionally, the department also split Ecology 10 into two sections. Previously, the lecture section was 100+ students. Now the department has a cap for the class set at 60 students or less. The second Ecology lecture offering at the Sutter facility has allowed this cap reduction.
3. In order to maintain the integrity of the program, teaching methods are regularly assessed by:
A) District and Department meetings – we share what we have learned with one another. For example, last year we discussed the concept of a “flipped classroom” and made plans to incorporate components of this concept in several ways. The biology faculty work well together as a team to learn from one another, to help one another, and to support one another.
B) Formal faculty evaluations – Adjunct and full time faculty receive feedback from our peers on a formal, continual basis. Often, we either learn something ourselves from observing faculty, or we have suggestions to share with the observed faculty.
C) Student feedback – Student evaluation forms are obtained through the formal process, but also many faculty include student surveys in their courses.
4. Finally, the biology faculty do believe that we need to hire a full time faculty member that can help direct and improve the transition of our students to 4-year universities. This faculty member should be an expert in the majors and nonmajors General Biology coursework and have a desire to work with Biology majors. This faculty member would be instrumental in connecting Biology students to specialized support services, and work to develop opportunities for summer internships, and research programs that would make our students more competitive in the future.

06IP. Course Outlines (Click '?' for Prompt): Most course outlines of record (CORs) are current. A schedule to review and update course outlines has been developed by the Curriculum Committee and then passed on to the Biology Department. With this schedule, and with the implementation of Curricunet, the Course Outlines of Record for all program courses are continually being updated, modified, and improved. We have assigned all department course outlines to full time faculty for this supervision. All courses will continually be updated within the 5 year cycle. Currently we are updating the two courses that are

outdated (Biol 25, Biol 11), and we are updating courses that will be outdated next year (Biol 10, Biol 10L).
Additionally, we will continue to refer to the full time faculty department member who is on the curriculum committee for current information regarding CORs.
07IP. Collaboration (Click '?' for Prompt): Department members collaborate with student services both informally and formally. Formally, we complete progress reports initiated by student services programs. Informally, we contact individual counselors concerning students and their progress in biology classes. Also, as new curriculum and courses are developed by department members, we often request time during the counselor's weekly meetings to present changes and make counselors aware of our new course offerings.

08IP. Catalog Currency (Click '?' for Prompt): Biology/Ecology entries are up-to-date and accurate in the current catalog. Courses which have not been taught have been put on the active teaching schedule or inactivated.
09IP. For CTE Programs Only (Click '?' for Prompt): NA
10IP. DE Students (Click '?' for Prompt): Our online course offerings include Biology 10, 11, 24, 25 and Ecology 12. Total enrollment in the 2014 – 15 academic year was 19% of our total enrollment. We are in the process of adding two new courses Biology 24L – Human Biology with Lab and Biology 30 - Emerging Infections and the History of Infectious Disease. Both are intended to be added to the general education options for area A.
Effectiveness of instruction is evaluated by reviewing overall success and retention in individual courses. Also, the Canvas LMS, provides many tools to assess individual assignments for effectiveness.
Contact with students is provided in a variety ways. First by assignments. Instructors can make direct comments to students regarding any submission they make for grading. Second by regular email and announcements. Instructors use the tools in Canvas to communicate updates, changes and other information. Third by video conference and chat rooms. These methods provide real-time opportunities to discuss with students about course material and grading.
DSPS Students are most often accommodated by additional time. Again, the tools in Canvas allow the instructor to provide additional time on an exam based on their specific need.
Most videos are linked to YouTube and captioning within the YouTube site is used to caption videos.

11IP.Disproportionate Impact(Click '?' for Prompt): Disproportionate impact occurs when students in particular groups are not receiving services or achieving success in a manner that is proportionate to their percentage in the district population. This might include success in course prerequisites, course completion, transfer rate, or degree completion. Demographic data for YCCD and for the Biology and Ecology programs were reviewed. Some data were not evaluated if the number of entries in the groups (example, some of the ethnic groups) were insufficient to draw reasonably accurate conclusions. In addition, the number of AS degrees in Biology (although showing promise) are too few to evaluate since it was only implemented recently.

In the last year, Biology had somewhat fewer male students, white students, or older (>25 yo) students compared to the district population. Overall, Biology student success and retention rates were stable or slightly improved compared to prior years, but were notably lower than all other YCCD course success/retention rates. Even though both male and female students showed less success in Biology than district-wide, females were more so, and ages 18-24 and >50 yo also were less successful. Students with GPS > 3.5 were more successful than students with lower GPSs. This could be helpful in advising students about course placement.

We noted some lower success in certain face-to-face courses compared to DE courses, which might be instructor or campus specific and will be investigated further. All of our DE was assigned to the Sutter Center, so it does not reflect Sutter vs Marysville campus at all, so just the face-to-face courses will be investigated.

Biology has more EOPS and BOG waiver students. DSPS and CalWorks students are similar to the YCCD population. Further student could be done to determine if these students showed less or more success that other students in our program.

Ecology was evaluated separately and was noted to have more male students, more 18-24 yo students, less 25-49 yo students than YCCD and similar proportions of white and Hispanic students. Ecology may be more reflective of the general district population since it is a GE, entry level course, often taken to satisfy the science requirements for graduation. Success and retention rates were much lower that in previous years, indicating further evaluation within our department is needed. This may be instructor or campus specific. Again, students with a GPS > 3.5 had similar course success. Female students and all ethnicities performed below their peer district levels. Face-to-face course had less success than DE. This program had more EOPS, DSPS, and BOG fee waiver students than the general YCCD population.

The Biology/Ecology department will evaluate whether changes are needed to address success/retention rates. We instruct more students from sensitive ethnic/economic/gender groups, and this can be evaluated. The clear descriminator of GPS > 3.5

can be used to advise students.
12IP. Mapping (Click '?' for Prompt): Yes
13IP. Course SLOs (Click '?' for Prompt): CSLO Assessment Compliance: We currently have 16 active courses. Tracdat currently contains assessment data from the last two years for 14 of these courses. Only Biology 24 and 35 have not had assessment data entered for the past two years, though assessments have likely been conducted.

CSLO Assessment Results: For all courses over the last two years, data has been entered for 40 CSLO assessments. Out of 40 CSLO assessments, 15 generated results that exceeded expectations, 23 generated results that met expectations, and 2 generated results that fell below expectations.

Actions Taken Based on Assessment Results : Specific data related to individual courses and CSLOs can be found on tracdat. The following are examples of the types of actions taken by instructors based on assessment results:
Biol-10L: In past years, students had not performed as well on the assessments as the instructor would have liked. New in-class assignments were added to give students more practice with the concepts, and extra time was devoted to the SLO in lab. Average scores on the assessment increased from about 79% to 87%.
Biol-24: To increase student performance on the SLO related to meiosis, a video on meiosis was added to Canvas for students to view. To increase student performance on the SLO related to Mendelian inheritance, and assignment with practice questions was developed. Since these changes are relatively new, their impact on student performance is not yet known.
Biol-4: Linda Staffero created a new 1 unit course (Biol-34) that is meant to be taken alongside Biol-4. This course should increase student performance in Biol-4 overall. Biol-34 is currently in the approval process.

Conclusions and Future Goals: Overall, students seem to be performing well on our CSLO assessments, indicating that our instruction methods are effective. Instructors have been proactive about making changes to improve student success, even when assessment results exceed expectations, but particularly when they fall below expectations. We have been working on refining many of our CSLOs and assessment methods, and plan to continue this work. Timelines do still need to be developed for many of the assessment methods, and we are working to increase participation in CSLO assessment.
14IP. Program SLOs (Click '?' for Prompt): Prior to the 2013/2014 academic year, the PSLOs for our department were just selected ISLOs. A new PSLO was written for the 2013/2014 academic year to address the new PSLO requirements. We have refined this PSLO, and added two new PSLOs for the 2015/2016 academic year and beyond.

PSLO Assessment, Results, and Actions: The following PSLO was assessed for the 2013/2014 and 2014/2015 academic years:

Critical Thinking and Communication as Part of the Scientific Method: Students will be able to correctly interpret experimental data and effectively communicate the findings and implications of that data in writing.

Assessment Method(s): For Biology 2, 3, 4*, 5* and 6*, student learning outcomes will be assessed by one or both of the following methods:
a) Students will conduct an experiment during lab and will write a formal lab report detailing the experiment, their findings, and the implications of their findings.
b) Students will be provided with experimental data on an exam and will be asked to draw a graph based on the data and interpret and discuss the results in a short essay.
*For courses with separate lab and lecture sections, the assessment only needs to be conducted in the lab or lecture, not both.

Results: Specific results for individual assessments can be found on tracdat. The following data is summarized.
2013/2014 – The PSLO was assessed for Biology 3 and Biology 5. The results from the Biology 3 assessment exceeded expectations. Two assessments were conducted for Biology 5. In one Biology 5 assessment, the results met expectations, but in the second assessment, the results were below expectations. The average score from all 117 instances of assessment was 76%. A score of 70% or higher is considered passing, so the overall results meet expectations.
2014/2015 – The PSLO was assessed for Biology 3. The results from the Biology 3 assessment exceeded expectations. The average score from 21 instances of assessment was 80%. A score of 70% or higher is considered passing, so the overall results exceed expectations.

Actions: Since last year was only the second year assessing the new SLO, we do not have a lot of data to compare. We would like to have data for more of our courses in the future, which we are working towards. However, changes have already been instituted based on the data we do have. That said, since the overall results have met or exceeded expectations, we are confident that students are learning this skill effectively as they move through their courses, and that they are leaving the program with the ability to conduct experiments, correctly interpret data, and write scientifically.
2013/2014 – For the Biology 3 and 5 assessments that met or exceeded expectations, no special actions were taken other than

continued assessment of the PSLO. For the Biology 5 assessment for which the results were below expectations, the instructor evaluated the difference in performance on take-home assignments versus exams, and is working to improve the disconnect. 2014/2015 – For Biology 3, students received feedback on their lab reports so that they could make improvements, just as they would in a professional environment. Even though the results for this assessment exceeded expectations, it was observed that some students may not have been clear about how to access the instructor's comments on Canvas. From now on, students will be shown how to access these comments in class.

Conclusion and Future Goals: Current PSLO data supports our belief that we are effectively preparing students to be successful in Biology. The additional PSLOs that have been developed will give us additional information about our program's effectiveness. We will continue to refine our PSLOs as needed, and will work to increase participation in PSLO assessment.

15IP. Professional Development (Click '?' for Prompt): The current full time faculty is dedicated to working as a team while offering excellent and appropriate classes to students at Yuba College. All full time faculty members keep updated in their specific curriculum areas by attending conferences, workshops, department meetings, sabbaticals, and developmental classes. Besides maintaining proficiency, our department faculty is active in incorporating new information into their classes, updating laboratory procedures, and engaging in activities intended to bring about improvement to their teaching. Full-time faculty continue to stay updated on the university level requirements through both formal and informal processes and alter course content and course prerequisites as needed to ensure that these courses continue to be transferable.

Many of our faculty members are actively involved in district committees, associations and organizations. We find pleasure and pride in the active involvement in shared governance in the college and the district.
16IP. Reflection (Click '?' for Prompt): This is addressed individually within each question above. Please those sections for specific reflections and goals.
Are you ready to submit your final program review?: Yes

Program Recommendation: Maintain or Increase Department Faculty and Staff

Hire one full time faculty member into the department to replace retirement in 2009. Hire one full-time Science Lab Assistant (IA) for the Marysville campus. Hire a part time student IA for the Clear Lake campus. Augment budget for student assistance

Recommendation Priority: 3. High Priority
Year(s) Requested: 2010-2011, 2011-2012, 2012-2013, 2015-2016
Supporting Evidence : Biology department classes are taught by six full time professors (5 at the Marysville Campus and 1 at the Lake Campus), plus a variable number of adjunct faculty, depending on need and availability. The total FTEF for the program in 2011 ? 12 is 10.47 with 6.07 assigned as contract FTEF and 4.40 as non-contract. Thus, fifty-eight percent of the courses are taught be full-time faculty and the remaining 42% by adjunct or non-contract load.
At the Marysville campus, the number of full-time faculty is not adequate to lead major portions of the biology curriculum. Typically, a full-time member is responsible for a portion of the curriculum. The courses taken by biology majors (Biology 1,2 and 3) has two full-time instructors overseeing these courses. But, both of these professors are mammalian biologists and have no expertise in plants and the science of botany. The courses taken by allied health majors (Biology 14, 4, 5 and 6) have a full time faculty member overseeing each of these courses in the curriculum. This year it has been difficult to staff the biology 15 laboratories. At this time, one laboratory is not staffed.
The non-majors/general education portion of our program currently is taught by part-time faculty or non-contract load of full-time faculty. Currently, we have highly reliable adjunct teaching Biology 10L but we do not have adjunct faculty to cover Ecology 10 and 11. Currently both of these courses are scheduled at the Marysville campus in the spring but they are not staffed. We seek an additional fulltime faculty member that has expertise in botany and ecology. This individual will also teach Biology 10L and would oversee the non-majors portion of the program.

There is one full-time instructional assistant at Marysville, who prepares laboratory materials and handles clean-up for the majority of classes. The instructional assistant is also responsible for; ordering, inventory and maintenance of supplies and equipment; care of lab animals; supervision of student help; setup and cleanup of all laboratories; and chemical and lab safety issues. District funds have been available for many years to hire student help for Microbiology and Anatomy preparation, and for student workers to help with general lab prep and clean-up. This year student help funding is being held at 50% less than we typically spend. Thus, a total of 18

hours in student help has been budgeted to maintain the cadaver, perform Microbiology preparation, as well as assisting with the preparation of all the other lab sections. Normal use/need for these jobs would require 30+ hours of aid minimum. In the past, Microbiology has required at least 20 hours per week to prepare the labs, as these are not prepared by the full-time IA. Anatomy requires approximately 4-6 hours per week. The IA has required additional student aid of approximately 10 - 15 hours per week. The reduction in student help results in our current IA consistently working over 40 hours/week. An additional IA is needed to maintain the program facilities, equipment, lab set-up, ordering and other matters.

Evaluation Plan: Deleted Clear Lake 11/15 (Tanabe).

Plan of Action

Complete and submit request to fill faculty vacancy (Active)

The Division Dean and program faculty will develop job requests to hire an additional IA for Marysville. (Active)
Timeline/Responsible Party: Revised to delete Clear Lake 11/15 (Tanabe).
Perkins Eligible: No
DE Related: No
HSI Related: No
YC - Location: Marysville Campus

Submit a request to the VP of Yuba College to increase Student Support in Biology. (Active)

Staffing - Faculty - Faculty request form was completed for 2016-2017 school year. (Active)
Timeline/Responsible Party: completed 11/15
Perkins Eligible: No
DE Related: No
HSI Related: No
YC - Location: Marysville Campus

Related Goals

YC - Biology & Ecology Program Review
The department will seek to maintain and/or improve staffing for the department

Program Recommendation: Evaluate Extra Large Classes to improve success and retention

The program faculty will evaluate large classes in terms of retention, pedagogy, student success, and impacts to the program such as FTES and FTEF.

Recommendation Priority: 3. High Priority
Year(s) Requested: 2010-2011, 2015-2016
Supporting Evidence : Biology 15 split the extra-large lecture section of 140+ students into two large lecture sections. In the fall 2011, due to classroom availability, one section enrolled 80 students and the second 65. In the spring 2011, both sections were enrolled to 72. This fall the course was split into two 72 student classes taught by different instructors. Ecology 10 reduced student cap to 60 on the Marysville campus and 40 at the Sutter center. The total number of students was maintained, just as for Biology 15, but the course caps were reduced. Current Status: Biology 15, an extra-large lecture section of 140+ students, was spllit into two large lecture sections. In the fall, due to classroom availability, one section enrolled 80 students and the second 65. In the spring, both sections were enrolled to 72. An analysis of the fall retention and success rate show there is a statistically significant difference between the single extra-large lecture class versus the 2 large lecture section. The data show for both retention and success students improved by 11%. Given this result, the department faculty will continue to evaluate the retention and success rates this

spring. Additionally, the department will split Ecology 10 into two sections as well. Currently the lecture section is 100+ students and the department will seek to cap the class at 60 students or less.

Evaluation Plan: updated 11/15

Plan of Action

The faculty will work with the college researcher to determine a method to evaluate large classes.
(Active)

Budgetary Impact: None at this time. Impact on College Research and Faculty schedules to collect and analyze the data

YC - Location: Yuba College - All

Related Goals

College - Yuba College Program Review
YC Goal 1 - Foster a culture of evidence-informed decision making, include SLO development/assessment and other measures of student success.
YC Goal 6 - Evaluate our programs, services and processes to ensure continuous quality improvement.

Institutional Learning Outcomes
Scientific Awareness - Understand the purpose of scientific inquiry and the implications and applications of basic scientific principles.

YCCD Board of Trustees Vision Statement
YCCD VS 3 - Developing and maintaining programs and facilities that best meet with needs of our students and communities;

YC - Biology & Ecology Program Review
The deparment faculty will look for ways to improve success and retention rates

Program Recommendation: Biology Study Labs

Biology 2, 3 and 4 offer additional lab time on Fridays to help students have more time with laboratory specimens and to review for labortory practicals. This has been an on-going tradition in the deparment for many years. Faculty have unofficially added these hours to their schedules or used office hour time in the lab to provide extra study time for students. Data has yet to be collected to determine if these open/extra labs improve student performance in the class. Additionally, the times the labs are open are limited to the availability of instructors and/or the student schedules.

Recommendation Priority: 2. Medium Priority

Plan of Action

Devise a procedure to collect data that will aid in determining if students attending open lab periods improve success in these classes versus those that do not or cannot.
(Active)

Budgetary Impact: None at this time. Impact on College Research and Faculty schedules to collect and analyze the data

YC - Location: Marysville Campus

Curriculum/SLO - Biology 34 has been developed and is currently under review by the curriculum committee. LS 12/1/2015
(Active)

YC - Location: Marysville Campus

YC - Biology & Ecology Program Review

YC - Biology & Ecology Program Review
The deparment faculty will look for ways to improve success and retention rates

Program Recommendation: Maintain and Improve Equipment - Repair/Maintenance

Repair and Maintenance Budget: Currently there is no separate budget for repair and maintenance of instruments/tools. Any necessary repairs must compete with supplies and new acquisitions from an already inadequate budget allocation. The budget must be sufficient to ensure adequate funding of the curricula and the budget process must be altered to allow for embrances that can be accrued for a larger dollar item.

Recommendation Priority: 3. High Priority
Year(s) Requested: 2012-2013, 2015-2016
Request Date: 09/24/2012
Supporting Evidence : Biology maintains a high WSCH and vital programs supporting transfer, GE and vocational students. Repair and maintenace have consistently been identified in Program Review and Updates as extreme importance to maintain current curricula.
Evaluation Plan: Included in PR 11/15. Will develop a computer replacement list for the Technology committee (Tanabe).

Plan of Action

Equipment - 1. Make this a clear priority in Program Review. 2. Discuss with the MESH Dean when one is assigned. 3. Document supply expenses per course/per year. 4. Document repair/maintenance expenses and make this a separate budget category with increased budget allocation needed. (Active)
Budgetary Impact: Unknown. Expect it to vary year by year but could add several thousand dollars to the budget annually.
Timeline/Responsible Party: Biology faculty, MESH Dean (or representative)
DE Related: Yes
HSI Related: Yes

Equipment - Continue to work on estimates for budget repair, since this is not a separate budget item. (Active)
Timeline/Responsible Party: IA for Department.
Perkins Eligible: No
DE Related: No
HSI Related: No
YC - Location: Marysville Campus

Develop a regular cycle to purchase cadavers so that 2 are always in the classroom (Active)
YC - Location: Marysville Campus

Related Goals

Institutional Learning Outcomes
Computation - Use appropriate mathematical concepts and methods to understand, analyze, and communicate issues in quantitative terms.
Technological Awareness - Select and use appropriate technological tools for personal, academic, and career tasks.

YCCD Board of Trustees Vision Statement
YCCD VS 1 - Providing an innovative, world-class learning environment;

YC - Biology & Ecology Program Review
The department faculty members will seek funding to allow the department to maintain, replace, repair current equipment and to allow for the purchase of additional equipment.

YC - Biology & Ecology Program Review

Program Recommendation: Maintain and Improve Equipment - Replacement

Equipment Replacement: Phased equipment replacement has been identified as a priority but the lack of adequate funds for equipment replacement has prevented its implementation. Phased replacement of aging instructional and support equipment is needed. An increased budget allocation is needed and a change in budget process that would allow for embrances to accrue and larger dollar items purchased.

Recommendation Priority: 2. Medium Priority
Year(s) Requested: 2012-2013, 2015-2016
Request Date: 09/24/2012
Supporting Evidence : Current curriculum cannot be supported if equipment ages to the point of being obsolete or poorly functional. Learning has been compromised in Fall 2012 by not being able to purchase the amount of materials needed - for example, 8-12 students trying to work on 1 frog, rather than 1 frog for a group of 4 students.
Evaluation Plan: Included in PR 11/15. Computer replacement equipment will be requested from Tech committee (Tanabe).

Plan of Action

Equipment - 1. Develop a list and priority of equipment replacements needed. These will include BIOPAC computer systems for Bio 5, lab prep equipment for Bio 6, etc.
2. In developing priority, consider how the new equipment will enhance or improve instruction. (Active)
Budgetary Impact: Unknown, but currently the department houses hundreds of thousands of dollars worth of equipment. Much of it is more than 10 years old and needs eventual replacement.
Timeline/Responsible Party: Biology Department members and MESH Dean (or assigned substitute)
DE Related: Yes

Status

Reporting Year: 2015-2016 03/01/2016
Recommendation Progress: Recommendation Addressed/Satisfactory Progress
List of computer replacements for Biol 5 Lab created and submitted. See attached document "COMPUTER REPLACEMENTS".
Content pasted here also: COMPUTER REPLACEMENTS
LAB 814 BIOLOGY DEPARTMENT

Our current systems are from 2004 and cannot be upgraded to current Windows OS.

8 DESKTOP SYSTEMS – @ $1,200 each = $9,600
CPU 1 TB Hard drive, 8 GB RAM
MONITOR – 17 inch if possible
KEYBOARD AND MOUSE
SPEAKERS
CD/DVD RW
WIRELESS LAN
WINDOWS 8 OR 10
MS OFFICE

1 BLACK AND WHITE WIRELESS LASER PRINTER $300

Related Documents:
COMPUTER REPLACEMENTS 0216.docx

Reporting Year: 2015-2016 12/01/2015
Recommendation Progress: Recommendation Addressed/Satisfactory Progress
Continue to pursue monies to support equipment for all biology classes.
Need to update bio-technology uv boxes, gel boxes and related equipment.

Anatomy request replacement of skeleton specimens; especially skulls
Data collection equipment is need for Biology 1, 10L and 15.

Related Goals

Institutional Learning Outcomes
Computation - Use appropriate mathematical concepts and methods to understand, analyze, and communicate issues in quantitative terms.
Technological Awareness - Select and use appropriate technological tools for personal, academic, and career tasks.

YCCD Board of Trustees Vision Statement
YCCD VS 1 - Providing an innovative, world-class learning environment;

YC - Biology & Ecology Program Review
The department faculty members will seek funding to allow the department to maintain, replace, repair current equipment and to allow for the purchase of additional equipment.

Program Recommendation: Maintain and Improve Equipment - Advance Methods & Technology

Advancing Methods and Technology in Biology/Ecology labs: New equipment, methods, lab facilities and curricula are needed to keep our teaching current and to match the pace of change in these biological sciences. However, no new equipment has been purchased since our lab building underwent the remodel, and the equipment we received was reduced from the original proposal.

Recommendation Priority: 3. High Priority
Year(s) Requested: 2012-2013, 2015-2016
Request Date: 09/24/2012
Supporting Evidence : Biology/Ecology continues to teach a high number of students in transfer, GE, and vocational tracks. Program Review and Annual Updates have consistently identified a deficient budget for new equipment. Therefore, new methods and scientific advancements cannot be implemented in the classroom.
Evaluation Plan: Continue to evaluate for expansion of equipment and materials if budget increases are received (11/15).

Plan of Action

Equipment - Develop 1-2 advancements that can be made in each Biology/Ecology course if additional equipment were available. (Active)

Budgetary Impact: Varied, depending on the type of equipment. Typically, low cost items are purchased as the annual budget allows. However, high cost items or classroom sets of equipment may range from $5,000 to $50,000.
Timeline/Responsible Party: MESH faculty and MESH Dean (or assigned administrator)

DE Related: Yes

Develop labs that use computer probes and data collection for biology 15 (Active)

YC - Location: Marysville Campus

Related Goals

Institutional Learning Outcomes
Computation - Use appropriate mathematical concepts and methods to understand, analyze, and communicate issues in quantitative terms.
Critical Thinking - Analyze data/information in addressing and evaluating problems and issues in making decisions.

Information Competency - Conduct, present, and use research necessary to achieve educational, professional, and personal objectives.
Technological Awareness - Select and use appropriate technological tools for personal, academic, and career tasks.

YC - Biology & Ecology Program Review
The deparment faculty will look for ways to improve success and retention rates
The department faculty members will seek funding to allow the department to maintain, replace, repair current equipment and to allow for the purchase of additional equipment.

Program Recommendation: Maintain and Improve Equipment - Funding

Increase current funding by 50% to recover some of the funding loss suffered in Fall 2012 and to allow for improvements. Consider seeking alternative funding sources. Since money to purchase or replace equipment has not been available for many years now, alternative funding sources need to be cultivated. In past years, equipment has been procured through NSF grants, and other sources may be possible.

Recommendation Priority: 2. Medium Priority
Year(s) Requested: 2012-2013, 2015-2016
Request Date: 09/24/2012
Supporting Evidence : Biology/Ecology continues to serve a large number of students in Transer, GE, and Vocational programs. Supporting the laboratory curriculum requires equipment that is both functional and pertinent. Supply budgets (gloves, frogs, bacterial cultures, etc) must be increased since the Fall 2012 cut has compromised learning and safety. Laboratories will be severely restricted by lack of equipment and materials.

Plan of Action

Equipment - Identify faculty members who are willing to pursue alternative funding for their program needs. Identify adminstrative support needed, including matching funding, for outside funding sources. (Active)
Budgetary Impact: Often matching funds are required and Yuba College needs to be willing to commit to resource allocations, such as money, adminstrative oversight, etc.
Timeline/Responsible Party: MESH faculty, Yuba College Administration
DE Related: Yes

Related Goals

Institutional Learning Outcomes
Computation - Use appropriate mathematical concepts and methods to understand, analyze, and communicate issues in quantitative terms.
Critical Thinking - Analyze data/information in addressing and evaluating problems and issues in making decisions.
Scientific Awareness - Understand the purpose of scientific inquiry and the implications and applications of basic scientific principles.
Technological Awareness - Select and use appropriate technological tools for personal, academic, and career tasks.

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YC - Biology & Ecology Program Review

YC - Biology & Ecology Program Review
The deparment faculty will look for ways to improve success and retention rates
The department faculty members will seek funding to allow the department to maintain, replace, repair current equipment and to allow for the purchase of additional equipment.

Program Recommendation: Prerequisites

Program faculty will consider adding pre-requisite courses including Chemistry, Reading, English, and Math to Biology courses as a way to improve success. Additionally, since it appears that students taking MComm 40 are better prepared to take online courses then those that do not, this is another potential course to evaluate as a Biology pre-requisite.

Recommendation Priority: 2. Medium Priority
Supporting Evidence : Data for the Reading 15A - The summary of the data from the period of fall 2011 to spring 2010 show that students taking the READ 15A were significantly more successful in BIO 15 then those that did not take the course.
A comparison of the success and retention of students taking MCOMM 40 vs. those that do not.

Plan of Action

The program will review course prerequisites and determine which to re qualify to meet state mandates (Active)

Program faculty will review and collect data to determine student should have chemistry as a prerequisite to biology courses. (Active)

Program faculty will review and collect data to determine if any math, english or reading course should be considered as prerequisite to biology courses (Active)

Program faculty will compare of the success and retention of students taking MCOMM 40 vs. those that do not. (Active)
Budgetary Impact: None at this time. Faculty time and College Researcher time will be impacted.

Related Goals

YC - Biology & Ecology Program Review
The deparment faculty will look for ways to improve success and retention rates

Program Recommendation: How to Learn Science Modules

Program faculty will develop a set of modules that any biology faculty can access to help students to improve science learning skills. Students could be educated on successful science learning methods/techniques through workshops/seminars/eLearning modules.

Recommendation Priority: 2. Medium Priority

Plan of Action

Biology Department faculty will meet to discuss a plan to design these potential modules, workshops, seminars. (Active)
Budgetary Impact: Possibly flex credit for department faculty.

Biology department will develop eLearning instructional modules designed to improve reading skills/note-taking/test-taking strategies. (Active)
Budgetary Impact: None - potential flex
DE Related: Yes

Status

Reporting Year: 2015-2016 12/01/2015

Recommendation Progress: Recommendation Addressed/Satisfactory Progress
Staffero has had conversations with the learning resource center about coordinating an effort to have science specific workshops for students.

Related Goals

YC - Biology & Ecology Program Review
The deparment faculty will look for ways to improve success and retention rates

Program Recommendation: Student Support Services

Program faculty will seek ways to improve coordination between tutoring center, MESA and other student support services.

Recommendation Priority: 2. Medium Priority

Plan of Action

Program faculty will develop a plan to coordinate and improve communication and services between the program and MESA (Active)

Program faculty will develop a plan to coordinate and improve communication and services between the program and Writing Center (Active)

Program faculty will develop a plan to coordinate and improve communication and services between the program and Student Success Center (Active)

Related Goals

YC - Biology & Ecology Program Review
The deparment faculty will look for ways to improve success and retention rates

Program Recommendation: Class specific support courses

Program faculty will consider developing courses like Biol 35 - Physiology Problems Solving or Reading 15A Efficient Reading for Biology 15 , that students would take concurrently with program courses as a method to improve success and retention.

Recommendation Priority: 2. Medium Priority

Plan of Action

Department faculty will meet to discuss the potential development, design, and implementation of these courses. (Active)

Status

Reporting Year: 2015-2016 12/01/2015
Recommendation Progress: Recommendation Addressed/Satisfactory Progress
Biology 34 - Active Anatomy has been developed and is currently under review by the curriculum committee. LS 12/1/2015

Related Goals

YC - Biology & Ecology Program Review
The deparment faculty will look for ways to improve success and retention rates

Program Recommendation: Course Outlines

YC - Biology & Ecology Program Review

A schedule to review and update course outlines has been developed by the Curriculum Committee and then passed on to the Biology Depratment. With this schedule, and with the implementation of Curricunet, the Course Outlines of Record for many courses are currently being updated, modified, and improved.

Recommendation Priority: 2. Medium Priority

Plan of Action

Curriculum/SLO - Keep abreast of the 5 year schedule to update the Biology Course Outlines of Record.
Continue to update all course outlines as indicated by the 5 year schedule.
Make sure all department course outlines have full time faculty assigned for supervision.
Continue to refer to the two full time faculty in the department who are on the curriculum committee for current information regarding COR. (Active)

Budgetary Impact: No budgetary impact.
Timeline/Responsible Party: Department faculty.

Status

Reporting Year: 2015-2016 12/01/2015
Recommendation Progress: Recommendation Addressed/Satisfactory Progress
COR for Biology 1, 2 and 3 were approved Fall 2015

Program Recommendation: Student Learning Outcomes

Review completed SLOs to modify, add or delete SLOs as needed. Update SLO schedule. Complete any SLOs not developed or measured.

Recommendation Priority: 2. Medium Priority
Supporting Evidence : At Yuba College Marysville campus Biology Department, we have designed SLOs for most all courses. Major instructors for each area of Biology have reviewed the originally designed SLOs and have either implemented them, modified them to fit the course better, or deleted and replaced them. Some instructors have added additional SLOs to their courses. A schedule for the assessment of the SLOs in each course has been formulated and has been adhered to for 4 years now. Instructors have been diligent in their assessment of those SLOs. This schedule assures that each course has its SLOs assessed, and the results recorded, at least once in a 4 year cycle. Furthermore, most course SLOs have been assessed more than once during that cycle. If the SLO assessment yielded results that indicated a need, an action plan was derived and the modification implemented.
The department plans to continue(ie: roll over)the designated 4 year SLO assessment schedule. We also plan to design additional SLOs for courses, as well as formulate SLOs for any course that does not currently have one.
A new SLO assessment schedule has been designed (mostly rolled over from previous schedule). However, since all of the courses have been assessed, sometimes multiple times, within a 3 year period rather than a 4 year period as mandated by the college, the faculty has decided to use this next year to reevaluate current SLOs to change, delete or retain, potentially design additional SLOs, evaluate SLO assessment methods, potentially design new assessment methods, or to reassess SLOs if desired. Consequently, this next year will function as a faculty directed SLO design and assessment evaluation year.
Evaluation Plan: TBC

Plan of Action

The SLO assessment schedule that is coordinated with the program review cycle, will be "rolled over" for the next fours years beginning in the Fall 2012 semester. We will adhere to the scheduled assessments within this 4 year cycle.
New SLOs will be continually designed and added to certain courses. Others will have SLOs modified/changed/deleted in order to improve the useful significance of the assessment results. Course curricula will be maintained, and potentially improved, depending upon SLO assessment results.
Only a couple courses are missing SLOs largely because those courses have not been taught lately. When those courses are once again offered, the instructors assigned to teach those courses will develop SLOs and subsequently perform the assessments.
The department has an SLO Committee member and thus plans to continue staying abreast of the current SLO policies/procedures/information, etc... (Active)

Budgetary Impact: No budgetary impact.

YC - Biology & Ecology Program Review

Timeline/Responsible Party: Department faculty.

Program Recommendation: Department Faculty will establish and offer an AS Degree in Biology

Completed Spring 2013

Recommendation Priority: 2. Medium Priority
Year(s) Requested: 2012-2013
Inactive Date: 10/28/2013
Supporting Evidence : Approximately 125 students per year start the first Biology course in the series. Of those students, approximately 35-40 complete the second and third courses of the Biology sequence each year. Based on those enrollment figures, we estimate that 25-30 students will complete, and therefore benefit from the program yearly.
Evaluation Plan: TBC

Plan of Action

Curriculum/SLO - Continue to provide information to assist the state Chancellor's Office to accept the AS in biology at Yuba College

COMPLETED Spring 2013 (Active)

Related Documents:
Biology AS Degree Approval Email 031313.pdf

Program Recommendation: Transfer Data

The program faculty will evaluate transfer data

Supporting Evidence : Transfer data for BIO 1, 2 and 3 to UC or CSU - Of the 526 students who took Biology 1,2 or3 between fall 2006 and fall 2008, 349 transferred to a four year college or 66% transfer to a four year college.

Transfer Biology 4, 5, and 6 to UC or CSU - Of the 1624 students who took Biology 4, 5 or 6 between fall 2006 and fall 2008 519 tranferred to a four year college or 31%

Transfer Data for Biology 10, 10L, Ecology 10, 11 or 12 - Of the 3278 students who took Biology 10/10l or Ecology 10, 11 or 12 betwen fall 2006 and fall 2008 1362 transferred to a four year college or 42%.

Plan of Action

Curriculum/SLO - Establish a schedule to review transfer data (Active)
Budgetary Impact: None.

Program Recommendation: Maintain and Improve Facilities - Modifications/Upkeep

Modifications of existing facilities, even though recently remodeled, are needed to support current and future curricula. These include improvement of the power sources in Room 817, microscope storage in 804, improvement of restroom facilities. Upkeep and replacement of facilities has been very low since remodeling, due to lack of funding. Items, like Smart Systems/projectors, are breaking and are not being repaired or replaced.

Recommendation Priority: 3. High Priority
Year(s) Requested: 2012-2013
Request Date: 10/15/2012
Supporting Evidence : Districtwide, the Biology/Ecology program has a 5 yr average WSCH/FTEF of 567. We manage 20 courses, many of which have 1 or 2 lab periods per week. Facilities must support the high flow of students in order to maintain student success in our SLOs (critical thinking and scientific awareness).

YC - Biology & Ecology Program Review

Facilities - When funding is available, request modification of the power outlets in Room 817 to support a flexible arrangement of student stations. The current outlets are on the floor and are difficult to open. If left open, water or debris can enter the outlet. Also, they are arranged in narrow rows for a lecture hall and this room has been converted to a laboratory. (Active)

Budgetary Impact: Unknown, would need to be evaluated by a contractor.
Timeline/Responsible Party: When funding available, the department and dean will discuss.

DE Related: No

Facilities - Develop an estimate for microscope storage for 804. The current cabinets do not fit the micrscopes and had to be modified, making them less sturdy and a safety hazard. Students often jam the microscope into the shelf, thus leading to the possiblity of equipment damage. (Active)

Budgetary Impact: Unknown, would need a bid.
Timeline/Responsible Party: When funding available the department and dean should proceed.

DE Related: No

Facilities - The restroom facilities in the 800 Building area are inadequate, due to size reduction in the remodel. Request for additional restroom facilities is needed. (Active)

Budgetary Impact: Unknown.
Timeline/Responsible Party: When funding is available.

DE Related: No

Facilities - Planned Replacement of portions of the facility that are failing such as Video Projection systems in lecture and lab rooms. Maintain a budget for facilities that is adequate for upkeep. (Active)

Budgetary Impact: Increased facilities budget required, unknown amount.
Timeline/Responsible Party: YCCD district, DE department, MESH Division

DE Related: Yes

Facilities - Install deionized water in 808/853C to support Microbiology prep, Bio 6 and Bio 15 coursework. Would need a contractor to evaluate and bid. (Active)

Budgetary Impact: Unknown.
Timeline/Responsible Party: Department faculty and IA, Dean. When funds available.

DE Related: No

Facilities - Modify the Anatomy storage rooms to house 4 cadavers (rather than the current 3). Add shelving required for storage of cadaver supplies, organs, etc. (Active)

Budgetary Impact: Unknown.
Timeline/Responsible Party: Department faculty and Dean. When funds available.

DE Related: No

Related Goals

Institutional Learning Outcomes
Critical Thinking - Analyze data/information in addressing and evaluating problems and issues in making decisions.
Scientific Awareness - Understand the purpose of scientific inquiry and the implications and applications of basic scientific principles.

YCCD Board of Trustees Vision Statement
YCCD VS 1 - Providing an innovative, world-class learning environment;

YC - Biology & Ecology Program Review

YC - Biology & Ecology Program Review
The program faculty and staff will assess the facilities to improve safety and learning environments
Faculty seek to improve curriculum design and teaching methodology through professional development, peer discussion, and classroom experimentation.

Program Recommendation: Maintain and Improve Facilities - Safety and Liability

Evaluate facilities used for safety, ease of use by employees and students, and best use of each classroom.

Recommendation Priority: 2. Medium Priority
Request Date: 10/15/2012
Supporting Evidence : Eye wash facilities installed in the remodel need to be reevaluated and modified if necessary. Hazards (slip, trip, electrical, etc) need to be identified and reported. Classroom assignments need to be evaluated according to which groups of students could best and most safely occupy the facility (e.g. biohazard on site, size of room, equipment available).
At Clear Lake, the transition to teaching anatomy with cadavers must be made with safety in mind, following UCD protocols and with all equipment required to ensure safety. In addition, chemical storage must take advantage of new and appropriate cabinets made available by Measure J construction.

Districtwide, the Biology/Ecology program has a 5 yr average WSCH/FTEF of 567. We manage 20 courses, many of which have 1 or 2 lab periods per week. Facilities must support the high flow of students in order to maintain student success in our SLOs (critical thinking and scientific awareness).
Evaluation Plan: TBC

Plan of Action

Facilities - Continue annual safety reviews of our facilities. Add interim review as needed. Evaluate styles and costs of eyewash stations. (Active)
Budgetary Impact: None at this time.
Timeline/Responsible Party: IA, Department faculty, Dean. Evaluate by next program update.
DE Related: No

Facilities - Evaluate best use of classrooms and adjust assignment as needed. (Active)
Budgetary Impact: None
Timeline/Responsible Party: Department staff. Spring 2013.
DE Related: No

Facilities - At Clear Lake, continue to catalog and store chemicals in appropriate cabinets as per Material Safety Data Sheets and discuss with local fire officials on best placement of cabinets.
Once the date of first offering of Anatomy is known, begin the process of acquisition of cadavers and preparation for their arrival. (Active)
Budgetary Impact: Unknown
Timeline/Responsible Party: Action required within two years by Full-Time Biology Instructor and Campus Dean.
DE Related: No

Related Goals

Institutional Learning Outcomes
Critical Thinking - Analyze data/information in addressing and evaluating problems and issues in making decisions.
Scientific Awareness - Understand the purpose of scientific inquiry and the implications and applications of basic scientific principles.

YC - Biology & Ecology Program Review

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The program faculty and staff will assess the facilities to improve safety and learning environments

Program Recommendation: Maintain and Improve Facilities - Additional Facilities

Evaluate the need for additional facilities such as
1. Student Study Area - Students could meet to review wet labs, Anatomical models, study together, and receive help from the instructors.
2. Sutter Laboratory Facility - Develop 1-2 labs to be added to the Sutter Center to support basic laboratory classes such as Bio 10L.

Recommendation Priority: 3. High Priority
Request Date: 10/15/2012
Supporting Evidence : Districtwide, the Biology/Ecology program has a 5 yr average WSCH/FTEF of 567. We manage 20 courses, many of which have 1 or 2 lab periods per week. Facilities must support the high flow of students in order to maintain student success in our SLOs (critical thinking and scientific awareness). Sutter Center has requested our input regarding the required facilties and equipment needed to support a Biology lab curriculum.

Plan of Action

Facilities - Continue to evaluate a Student Study Center for Biology/Ecology. (Active)
Budgetary Impact: none currently
Timeline/Responsible Party: Dept faculty
DE Related: Yes

Facilities - Work with Sutter Center administration on a basic list of requirements for facilities and equipment for a Biology lab at Sutter. (Active)
Budgetary Impact: None currently.
Timeline/Responsible Party: Department, Dean, Sutter Center
DE Related: No

Status

Reporting Year: 2015-2016 12/01/2015
Recommendation Progress: Recommendation Addressed/Satisfactory Progress
Biology 10L lab was implemented in fall 2014.

Related Goals

Institutional Learning Outcomes
Computation - Use appropriate mathematical concepts and methods to understand, analyze, and communicate issues in quantitative terms.
Critical Thinking - Analyze data/information in addressing and evaluating problems and issues in making decisions.
Information Competency - Conduct, present, and use research necessary to achieve educational, professional, and personal objectives.
Scientific Awareness - Understand the purpose of scientific inquiry and the implications and applications of basic scientific principles.
Technological Awareness - Select and use appropriate technological tools for personal, academic, and career tasks.

YC - Biology & Ecology Program Review

YC - Biology & Ecology Program Review
The program faculty and staff will assess the facilities to improve safety and learning environments
Maintain and Update Program Curriculum to ensure SLO acheivement, transfer to other higher eductional institutions or programs
Faculty seek to improve curriculum design and teaching methodology through professional development, peer discussion, and classroom experimentation.

Program Recommendation: Improve Curriculum

One of the areas and points of discussion will be to evaluate our use of sound learning theory principles to deliver and design course curriculum

Recommendation Priority: 2. Medium Priority

Supporting Evidence : The biology department faculty feel they have a rigorous program that supports student success. But, our success and retention data are relatively unchanged over the period of 2007 - spring 2012. Thus, as a means to address this the faculty will more actively meet to to discuss efforts to improve curriculum, review SLO data, exchange teaching ideas and get support for classroom experimentation. It has been difficult for members of the program to meet. Our schedules are not arranged to accommodate this kind of interaction and the district does not provide for programs or departments to meet and discuss curriculum on opening day. It is hoped that this activity can then by used to mentor adjunct faculty and coordinate teaching between full-time faculty.

Evaluation Plan: TBC

Plan of Action

Curriculum/SLO - Program facuty will establish a meeting schedule to specifically discuss courses, curriculum and teaching. (Active)

Related Goals

YC - Biology & Ecology Program Review
Faculty seek to improve curriculum design and teaching methodology through professional development, peer discussion, and classroom experimentation.

Program Recommendation: Success and Retention

We will continue to look for ways to improve success and retention. We will use CSLOs and PSLOs, retention rates, transfer rates to assess this.

Recommendation Priority: 2. Medium Priority

Year(s) Requested: 2013-2014, 2015-2016

Request Date: 10/28/2013

Supporting Evidence : TBC

Evaluation Plan: Retention rates were evaluated for PR 11/15. Certain concerns were raised regarding courses taught by adjunct faculty and were included in the Staffing Request made. (Tanabe)

Plan of Action

Other - Evaluate Retention Rate data provided to the department.
(Active)

Budgetary Impact: none

Timeline/Responsible Party: all

Perkins Eligible: No

DE Related: No

HSI Related: No

YC - Biology & Ecology Program Review

YC - Location: Marysville Campus

Program Recommendation: Facilities

Maintain and improve facilities.

Recommendation Priority: 2. Medium Priority
Year(s) Requested: 2013-2014
Request Date: 10/28/2013
Supporting Evidence : TBC
Evaluation Plan: TBC

Plan of Action

Facilities - Facilities
G20. To what degree does your program or department have adequate facilities to support effective instruction? Please explain.
After the 800 building remodel, several modifications were needed and have not yet been funded, such as electrical outlets in Anatomy (currently safety hazards), shelving for microscopes (larger so the microscopes actually fit in them) and student study areas for Anatomy, Zoology and Physiology, etc. These changes might cost $5000 or more each.
Before the remodel, the restroom facilities in the 800 building were below the needed capacity and became more inadequate after the remodel (2 women's stalls for about 40 classrooms and offices). We need to add another restroom, even if it is a stand-alone facility.
The lecture halls in the 800 building also lost capacity with the remodel and we have only 2 lecture rooms with capacity for more than 50 students. Therefore, larger Biology lectures have to be held in other buildings. Additionally, different classroom lecture designs will be needed to allow for more cooperative learning and "flipped classroom" arrangements. (Active)

DE Related: Yes

Status

Reporting Year: 2015-2016 12/01/2015
Recommendation Progress: Recommendation Addressed/Satisfactory Progress
The only lecture room that allows for cooperative or student center learning in the 800 building is room 843. It is currently being used to support the biology 15 flipped classroom

Program Recommendation: Technology and Equipment

Restore Technology and equipment budgets; maintain and improve

Recommendation Priority: 3. High Priority
Year(s) Requested: 2013-2014, 2015-2016
Request Date: 10/28/2013
Supporting Evidence : TBC
Evaluation Plan: Budgetary concerns were included in PR for 11/15 and continue to be inadequate.

Plan of Action

Equipment - Technology

F18. To what degree does your program or department have adequate and appropriate technology to support effective instruction (e.g., software, computers, and information technology)?
As cited in previous Program Reviews, we have been adequately equipped in the past to support good quality Biology instruction. However, without replacement funds for multiple years, we are seeing a larger portion of our budget go to repairs and emergency replacements. For example, Clear Lake will need new computers and BIOPAC data acquisition systems (approximately $60,000 for an entire lab) in order to continue Physiology. In addition, no changes or improvements in lab technology or teaching technology have been supported because of budget constraints. Computers,

printers, networks, and presentation systems in lecture rooms and laboratories of the 800 building are only replaced if and when a catastrophic breakdown occurs. They should be replaced on a rotating basis and upgraded regularly.
(Active)

DE Related: Yes

Equipment - Equipment

F19. To what degree does your program or department have adequate and appropriate equipment (other equipment, not computers or IT related).

The current UC Davis Body Program policy allows a single cadaver to be used for only three years. Thus, in order to maintain 2 cadavers in the classroom and 1 in dissection, a new cadaver must be purchased yearly. This means that we need a separate budget to purchase the cadavers from the biology instructional supply budget. Other pieces of equipment, such as spectrophotometers, microscopes, centrifuges are all aging (>10 years old) and there is no replacement budge or schedule for them. Expensive hardware, such as the data acquisition systems in Physiology, models in Anatomy/Zoology/Biology, autoclaves and media preparation systems in Microbiology commonly break down and have to be repaired or replaced. We have no replacement budget and our repair budget is underfunded by several thousand dollars per year. Our replacement budget needs to be increased by 50%. District support is needed for matching equipment grants.
Our supply budget was disproportionately reduced in the last 2 years and needs to be increased by 50%. Materials and supplies are mainly used in lab education and are a required part of the curriculum. Lab curriculum cannot be changed much without going through the curriculum committee and affecting articulation agreements. Therefore, we must continue to provide meaningful lab experiences, including the required purchases of plant and animal specimens, reagents and cultures, gloves and other safety. The budget constraints prevent us from updating laboratory equipment and techniques. In Biology 15 there is a need to purchase data acquisition equipment. In Biology 4 there is a need to replace skeletal parts.
(Active)

DE Related: Yes

Program Recommendation: Update course materials

Many biology faculty prepare their own lab manuals and course notes for purchase in the bookstore. Materials need to be reviewed and updated on a regular schedule to account for any changes in the curriculum or in the field of study. Update and re-write materials purchased by students: lab manuals, course notes, etc.

Recommendation Priority: 2. Medium Priority

Plan of Action

Faculty developed lab manuals will be reviewed and updated every three years. (Active)

Status

Reporting Year: 2015-2016 12/01/2015

Recommendation Progress: Recommendation Addressed/Satisfactory Progress

Biology 15 lab manual was updated for the 2014-2015 academic year. It continues to be updated. It is used at Yuba and at the Clea rLake campus

Related Goals

YC - Biology & Ecology Program Review

Maintain and Update Program Curriculum to ensure SLO acheivement, transfer to other higher eductional institutions or programs

YC - Biology & Ecology Program Review

Program Recommendation: Staff

Improve and maintain staffing

Recommendation Priority: 3. High Priority
Year(s) Requested: 2013-2014, 2015-2016
Request Date: 10/28/2013
Supporting Evidence : TBC
Evaluation Plan: Staff Request was made for 2015-2016 and again for 2016-2017. In addition, our IA is planning to retire within the next year and preparations are beginning for her replacement.

Plan of Action

Staffing - Faculty - Faculty
H21. Does this program or department have adequate full-time faculty to support a high quality program? Please explain.

No, we do not have adequate faculty. We currently are in the process of hiring a full-time faculty for Botany (and Ecology hopefully), a position that was approved 2 years ago. The hiring process was halted at that time due to budget constraints, so we have been without a full-time faculty in this vital area of our majors Biology program for over 2 years.

This year, another of our full-time faculty took a position elsewhere, leaving another vacancy. We also have a faculty member on sabbatical for 2013-2014 and a faculty member who is reducing their workload for 2014-2015. Therefore, even with the hire for this year, we will still be 1 to 1 ½ faculty members less than full staffing.

Because we only have 3 working faculty this year (instead of 6) on the Marysville campus, important activities and functions are not being covered.

(Active)

DE Related: Yes

Related Documents:
BIOLOGY PR FTEF FTES WSCH FINAL.pdf

Staffing - Technical/Clerical - Staffing
I22. Does this program have adequate technical/clerical staff to support a high quality program?

Our Program Reviews every year have documented the need for additional Instructional Assistants. Marysville campus has 1 full-time IA who has responsibility, in part or in whole, for 20 courses, some of which have 2 lab sessions each week. She is responsible for researching, purchasing, storage, maintenance, safety, and governmental regulations. She manages the student workers, trains students and faculty, and interacts with other staff. Thus we need an additional fulltime IA.

The Marysville Biology department also utilizes student workers, but the student worker budget was decreased by 50%. These students clean glassware, make solutions, set up and breakdown lab equipment (as lab rooms often have different courses in the morning vs afternoon), dissect specimens, stock shelves, make and maintain cultures and media, etc. Without the students to act as instructor-extenders or IA-extenders, then instruction or preparation for instruction will not happen. Thus we need a minimum of 30 hours/week.

The Clearlake program has never provided a budget for an Instruction Assistant and should do so for Biology and Chemistry. As the current Clearlake instructor nears retirement, it will be difficult to find a replacement instructor that is capable and willing to do the onerous amount of lab prep. Thus we need a half-time IA at Clearlake.
(Active)

DE Related: Yes

Program Recommendation: Training/Professional Development

YC - Biology & Ecology Program Review

Improve and maintain Training and Professional Development

Recommendation Priority: 2. Medium Priority
Year(s) Requested: 2013-2014
Request Date: 10/28/2013
Supporting Evidence : TBC
Evaluation Plan: TBC

Plan of Action

Professional Development/Training - Faculty and Staff Support and Professional Development
J23. In the last year, what professional development or networking has faculty and/or staff participated in?

Faculty and staff attend on-campus Flex and opening day learning experiences. Faculty also attend continuing education conferences, such as Human Anatomy and Physiology (HAPS), continuing medical education (for Physiology), field studies to further education and experience in field biology courses, etc.

J24. How did these activities contribute to student success? (include supportive data)

Attending HAPS opened opportunities to provide models and hands-on learning for Anatomy. We incorporated clinical studies in Physiology, independent experimentation rubrics and applied clinical/medical knowledge to the instruction of future nurses.

J25. How does professional development in your program or department support basic skills students and foster inclusive classroom environments that value diversity?

Our faculty have participated in the BSI committee and activities. Classroom strategies that we share in the department promote diversity and inclusiveness, such as projects that require students to work in small groups, rotating group membership in order to prevent cliques, supporting students mentoring students, incorporating volunteerism into the curriculum, etc.

J26. What Staff Development activities would you suggest be offered in the next year that would enhance your program?

Technology in the classroom, student success strategies, student-centered learning.

(Active)

Program Recommendation: Computer Replacements for Lab 814

Upgrade computers in 814 (those are from 2004)
8 desktop computers at $1200 each = $9600 total

Recommendation Priority: 3. High Priority
Year(s) Requested: 2015-2016
Request Date: 03/01/2016
Supporting Evidence : Computers are old and will not run new software, inhibiting student learning and success.

Plan of Action

Equipment - We need those computers, please buy them. (Active)
Budgetary Impact: $9600
Perkins Eligible: No
DE Related: No

YC - Biology & Ecology Program Review

HSI Related: No
YC - Location: Marysville Campus

Program Recommendation: Black and white printer

need 1 black and white printer, cost approximately $300

Recommendation Priority: 2. Medium Priority
Year(s) Requested: 2014-2015
Request Date: 03/01/2016
Supporting Evidence : Student need to be able to print and turn in lab reports, part of students' learning experience.

Plan of Action

Equipment - We need the printer, please buy one. (Active)
Budgetary Impact: $300
Perkins Eligible: No
DE Related: No
HSI Related: No
YC - Location: Marysville Campus